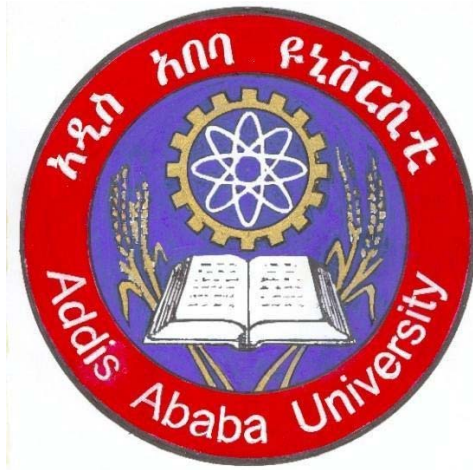


ADDIS ABABA UNIVERSITY



School of Commerce

College of Business and Economics

Masters of Arts in Project Management Program

Examining Causes of Poor Communication and Its Effect in Urban Development Projects: The Case of Addis Ababa Housing Development Projects

A Final Project Submitted to College of Business and Economics, Addis Ababa University
School of Commerce, in Partial Fulfilment of the Requirements for the Award of a Master's of
Arts Degree in Project Management

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October 2022

Addis Ababa, Ethiopia

Declarations

I, **Yoseph Megersa**, declare that this project work is my original work and that it has not been submitted in part or in full by any other person for consideration of a degree in any other university/institution. Each and every source of information used in the thesis has been appropriately credited.

Yoseph Megersa

Signature.....

Date

Letter of Certification

This is to certify that Yoseph Megersa has completed his project work titled **Examining Causes of Poor Communication and Its Effect in Urban Development Projects: The Case of Addis Ababa Housing Development Projects** under my supervision and guidance. This research project work is original in nature and, in my opinion, it is suitable for submission in partial fulfillment the requirements for the award of Master of Arts Degree in Project Management.

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Approval

The undersigned certify that they have read and hereby recommend to the Addis Ababa University School of Commerce, College of Business and Economics to accept the project work submitted by **Mr. Yoseph Megersa** titled “**Examining Causes of Poor Communication and Its Effect in Urban Development Projects: The Case of Addis Ababa Housing Development Projects,**” in partial fulfilment of the requirements for the award of a Master’s Degree in **Project Management Program.**

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Acronyms

AAHDPO.....	Addis Ababa Housing Development Project Office
CSA	Central Statistical Authority
GTZ-IS	Gesellschaft für Internationale Zusammenarbeit (Deutsche)
GDP.....	Gross Domestic Product
GTP	Growth and Transformation Plan
IHDP	Integrated Housing Development Program
MDGs	Millennium Development Goals
MWUD	Ministry of Work and Urban Development
NBE	National Bank of Ethiopia
SMEs	Small and Micro Enterprises
SPSS	Statistical Package Social Science
TVET	Technical Vocational Education Training
UN	United Nations
UNDP	United Nations Development Program
WTO	World Trade Organization

Abstract

Poor communication is the main cause of projects failing one-third of the time, according to the Project Management Institute (PMI). Poor communication has negative impacts even if the project is successful. Concise, clear communication helps prevent confusion. Keep your communications brief, direct, and uncomplicated. The effectiveness of communication can make the difference between a successful endeavor and one that does not quite work out. In this respect, this study was to assess the cause and effect of Poor Communication in Construction Projects on Selected Sites of Addis Ababa Housing Development Corporation. To overcome the task three specific objectives were identified. These are assessing the root cause of poor communication in construction projects of condominium housing projects, assessing the effects of poor communication in construction projects of condominium housing projects and assessing measures that have to be taken to overcome the problem of poor communication in construction projects of condominium projects. About 133 questionnaires were distributed for respondents (40 clients, 30 consultants, and 63 contractor professionals) who were involved in the project received a paper questionnaire, of which 128 (40 clients, 28 consultants, and 60 contractor professionals) were returned. Six professionals were interviewed in-depth (2(two) from the customer, 2(two) from the consultant, and 2(two) from the contractor) in order to get comprehensive information on the topic. Relative importance index (RII) was used to analyse and rank the cause and effect of poor communication issues found in the condominium housing construction project. The top five major causes of poor communication ranked by respondents were lack of support for advanced communication technologies, lack of understanding among parties, poor planning and coordination, poor communication management and weak organizational structure. The top five major effects of poor communication ranked by respondents were time overrun, waste generation, cost overrun, poor risk management, rework and redesign occurrence.

Keywords: *Poor communication, Construction Project Performance*

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CHAPTER ONE: INTRODUCTION

1.1. Introduction

Under this chapter, the background of the study, the statement of the problem, the objective of the study, research questions, scope of the study, limitation of the study, description of the study area, organization of the research and definition of operational terms were included.

1.2. Background to the Study

Information, feelings, and ideas are exchanged or shared through communication between people in a group, an institution, or between groups and organizations in general (Agarwal, S., & Garg, A., 2012). Previous studies have shown that effective communication is a major factor in project success (Anantatmula, 2015). A building project cannot succeed without effective communication (Dainty, A., Moore, D., & Murray, M., 2007). Effective communication is a crucial component of project-based management and acknowledged as being necessary for project management success (Yap, J. B. H., Abdul-Rahman, H., & Chen, W., 2017). Additionally, the success of construction businesses depends on the caliber and effectiveness of relationships between contractors, subcontractors, technical personnel, customers, professionals, and regulatory bodies (Jimoh, 2012). Excellent cooperation and coordination between numerous construction specialists and the clientele are required for a building project to be completed successfully (Eze, C. E., Awodele, I. A., Adegboyega, A. A., Onyeagam, O. P., & Guto, J. A., 2020). To achieve its goals, a construction project needs its members to work well together and share information (Akinradewo, O. F., Ojo, L. D., & Oyefusi, O. N., 2017).

The construction industry differs from other industrial sectors due to its particular features and structures (Dubois, A. and Gadde, L.E., 2002). It is an expanding and complicated industry that evolves over time to accommodate and shelter the growing population. It also involves many stakeholders from both the public and commercial sectors (Kazi, 2005). These features have increased the complexity and difficulty in producing effective, sustainable, and acceptable quality products (Teo, 1991)). Poor communication among construction teams is one of these difficulties.

In the construction sector, poor communication have a wide range of effects and consequences, including cost and schedule overruns, conflicts, and, eventually, project collapse. It has demonstrated that ineffective communication results in ineffective consequences (Teo, 1991)cited in (Gamil, Y., Abd Rahman, I. and Nagapan, S., 2019).

The building sector in emerging countries faces a variety of obstacles. The majority of them marked by schedule delays, cost overruns, and low quality construction, owing to the contractor's poor performance. Similarly, poor building performance is visible in the development of condominium houses in Ethiopia. Major and small building flaws have discovered in completed housing units, and homeowners are facing unexpected upkeep costs (Bahru, 2012).

The Project Management Institute (PMI) reported in the Pulse of the Profession (2013) that poor communication is the number one reason why projects fail. In fact, PMI states that poor communication is a contributing factor in 56% of the projects that failed (Monkhouse, 2015).

Contrarily, ineffective, failed, and inadequate project information communication described as a problem that re in the construction sector (Berntzen, 1988). One of the main factors contributing to project cost increases is poor communication among the project team members (Mahamid, 2016). Furthermore, a communication breakdown is one of the most frequent project dangers (Cerić, 2003). According to (Hyväri, 2007), any project's success depends on the project manager's ability to communicate effectively and experience managing changes. In the construction sector, poor communication can have a variety of consequences and outcomes, including cost overruns, timetable delays, disputes, and project failure. Ineffective communication has shown to produce unsuccessful results (Teo, 1991). Most issues in the construction sector are the result of poor and incorrect communication (Kazi, 2005).

One of the most serious problems Palestinian project managers encounter when overseeing building projects is a communication gap (Omran, A., & Suleiman, A. S. H., 2016). The achievement of the projects stated aims and objectives could facilitated by effective communication during the construction phase. Only by identifying and looking into the reasons and repercussions of bad communication, good communication ensure that an increase in the project's performance. Construction companies must create a successful communication management system to reduce the negative consequences of poor communication on construction projects.

1.3. Statement of the Problem

Humans require housing as one of their basic needs. However, it is a serious issue for millions of poor people in emerging countries, including Ethiopia (Bihon, 2007). The economic underpinning of Ethiopia's metropolitan centers is underdeveloped. Most cities and towns in Ethiopia, like most

developing-country metropolitan areas, suffer from a number of problems, including as a severe and growing housing shortage (Solomon, M. and McLeod. R., 2004) cited in (Zelalem, 2012).

The Addis Ababa Integrated Housing Development Project (AAIHDP) began the development of condominium houses in 2004. The program takes an integrated strategy to addressing the housing shortage by mass-producing low-cost dwellings and lowering the unemployment rate by involving a big workforce in the construction process. As a result, the project includes developing contractors and MSEs for the major construction activities and prefabricated construction material, respectively (Hiwot, 2012).

The Housing Development Project Office is in charge of project management and administration, with the support of consulting firms involved in the project as advisors and supervisors. According to the Integrated Housing Development Program (IHDP), 400,000 condominium residences planned to develop between 2010 and 2015, but only 171,000 housing units created (Hiwot, 2012).

Many studies conducted to evaluate the AAIHDP's implementation, with the primary focus on its contribution to employment opportunities, alleviating housing shortages, and slum elimination (Guesh, 2017). Criticism has also made at the incapacity of the houses to be affordable to low-income inhabitants, the lack of clear and up-to-date compensation and relocation systems, and the inability of the urban poor to acquire loans from banking institutions to make down payments on the houses (Endale, 2017).

According to research on developing-country construction projects, a lack of communication among workers due to cultural uniformity with their respective regions can become a working constraint affecting implementation performance and productivity, namely a 69.61 percent decrease in time performance (Zulkifli, 2021).

The study conducted in Western Australia's construction industry by (Wong, K., & Vimonsatit, V., 2012) has put poor communication in seventh rank among the ten causes of delay and similar study in Malaysian construction industry has put ninth (Sambasivan, M. and Soon, Y.W., 2007). (Adem, 2018), conducted research on causes of delay in construction project of private real state and stated lack of communication in tenth rank among ten causes of delay. Similarly, (Michael, 2017) conducted study on causes of delay in condominium houses construction project ranked poor communication in sixth place out of ten (Tigist, 2018), also conduct study mentioned poor

communication as one of contactor related and client related causes for delay in project 17 of condominium construction.

