KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
INSTITUTE OF DISTANCE LEARNING

THE ROLE OF EFFECTIVE COMMUNICATION IN PROJECT SUCCESS: A CASE STUDY OF GHANA HIGHWAYS AUTHORITY

BY
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DECLARATION

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

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DEDICATION

This study is dedicated to my family who have loved me throughout a lifetime of learning. It is primarily devoted to my lovely wife for her understanding and unflinching support and making me feel special at all times.

ACKNOWLEDGMENTS

My special appreciation goes to the ALMIGHTY GOD for guiding me in all spheres of my endeavors and pray that He leads me to the citadel of success. My gratitude and respect are extended to Miss Theodora, my Supervisor for the supervisory role that has made this work a success.

Many friendships that have begun and will continue forever were created in classes, study sessions, and during campus interaction. To all of my course mates and friends, I owe an enormous debt. A sincere appreciation to all members of my group during our program of study.

Finally, a very special thank you to all the technocrats who participated in this study, without their response this study would have been a disaster.

ABSTRACT

Effective communication is the hallmark of every construction project. As the project unfolds and the design is realized, information in the form of drawings, specifications and construction methods must be communicated from one expert to another. Therefore, using an appropriate communication method and communication medium to resolve construction and design problems is essential. In order to fully appreciate communication in the Ghana Highways Authority construction project, the following objectives were articulated for the research: To determine the communication channels used by project experts in Ghana Highways Authority, determine the causes of communication barriers on GHA projects and determine how construction project communication affect the execution of projects of Ghana Highways Authority. The research sampled 86 professionals working with consultants, project clients and contractors with D1K1 classification. The study established that within the Ghanaian construction industry, there is a strong appreciation of the importance of effective project communication and its importance within the industry. Indeed, various levels and channels of communications have been established within the construction industry notably the communication between the clients and consultants or consultants and contractors. In spite of that, there have been many hindrances to effective communication on construction projects in Ghana. These include; selective perception, non-verbal messages, deceptive tactics, late delivery, poor leadership, unclear communication objectives, unclear channels of communication, inefficient reporting system, ineffective communication between the parties on the project, and language difficulties. Finally, the research established that poor communication had resulted in project delays, project cost overrun and project abandonment. Project communications was also shown to affect the performance of professionals within the construction industry strongly.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

The construction industry is among the extremely thriving industries in the world. It is essentially urban-based and is concerned with preparation as well as the construction of roads, real estate properties, power plant project, harbor expansion, construction of dams and bridges among others. However, the mending of existing roads or the making of specific modifications in the same road also falls under the jurisdiction of this industry but in Ghana, the Highways Authority has the responsibility of ensuring that our roads are better.

As alluded by (Tam, 1999), the construction sector is among the areas that thrive more on information and is heavily based on the antiquated methods of communication including face to face meetings, phone calls and the exchange of drawings and associated paperwork or documents (Stewart & Mohamed, 2003). Communication can, therefore, be seen as the critical factor that influences the overall accomplishment of any building project. Crucialto the process of any construction project is the drive and transfer of project data amongst the different professions all of whom have inconsistent priorities and opposing objectives (Faniran, et al., 2001).

More often than not projects that encountered issues that are detriment to its achievement is attributed to the fact that a, project team members have the impression that a better communication will result in the best operations in the project (Čulo & Skendrović, 2010). Consequently, communication is often deliberated as one of the most needed areas for development. To guarantee the success of a project, much information, including expectations, goals, needs, resources, status reports, budgets and purchase requests, need to be communicated on a regular basis to all major stakeholders. The more the people involved in the project

communication, the higher the risk of misconception or forfeited information which leads to failure to meet targets, demands at the market or inability to cooperate efficiently effectively with other players in the project team.

(Griffin & Hauser, 1992) ascertained that in an efficacious project, the project members are aware of what information needs to be disseminated, when it is to be disseminated and the audience to receive the exact information. The reality is, however, that communication in Ghana Highways Authority projects is very challenging.

1.2 Problem Statement

Müller &Turner, (2010) indicated that communication is one of the most important factors which influence the success of any construction project. The authors noted that any project which is associated with poor communication between its stakeholders stands a great chance of failing. This assertion gives the implication that project managers who desire to have a successful project outcome need to identify effective strategies for information management and communication. The question therefore is how can project managers ensure that communication becomes effective in construction project management?

According to Keyton (2011), most defects in the construction industry is as the result of poor communication. This assertion also gives the indication that poor communication can be blamed for the failure of most construction projects. The implication of Keyton's (2011) assertion is that in other for construction projects to succeed there is the need for project managers to pay close attention to communication management.

According Orgen (2015) the construction industry in developing countries like Ghana faces a number of Design Service Delivery (DSD) challenges. These challenges include non-collaborative activities which are evidenced by breakdown in communication and adversarial business relationships among various construction actor groups and clients. Such challenges mostly end in discords, disputes and conflicts (DDC). Subsequently, while the discords, disputes and conflicts are pervasive and not in doubt, the impact is not known, making it difficult to appreciate the severity of the problem and also to propose appropriate measures for addressing the problem.

In Ghana several road construction projects have failed to live up to the expectation of its stakeholders. Specifically, road projects in Ghana have been bedeviled by such issues as delays, poorly constructed roads and roads which have been completely abandoned by contractors. Even though several challenges such as lack of funds and corruption have been identified by various stakeholders as the basis of the lack of success of most road projects in Ghana, rarely has anyone identified communication as a root cause of the failure of road projects. Hence this study to examine the contribution of communication towards the success of road projects in Ghana.

In relation to the Ghana Highway Authority (GHA), there is no empirical on how communication affects road project management. Therefore this study seeks to examine the role of effective communication in project success using Ghana Highway Authority, Takoradi as a case study.

1.3. Aim of the Study

The main objective of the research was to assess the role of effective communication as a key to project success in Ghana Highways Authority (GHA).

1.3.1. Specific Objectives

1. To examine the communication channels used for road project management in Ghana Highways Authority.

2. To determine the barriers to effective road project communication in Ghana Highways Authority.

3. To determine the measures required for effective communication in Ghana Highways Authority.

1.4 Research Questions

This research answered the subsequent research questions:

1. What are the communication channels employed for road project management in Ghana Highways Authority?

2. What are the barriers to effective road project communication in Ghana Highways Authority?

3. What measures are required for effective communication in Ghana Highways Authority?

1.5 Scope of the Study

Communication within the construction industry in Ghana's communication is very wide in scope with relevant parts which when discarded renders the study incomplete, particularly if there are no deliberations in the study. This industry comprises of three main actors: contractors, consultants, and clients who are responsible for the designing, planning and construction of both

roads and buildings. The players within the road and the building sector were made the crux of this study. Again, the study further delved into the more prominent companies within the building sector since they were assumed to have been utilizing most possible communication structures effectively and efficiently that this study declares to investigate.

1.6 Research Methodology

A survey using a quantitative approach was employed in the study because quantitative study depicts a deductive method on the basis of theoretical assumptions and elicits validity study designs, calculations, and appropriate sampling techniques. Relevant literature was initiated through secondary data obtained through textbooks, journals, previous research works and the internet, structured questionnaires were administered to key management personnel of construction firms, and in some cases, interviews were conducted on site. The selection of technocrats (the respondents) was limited only to Ghana Highways Authority project consultants as well as road and building contractors respectively. The construction sector employs a number of professionals including civil engineers, structural engineers, project managers, quantity surveyors, and architects. Various public firms within the Ministries – its departments and agencies, provided consultancy services for infrastructural projects. With the discovery of oil and increase in mining and timber lumbering activities, the western region has accelerated in development of their infrastructure especially their roads and thus the Western region being the focus of this study. An interview in the form of structured questionnaires, were administered to 86 respondents (comprising of clients, consultants, and contractors) who were sampled from a population of 110. 93% representing 80 of the respondents which were analyzed using SPSS and presented in descriptive statistics (mean and standard deviation).

1.7 The Significance of the Study

In view of the immense contribution of the construction to Ghana's GDP, its importance cannot be played down and is therefore a justifiable cause to research and add needed knowledge to every aspect of the industry in order to promote it. As evidenced by (Söderlund, 2011); Skulmoski and Hartman (2010); Craig and Tracy (2014), substantial studies have brought to light many problems of construction projects that have developed at the interfaces between critical specialists. While it's feasible that some specialists will be able to read and understand various aspects of building information even without delineation with a high degree of accuracy, other issues of the building might not be caught on to unless the information is disseminated in a way which gives project stakeholders a mental model of understanding for actions to be taken. Therefore, communication is has be found to be germane in the management and execution of projects in that,a delay in recognizing that information is missing, not correct, or contradicting might cause a delay, wastage of resources or require alteration to wrongly constructed parts. Effective communication is of great importance if information is to be understood and processed as intended. However, very little is known about how communication is planned, information is distributed and performance is reported during a project being worked on by the GHA. The findings of this research will assess the communication system, find any existing challenges make these communication challenges forthcoming to GHA management to be improved for future project implementation.

1.8 Limitation of study

This study is limited to the Ghana Highways Authority, mainly focus in the area of construction projects. The study explores the range of communication by the project office in the form of

scrutinizing the internal project workforces due to their involvement in both internal and external communications by their work in drawing up communication schemes. Up close interview was exercised with 20 of the respondents to ascertain information collected from internal projectworkforces. This interview was to incorporate the external stakeholders however, the results of the study only represent the project communication practices of the Ghana Highways Authority. The external stakeholders were included to the extent possible, but the geographical limitations mean some delimitation in this area is inevitable.

1.9 Organization of the Study

The study consists of five chapters and is presented as follows:

Chapter One: Comprises the background and scope of the study, establishes the problem, draws up objectives together with the research questions, and presents the importance f the study and limitations that constrained findings.

Chapter Two: Presents the review of relevant literature pertaining to the study which basically involves review on recent research pertaining to project communication models, the various communication channels, how project communication is planned, and a general overview of the Ghanaian construction industry dealing with its construction information is distributed.

Chapter Three: Provides information on methodology, population and sample size consideration, limitation of the study, data collection procedures, instrumentation, and data analysis procedures. Also, ethical issues were discussed here.

Chapter Four: Provides findings and the discussion of the results of the study.

Chapter Five: Provides a summary of the findings, conclusion, and recommendation to the Ghana Highways Authority management team and suggestions for further research.

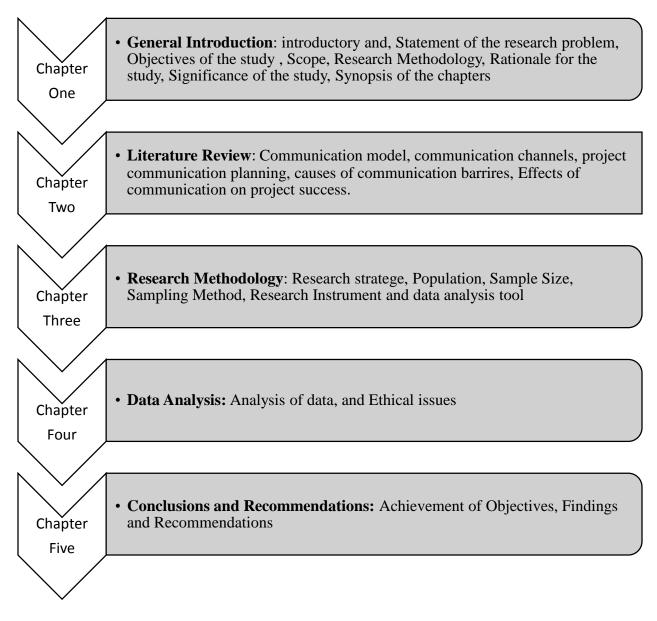| Chapter One | • **General Introduction**: introductory and, Statement of the research problem, Objectives of the study , Scope, Research Methodology, Rationale for the study, Significance of the study, Synopsis of the chapters |
Chapter Two	• **Literature Review**: Communication model, communication channels, project communication planning, causes of communication barrires, Effects of communication on project success.
Chapter Three	• **Research Methodology**: Research stratege, Population, Sample Size, Sampling Method, Research Instrument and data analysis tool
Chapter Four	• **Data Analysis:** Analysis of data, and Ethical issues
Chapter Five	• **Conclusions and Recommendations:** Achievement of Objectives, Findings and Recommendations

Figure 1: Summary of Workflow of the Research.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Projects that come with a lot of communication problems often lead to frustration, delays, and conflict within the workplace. This is the reason why using effective communication methods are very important for the success of GHA construction projects. The lack of a solid knowledge basis, as well as ineffective communications, has resulted in delayed projects throughout Ghana (Ampadu-Asiamah & Ampadu-Asiamah, 2013). "Project communication management includes the process required to ensure timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of project information" (Project Management Institute, 2008). Cheung, et al., (2013) defined communication as a two-way process between the sender(s) and receiver(s) through commonly used media. Communications, in general, is the basic means through which project teams interact with the project stakeholders. Using communication, project teams can exchange information and link each other to achieve project objectives (Tai, et al., 2009). Similarly, Conrads and Lotz, (2015) proposed that team communication was the activity by which team members convey information to each other in an appropriate manner or active information exchange activities between teams. Communication difficulties or disorders during the process of the project can directly lead to a sharp increase in the volume of unnecessary expenditure (Hwang, et al., 2014).

Kwofie et al., (2015) found that the main functions of team communication include control, motivation, emotional expression and information transmission. By influencing or inspiring

others to act, effective communication is an indicator to measure the result of communications. (Tai, et al., 2009). The measurements include accuracy, timeliness, completeness, barriers, and understanding (Porter & Lilly, 1996). It is well recognized that effective communication plays a key role in achieving the success of construction projects (Martin, et al., 2014); (Senaratne & Ruwanpura, 2016). The construction project team has certain unique characteristics, such as temporary in nature, task-oriented, having different team goals, and inconsistent core competencies (Ibadov, 2015). Project teams require the collection, analysis and real-time communication of information for early warning of deviations from planned performance and timely decision-making for corresponding actions (Lee & Rojas, 2013).

In the context of construction projects, the role of communication is even more important because of its decentralized nature due to different responsibilities of various project teams, and different time to join the project (Tai et al., 2009). Also, team communication is an effective means of conflict resolution (Senaratne & Ruwanpura, 2016). Differences in organizational structure and organizational scale, changes in project objectives may result in such conflicts (Zhao & Li, 2015). These conflicts need to be solved using coordination and communication (Azmy, 2012). Hence, the communication between construction project teams can be defined as the process of information sharing, information exchange and information transmission across project teams during the whole lifecycle of the project. It refers to the frequency, effect, attribute, scope, and transformation of information, and serves as a way to reduce the information asymmetry among project teams. Communication is considered as a multidimensional phenomenon that can be conceptualized with some attributes (Badi, et al., 2012). Communication within construction projects includes not only progress meetings, document

transmission, and the regular exchange of information among project teams; but also informal meetings and private conversations among team members (Butt, et al., 2016). In construction projects at GHA, it has been observed that informal communication constitutes a significant share of the communications between project teams.