According to (Abraham, 2018), one of the causes of low quality electrical and water installation work is poor communication among project stakeholders. Similarly, (Seyoum, 2018) discovered in his research that there is a communication gap between project stakeholders, which has an impact on project quality.

Previous research studies published in various journals explored the causes and impacts of poor communication in the Addis Ababa Housing Development Corporation. When it comes to the local perspective, as previously said, the issue presented as a general concern in relation to other failure factors of construction projects.

The primary goal of this research was to identify the reasons and consequences of inadequate communication in condominium housing projects in Addis Ababa.

1.4. Research Questions

This study attempted to answer the following questions.

1. What are causes of poor communication in Addis Ababa Housing Development Corporation?
2. What are the effects of poor communication in Addis Ababa Housing Development Corporation?
3. What measures should implemented to handle the problem of poor communication in Addis Ababa Housing Development Corporation?

1.5. Research Objectives

1.5.1. General Objective of the Study

The general objective of this study is to examine causes of poor communication and its effect in urban development projects in the case of Addis Ababa Housing Development Projects.

1.5.2. Specific Objectives of the Study

The specific objectives of the study are:

1. To assess the root cause of poor communication in construction projects of condominium housing projects

2. To assess the effects of poor communication in construction projects of condominium housing projects
3. Measures that have to be taken to overcome the problem of poor communication in construction projects of condominium projects

1.6. Significance of the Study

The implementation of this study projected to yield various beneficial benefits. The importance of establishing the issues of poor communications related to condominium housing construction projects was to provide a greater insight and understanding on the causes of poor communications and their effects, particularly among the project's main stakeholders: contractors, clients, and consultants. This can be accomplished by putting theoretical notions addressed in many books into practice in real-world projects. It is intended that these findings will influence efforts to improve the construction industry's performance and be valuable to construction stakeholders. As a result, these findings may inspire practitioners to focus on communication issues that may have arisen in their current or future projects. Aside from that, this research projected to provide better approaches and methods for executing construction projects by reducing the key causes of bad communication.

Identifying the causes of poor communication can assist the program in identifying its weak points, which will impede its goal of delivering excellent dwellings on time and within budget. Furthermore, because the construction business has a huge impact on economic development, enhancing communication performance of project parties will have an impact on strengthening the sector, which in turn will have a beneficial impact on the country's economy.

It is believed that this study would raise AAHDPO officials' awareness of communication. If corrective steps are implemented, the program's potential to produce high-quality low-cost housing in Addis Ababa will be ensured. Furthermore, this research could provide solutions to similar ongoing projects throughout the country. The study's findings are also expected to be good, opening the door to further research on comparable and related themes.

1.7. Scope of the Study

1.7.1. Spatial Scope

Addis Ababa Housing Development Project Office (AAHDPO) currently named as Addis Ababa Housing Development Corporation (AAHDC) has three low-cost housing programs (10/90, 20/80,

and 40/60); this study will focus on the low-cost housing program. This program encompasses projects constructed for low incomes (20/80 condominium houses) in the city; however, this study was took place at the Koye Feche site projects.

1.7.2. Thematic Scope

The thematic scope of the study is limited to examine causes of poor communication and its effect in urban development projects in the case of Addis Ababa Housing Development Projects

1.7.3. Timeline Scope

The study of the research conducted for six months from January 2022 to October 2022.

1.8.Limitation of the Study

The research focused on communication issues related to defects of construction. It envisages construction defects in association with poor communication between construction stakeholders. This involves revealing the constraints that stakeholders facing during the construction process, which caused by improper communications and examining the program effort to insure effective communication on the project.

There are a number of limitations to the study. Firstly, the research population is too large to cover in the limited time thought to be available which made the researcher condense the study to two project sites only. Which might have an impact on the generalizability of the research. Secondly, since most of the programs are at the end of execution stages it might be difficult to find all respondents on site and was mandatory to look for them in different places. The last but important limitation was a language problem. Since most of the survey made using local language, translations of the entire questionnaire would be necessary. While doing so sometimes it was too difficult to get the appropriate word in the local language. To transcribe the data collected, it again needed to translate back the interview results to English.

1.9.Organization of the research Paper

This research divided into five chapters. The first chapter is an introductory section that covers the background of the study, a statement of the problem, research objectives (general and specific objectives), and research questions, scope of the study, limitation of the study area and definition of terms. The second chapter examines the literature review, which contains theoretical and empirical research on the experiences of other countries on the same problem. The third chapter

focuses on study methods, data gathering, and sample and sampling techniques. The fourth chapter presents data interpretation, summary analysis, and discussions. The fifth chapter includes recommendations for conclusions.

1.10. Definition of Operational terms

The definitions of terms given below defined in the sense in which they used in this paper.

Poor communication lack of successful way of information transmission or delivery among construction stakeholders.

Housing: buildings or other shelters in which people live.

Condominium Housing: A form of living in multi-story buildings where a single building accommodates more than one family.

Delay in Construction: The extra time taken to complete the construction, which is beyond the intended completion date.

Consultants: Private Architectural and engineering firms that hired to perform the supervision activity.

Contractors: Firms that hired by the government to undertake the construction works of the housing units.

AAHDPO: An acronym for the Addis Ababa Housing Development Project Office, which is the government organ promoting the construction of low-cost housing.

Stakeholders: A person, group, organization that has interest or concern in the project under study include Client, Contractor and Consultant.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1. Introduction

One of the most significant and necessary aspects in any research project is a critical examination of current information on the issue and the creation of research problems. The goal of this chapter is to examine existing research on the subject in order to identify the key causes and impacts of poor communication in building projects. The literature review was significant since it provided a significant portion of the inputs for the lists of factors to examine for the research. This chapter reviews prior studies in various world countries to evaluate critical elements and to give a complete overview of empirical studies on the causes and effects of inadequate communications in construction.

This study aims to address a vacuum in the literature on Ethiopian construction projects, specifically condominium housing projects, by demonstrating the causes and effects of poor communication. Ethiopian studies focus on the causes and impacts of project delays using the Relative Importance Index (RII) instrument in road, public building, and housing development projects. There appears to be little or no research on the causes and effects of poor communication in construction projects, however this study will explore this utilizing the relative importance index technique.

To achieve successful collaboration and understanding among project participants, which eventually results in satisfying project completion, communication success in a construction project is essential (Dainty, A., Moore, D. and Murray, M. , 2007). It is also essential to ensure better project execution quality and performance (Günhan, S., Şenol, G. and Doğan, S.Z., 2012). Communication is a crucial component of the project, according to the project management body of knowledge (Guide, 2001), and between construction parties, it is crucial for information exchange and cooperation.

On the contrary, ineffective, inadequate, and substandard communication among construction stakeholders results in several undesired sequences, such as conflict and project failure (Hossain, 2009). It is also a substantial contributor to a slew of other negative effects on project performance and quality (Henderson, L.S., Stackman, R.W. and Lindekilde, R., 2016). Poor communication is defined as the phenomenon of unsuccessful project information (PI) exchange throughout the project's lifecycle (Loosemore, M. and Lee, P., 2002). Poor communication has several causes and

effects, which have already established through literature reviews and exploratory interviews with building experts. Using factor analysis, the cause-and-effect variables of poor communication grouped into their respective groups/constructs.

2.2. Theoretical Literature Review

The construction sector has experienced rapid growth in recent years, making it one of the key industrial sectors for societal and economic development as well as one of the main areas for job generation (Isa, R.B., Jimoh, R.A. and Achuenu, E., 2013) as cited in (Gamil, Y., Abd Rahman, I. and Nagapan, S., 2019). As a result, its sustained growth and progress are a measure of the countries' development (Dainty, A., Moore, D. and Murray, M., 2007).

The construction industry is distinct from other industrial sectors in that it is dynamic, diverse, complicated, multidisciplinary, and expanding (Chen, 1998); (Dubois, A. and Gadde, L.E., 2002); (Senaratne, S. and Ruwanpura, M., 2016) as cited in (Gamil, Y., Abd Rahman, I. and Nagapan, S., 2019)). These personalities are consequently accompanied by a number of difficulties and issues, including subpar building quality, subpar performance, cost and time overruns, accidents, poor communication, and project failure (Abd El-Razek, M. E., Bassioni, H. A., & Mubarak, A. M., 2008); (Alaghbari, W.e., Kadir, M.R.A. and Salim, A., 2007)). Since it incorporates every stage of the project as a method of imparting and transmitting information, effective communication is a crucial component for project success in the construction project lifecycle (Dainty, A., Moore, D. and Murray, M., 2007). Because of the large volume of information and the number of parties involved in a single project, maintaining a proper communication process and an effective flow of information can be a considerable difficulty (Loosemore, M. and Lee, P., 2002). Poor communication thus arises and poses a challenge in construction projects (Zulch, 2014). It also regarded as one of the impediments to maintaining a consistent execution process and good project delivery (Senaratne, S. and Ruwanpura, M., 2016).

Poor communication is the term used to characterize the failure to convey PI, the incorrect channeling selection, and the poor timing of information release (Dainty, A., Moore, D. and Murray, M., 2007). According to a report provided by the Project Management Institute (PMI, 2013), inefficient communications, inappropriate channeling, and erroneous time management of information distribution account for greater than half of all project budget risk. According to the report, ineffective communication was a major factor in the project's failure. Furthermore, the

British Standards Institution (BSI, 2003) estimated that the cost of correcting flaws caused by inefficient PI communication is worth around £20 billion each year in the UK construction industry. It also underlined the importance of greater communication and information exchange among designers, engineers, and contractors in order to execute the project on time and within budget.

Poor communication in the construction sector has a wide range of negative consequences. Poor communication can cause frustration, friction, a tense workplace, and demotivation (Zulch, 2014). These concerns lead to decreased productivity and efficiency, as staff tend to overreact to any situation. As a result, better communication is required to create a more intelligible workplace and to encourage employee interaction in order to assure the project's successful completion.

According to the Malaysian construction sector, communication is a multicultural and multilingual society in which multiple languages spoken and diverse interpretations generated throughout the PI exchange (Kuang, C.H., Wong, N.L. and David,M.K. , 2010). Malaysian construction sectors include all races in the country, as well as international investors and labor. The majority of the workforce is from Indonesia, Pakistan, Myanmar, Bangladesh, and other ASEAN nations (Adnan, 2004). As a result, effective communication in the sector faces difficulties and barriers.

Several research on communication in Malaysian industry have introduced. A study on the communication barrier in Malaysia construction sites conducted by (Valithern, A. and Rahman, A., 2014) found that language barriers present the biggest difficulty on construction sites, as supervisors have trouble communicating and conveying information, leading to safety violations and improper project activity execution. Furthermore, (Salleh, N.A.B., Nordin, N.B.M. and Rashid, A.K.B.A., 2012) did research on the language barrier among foreign workers in the construction business in Malaysia and found that it has contributed to numerous accidents.

(Taleb, H., Ismail, S., Wahab, M. and Rani, M., 2017), it was found through research into the management of communication between architects and clients during the design process that improving communication among architects is essential for achieving effective performance. Furthermore, (Pozin, M.A.A., Nawi, M.N.M., Lee, A. and Azman, M., 2018) the usage of virtual communication practices in the industrialized building system of the Malaysian construction industry was researched. It found that due to contemporary organizational reform, the majority of team members used virtual communication during project implementation. Unfortunately, no

research work on poor communication in the Malaysian construction business could found for this topic. As a result, more investigation and study are required to examine the problem of communication in the construction industry, particularly to pinpoint the reasons why and how it affects the success of construction projects. This will help the construction community better understand the problem of poor communication in their own organizations.

2.2.1. Communication in Construction Projects Industry

In the construction industry, communication is the mutual exchange of PI with the aim of creating a platform that is clear to all parties involved ((Dainty, A., Moore, D. and Murray, M. , 2007); (Fichet, H. and Giraud, L., 2007)). According to (Pérez Gómez-Ferrer, 2017), communication is the act of sending and receiving technical and non-technical information through a variety of channels and means, as well as between various management and non-managerial levels. According to PMBOK, "one of the core knowledge domains in project management" comprises "the processes necessary to assure timely and appropriate generation, gathering, distribution, storage, retrieval, and ultimate disposition of project information" (Guide, 2001).

All duties involved in producing, assembling, sending, storing, disseminating, and keeping track of project data are included in communication. It also includes providing an accurate report on the project's performance, change, and earned value (Crowe, 2005). (Emmitt, S. and Gorse, C., 2006), on the other hand, identified excellent communication as a key managerial ability for effective leadership and decision-making. (Dingsdag, D., Biggs, H. and Sheahan, V., 2006), on the other hand, defined effective communication as the ability to communicate with personnel. Communication, according to (Emuze, F. and James, M., 2013), is a vital component of the construction business and is critical to project success (Gamil, Y., Abd Rahman, I. and Nagapan, S., 2019).

2.2.2. Concept of Poor Communication in Construction Projects

Communication in the construction industry is difficult, complex, and varied because of the volume of PI and the number of stakeholders involved in a single project (Emmitt, S. and Gorse, C., 2006). Communication is perhaps one of the most crucial components of project management that outweighs others, and excellent communication is a critical factor in the successful completion of construction projects (Dainty, A., Moore, D. and Murray, M. , 2007). Poor communication in

construction, on the other hand, is a global issue that demands attention to investigate remedies and mitigating strategies.

Many scholars use the term poor to describe the phenomena of inefficient communication in construction projects. (Hoezen, M., Reymen, I. and Dewulf, G., 2006) Coined the phrase to describe poor and ineffective communication among construction stakeholders. Poor communication used as a generic concept by (BSI, 2003) to indicate ineffective communication and unsuitable PI exchange in the building industry. Similarly, (Dainty, A., Moore, D. and Murray, M. , 2007) referred to improper, insufficient, and ineffective project communication among construction teams as ineffective.

Poor communication methods have been identified as a significant impediment to the success of construction projects (Loosemore, M. and Lee, P., 2002). Lack of communication was identified as a critical risk in the Italian construction sector by (Rostami, A. and Oduoza, C.F. , 2017), while failure of internal and external communication was identified as a key concern in supply chain management in construction projects by (Thunberg, M., Rudberg, M. and Gustavsson, T.K., 2017). Poor communication, on the other hand, has numerous negative consequences, such as disagreements and frustrations among construction partners, which can lead to huge difficulties such as unexpected cost loss, delays, and litigation amongst construction teams ((Arnorsson, 2012); (Tipili, L.G. and Ojeba, P.O. , 2014)). It also causes errors and reworks in construction projects, resulting in additional repair costs ((Arnorsson, 2012); (Love, P.E. and Li, H., 2000)).

As a result, strong communication skills among construction practitioners are required to ensure communication of correct information and orders throughout the levels of management (Guide, 2001). In addition, maintaining proper communication among all project participants is critical to project success (Sinesilassie, E., Tabish, S. and Jha, K., 2018). To avoid the phenomena of poor communication in the construction sector, further studies and study on the source and repercussions are required ((Dainty, A., Moore, D. and Murray, M. , 2007); (Loosemore, M. and Lee, P., 2002); (Rostami, A. and Oduoza, C.F. , 2017)).

Due to the complicated structure of projects and the vast volume of information exerted on a daily basis, maintaining the effectiveness of communication in the construction sector is a significant problem (Dainty, A., Moore, D. and Murray, M. , 2007). Background variety, differing degrees of experience, and personal obstacles are the most prevalent barriers to effective communication,

according to (Quill, 1995). Furthermore, (Jureddi, D.N. and Brahmaiah, N., 2016) Linguistic, psychological, physical, and attitudinal barriers were shown to be the most common hurdles to effective communication.

According to (Torrington, D. and Hall, S. , 1998), common barriers to effective communication include the individual's frame of reference, which refers to the interpretation of an individual based on his/her reference, stereotyping (which means people may stereotype others based on their own perceptions) and cognitive dissonance (which means that if someone receives information that contradicts their beliefs). It will create a barrier to understanding or responding in a positive manner.

Furthermore, (Ross, C.S. and Dewdney, P. , 1998), the listener only chooses the message that supports his or her opinions or thoughts, and making assumptions, are examples of barriers to effective communication. Giving unsolicited advice, reading the intent or sentiment incorrectly, and failing to pay attention to the details. The listener gives information before hearing about the situation: Failure to recognize cultural differences, responding defensively by defending a stance rather than listening to others' perspectives, or becoming so critical of other people's opinions or points of view that it creates a barrier or gap that is impossible for the transmitter to grasp.

From a different perspective, (Buchanan, D.A. and Huczynski, A.A., 2019) and (Othman, N. and Mydin, M., 2014) gender differences: Men tend to talk more, whereas women tend to listen and reflect more, have been identified as barriers to effective communication. Power differences, which happen when employees distort communication upward and believe that superiors have a limited understanding of subordinates' needs and the physical environment: problems with the design of the room, loud equipment, and physical obstacles.

Language and dialect differences can have an impact on communication and cultural diversity: various cultures have different expectations in terms of formal and informal expectations. The project team's cultural differences, poor diversity management, linguistic barriers, lack of technical proficiency, and varied levels of education, according to (Loosemore, M. and Lee, P., 2002), are the key hurdles to effective communication in the construction sector as cited in (Gamil, Y., Abd Rahman, I. and Nagapan, S., 2019).

2.2.3. Importance of Communication to Project Success

Any construction project's success depends on effective communication (Dainty, A., Moore, D. and Murray, M. , 2007). Effective communication between individuals, teams, and organizations is critical to the construction industry's performance (Pérez Gómez-Ferrer, 2017). As a result, implementing effective communication strategies has improved project quality, scope clarity, and business outcomes (Coopers, 2012). Effective communication, according to (Zulch, 2014), reduces costs, time overruns, and increases work quality. Furthermore, adopting appropriate communication techniques and mediums aids in the resolution of any design issues and conflicts (Tipili, L.G. and Ojeba, P.O. , 2014). Furthermore, excellent communication facilitates project implementation from conception to completion, and it is critical to recognize its importance in the construction industry's success (Zulch, 2014).

In the context of an organizational project, communication is seen as a core competency. If it is not properly carried out and links each member of the project team to a set of consistent strategies and processes, project outcomes are compromised, and the budget is exposed to needless risk (Dainty, A., Moore, D. and Murray, M. , 2007). (Coopers, 2012) published a report on the role of communication in project outcomes, which found that effective communication is critical to the success of strategic initiatives, 9 out of 10 chief executive officers concur that effective communication is essential for the accomplishment of strategic initiatives, and they view communication as a crucial step in the process of strategic planning and execution.

The necessity of good communication in the construction sector has been highlighted in several studies. (Fichet, H. and Giraud, L., 2007) Performed a survey on the role of communication in performance improvement and found that effective communication is necessary for high-quality performance. Furthermore, excellent communication of information and ideas among members of the design team can streamline the design process and result in a more efficient product (Best, R. and De Valence, G. , 2007). From a different perspective, (Liao, P.C., Lei, G., Fang, D. and Liu, W., 2014) in China, studies on the connection between effective communication and safety found that communication is essential for managing safety, providing a safe workplace, and making safety information easily accessible.

In construction projects, effective communication between project team members is critical to project success and quality control ((Lohiya, 2012); (Pasley, G.P. and Kim Roddis, W., 1994). It

is important for project actors to feel empowered to collaborate (Cheng, E.W., Li, H., Love, P.E. and Irani, Z., 2001). To back up this claim, a survey conducted by (Coopers, 2012) on the present state of project management revealed that effective communication caused a 17 percent improvement in project completion within budget. Organizations, too, require communication and collaboration (Kornelius, L. and Wamelink, J., 1998). Communication between individuals, organizations, and stakeholders, without a doubt, is the glue that keeps the project moving forward with minimal setbacks (Emmitt, S. and Gorse, C., 2006). As a result, a project manager's communication takes up more than 70% of his or her time.

As a result, a project manager spends more than 70% of their time communicating with stakeholders and other project participants (Turley, 2010). Furthermore, he stated that communication is at the heart of management discipline and that the sector has to focus more on improving communication (Kent, D.C. and Becerik-Gerber, B., 2010). Armstrong and Taylor (2020) add the following to the importance of effective communication as cited in (Gamil, Y., Abd Rahman, I. and Nagapan, S., 2019).