Project stakeholders are typically characterized by different types of team members, complexity and inter-organizational task interdependence which makes communication ever more important (Badi, et al., 2012). A strong willingness to communicate helps to enhance the exchange of information between teams (Hewage & Ruwanpura, 2009). Possessing different resources (e.g., personnel, technology, information), the diversity of project teams may lead to conflicts among teams (Henderson, et al., 2016). For a project team, there are two overarching objectives: achieving project goals and its benefits, which is an objective duality (Gunduz, et al., 2015); (Psychology & Gonz, 2016).

2.1 Models of Communication

The purpose of a "model" is to offer a visual representation of a concept with the intent of facilitating the understanding of it. Traditionally speaking, there are three standard models of the communication process: Linear, Interactive, and Transactional, and each offers a slightly different perspective on the communication process (Gavi, 2013).

2.1.1 Linear Communication Model

The Linear Communication model recognizes (or doesn't recognize) the concept of feedback. The linear model's behavior is belied by its name, where a sender encodes a message via a channel and the message is decoded by the receiver. It is straight-line communication found

typically in mass communication; think television, radio, newspapers, etc. According to this model, there are no means for immediate feedback (Gavi, 2013).

2.1.2 Interactive Communication Model

The Interactive Model takes the Linear Model and multiplies it times two with a quick flip of the return message. Interactive model has a feedback element because after a message is encoded and sent to the decoding receiver, the roles then reverse and the receiver encodes and sends a response to the original sender who has now turned receiver. It sounds more confusing than it is. Envision an exchange of text messages whereby your friend sends you a message, and you respond to it. The same thing happens during a telephone call or even an email exchange. A message is sent and received, then the roles reverse (Gavi, 2013).

2.1.3 Transactional Communication Model

The Transactional Model becomes more sophisticated yet. This model depicts a face-to-face interaction or "trans-action" as a dynamic and changeable process that is not limited to a simple definition. In the Transactional Model, receiver and sender can play the same roles simultaneously, as sometimes happens, as messages can be sent back and forth simultaneously. It appears chaotic and ineffective, but sometimes communication is just that. Throw in some noise, and it would be a wonder whether any message is conveyed successfully in this environment (Gavi, 2013).

2.2 Channels of Communication

There are a great many tools and strategies for project communication (i.e., Project Office, telephone, faxes, teleconferences, dashboard, e-mail, video-conferences, collaborative design tools, face-to-face and knowledge management systems) and research states that, in general, the

more tools used by project managers, the more successful a project team will be. So although there is a difference in the tools used by certain types of teams, tools enable the conditions for success (Gibson & Cohen, 2016). For example, (Henderson & Stackman, 2010) studied project communication to determine what degree the teams relied on mediated communications rather than face-to-face interaction to accomplish tasks. Project teams working on projects of $1 million or less tend to be co-located and more reliant on face-to-face communication (Henderson & Stackman, 2010). Then project teams with budgets above $1 million have higher dispersion among members and are more likely to use mediated technology. Project office, face-to-face communication, video conference systems, project planning documents, meetings, project portal, email, telephone, and smartphone are all regarded as tools or channels to communicate information.

Different types of communication channels are used in project management, and these include interactive, push and pull communication. All of these methods allow the project team leader to get the message across the organization as well as extract response from the stakeholders effectively. Without the effective communication channels, it will be very difficult for the project to even move forward as the lack of them [methods] will result in the misunderstanding of the project goals and even conflict among the stakeholders.

2.2.1 Project office

Stryker and Santoro (2012), describe how, today, the project management team's most difficult and crucial tasks is to facilitate communication in the project team. They concur with other authors that face-to-face communication is the most effective problem-solving communication

medium and that, especially in research and development (R&D) projects, the project managers' objective should be to facilitate this communication form (Stryker & Santoro, 2012).

2.2.2 Face-to-face substitute – Videoconferencing

(Dainty, et al., 2006) describe how projects that have physically non-present members, such as teams that are situated at other locations, today have the potential to communicate efficiently. They state that video conference tools enable audio and visual communication with simple, built in, picture or model sharing programs (Dainty, et al., 2006).

Today, Skype, through products developed by technology companies, offers rather well functioning and affordable video conferencing services. For example, a device with a built-in camera and microphone that plugs into television through an HD port. This device, developed by Tely Labs called the Tely HD, is meant to function as a meeting tool compared to earlier, more restricted, webcam devices. In a review made by PC World, a media technology magazine, the reviewer, Arar, walks through the usage of the Tely HD listing features such as a high-resolution screen, picture sharing and docking for SM-cards, which are cards used in most digital cameras today (Arar, 2012).

2.2.3 Email and the Project Portal

Email and project portal are two internet-based tools they have, during the past years rapidly been taken into use in the construction industry. This is because they can spread vast amounts of information with high speed and efficiency (Dainty, et al., 2006).

2.2.4 Telephone and Smartphone

Mobile telephones are known to have radically changed the way in which people are available for communication. It is a means to communicate while on the move or in the midst of work

activity. (Dainty et al., 2006). Smartphones are currently widely spread and integrate not only screen sharing and voice communication but also support video conversations and video-conferences. The only requirement for such a service is, with more advanced use, a fee and a strong Internet connection, something that is a standard feature in most office buildings. Smartphones also act as a portable email and Internet devices.

2.2.5 Meetings

Conducting a project meeting allows you to set expectations, communicate details, report on progress, or solve a problem. During a project meeting, team members contribute their opinions, expertise, and advice based on their roles, playing a critical role in the successful outcome of the project. Successful project leaders create a responsibility matrix to define project roles at the meeting to keep it on track and running smoothly (Duggan, 2018).

2.2.6 Project planning documents

A project planning with its phases explained in writing is the condition for deadlines not to be missed and the budget, overrun. It's also the only way to keep the quality of deliveries and, above all, the team motivation. However, among all the documents, what's bureaucracy and what's necessary? The planning documents should contain Project Charter, Project management plan, Project scope plan, Project schedule plan, Project team plan, Project work plan, Quality assurance plan and Project risks plan (Moretti, 2017).

2.2.7 Face-to-face communication

Face-to-face communication and in-person meetings can boost efficiency. Instead of spending an entire day e-mailing back and forth, you can hash out all of the details of a project in one go. These meetings can also boost creativity as the overall energy will be higher so you can brainstorm and solve a multitude of problems at one time. Face-to-face communication can also

be much more effective for those who may struggle with written communication. Everyone has their own unique set of skills, and some people are much more fluid and clear with verbal communication (Petersen, 2013).

2.3 Project Communication Planning

Planning is very important in every activity. Lack of planning in project management may lead to a cul-de-sac. The project manager and project office are at the heart of the project's information and control system. It is the project manager's responsibility to develop not only the project's organizational structure, but to develop the project communication plan and lines of communication (Burke, 2007). A formal communication plan should be compiled to identify how stakeholder opinions and actions will be managed (Engelbrecht, 2010).

2.3.1 Project Organizational Structure

Organizations are structured in such a way as to achieve the goals and objectives. There are two basic structures. Firstly, the bureaucratic structure that is arranged in a pyramidal hierarchy, with authority increasing from one level to the other, as one moves up in the organization. The authority lies in the position rather than in the people who occupy it. Secondly, the matrix structure that breaks the unity of command where every employee has one person to report to. This structure allows flexibility and involvement, which leads to greater motivation and teamwork (William, 2010).