- Achieving coordinated results: excellent communication aids in the smooth organization of team members' collective actions and the huge amount of information, preventing incompatible and mismatched actions with project objectives and coordinated outcomes.
- Managing change: Constant change is inevitable in construction projects, but effective communication helps to prevent conflict as these changes and variations occur.
- Increasing employee motivation: Effective management can foster self-starters in construction teams and boost employee motivation.
- Understanding worker demands: Effective communication may expedite and speed up an organization's response to any workplace alarm.

2.2.4. Main Causes of Poor Communication in Construction Projects

Finding the factors that cause poor communication was the goal of a review of numerous articles on the topic. From which 33 causal factors were found and tabulated from the literature (Gamil, Y., Abd Rahman, I. and Nagapan, S., 2019). One of the main reasons for poor communication is a lack of timely contact between project participants.

It is one of the most frequent reasons for bad communication in the construction sector, which has had a number of detrimental effects on the project. It has also been proven that a lower rate of communication among project parties can lead to time and cost overruns ((Badu, E., Fugar, F. and Assah-Kissiedu, M. , 2010); (Chan, D.W. and Kumaraswamy, M.M., 1997); (Hoezen, M., Reymen, I. and Dewulf, G., 2006); (Sambasivan, M. and Soon, Y.W., 2007)). Rework and a variety of other construction performance deficiencies (PER) can also be caused by a lack of communication (Emuze, F. and James, M., 2013).

(Oshodi Olalekan, S. and Rimaka, I., 2013), conducted study on the causes and effects of delay in Nigerian and Iranian construction projects, the lack of communication between construction parties was ranked as the 11th and 12th factors of delay for Nigeria and Iran, respectively, from the contractor's perspective, but the ranks from the consultant's perspective were 20th and 13th for Nigeria and Iran, respectively. A study by (Darvik, L. and Larsson, J. , 2010) a study on the impact of material delivery deviations on costs and performance in construction projects discovered that communication breakdowns and a lack of communication among key stakeholders were to blame for both quality problems and material delivery deviations.

As a result, it advised that stakeholders should pay greater attention to improving communication regularity, means, and methodologies. (PMI, 2013) looked into the impact of frequent communication on an organization's overall performance. High-performing organizations are found to be better at communicating essential project elements such as objectives, budget, timetables, scope, outcomes, and business benefits. It was also mentioned that frequent and consistent communication is necessary to keep project activities on track with the overall project timeline; as a result, delays are reduced and quality is increased.

Another factor for bad communication is a lack of a communication system, which is defined as a fully structured platform for the entire organization's communication process. Once the communication infrastructure is in place, information dissemination was simple to control (Ballan, 2011). The construction industry uses a communication system, also known as an information management system, to control the flow of information and the time it takes to disseminate it. It also uses a comprehensive reporting system to control communication and feedback, which can be used to maintain process balance by responding to any deviations that occur during construction projects. (Affare, 2012). Another cause of bad communication is a lack of a communication

system, which is defined as a fully structured platform for the communication process throughout the organization. Once the communication infrastructure is in place, it was simple to oversee information dissemination (Ballan, 2011). The construction industry uses a communication system, also known as an information management system, to control the flow of information and the time it takes to disseminate it. It also uses a comprehensive reporting system to control communication and feedback, which can keep the process in check by responding to any deviations that occur during construction projects (Affare, 2012).

Lack of communication abilities results in ineffective communication, especially in the context of building projects when technical, interpersonal, and social abilities are required. Everyone working on the construction project is expected to have these abilities in order to deliver high-quality work, and one of the interpersonal skills is effective communication (Dainty, A., Moore, D. and Murray, M. , 2007). Interpersonal abilities, such as communication skills, are critical to the project's success (Günhan, S., Şenol, G. and Doğan, S.Z., 2012). Construction parties typically have varying communication abilities, which are also dependent on their qualifications and cultural backgrounds. These disparities lead to misconceptions during the project's building and delivery phases (Cheng, E.W., Li, H., Love, P.E. and Irani, Z., 2001).

Language difficulties are one of the main causes of inadequate communication in construction projects because the business is varied and comprises many people from different backgrounds, cultures, and tongues (Abd El-Razek, M. E., Bassioni, H. A., & Mubarak, A. M., 2008). Construction parties speak different languages and come from diverse cultural backgrounds; if these differences are not managed properly, they can lead to communication breakdowns on the job site (Dainty, A., Moore, D. and Murray, M. , 2007). Misunderstandings among construction professionals are common, and this can lead to poor craftsmanship and productivity (Othman, N. and Mydin, M., 2014). The disparity in languages to understand project-specific technical terminologies, according to (PMI, 2013), is likely to be the source of the organizations' difficulty in communicating with adequate degrees of clarity and details. According to the research, compared to slightly more than half of projects that are not adequately explicit and comprehensive, four out of five initiatives that communicated with acceptable clarity and information provided in the audience's language fulfill their original goals and intent. (Tipili, L.G. and Ojeba, P.O. , 2014) conducted a study on the effects of language on communication in the construction business in

Bauchi, Nigeria, concentrating on 40 professionals working in the field. Participants were asked to rate the severity of language's impact on communication on a scale of low, medium, and high. According to the findings, 33% of respondents chose medium, implying that operatives' language is critical for efficient communication on the job.

In addition, inadequate communication channeling, where communication is handled by channels in all organizations and each department or unit is in charge of disseminating related information to form a whole communication system, is one of the causes of faulty information dissemination. However, because of the complexity of the sector, there are multiple concurrent communication problems since the communication process is not properly channeled (Fichet, H. and Giraud, L., 2007). Due to a lack of proper data channels, incorrect data channels, and faulty data transfers, communication in the construction industry is severely hampered (Lee, J. and Bernold, L.E., 2008). In addition, unclear communication channels cause project delays (Tipili, L.G. and Ojeba, P.O. , 2014). Standardizing communication channels in the construction sector is essential to accelerating and streamlining the communication process consequently. Due to the fragmentation and complexity of the construction sector, selecting the appropriate route for transmitting PI is delicate and difficult.

(Fichet, H. and Giraud, L., 2007) outlined the criteria for selecting a suitable medium and channel for effective communication, including the capacity to receive immediate feedback, the potential offered by the medium to express various communication elements, such as body language, facial expressions, and tone of voice, and the capacity offered by the medium to focus on a specific person. Furthermore, the use of the wrong medium or channel might lead to a breakdown in communication. It can happen on a building site when a receiver is required to select the incorrect medium, resulting in poor communication (Khahro, S.H. and Ali, T.H., 2014)). As a result, choosing an appropriate channel is critical for communication success in order to avoid miscommunication.

Diverse degrees of education and experience among different groups might produce communication difficulties, resulting in a misunderstanding environment in which the receiver or sender lacks the right communication tools. Poor communication and misinterpretation are likely to happen if top management and lower management have different educational backgrounds because communication is fundamentally a vertical process in which they must interact (Dainty et

al., 2007). Additionally, a lack of processes and training for communication refers to a lack of sponsored training for workers on effective communication. As a result, performing information exchange and communication becomes harder (Khahro, S.H. and Ali, T.H., 2014).

Businesses frequently minimize the effects of bad communication and do not set aside funds to promote the use of cutting-edge technology to improve communication, which may contribute to the insufficiency of the communication process (Ahuja, 2007). The location of building sites may face power outages or lack of network coverage, resulting in communication technology malfunction, which is a problem on the construction site and one that is very regular to encounter throughout project execution (Tai, S., Wang, Y. and Anumba, C., 2009).

In terms of cultural diversity, construction organizations employ many people from many cultures and backgrounds, resulting in a misunderstanding of communication. As a result, it generates a tense environment and necessitates greater attention to fix this issue (Loosemore, M. and Lee, P., 2002). The same applies to the project's ethnic diversity when the sender or recipient restricts communication to only those of the same ethnicity, putting less emphasis on successful communication than is necessary (Günhan, S., Şenol, G. and Doğan, S.Z., 2012).

A lack of confidence can be a personal barrier of being hesitant or doubtful, resulting in poor communication, and individual barriers can also cause miscommunication, meaning that the communicator is establishing his own barriers (Dainty et al., 2007). Effective communication can be hampered by gender differences, which in this case allude to cultural barriers where males prefer to seek information solely from men and the same from women, which leads to miscommunication (Waziri, F. and Khalfan, S. , 2014).

Essentially, one of the causes of bad communication is a lack of a communication strategy, which defined as a plan that must explain the specifics of information flow in terms of time of communication, type of information, and person in charge of spreading the information. The management and administration of communication on the construction site is badly handled without a prior communication plan, leading to poor communication (Lee, J. and Bernold, L.E., 2008).

Incorrect communication time management is the main cause of poor communication, also known as an improper time plan, which creates stress when it arrives to the building site on a regular basis.

It's also known as the "equivalence of picking the correct knowledge at the right moment" (Dainty, A., Moore, D. and Murray, M. , 2007). Poor planning and coordination refer to the project's overall plan and coordination in terms of construction activity scheduling and monitoring. As a result, bad planning leads to poor communication (Bandulahewa, 2015). Poor communication management refers to problems with archiving, storage, and transmission of large amounts of data.

It is also inconvenient to figure out what kind of information is required, when it's required, and how it's delivered (Dainty, A., Moore, D. and Murray, M. , 2007). Miscommunication is also caused by the inaccessibility of PI, which refers to restrictions between construction teams involved in the construction process, which can obstruct the communication process and result in a lack of information, particularly in emergency communication, which then leads to an increase in miscommunication among the parties (Thorpe, T. and Mead, S., 2001).

Frequent changes in project contracts can lead to poor communication, which is frequent in the construction sector, where terms alter owing to the nature of the project or the client's requirements, as well as the need for modification due to encounters on the job site.

Changes in contract, design, or techniques might lead to a breakdown in communication ((Bandulahewa, 2015); (Enshassi, A., Al-Hallaq, K. and Mohamed, S., 2006)). Lack of a defined communication purpose indicates that the person in charge of communication is unaware of the communication's intended goals, which leads to incorrect information selection and misunderstanding (Olanrewaju, A., Tan, S.Y. and Kwan, L.F., 2017). Furthermore, without a clear communication goal, the message is ambiguous, and the transmitter and receiver are confused (Baguley, 1994), Apart from that, reduced openness and credibility among construction partners imply a lack of mutual trust, which may be caused by cultural and ethical diversity. The ability to communicate and understand is dependent on the parties' ability to trust one another (Dainty, A., Moore, D. and Murray, M. , 2007).