2.3.2 Project Communication Plan

It is advisable that a communication plan is agreed upon in advance to provide a clear direction to all parties involved, particularly for complex projects (The Chartered Institute of Building, 2010). The development of a communication plan should focus on facilitating the process of

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keeping the key stakeholders informed of the project's progress and to promote the project by making it visible at all times (Burke, 2010). The communication plan should outline the following:

i. Who (lines of communication – sender and receiver – responsibility and authority).

ii. What (scope of communication and format)?

iii. When (schedule)

iv. Feedback (confirms message received and understood – document control)

v. Filing (retrieving, storing, disaster recovery)

vi. How (email, document, telephone, meeting, presentation) (Burke, 2003).

2.3.3 Lines of Communication

At the start of a project, it is important to determine the lines of communication and the methods of managing information (Fisk & Reynolds, 2010).

Smit & Cronje, (2002) propose two primary lines of communication, namely formal communication and informal communication. Formal communication flows in four directions; downward, upward, lateral or horizontal and diagonal or crosswise (Tubbs & Moss, 2008). (Gronstedt, 2000) adds external communication as a formal communication direction. It takes place between the project team and people who are not part of the project. The position in the hierarchy of project management is important because the position determines the skills needed to communicate effectively. (William, 2010) states that the best way to avoid disputes during and after a construction project is to provide open lines of communication between project stakeholders to solve problems and disputes quickly before they lead to costly arbitrations or litigation.

Informal communication uses channels such as the grapevine, rumors (Tubbs & Moss, 2008), informal social groupings and verbal and non-verbal communication (Van, et al., 2002). The grapevine constitutes informal and unofficial communication in which information is based on facts or rumors. It may begin with anyone in the organization and may flow in any direction. The grapevine's primary function is to disseminate information to employees (both managerial and non-managerial) that is relevant to the needs. Rumors and the grapevine are not the same. Rumors are information without a factual base (Smit & Cronje, 2002).

2.3.4 Internal Communication

According to Dow & Taylor, (2008), different methods of internal communication exist:

i.   Oral communication takes place in the form of meetings, discussion groups, talks, interviews, announcements and conversations, both face to face and over the telephone

ii.   Written communication takes place using letters, emails, circulars, memoranda and minutes of meetings

iii. Non-verbal communication may convey powerful messages in the business world using gestures, appearance or attitudes

iv.   Electronic communication makes it possible to send messages all over the world at a very high speed. Messages may be sent and received using computer terminals, electronic mail (email) and fax facilities

v.   Visual communication takes place using presentations, DVDs, and videos.

2.3.5 External Communication

According to Le Roux (1999), every member of an organization is involved in communicating with customers, shareholders, the media and members of the public on a daily basis. The external communication of each of these members of the organization conveys a particular image of the organization to the outside world. Communication does not function in isolation but within a process. It is thus important to review internal and external communication levels between members of an organization to achieve a mutual goal or goals. The construction Project Manager needs skills to communicate effectively with both the internal and external parties involved in the project.

2.3.6 Effective Communication

(Kotzé, et al., 2008) propose that projects are run through effective communication. Cost, scope and time are the interrelated areas, and change in one area affects the other two areas. Based on the fact that communication brings the areas together, communication can be regarded as having a cornerstone function. The areas of project management are the body of knowledge, which can be subdivided into core elements that determine the deliverable objectives of the project, namely scope, time, cost, and quality (Burke, 2010).

2.4 Overview of Ghanaian Construction Industry

Ghanaian construction industry is complex, representing a range of stakeholders (Dadzie, et al., 2012). The Ministry of Water Resources, Works and Housing, is responsible for the housing infrastructure and construction throughout the country. Typically, a construction industry of any country could be seen as having two main sets of features which makes it unique from all others. The first one is the peculiarity of the construction industry which distinguishes it from other

industries. The second being the peculiarities of each country's construction industry as defined by its socio-economic level, technological level, culture, institutional and legal frameworks.

2.4.1 The Ghanaian Construction Industry Set –Up

The key stakeholders in the construction industry in Ghana are clients, professional consultants, and contractors. In Ghana, four main clients are distinguishable: the Government (being the major client), Real Estate Developers, Investors and Owner Occupiers.

Professional consultants who are regularly engaged by the government and other clients are Architects, Quantity Surveyors (QS), Geodetic Engineers (GE), Structural Engineers (St. E), Electrical Engineers (EE) and Services Engineers (SE). Geodetic Engineers are often involved in roads construction. All these professional are regulated by their professional institution, namely, Ghana Institute of Architects (GhIE), Ghana Institute of Surveyors (GhIS) for the QS and GE and (GhIE) Ghana Institute of Engineers for the rest respectively.

Contractors in the Ghanaian construction industry are grouped into eight categories (A, B, C, S, D, K, E, and G) according to the type of works they undertake. These are:

  i.   Roads, Airports, and Related Structures (A)

  ii.   Bridges, Culverts and other Structures (B)

  iii.   Labour-based road works (C)

  iv.   Steel bridges and structures: construction rehabilitation and maintenance (S)

  v.   General building works (D)

  vi.   General civil works (K)
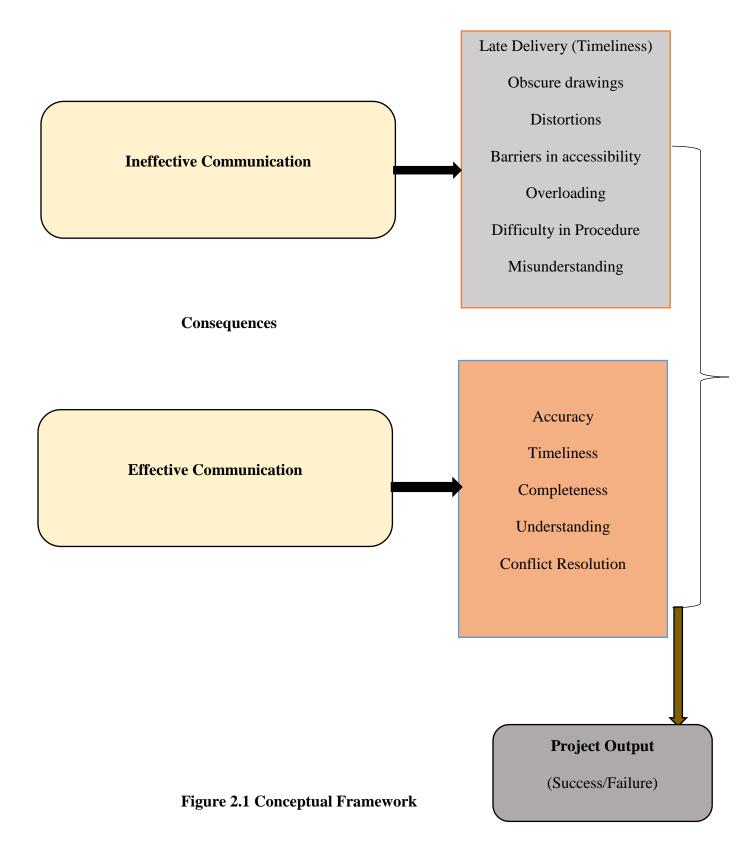
  vii.   Electrical works (E)

viii.   Plumbing works (G).