In a different sense, a weak organizational structure refers to a lack of personal communication authority, which is comparable to the characteristics of a functional organizational structure. Inadequate activity and task allocation can also result in poor communication. A strong organizational structure consequently provides a strong foundation for routine processes and communication (Tai, S., Wang, Y. and Anumba, C., 2009).

Contractual barriers relate to the limitations on acquiring the PI imposed by the contract's provisions, which allow the contract to assign certain obligations to a certain party, preventing others from interfering and resulting in miscommunication (Dainty, A., Moore, D. and Murray, M. , 2007). In addition, lack of representation for project stakeholders relates to construction meeting absenteeism, which seen as a lack of accountability, which can lead to poor communication (Thomas, S.R., Tucker, R.L. and Kelly, W.R., 1998).

Technically speaking, poorly detailed drawings refer to a lack of clarity and specifics that make the technical drawing understandable, especially to staff members who have less expertise putting the technical design into effect (Aulich, 2013). Furthermore, erroneous instructions or technical knowledge might lead to miscommunication, which can lead to reworks because of incorrect project activity execution (Aulich, 2013).

2.2.5. Effects of Poor Communication to Construction Projects

Poor communication has a number of negative consequences for the project. It is one of the most common causes of building project failure (Tipili, L.G. and Ojeba, P.O., 2014). Many negative effects and repercussions have occurred because of inadequate communication, including, but not limited to, cost overruns, time overruns, disputes, and others. In addition, inadequate communication results in unsuccessful consequences (Gamil, Y., Abd Rahman, I. and Nagapan, S., 2019). There are differences between highly successful communicators and minimally effective communicators in achieving initial goals, on-time delivery, and within budget, according to a PMI (2013) report on the investigation of communication in organizational perspectives. It shown that when communication is at its best, 80 percent of initial goals achieved, 71 percent of projects are completed on schedule, and 76 percent are completed within budget. However, ineffective communication leads to a reduction in the meeting's goals, time, and expense. It also demonstrated the link between project success components and the frequency of good communication. Highly successful communicators have demonstrated to create superior results in terms of fulfilling initial goals, delivering on time, and staying within budget.

Poor communication can lead to time overruns, which are defined as time spent beyond the contract completion date during the project planning phase and are referred to as delays ((Chan, D.W. and Kumaraswamy, M.M., 1997); (Dainty, A., Moore, D. and Murray, M. , 2007)). which regarded as the most common issue in the building sector around the world (Alaghbari, W.e.,

Kadir, M.R.A. and Salim, A., 2007). It frequently has a negative impact on project success (Faridi, A.S. and El-Sayegh, S.M., 2006). According to the literature, one of the main causes of building delays is a lack of communication ((Afshari, H., Khosravi, S., Ghorbanali, A., Borzabadi, M. and Valipour, M., 2010); (Ren, Z., Atout, M. and Jones, J., 2008)). It is certain that a delay will occur if appropriate communication on the goal is not maintained (Olawale, Y.A. and Sun,M., 2010). Slow information flow, improper communication channels, incorrect design, incorrect interpretation, reworks, and other delays caused by poor communication ((Batool, A. and Abbas, F., 2017); (Dainty, A., Moore, D. and Murray, M. , 2007); (Love, P.E. and Li, H., 2000); (Tipili, L.G. and Ojeba, P.O., 2014) as cited in (Gamil, Y., Abd Rahman, I. and Nagapan, S., 2019)). In the construction sector, poor communication can lead to schedule overruns in a variety of ways, including the following:

- Information disseminated late and slowly: if communication is not active, information disseminated slowly, contributing to time overruns.
- A delay in progress also caused by a slow response to enquiries (Guide, A. , 2001).
- A lack of communication throughout the contract's early stages leads to frequent contract revisions (Shehu, Z., Endut, I.R., Akintoye, A. and Holt, G.D., 2014).
- Inadequate communication between construction teams during execution leads to cumulative communication and inadequate information management, resulting in a work process delay (Shehu, Z., Endut, I.R., Akintoye, A. and Holt, G.D., 2014).
- Due to the construction industry's insufficient organizational structure, communication is not carried out properly (Dainty, A., Moore, D. and Murray, M. , 2007).
- Inefficient or inadequate reporting methods might lead to a breakdown in communication, resulting in extra time spent managing the PI (Tipili, L.G. and Ojeba, P.O., 2014).
- Inadequate communication lines, particularly during emergency calls or reporting of any work activity, can cause delays in job progress (Tipili, L.G. and Ojeba, P.O., 2014). The communication sent via an improper medium or channel, which resulted in a faulty transmission. It occurs when the recipient receives too much information from many channels and mediums, resulting in inadequate communication (Dainty, A., Moore, D. and Murray, M. , 2007). Because of the technology failure, there is a breakdown in communication, which causes the project to be delayed (Dainty, A., Moore, D. and Murray, M. , 2007).

The next thing that happens is a dispute, which is a phenomenon of disagreement about a particular set of terms and is frequently referred to as an endemic and persistent problem in the construction industry (Sinha, M. and Wayal, A. , 2007). It happens when partners on a project disagree or read contractual clauses incorrectly, leading to persistent conflict that significantly affects crucial project elements including cost, time, and quality of construction projects and, in some cases, results in the project's complete failure (Gebken, R.J. and Gibson, G.E., 2006). One of the biggest causes of disputes is a lack of communication between the construction partners. As a result, it is the primary consequence of inadequate communication (Adnan, H., Shamsuddin, S.M., Supardi, A. and Ahmad, N., 2012). To improve the project team's interaction, effective communication is essential (Adnan, H., Shamsuddin, S.M., Supardi, A. and Ahmad, N., 2012). The first and second indirect causes of conflict in the Pakistani construction industry ranked as having poor feedback systems and negligence, with average mean values of 2.7 and 2.65, respectively. The fifth and sixth indirect causes of conflict ranked as having poor communication procedures and non-adherence to communication procedure sets, with average mean values of 2.38 and 2.34, respectively.

The strongest motivator for strengthening the relationship and understanding among the project's partners is effective communication (Adnan, 2004). On the other hand, poor communication is one of the main reasons for disagreements in the construction industry (Sinha, M. and Wayal, A. , 2007). The potential source of conflict, according to (Malleon, 2013), varies depending on the project type and usually caused by a lack of communication and transparency among construction parties. Lack of communication among construction parties identified as the top cause of conflict occurrence in a study by (Cakmak, P.I. and Cakmak, E. , 2013) on identifying the reasons why disagreements arise in the building industry.

As a result, the notion of integrated project delivery necessitates coordination among construction partners in order to produce effective projects (Kent, D.C. and Becerik-Gerber, B., 2010). Nonetheless, the existence of a conflict has been a hurdle, making it difficult to maintain a positive relationship and cooperation among project partners (Kassab, M., Hipel, K. and Hegazy, T., 2006). When it comes to cost overrun, it means that the project did not meet its financial goals ((Abdullah,M.R., Rahman, I.A. and Azis, A.A.A., 2009); (Rahman, I.A., Memon, A.H., Karim, A.T.A. and Tarmizi, A., 2013)). Cost overrun happens when the actual cost of a project exceeds

the budgeted cost, resulting in substantial controversy and litigation, and, in many cases, project failure (Shehu, Z., Endut, I.R., Akintoye, A. and Holt, G.D., 2014) cost overruns in the construction industry can occur for a number of reasons. Lack of communication between construction partners is one of the main reasons for cost overruns in the industry (Rahman, I.A., Memon, A.H., Karim, A.T.A. and Tarmizi, A., 2013). (Rahman, I.A., Memon, A.H., Karim, A.T.A. and Tarmizi, A., 2013) in various road construction projects in Saudi Arabia, 41 cost overrun reasons were examined. It was discovered that internal administrative problems, poor communication between construction partners, payment delays, and decision-making delays are the most frequent causes of cost overruns. (Bassioni, H.A., Sarhan, A. and Zaki, A.S., 2013) discovered that a lack of communication and coordination amongst design participants of various backgrounds had a higher relative impact on cost overrun in the Egyptian construction industry's design phase. It was also mentioned that communication problems throughout the project's execution could contribute to an increase in unneeded spending (Sinesilassie, E., Tabish, S. and Jha, K., 2018). Poor communication, like time-overrun factors, seen as an important element that leads to cost overrun. However, compared to time overrun there are fewer research studies on the elements that cause cost overrun.

According to the research, cost overruns can be caused by a variety of factors, including:

- Rework: Due to poor communication management, instructions provided late, and then destroying to reconstruct the work as ordered, some design changes have been documented in the construction sector after the completion of specific tasks, necessitating the use of new materials and labor (Love, P.E. and Li, H., 2000).
- Poor construction drawing details: The process through which a designer communicates with a contractor through technical paperwork referred to as detailing. Cost overruns happen if the drawing is misinterpreted or sent improperly as a result of inadequate communication between designers and engineers on the job site (Dainty, A., Moore, D. and Murray, M., 2007).
- A lack of communication among construction partners can result in negative financial results by causing a delay, which leads to cost overruns due to incomplete tasks on time (Dainty, A., Moore, D. and Murray, M., 2007).

When it comes to rework, which is a prevalent problem in the construction sector (Nagapan, 2014). It described as the extra effort or activities involved in recreating or replacing a task that was done poorly the first time around (Love, P.E. and Li, H., 2000). Rework in construction could described in a variety of ways, depending on the project. Quality deviations, non-conformance, faults, and quality failures are all types of rework, according to (Fayek, A.R., Dissanayake, M. and Campero, O. , 2003). Rework was defined as the process of repeating actions in the field without changing the scope, as determined by relevant parties (Fayek, A.R., Dissanayake, M. and Campero, O. , 2003). Rework consequently results in a variety of other problems, such as waste and cost overruns (Nagapan, 2014).

Rework typically calls for an additional expense to repeat the task in order to achieve the quality and standards. According to research conducted by (Nylén, 1996) A total of 23 failure elements, accounting for 10% of the overall production cost, were found throughout the production phases of highway projects to explore the primary causes of rework. Of these failures, 51% were a result of poor communication between consultants and customers. (Hammarlund, Y. and Josephson, P., 1991) Published another study on quality failure in the construction business, claiming that inadequate communication among construction partners is responsible for 13% of quality failures. It was also discovered that rework accounts for more than 30% of building cost overruns in the United Kingdom (Ofori, G. and Ekanayake, L. , 2000). Furthermore, it was stated that in Australia, it accounted for up to 35 percent of the total project cost and 50 percent of total cost overruns in building projects (Aziz, R.F. and Hafez, S.M., 2013). As a result, it was proposed that suitable communication platforms be included, as well as proper identification of customer requirements, in order to reduce the frequency of rework (Nagapan, 2014). (Abdul-Rahman, 1995), did a case study on the cost of non-conformance on a highway project and found that one of the main reasons for non-conformance is poor communication, which results in subpar construction projects and needs additional costs to fix.