2.5 Conceptual Framework

Conceptual framework is conceived as a visual or written product (graphical or narrative form) that seeks to capture and explain thoroughly, the main factors, concepts and variables in a study (Sinclair, 2007). It also depicts and explain the inherent relationship amongst the key concepts and variables identified and also offer a clear process of achieving them (Sinclair, 2007). From the understanding gained in the attributions of communication performance outcome presented in this chapter, it can be affirmed that communication performance models offer a good understanding of the relationship between the main communication factors that affect and influence the performance outcomes (Liu, 2009; Marshall-Pointing and Aouad, 2005). It also offers an evaluative, objective and predictive approach for constant monitoring of the actions (inputs) against performance outcome for improvement (Xie et al., 2010; Liu, 2009; Marshall-Pointing and Aoud, 2005)

In the context of this study, it is thus considered important to aid a clear and precise understanding of the relationship between the main attribution factors (ineffective communication and its consequence and effective communication and its results on the overall construction projects) and their extent of impact on the communication performance among the project team. Hence, a conceptual model which rigorously integrates these key concepts identified is thus useful for objective evaluation and predictive purposes. Construction projects are said to possess unique features which are expressed in the 'physical, organizational and operational' attributes (Ahadzie et al., 2014; Adinyira et al., 2013). It is further asserted that project teams can communicate effectively and enhance their performance outcome by

possessing 'functional task skills' in encoding and decoding as well as 'psycho-social' communication skills (Morreale, 2009; Salleh, 2008). Alternatively, the result of communication outcome in any context is dependent on the competency input and the contextual environment in the communication process (Hsieh and Schallert, 2008).

Building on this background and the exposition given above, the extent to which the effective and ineffective communication impact on project performance among the project team can be illustrated and operationalized in the model shown in Figure 2.1.

Late Delivery (Timeliness)

Obscure drawings

Distortions

Barriers in accessibility

Overloading

Difficulty in Procedure

Misunderstanding

Ineffective Communication

Consequences

Effective Communication

Accuracy

Timeliness

Completeness

Understanding

Conflict Resolution

Project Output

(Success/Failure)

Figure 2.1 Conceptual Framework

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

In the previous chapter, the pertinent literature on the topic was reviewed to place the research in a sound theoretical context. This chapter discusses the research methodology adopted for this study to achieve the research objectives. The chapter discusses the research design, types and sources of data, sampling methods, techniques of data collection and data management and analysis. It provides detailed explanations of the methods used and how they are appropriate to address the objectives of this research.

3.2 Research approach

The main research approaches employed for any given study are: qualitative and quantitative research approaches. Each approach is based on its own means of data collection and reporting (Bryman & bell, 2007). This study employed the quantitative research approach to examine the role of effective communication in road construction project management in Ghana Highways Authority.

Quantitative data employs quantifiable means of data collection and also presents its findings in a numerical or statistical approach. The presentation of the analyzed data obtained in a quantitative study can be presented in charts, graphs and statistics to explore present and describe the relationship of trends (Saunders et al., 2009).

3.3 Research Design

In view of the objectives of the study, the research design employed was the case study design. Case study is a type of study that involves an empirical investigation of certain phenomena in real life contexts (Saunders et al., 2009). Cases studies enable researchers to unearth the issues underlining an existing issue in a given environment. While some studies make use of multiples cases others focus only on a single case. This study was based on a single case that is the situation in Ghana Highways Authority, Takoradi when it comes to effective communication in road construction project management and how it can lead to the success of road projects.

In addition, case is an important research design which ensures that a deeper understanding on an existing problem is realized. Moreover, case study is employed when "what", "why" and "how" need to be answered in a research (Rowley, 2012).

3.4 Study and Target Population

A population is an identifiable total group or aggregation of elements (people) that are of interest to a researcher and pertinent to the specified information problem. This incorporates characterizing the population from which the sample is drawn. As per Salkind (2008), population is characterized as the whole of some gathering of individuals. This is additionally affirmed by Sekaran and Bougie (2010); population is characterized as the entire gathering of individuals the scientists need to explore.

Along these lines, the target population for this study was 110 individuals made up of project consultants, civil and structural engineers, plus the directors of the project, Quantity Surveyors, and builders and designers.

3.5 Sample Size and Sample Technique

Sampling is very vital in research because an entire population is almost impossible to examine (Fellows & Liu, 2008). The unit for sampling in the study was project consultants as well as building, and road contractors. Construction specialists comprised of Structural and Civil Engineers, Project Managers, and Quantity Surveyors.

3.5.1 Sample Size Determination

To determine the sample size of the population of the study, Krejcie and Morgan (1970) formula which gives a procedure for the calculating sample size was applied. The formulais stated below:

$$S = \frac{X^2 NP(1-P)}{d^2(N-1)+X^2P(1-P)} \text{-------------------- (1)}$$

Where,

S = required sample size

N = the given population size

P = population proportion assumed to be 0.5

d = degree of accuracy

X^2 = 3.841 for the 0.95 confidence level

Now, the given values are:

S =?

N =110

P =0.5

$D^2 = d^2 = 0.0025$ (5%)

$X^2 = 3.841$

Substituting this into the general formula, equation (1) yield;

$$S = \frac{3.841 \times 110 \times 0.5(1-0.5)}{(0.0025 \times 109) + 3.841 \times 0.5(1-0.5)}$$

$$S = \frac{3.841 \times 110 \times 0.5 \times 0.5}{(0.0025 \times 109) + 3.841 \times 0.5 \times 0.5}$$

$$S = \frac{105.6275}{0.2725 + 0.96025}$$

$$S = \frac{105.6275}{1.23275}$$

S = 86, hence the sample size for this study is 86.

3.6 Methods and Instruments of Data Collection

The analyst utilized questionnaires, interview guides and focus group discussions for gathering information. The survey questionnaires were utilized in light of the fact they are not difficult to manage and also able to produce an expansive layout of required information. Questionnaires are economical, ensure anonymity, and permit use of standardized questions, save time especially the self-administered as the 86 respondents have a sufficient time to think and answer the questionnaires with ease, henceforth limiting mistakes.

Document analysis is a technique for information gathering from recorded sources. The analyst additionally document analysis to accumulate data that isn't caught in the answers given in the questionnaire and others utilized. The Information were gathered from paper archives and in addition computer databases and approach reports from Ghana Highways Authority. Document analysis has focal points over other information accumulation strategies on the grounds that the reports are required to be complete, detailed, and consistent and well-structured. They likewise saved money on time since they are promptly accessible.

3.7 Data Collection Procedure

The researcher acquired an introductory letter from the Human Resource Management, Ghana Highways Authority, for permission to be granted for this exercise. The respondents were given questionnaires after approval was given. The questionnaires are designed in sections. The respondents were given instructions, and the researcher also assured them confidentiality and gave them time to fill out the questionnaires. The respondents were also shown on how to fill out the questionnaires for those who it was necessary for understanding.

The respondents were given a period of two weeks to respond to and return the questionnaires for analysis.

3.8 Data Analysis Procedures

This is the procedure pertaining to gathering, demonstrating and changing information to feature valuable data, recommending ends and supporting basic deciphering (Sharma, 2005). The researcher gathered the information, utilizing survey questionnaires. The information that was gathered was inspected and checked for consistency and clarity. The data obtained was analyzed using descriptive statistics with the aid of SPSS and the data presented in the form of frequency tables.

3.9 Reliability and Validity

The reliability of an instrument reflects its stability and consistency within a given context. It is the consistency of measurement over time, whether it provides the same results on repeated trials. Before actual data collection, the piloting of the questionnaire was carried out (Golafshani, 2003).

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Validity refers to the degree to which the empirical measures or several measures of the concept, accurately measure the idea (Orodho, 2005). This study used content validity, criterion validity, and constructed validity. To ensure content validity, research experts reviewed the questionnaires to confirm the data that is collected represent the content that the test is designed to measure. According to Bordens & Abott (2011), content validity of an instrument is improved through expert judgment in constructing the instrument items. The researcher used also simple English to ensure that the respondents understand them quickly. The effort was also made to build transparent and precise questionnaires with the help of the supervisors to avoid ambiguity. The researcher prepared the research instruments in close consultation with the supervisors, whose expert judgment helped improve content validity.

As mentioned by Hesse-Biber and Leavy, (2013) ethical consideration is essential for authentic and ethical research. The primary ethical principal in data collection is that no harm should come to the respondents as a result of their participation in the study (Oppenheim, 2003, p.83). There are several considerations in ethical issues during research (Saunders et al., 2007):

i.   Privacy of potential research participants and actual research participants.

ii.   Participation in the research is voluntary in, and participants have the right to withdraw partially or wholly from the study.

iii. Consent and possible deception of participants.

iv.   Confidentiality and anonymity of data from research participants.

v.   Unpleasant situations (embarrassment, stress, discomfort, pain, and harm) for research participants during the data collection process.

Those considerations were observed in this research. Information about the respondents confidential and data collected from the respondents were used for these particular academic

purposes. Respondents were informed that their participation was entirely voluntary, and the participants were informed before the interview. And that their identity and details will remain confidential (refer to Appendix 1). No participant was made to suffer any of the enumerated ethical issues.

3.10 Limitation of research

In this specific research, the chief limitation is financial. The time factor or the duration for this study was also a limiting factor. The topic is vast enough to be covered as a whole. Moreover, every project has their possible limitation and stringency as well. Thus, Project Management style can also differ. Therefore, the issue with communication in project management can also be different in different aspects. However, in this research primary causes of the project communication channels and barriers have been described in details. Moreover, I have faced limitation while conducting the primary research with some managers. Since project failure and its reasons are some of an integral part of any organization, thus the majority of the managers who were approached refused to participate in the research project

CHAPTER FOUR

4.0 RESULTS AND DISCUSSIONS

4.1 Introduction

The research assessed the role of effective communication as a key to project success in Ghana Highways Authority (GHA). This chapter contains the empirical data gathered and deliberates on the discoveries of the study. The chapter also presents the analysis and interpretation of results. The principal section presents the degree of responses, followed by the demographic factors of the people interrogated and finally the descriptive and inferential statistical outcomes with regards to the research objectives.

4.2 Response Rates of Respondents

The response rate of the study is presented in table 4.3

Table 4.1: Response rates to the study

Category of Respondents	Sample Size	Actual Response	Percentage
Project consultants	7	7	100%
Civil Engineers	35	31	88.6%
Structural Engineers	17	15	88.2%
Project Managers	12	12	100%
Quantity Surveyors	5	5	100%
Architects	10	10	100%
Total	**86**	**80**	**93%**

(Source: Field Survey, 2018)

From the responses in table 4.1 above, a total number of eighty respondents were able to respond to the issues presented in the questionnaires and also return them for analysis. This led to a responses rate/percentage of 93%. The implication of such a response rate is that the majority of the respondents targeted were able to data for analysis therefore the obtained information was deemed to be a reflection the views of the entire population.

4.3 Background Information of the Respondents

Respondents provided information on their socio demographic characteristics which was compulsory to ensure that the sample that partook in the investigation have comparative dissemination of the respondents by qualities from the population. This decides the precision and features of data deduced from the sample to the population. These characteristics are illustrated in the table below.

Table 4.2: Background information of the respondents

Characteristics	Category	Frequency	Percentage
1. Gender	Male	67	83.7%
	Female	13	16.3%
2. Age	Under 20	-	-
	20-30	11	13.8%
	30-40	37	46.3%
	40-50	23	28.8%
	50-60	8	10%

	Above 60	1	1.3%
3. Education	PhD	1	1.3%
	Masters	7	8.8%
	Bachelors	41	51.2%
	HND	26	32.5%
	Others	5	6.2%
4. Years of Experience	<5 years	35	43.8%
	Between 5-10 years	24	30%
	10-15 years	12	15%
	15-20 years	7	8.7%
	Above 20 years	2	2.5%

(Source: Field Survey, 2018)

From Table 4.2, there was no gender balance in the respondents as 83.7% represent males, and 16.3% represent female. This is to be expected because the construction industry is male-dominated project. The outcomes in the table likewise demonstrate that lion's share 37 (46.3%) of the investigation respondents were within the ages of 30-40, but just a single was over 60 years. This shows that the lion's share of staff respondents is in their most beneficial age gathering. Such respondents are probably going to give the true picture of what is on the ground. More so, from the outcomes in Table 4.2, the larger part 41(51.2%) of the respondents were trained up to Bachelors stage, 26(32.5%) were instructed up to HND, and 7 (8.8%) were taught up to Masters. This demonstrates most of the investigation respondents were sufficiently trained.

This for all intents and purposes infers that the respondents have adequate knowledge of the construction industry.

The outcomes in Table 4.2 additionally demonstrates that majority 35(43.8%) of the investigation respondents had worked for 5 years or less, with the next being followed by those who had worked for 5-10 years 24(30%). Those who had worked for 10-15 years were 12(15%) while those who had worked for more than 20 years were 2(2.5%). The results show that the respondents were experienced enough to make informed decisions.

4.4 Communication Channels in Road Construction Projects in Ghana Highway Authority

The study set out first of all to decide the different communication channels utilized by project experts in GHA. The respondents were asked to indicate their views in relation to the various channels of communication employed in GHA for road construction projects. The Liker-type scale was used to rate their responses. The findings are provided in Table 4.3

Table 4.3 Communication Channels in Construction Projects

Communication Channels		1	2	3	4	5
	M	NS	LS	MS	S	VS
1. Face-to-Face Communication	4.2	2(2.5%)	1(1.25%)	4(5%)	43(53.75%)	30(37.5%)
2. E-mail	4.1	3(3.75%)	2(2.5%)	10(12.5%)	35(43.75%)	30(37.5%)
3. Video-Conferences	4.1	1(1.25%)	4(5%)	9(11.25%)	41(51.25%)	25(31.25%)
4. Faxes	3.8	2(2.5%)	8(10%)	11(13.75%)	39(48.75%)	20(25%)
5. Project Office	3.8	7(8.75%)	3(3.75%)	16(20%)	28(35%)	26(32.5%)
6. Telephone and Smartphone	4.1	7(8.75%)	2(2.5%)	10(12.5%)	20(25%)	41(51.25%)
7. Meetings	4.0	1(1.25%)	7(8.75%)	12(15%)	29(36.25%)	31(38.75%)
8. Project Portal	3.6	4(5%)	12(15%)	16(20%)	30(37.5%)	18(22.5%)
9. Grapevine	3.6	3(3.75%)	11(13.75%)	20(25%)	27(33.75%)	19(23.75%)
10. Dashboard	3.7	5(6.25%)	14(17.5%)	11(13.75%)	22(27.5%)	28(35%)
11. Project Planning Documents	3.9	6(7.5%)	2(2.5%)	10(12.5%)	41(51.25%)	21(26.25)
Others (please identify any not in list)						

(Source: Field Survey, 2018)

The results in Table 4.3 indicate that the respondents see face-to-face Communication as very significant in GHA construction projects (Mean =4.2); Email as a mean of project communication (Mean = 4.1). The findings show majority of the respondents are aware of the

various forms of construction project communication. In all the cases it should be noted that the communication channels in construction projects can enhance project delivery at GHA.