Another study, entitled Causes of Defects in the South African Housing Construction Industry: Perceptions of Built-Environment Stakeholders, introduced 17 causes of errors in the construction industry, with lack of communication between designers and contractors ranking 11th in terms of its importance in causing defects and necessitating a rework process to repair the defects (Buys, F. and Le Roux, M., 2013). As a result, there was an accident on the building site.

Due to the nature of construction site work, poor labor practices, safety standards violations, and erroneous PI delivery, it continues to be a major concern for the sector (Chong, H.Y. and Low, T.S., 2014). Accidents occur on the project site as a result of improper communication and delivery of technical knowledge (Chan, D.W. and Kumaraswamy, M.M., 1997). Most accidents, according to (Haslam, R.A., Hide, S.A., Gibb, A.G., Gyi, D.E., Pavitt, T., Atkinson, S. and Duff, A.R., 2005) and (Salleh, N.A.B., Nordin, N.B.M. and Rashid, A.K.B.A., 2012), are brought on by poor supervision, a lack of technical expertise, inadequate workforce communication, and a disrespect for safety regulations.

Numerous researchers have looked into how poor communication might lead to a demotivated workforce, claiming that poor communication leads to an angry workforce and a detrimental impact on innovation, both of which have harmed the project's overall success. If instructions not adequately communicated with effective skills, they might have a detrimental impact on the workforce. As a result, improving communication in terms of method and mediums demands additional attention (Dainty, A., Moore, D. and Murray, M., 2007); (Emuze, F. and James, M., 2013).

Since the person prefers to rely on others to complete his own tasks rather than actively contributing in the task's completion, poor communication also contributes to poor teamwork (Aiyewalehinmi, 2013).

Poor communication also leads to a delayed disaster response, as more information is needed to respond to the situation during an emergency. If there is no clear communication system in place, time is lost in the event of a disaster or an accident deciding who to contact before taking action (Apolot, 2011); (Liao, P.C., Lei, G., Fang, D. and Liu, W., 2014). Poor productivity is also a result of poor communication between project team members, manifesting itself as a lack of work in the form of contract revisions or drawing details. The workforce is also confronted with instances when the task is unfinished or of poor quality, resulting in cost and time overruns (Ali, A.S. and Wen, K.H., 2011).

Misunderstanding is a factual circumstance in which the receiver misreads the information, resulting in misdirection as a result of poor communication. Misunderstanding also leads to information misunderstanding and misuse, resulting in an agitated communication environment (Cheng, E.W., Li, H., Love, P.E. and Irani, Z., 2001); (Emuze, F. and James, M., 2013)). Poor

communication can also lead to design flaws, since the designer receives incorrect information, causing the designer to design incorrectly, resulting in an undesired condition that requires rehabilitation and rectification (Oluwaseun Sunday, D. and Olumide Afolarin, A., 2013); (Sambasivan, M. and Soon, Y.W., 2007)).

Poor communication is another factor that contributes to low satisfaction among construction workers. If the project partners are dissatisfied with the outcome, it will have an impact on teamwork and cooperation in order to complete the project (Hoezen, M., Reymen, I. and Dewulf, G., 2006) about 20 Poor communication between project partners is also a common remedy in design and planning. The remedies required to attain compliance with the rule come at a higher cost, which leads to more negative consequences (Dainty, A., Moore, D. and Murray, M. , 2007). Similarly, improper communication and information exchange contribute to waste generation, which results in additional costs and time spent on rehabilitation (Alwi, S., Mohamed, S. and Hampson, K. , 2002). Communication barriers also leads to a muddled channel selection, poor risk management, poor project documentation, and poor planning, all of which have an impact on the design and execution process. (Gamil, Y. and Rahman, I.A., 2017) discovered the effect elements of inadequate communication from a variety of sources, resulting in a total of 21 effect variables, which are listed below

2.3.Best Experience of Developed and Developing Countries

A research presented on causes and impacts of poor communication in the construction industry conference by (Arch. Mahmoud A. Hussain, Prof. Ayman A. E. Othman, Prof. Hisham S. Gabr and Assoc. Prof. Tamer Abdel Aziz, 2018) at Aswan, Egypt states that the worst consequence of poor communication is project failure. This could be the result of a number of factors that have persisted for a while without being resolved, leading to a project being label as unsuccessful. This implies that project managers completely disregarded all of the previously recognized factors and that communication management was subpar. Once more, this study explains that disagreements have a common effect and seen in all project phases. Conflicts may occur because of problems like erroneous information or poor communication between individuals and organizations. This may also result from unsatisfactory or dishonest feedback, which would prompt the recipient to make an aggressive application and spark a conflict.

One of the greatest risks to any construction project is going over budget. This hazardous impact can be attributed to a lack of effective project management abilities, inadequate coordination, and ineffective communication. Cost management is essential because going over budget is viewed as a failure in the project.

A research presented on the identification of causes and effects of poor communication in the construction industry presented by (Yaser Gamil and Ismail Abdul Rahman, 2017) indicates that one of the biggest problems in the building industries worldwide is the poor communication phenomena. Because of the complexity and shifting nature of building projects, successful communication is a significant problem in the construction sector. A variety of steps and techniques must be performed to reduce the causes and effects elements in order to improve communication in the construction sector. In essence, since effects are the outcome of causes, removing the causes might have the opposite impact. According to this paper, the poor communication skills and ineffective communication among construction parties were the most frequent causes. Additionally, time and subsequent cost overruns were the most frequent outcome. In order to determine their significance and severity in relation to the occurrence of poor communication in the construction sector, the criteria identified to conduct a survey of construction practitioners.

Another research was done in Malaysia and focuses on the identification of causes and effects of poor communication in the construction industry. This paper was presented by (Khairul Firdaus Ne'Matullah, Lim Seong Pek and Siti Aisyah Roslan, 2021) states that many cases in construction projects which have asked for extension of time (EOT) or else the projects are too neglected due to inability for construction companies to complete the project on time. Undertaking communication ability as one of the factors affecting the success and failure of a project, further studies need to carry out to look within the communicative barriers that occur. The findings posted a need to do research within language corpus and language training to be carried out to mitigate miscommunication within the construction industry. Development of modules for foreign workers training should be conducted before allowed to move straight into order taking in said projects.

2.4. Conceptual Frame Work

The aim of this section is to summarize the idea about past literature and to bring out the contributions for this study. Thus, this part starts with the idea generated and the contribution

follows. The general idea from the past literature shows that there is a relationship between poor communication causing factors and construction poor and the effects of poor communications in construction.

The relationship between poor communications and its causing factors can be conceptualized at a fairly general level, depicted in Figure 1, as two stage relationships where a set of casual factors are categorized based by the responsible body which in turn determine the outcome in terms of effects of Poor communication in construction.

The framework developed from works of (Gamil, Y. and Rahman, I.A., 2017)who identify the cause and effect factors of poor communication from different literature and listed them into 33 and 21 items respectively. Figure 2.2 shows major causes and effects of poor communication on construction projects based on those findings.

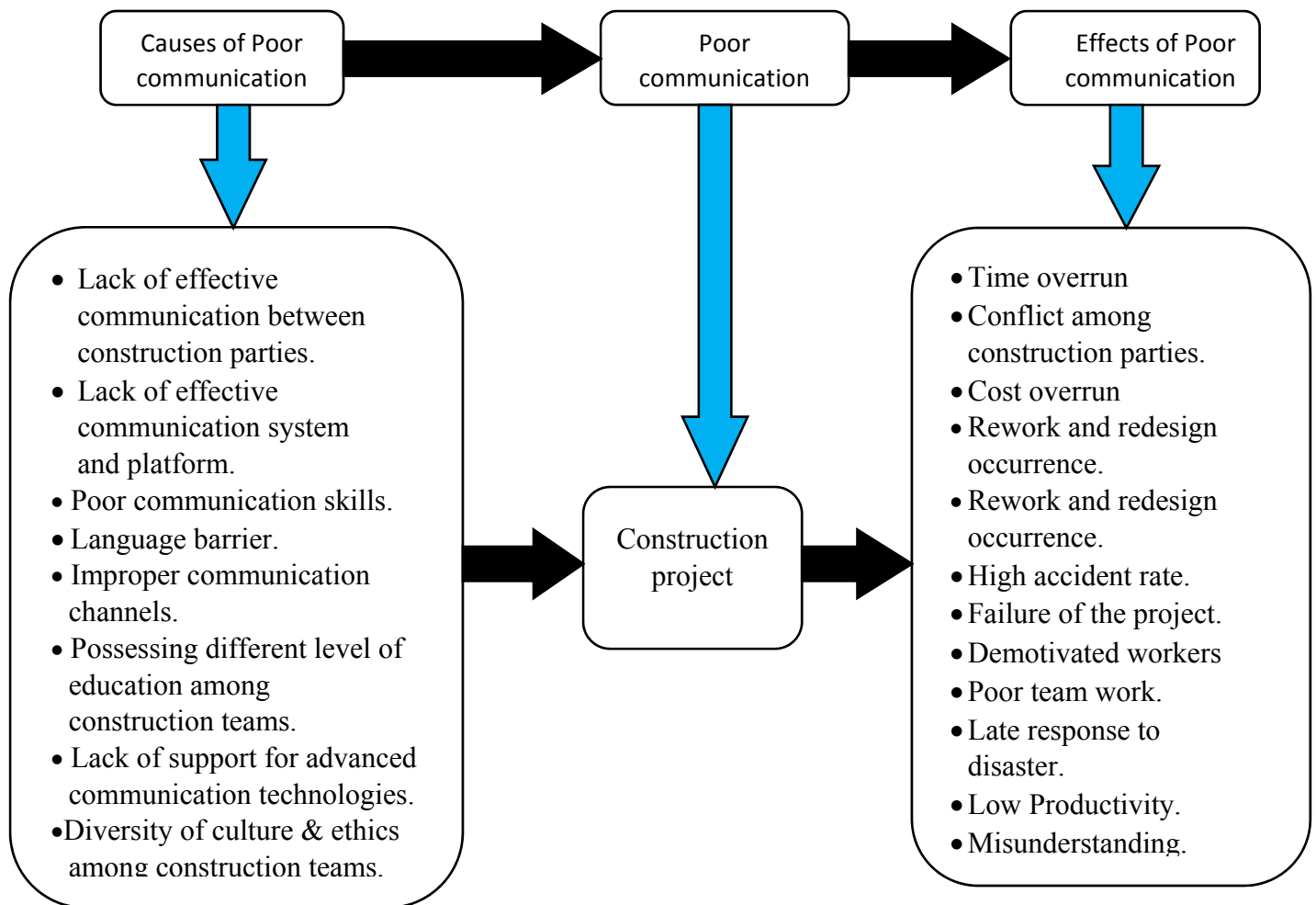


Figure 2-1: Analytical framework for linking causes of poor communications to its effects

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Introduction

Under this chapter, the study discussed about the description of the study area, research design, applicable sampling method, data gathering methods, and data analysis and interpretation techniques of the research.