4.5 Barriers to Effective Communication

Another target of the examination was to discover the causes of hindrances to communication on GHA projects. The respondents were requested to respond to some statements regarding causes of communication barriers on GHA projects by demonstrating their understanding utilizing a five-point Liker size of Strongly to Strongly Agreed as appeared in Table 4.4.

Table 4.4 Causes of Communication Barriers on GHA Projects

Barriers to Effective Communication		1	2	3	4	5
	M	SD	D	N	A	SA
1. Selective Perception	4.3	3 (3.75%)	4 (5%)	3 (3.75%)	30 (37.5%)	40 (50%)
2. Interpersonal	3.9	2 (2.5%)	8 (10%)	11 (13.75%)	39 (48.75%)	20 (25%)
3. State opinions as facts	3.9	2 (2.5%)	8 (10%)	11 (13.75%)	39 (48.75%)	20 (25%)
4. Variations in language – accent, dialect	4.0	5 (6.25%)	2 (2.5%)	13 (16.25%)	28 (35%)	32 (40%)
5. Non-verbal	4.1	3	5	12	24	36

Messages		(3.75%)	(6.25%)	(15%)	(30%)	(45%)
6. Deceptive Tactics	4.0	3 (3.75%)	8 (10%)	12 (15%)	17 (21.25%)	40 (50%)
7. Cultural	3.8	8 (10%)	9 (11.25%)	13 (16.25%)	12 (15%)	38 (47.5%)
8. Obscure drawings	4.2	2 (2.5%)	1 (1.25%)	4 (5%)	43 (53.75%)	30 (37.5%)
9. Overloading	4.1	3 (3.75%)	2 (2.5%)	10 (12.5%)	35 (43.75%)	30 (37.5%)
10. Late Delivery	4.1	1 (1.25%)	4 (5%)	9 (11.25%)	41 (51.25%)	25 (31.25%)

(Source: Field Survey, 2018)

To examine the discoveries, respondents who emphatically opposed and the individuals who opposed were collectively joined as one group of who were in opposition. Similarly, respondents who unequivocally concurred and the individuals who concurred were pooled into another gathering of the individuals who agreed with the things. The next group was those who neither concurred nor dissented, ―the undecided with the things. Consequently, these three groups of gatherings of workers were analyzed. Interpretation was then derived from the correlations as shown in the following paragraph.

As can be seen in Table 4.4, the study respondents strongly agreed that selective perception is a barrier to effective communication in construction projects (mean=4.3). They also noted that Non-verbal messages result in communication barrier (mean= 4.1). This means that the respondents know the essence of non-verbal communication.

4.6 Measures for effective road project communication management in GHA

The third objective of this study was to examine the measures for effective road project communication in GHA. In order to achieve this, overcoming communication barriers was identified as a means to this end. Table 4.5 depicts the responses obtained in relation to the measures that are necessary for effective road project communication in GHA

Table 4.5 Overcoming Communication Barriers

Overcoming Communication Barriers		1	2	3	4	5
	M	SD	D	N	A	SA
1. Be precise, clear and focused	4.1	3 (3.75%)	10 (12.5%)	7 (8.75%)	15(18.75%)	45(56.25%)
2. Do effective listening	4.0	5(6.25%)	6(7.5%)	10(12.5%)	22(27.5%)	37(46.25%)
3. Reduce the number of messages	4.1	1(1.25%)	4(5%)	9(11.25%)	41(51.25%)	25(31.25%)
4. Control your emotions	4.0	3(3.75%)	8(10%)	12(15%)	17(21.25%)	40(50%)
5. Facilitate feedbacks	4.1	7(8.75%)	2(2.5%)	13(16.25%)	10(12.5%)	48(60%)
6. Observe ethical values	4.0	1(1.25%)	7(8.75%)	12(15%)	29(36.25%)	31(38.75%)
7. Control Cost	3.6	4(5%)	12(15%)	16(20%)	30(37.5%)	18(22.5%)

8. Control Scope	3.8	8(10%)	5(6.25%)	17(21.25%)	18(22.5%)	32(40%)
9. Time Management	3.9	6(7.5%)	2(2.5%)	10(12.5%)	41(51.25%)	21(26.25)
Others (please identify any not in list)						

(Source: Field Survey, 2018)

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Introduction

This chapter deliberates on the synopsis of the findings, the conclusions of the investigation and proposes appropriate recommendations which seek to direct future research. The goal of the study was to conclude the impact of project communication and channels utilized by these experts in GHA. Also, the investigation covered the causes of communication obstructions on projects as well as its influence on project delivery in Ghana Highways Authority.

5.2 Summary of Research Findings

The findings are presented below in accordance to the stated objectives of the study.

5.2.1 Communication Channels Employed for Road Project Management in GHA.

The examination proved that channels utilized for communication contrast the kind of communication included. The examination built up those channels utilized for communication contrast communication incorporated. For example, if the communication is among project colleagues, the kind of communication included will be not quite the same as if the communication includes the task director on a project and the expert or the project customer. Project Professional have essentially utilized the accompanying means or stations of communication; general gatherings, formal communication (email, letter, phone, fax), group gatherings, vis-à-vis discourses, introduction of status and advancement reports, formal gathering provider or clients, site audit gatherings, yearly reports, and project business case. What has not been utilized at a considerable measure on constructional destinations are advertising, consumer

loyalty study, and worker recommendation plot. The different development communication composes and the channels utilized in Ghana Highways Authority projects are exhibited underneath:

- Channel of communication between the expert and the temporary worker incorporate; formal communication (video-conferencing, project entrance, email, letter, phone, and fax) and site audit gatherings.

- Channel of communication among expert and Client incorporate; formal communication (electronic mails, letter, phone, and fax), introduction of status and advancement reports, yearly reports and project business.

- Channel of communication among the contractual worker's project colleagues incorporates; group gatherings, up close and personal discourses, grapevine, project gateway, and general gatherings.

- Channel of communication that exists between the temporary worker and their providers or sub-contractual workers incorporates; formal communication (email, letter, phone, and fax), formal gathering provider or clients and site survey gatherings.

5.2.2 Causes of communication barriers on GHA projects

The findings of this research in view of the diverse communication obstructions on GHA construction project in Ghana exhibits that Selective Perception and Interpersonal communication skills were the most prevalent blockades to communication. Beneath is the supreme unavoidable destruction to communication on GHA development extends has been masterminded in the plummeting way.

i.   Selective Perception

ii. Poor interpersonal communication skills

iii. Overloading

iv. State opinions as facts

v. Obscure drawings

vi. Deceptive Tactics

vii. Variations in language – accent, dialect

viii. Non-verbal Messages

ix. Late Delivery

x. Cultural

5.2.3 Barriers of Road Project Communication in GHA

Responses collected from project experts within the construction zone in the country demonstrate that there was a sharp dynamism about task communication and its significance to the zone.

5.3 Measures for effective communication in GHA

As far as the specific communication issues are concerned, there was a unanimous agreement on how important communication is on the project site. A large number of the expert respondents, for example, concurred that site gatherings are a vital channel of communication between the advisors and contractual workers. Once more, the majority of the respondents additionally accosted that preparation of agents is important for on location communication. Project Professionals were of the assessment that communication frequently results into the deferral, increment in cost, relinquishment, among different issues. What's more, project experts likewise said that deprived and mutilated data will influence the level of work done at a particular place. The rest comprises are ingenious translation of working illustrations can cause a disappointment in building parts, poor methods for communication prompts misshaped data on location. The significance of dialect utilized among agents is extremely basic for compelling communication on location. Lastly, late dispersal of data will influence yield at a location adversely. There were

comparable understandings communicated by both the customers and experts in the development business. Again, every one of the players in the business concurred that there was without a doubt an on-going communication between project advocates and its partners and that has enhanced task achievement. There were once more, consistent concessions to the way that open communication is required to give administration some mechanism, communication plan looked into frequently and balanced winds up fundamental for project achievement, gatherings help conquer communication boundaries and increment execution level, communication designs and procedures must be resolved or built up at the beginning of tasks, project supervisors have or ought to have incredible relational abilities to convey a viable communication on an project lastly there ought to be a communication that clears up the jobs of partners in the GHA project Plan.