3.2. Description of the study area

Geographically the study is limited to Addis Ababa City Administration Condominium Housing Project. One of the major problems of Addis Ababa City is in balances between housing supply (both from Government and Private Sector) and housing demand of the peoples due to the continually increasing population growth and immigration from different corners of the country. United Nation world population prospects (August 2019) shows average population growth of Addis Ababa is 4.363%. This high rate of rapid urbanization has exposed the city for different socio-economic challenges in which housing demand is the major factor since housing is one of the basic needs.



Source: Google Map

Figure 3-1: Map of the Study area

Housing demand and supply deficit created a serious imbalance in Addis Ababa, which became a major concern for the city's administration and federal government. With plans to address housing needs, in 2004, the Integrated Housing Development Program (IHDP) introduced. The program had planned to construct 400,000 condominium units, promote development for 10,000 micro and small enterprises, create 200,000 jobs for city residents, enhance the construction sector's capacity, renew slums within the city by 50%, and promote home ownership for low to middle-income households within five years (2005-2010) (UN-HABITAT, 2011). Nevertheless, this program was became ineffective and unsuccessful to achieve its goal in the Addis Ababa City administration. This enforces government to develop another program (Addis Ababa Integrated Housing Development Program (AAIHDP)) to overcome the problem of housing issues in 2013 (Ministry of Urban Development and Construction, 2013). The program contains four different schemes based on percent of saving in advance and down-payment modalities such as 10/90, 20/80, 40/60 and housing association.

3.3. Research Approach

In this study, the researcher used a mixed research method (both quantitative and qualitative methods) in the data collection process. The countable responses (closed ended questionnaire) was analyzes through a quantitative method. The qualitative data gives more emphasis to the uncountable (open-ended questionnaire) responses. It is obvious that the responses that will collect through questionnaires are less reliable as the respondents did not give full attention to the outcomes.

3.4. Research Design

The entire framework of the study referred to as the research design. As was previously mentioned, one of the main causes of delays in the construction sector is their complexity and inadequate stakeholder communication. Explanatory study approach was suited and used to investigate in depth the causal relationship between poor communication and its impact on urban development.

3.5. Research Type

According to the specific objective perspective, the study uses explanatory type research to identify what are the main causes of poor communication between parties and explain its effects in the study area. Explanatory study aims to explain how two characteristics of a situation or phenomenon relate to one another. Accordingly, in this research, the study uses explanatory

research to identify and explain the causal relationships between variables and this type of research also concerned with cause and effect relationships. The methodology that selected for this research work focuses on the interview, observation, and structured questionnaire survey.

3.6. Sampling Techniques

The study uses probability sampling (stratified random sampling) and non-probability sampling (purposive sampling techniques) depending on the respondents' behavior who participate in the study. Accordingly, this research uses stratified random sampling due to the population classified or separated as Clients, Contractors and Consultants under each branch project offices and they are similar and have the same characteristics within their branches. A random sample selected from every stratum depending on the percentage that each subgroup represents in the population. Stratified random samples are generally more accurate in representing the selected population. This study uses stratified samples to optimize group comparisons involving three strata i.e Clients, Consultants, and Contractors. From purposive sampling, this study uses expert sampling involves the collection of a sample of persons with known experience and expertise in some area. In addition, expert sampling used to show the best way to elicit the views of persons who have specific expertise and to provide evidence for the validity of another sampling approach that the study used. Therefore, this research uses expert sampling to select Project Managers and Cluster sampling to select households.

Table 3-1: Classification of data collection method for population

No.	Respondents	Data Collection Instrument
1	Clients officials	Questionnaire
2	Consultants	Questionnaire
3	Contractors	Questionnaire
4	Project Managers	Interview
5	Coordinators	Interview

3.6.1. Target Population

Defining the target population of the survey is one of the first steps in the survey design phase. The target population is the population that should investigated. It also the population to which the outcomes of the survey refer.

The participants that are included in this research selected based on the criteria that the participants should be those involved in the construction of Addis Ababa Housing Development Corporation Construction projects: Clients, Contractors, consultants and Project managers.

3.6.2. Sampling and Sample Size

Sampling is a procedure, wherein a fraction of data taken from a large set of data, and the inference drawn from the sample extended to a whole. Sampling provides a valid alternative to a census when budgeting & time constraints and need quick results.

Table 3-2: Total Population of the study

No.	Stakeholders	Quantity of employees
1	Consultant	42
2	Contractors	88
3	Client	56
Total		186

Source: Own Survey, 2022

The total population participated in this study consists of 186 members (88-contractors, 42-consultants officials, and 56-client officials) working on Addis Ababa Housing Development Corporation at selected sites currently. The sample size is determined using a simplified statistical formula (Yamane, 1967) put here below assuming the total population, 95% confidence level, and 5% precision level assumed.

$$n = \frac{N}{1+Ne^2} \dots\dots\dots \text{Equation 1}$$

$$n = \frac{186}{1+(186*0.05*0.05)} = 127$$

Where; **n** - sample size, **N** - population size, **e** - level of precision.

Depending upon the above formula the sample size (n) selected for this study including contingency was =127+(127*5%)= 133 respondents from the selected project offices which includes Engineering team of Clients, consultants & contractors and managers working in Addis Ababa Housing Development Corporation project sites at different levels of job responsibilities.

Table 3-3: Sample Size

No	Stakeholders	Quantity of Employees	Sample Size
1	Consultant	42	$(42*133)/186= 30$
2	Contractors	88	$(88*133)/186= 63$
3	Client	56	$(56*133)/186= 40$
Total		186	133

Source: Own Survey, 2022

3.7. Data Sources

The study used both primary data and secondary data as a source of data.

3.7.1. Primary Data

Primarily data directly collected from the stakeholders in the Addis Ababa Housing Development Corporation housing project by means of questionnaires and interviews.

3.7.2. Secondary Data

Secondary data collected from internal reports of the organization, books, journal articles, websites and other's research papers.

3.8. Data Collection Instruments

For this study, the technique used to gather information was a combination of questionnaires, interview, observation, and document scanning.

3.8.1. Questionnaires

This study uses both closed-ended and open-ended questionnaires. Closed-ended questionnaires used to generate statistics in quantitative research and Open-ended questionnaires used to generate statistics in qualitative research. Clients' officials, contractors, and consultants are respondents who asked the same questions on the causes of poor communication in the Addis Ababa Housing Development Corporation, the effect of poor communication on Addis Ababa Housing Development Corporation housing projects, and measures that have to overcome the problem.

3.8.2. Interview

In this research, unstructured interview used for interviewing four project managers and two project coordinators of Addis Ababa Housing Development Corporation project sites. Because

unstructured interview used to bring detailed data with new insights, allow face-to-face contact of interviewer with the respondents, allowed interviewer to explain or help clarify questions. In addition, unstructured interview enables to collect data in qualitative, which are open-ended questions.

3.8.3. Observation

There are two main ways in which researchers observe, direct observation and participant observation. Direct observation involves the observation of a 'subject' in a certain situation and often uses technology such as video cameras or one-way mirrors. In participant observation, however, the researcher becomes much more involved in the lives of the people observed. Participant observation can viewed as both a method and a methodology. In accordance with the aforementioned requirements, this study used direct observation to see what was actually accomplished at the project locations (site progress and activities), to cross-check with other data gathering tools, and to get rid of respondent subjectivity. Additionally, the data gathered using this method is relevant to what is occurring right now and can be gathered using cameras and visualization skills.

3.8.4. Reviewing Document

This includes reviewing and analyzing of Site reports, payment certificates, contract documents, letters and memos that are available at client office.

3.9. Data Analysis Techniques

To analysis data, the study was uses Relative Importance Index (RII), Pearson correlation coefficient and mean score (average) method as discussed in the following sections where they adopted and interpreted contextually. In addition this study was uses Cronbach's alpha (α) coefficient to check reliability or consistency of questionnaire data.

3.9.1. Descriptive Statistics Analysis

For this study, descriptive statistics was used to analysis the background of respondents. Because of descriptive statistics, analysis is used to statistically describing, aggregating and presenting the variables of interest or associations between these variables. The data can be summarized in a useful way, either numerically (Mean and Standard Deviation) or graphically (charts and graphs), to yield insight about the population.

A five point likert scale ranging from 5-very high to 1-very low effect used. The same classification is used as (Jawal., 2015) used in his study “Assessment of delay causes of construction projects in Palestine.”

Table 3-4: Classification of mean value

Mean Value	Importance level
1 - 1.8	Very low effect
1.81 - 2.6	Low effect
2.61 - 3.4	Medium effect
3.41 - 4.2	High effect
4.21 – 5.0	Very high effect

3.9.2. Relative Importance Index (RII)

The gathered data through the questionnaire was analyzed using relative importance index (RII) to determine the ranking of causes of poor communication between variables, ranking of effects of poor communication for the study area. In this research, a 5-point Likert scale used to analyze the data for the ranking of causes and effects of poor communication. Eventhough the result of RII done using SPSS, mathematically relative importance index (RII) determined by the following mostly used empirical formula.

$$RII = \sum \frac{W}{A * N} \dots\dots\dots \text{Equation 2}$$

Where;

W - Weighting given to each statement by the respondents, ranging from 1 to 5, and 1 is given to the least implying and 5 for highest implying.