5.4 Conclusions

Within the GHA development project, there is a sharp obligation about the significance of task communication and its significance to the business. Certainly, unique echelons and channels of communication have been set up inside GHA development projects, for instance, communication between the customers and advisors or experts and contractual workers. That in any case, there have been numerous hindrances to successful communication on a development project in Ghana. These incorporate; particular observation, poor relational abilities, vague communication destinations, unclear channels of communication, wasteful announcing framework, inadequate communication between the those included on the project, and dialect troubles. To conclude, the exploration built up that poor communication had brought about project delays, project cost invade and project renunciation. This examination has uncovered that project communication

firmly influences the execution of experts in GHA development projects. In this manner, obviously setting up and dealing with the structures of communication on the project should dependably be on the plan of group pioneers and administration before the beginning of each capital escalated project.

5.5 Recommendations

The findings of the study revealed construction drawings for some road projects have poor details which leads to communication challenges and hence a poor project performance in Ghana Highway Authority. It is therefore recommended that the authorities of Ghana Highways Authority should insist on the use clear and detailed drawings for all road projects.

The study also noted that cultural difference between stakeholders of various road projects also affects communications and hence the level of success of road projects by Ghana Highways Authority. It is therefore recommended that managers of various road projects under the Ghana Highways Authorities have to take into accounts the various cultural differences among stakeholders especially those of the various communities within which such roads will be passing.

The study also found out that other factors such as language difference and perception are contributing to communication challenges in relation to road project delivery. It is therefore recommended that Ghana Highways Authority should engage the services of a communication expert for various projects whose responsibility will be manage information flow among all stakeholders.

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KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF ART AND BUILT ENVIRONMENT

DEPARTMENT OF BUILDING TECHNOLOGY

<u>**SURVEY QUESTIONNAIRE**</u>

"THE ROLE OF EFFECTIVE COMMUNICATION IN PROJECT SUCCESS: A CASE STUDY OF GHANA HIGHWAYS AUTHORITY"

Dear Sir/ Madam,

I am a MSc. student at Kwame Nkrumah University of Science and Technology, Department of Building Technology currently undertaking a **"The Role of Effective Communication in Project Success: A Case Study of Ghana Highways Authority".**

The research is ongoing under the supervision of Mrs. Theodora Oduro and requires a questionnaire survey to be undertaken to collect data from professionals in the construction industry. Your experience and knowledge in the area of the research is very important and much appreciated. Information on various communication channels employed by project professionals in Ghana Highways Authority,the causes of communication barriers on GHA projects and how construction project communication affects project delivery in Ghana Highways Authority will be obtained from the research. The information you shall provide shall be STRICTLY CONFIDENTIAL and for academic purposes only and findings from this research will be made available to you on request.

I know you have a very busy schedule and this will take some time off you, I will plead that you help me with your knowledge as it means so much to the achievement of this research. I appreciate your effort and time very much in advance, kindly contact me on 0244064889 if you have any questions or clarification.

Yours faithfully,

Archibald Nketsiah, MSc. Student, KNUST

Mrs. Theodora Oduro, Project Supervisor, KNUST

SECTION A: DEMOGRAPHIC BACKGROUND OF RESPONDENTS

Please, kindly respond to the questions by ticking (√) the appropriate box for each item.

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1. Gender: [ ] Male [ ] Female

2. Age: [ ] under 20 [ ] 20-30 [ ] 30-40 [ ] 40-50 [ ] 50-60 [ ] Above 60

3. Highest level of education: [ ] HND [ ] BSc [ ] MSc [ ] PhD [ ] other ………………….

4. Years of experience: [ ] Less than 5 years [ ] 5-10 years [ ] 10-15 years [ ] 15-20years

   [ ] Above 20 years

5. How would you best describe your role? [ ] Management [ ] Architect [ ] Project Team Member [ ] Project Consultant [ ] Civil Engineer   [ ] Quantity Surveyor   [ ] Other …….

SECTION B: COMMUNICATION CHANNELS IN CONSTRUCTION PROJECTS

Kindly, indicate the level of significance of each of the following as a means of channel of communication in construction projects.

 [1=Not significant; 2=Less significant; 3=Moderately Significant; 4= Significant; 5=Very significant]. Please tick (√) in the space provided.

Communication Channels	1	2	3	4	5
12. Face-to-Face Communication					
13. E-mail					
14. Video-Conferences					
15. Faxes					
16. Project Office					
17. Telephone and Smartphone					
18. Meetings					
19. Project Portal					
20. Grapevine					
21. Dashboard					
22. Project Planning Documents					
Others (please identify any not in list)					

Barriers to Effective Communication	1	2	3	4	5

SECTION C: BARRIERS TO EFFECTIVE COMMUNICATION
Kindly, indicate your level of the agreement or disagreement with the following statement on barriers to effective communication on construction projects.
[1=Strongly disagree; 2= Disagree; 3= Neither agree nor disagree; 4= Agree; 5=Strongly agree]. Please tick (√) in the space provided.

	1	2	3	4	5
11. Selective Perception					
12. Interpersonal					
13. State opinions as facts					
14. Variations in language – accent, dialect					
15. Non-verbal Messages					
16. Deceptive Tactics					
17. Cultural					
18. Obscure drawings					
19. Overloading					
20. Late Delivery					
Others (please identify any not in list)					

Overcoming Communication Barriers	1	2	3	4	5

SECTION D: HOW TO OVERCOME COMMUNICATION BARRIERS
Kindly, indicate your level of the agreement or disagreement with the following statement on how to overcome communication barriers in construction projects at GHA
[1=Strongly disagree; 2= Disagree; 3= Neither agree nor disagree; 4= Agree; 5=Strongly agree]. Please tick (√) in the space provided.

	1	2	3	4	5
10. Be precise, clear and focused					
11. Do effective listening					
12. Reduce the number of messages					
13. Control your emotions					
14. Facilitate feedbacks					
15. Observe ethical values					
16. Control Cost					
17. Control Scope					
18. Time Management					
Others (please identify any not in list)					

Communication Performance Indicators	1	2	3	4	5

SECTION E:COMMUNICATION PERFORMANCE INDICATORS ON CONSTRUCTION PROJECTS
Please indicate the *frequency* of the following communication problems among the Construction Project Team at the construction stage as indicated in the statements below.
1. Never 2. Rarely 3. Occasionally 4. Frequently 5. Very Frequently. Please tick (√) in the space provided.

	1	2	3	4	5
1. Persistent change in content of communicated information					
2. Receiving less information than expected from team participants for tasks					
3. Lack of conciseness in communicated information among the project team					
4. Late delivery of needed communicated information					
5. Receiving conflicting information from team participants					
6. Receiving more information than necessary for the tasks					
7. Difficulty in disseminating information among project team					
8. Withholding of whole of the information by the one who controls communication					
9. Difficulty in accessing communicated information from channels					
10. Persistent change in meaning of communicated information					
Others (please identify any not in list)					

End of questionnaire. Thanks for your valuable contribution