A - The highest weight integer (5 in 5-point Likert scale)

N - The total number of respondents.

The value of the relative importance index lay between zero and one ($0 \leq RII \leq 1$). According to (Akadiri, 2011), the level of importance described as follows:

Table 3-5: Relative Importance Index

RII values	Importance level
$0.8 \leq RII \leq 1$	High
$0.6 \leq RII \leq 0.8$	High-Medium
$0.4 \leq RII \leq 0.6$	Medium
$0.2 \leq RII \leq 0.4$	Medium-Low
$0 \leq RII \leq 0.2$	Low

3.9.3. Pearson Correlation coefficient

Pearson correlation coefficient used for normally distributed parametric statistical measure of the strength of a monotonic relationship between paired data. The Pearson correlation coefficient was supposed to determine the strength of association of ranking between two parties. This research was use Pearson correlation coefficient to show the correlation between Consultant and Contractor, Contractor and Client, and Client and Consultant. Pearson Correlation analyses express the strength of linkage or co-occurrence between to variables in a single value between -1 and $+1$. This value called the correlation coefficient. A positive correlation coefficient indicates a positive relationship between the two variables (the larger A, the larger B) while a negative correlation coefficients expresses a negative relationship (the larger A, the smaller B). A correlation coefficient of zero indicates that no relationship between the variables exists at all.

Table 3-6: Pearson correlation ranges

Indirect Correlation		Direct Correlation	
Strength of association	Values	Strength of association	Values
Strong	-1 to -0.75	Strong	0.75 to 1
Medium	-0.75 to -0.25	Medium	0.25 to 0.75
Weak	-0.25 to 0	Weak	0 to 0.25

3.9.4. Narrative Analysis

This study used narrative analysis to analyze the data obtained through qualitative research such as interviews with project managers and coordinators for transcribing their experiences. Using narrative analysis, this study sort out and reflects interview; enhance interviews, and present interviews in a revised shape. In this study, the core activity of using narrative analysis is to reformulate stories presented by the project managers and consultants in different contexts and based on their different experiences. In addition, the reason and measures that that have to take to overcome the problem analyzed by narrative analysis.

3.10. Reliability and Validity

3.10.1. Cronbach's Alpha (α) Coefficient

Cronbach's alpha used in this study to measure internal consistency of variables to determine the extent to which items that were in one category are more related. In this case, respondents expected to score similar answers for similar questions. Cronbach's alpha varies from 0 to 1 and scores are expected to be 0.7 to 0.9. Below is a commonly accepted rule of thumb for interpreting Cronbach's alpha (Fellows & Liu, 2007).

Table 3-7: Cronbach's alpha range

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Very high consistency
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$\alpha < 0.7$	Poor internal consistency

3.11. Narrative Analysis

This study used narrative analysis to analyze the data obtained through qualitative research such as interviews with project managers and homeowners for transcribing their experiences. Using narrative analysis, this study sort out and reflects interview; enhance interviews, and present interviews in a revised shape. In this study, the core activity of using narrative analysis is to reformulate stories presented by the project managers and homeowners in different contexts and

based on their different experiences. Moreover, the reason and measures that have to take to overcome housing affordability analyzed by narrative analysis.

3.12. Conclusion

In general, for the overall data analysis process, Cronbach's alpha (α) coefficient was check the reliability or consistency of questionnaire data. Relative importance index (RII) was determine the ranking of causes of poor communication, and effects of poor communication in Addis Ababa Housing Development Corporation. Pearson correlation coefficient and ANOVA used to determine the strength of the relationship of rankings between cause and effects of poor communication in Addis Ababa Housing Development.

The study includes the following procedures and according to their sequence Collection of literature, Literature review, identifies the factors, Collection of data for the case study, data analysis, and interpretation, and finally, draws conclusion and recommendations are the main tasks included in this research.

3.13. Ethical Considerations

For the purpose of ethical consideration the name of consultants in all sites, the names of interviewed individuals listed in this study. Documents reviewed from the organization will remain confidential. The names of consultants are also changed codes for the sake of their confidentiality. The findings, results and conclusions from this study would not use for other purpose rather than only for academic purpose. While data collection respondents were free to respond their own opinion and suggestion from their experience, and their personal information such as name and religion not mentioned.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1. Introduction

Under this chapter, the research focuses on data analysis, interpretation, and discussion of the outcomes obtained from all data collection methods. Under this chapter the questionnaire response rate presented for stakeholders; the reliability of the questionnaire survey checked by using Cronbach's alpha coefficient. After checking the reliability, the major causes of poor communication between parties identified using the relative importance index, and then the insights of the list in ranking the causes of poor communication and effects of poor communication compared. Furthermore, Pearson correlation coefficient and analysis of variance (ANOVA) conducted. This section also presents the interpretation and discussion of the results from poor communication and its effect on Addis Ababa Housing Development Corporation shown by taking different scenarios.

4.2. Questionnaire Response Rate

The prepared questionnaire for this study was distributed to stakeholders i.e. client, consultants and contractors currently working on the two branch project sites of Addis Ababa Housing Development Corporation project office. Accordingly, from 133 questionnaires were distributed in the four branch project offices proportional to their sample size and 128 (96.24%) questionnaires were responded. The questionnaire distribution and collection took ten days and the response rate of questionnaire is as shown in table 4-1.

Table 4-1: Respondents' Response Rate

No	Stakeholders	Sample Size	Number of questionnaire		Response Rate
			Distributed	Responded	
1	Consultant	30	30	28	$(28/30)*100\%= 93.33\%$
2	Contractors	63	63	60	$(60/63)*100\%= 92.24\%$
3	Client	40	40	40	$(40/40)*100\%= 100\%$
Total		133	133	128	$(128/133)*100\% =96.24\%$

Source: Own Survey, 2022

4.3. Demographic and Socioeconomic Data of Respondents

The first part of the questionnaire consists of the general background (demographic information) of the respondents of the participants. This part of the questionnaire requested information related

to background characteristics of respondents. The questionnaire prepared for client officials, Consultants' officials and Contractors' officials ask background questions such as name of the organization, project site, respondent's organization, educational level, responsibilities of respondents, and their work experience in construction sector as well as in building construction sector.

As table 4-2 below shown, from all stakeholders respondents 28(21.9%) of respondents are working as Client representative, 60(46.9%) are working as Consultant representative and 40(31.3%) are working as Contractor representative.

Table 4-2: Respondents' Organization

Which organization do you represent?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Client	28	21.9	21.9	21.9
	Consultant	60	46.9	46.9	68.8
	Contractor	40	31.3	31.3	100.0
	Total	128	100.0	100.0	

Source: Own Survey, 2022

As table 4-3 below indicates, from all respondents 56(43.8%) of respondents are works at branch 08 project office and 72(56.3%) of respondents are works at branch 11 project office. This figure indicates that branch 11 project office constructing huge amount of houses than branch 08 project office.

Table 4-3: Respondents' Project Sites

What is your Project Sites					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Project office branch 08	56	43.8	43.8	43.8
	Project office branch 11	72	56.3	56.3	100.0
	Total	128	100.0	100.0	

Source: Own Survey, 2022

Table 4-4 below indicates, from total respondents 17(13.3%) are diploma holders, 93(72.7%) of respondents are degree holders, 18(14.1%) are masters' of science holders and there is no PhD

holders in all organization. Majority of respondents are under graduated (degree holders). This indicates the organization could not support or encourage employees to upgrade their educational level. However, it is obvious that educational level directly affects the efficiency of the individuals as well as the organization.

Table 4-4: Respondents' Educational level

What is your education level?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma	17	13.3	13.3	13.3
	Degree(BSc/BA)	93	72.7	72.7	85.9
	Masters' of Science (MSc.)	18	14.1	14.1	100.0
	Total	128	100.0	100.0	

Source: Own Survey, 2022

Table 4-5 indicates that from all respondents, 8(6.3%) are project coordinators, 9(7%) of respondents are resident engineers, 13(10.2%) of respondents are Forman, 30(23.4%) of respondents are office Engineers and 68(53.1%) of respondents are site supervisor.

Table 4-5: Respondents' responsibility in their company

What is your responsibility in the Company?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Project Coordinator	8	6.3	6.3	6.3
	Resident Engineer	9	7.0	7.0	13.3
	Forman	13	10.2	10.2	23.4
	Office Engineer	30	23.4	23.4	46.9
	Site Supervisor Engineer	68	53.1	53.1	100.0
	Total	128	100.0	100.0	

Source: Own Survey, 2022

Table 4-6 shows that of the total respondents, 50(39.1%) have less than five years of experience, 52(40.6%) have more than five years but less than ten years of experience, 13(10.2%) have more

than ten years but less than fifteen years of experience, and 13(10.2%) have more than fifteen years of experience.

Table 4-6: Respondents' work experience

Your work experience in the construction project					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	[0-5)	50	39.1	39.1	39.1
	[5-10)	52	40.6	40.6	79.7
	[10-15)	13	10.2	10.2	89.8
	>=15	13	10.2	10.2	100.0
	Total	128	100.0	100.0	

Source: Own Survey, 2022

4.4. Findings and Discussions

A total of 175,000 dwellings had been built and given to owners by the time the AAHDPO was launched, and 94,000 more are now built and transferred to homeowners even though. There are construction sites scattered across Addis Ababa's sub cities. The government agencies (sub cities and woredas) are in charge of providing land for construction, as well as MSEs, small contractors, and supporting programs.

The first phase of Koye Feche project site was finished in 2017 and the majority of the homes handed over to the residents. There are 126 blocks totaling roughly 3,371 dwelling units on the site. However, the second project, which started in 2014 and still being build. In eight blocks, 232 housing units are still under construction even though many of the housing units transferred to the households.

Officials from the AAHDPO with various project-related duties chosen to provide an update. The response assisted in gathering broad information about the project's contractors' and MSEs' engagement, as well as what assistance programs are offered to them.

A second group of respondents drawn from locals who own condominium homes or who currently reside in condominium homes in the chosen location. These respondents were useful in pointing out flaws that discovered both before and after occupancy.

The project involves a large number of stakeholders, thus, it is important to determine the type of relationship and communication pattern between them. The majority of SMEs (more than 65%)

affirm they communicate with the AAHDPO for payment follow-up, material requests, and other types of meetings, according to survey data used to determine when and how often each stakeholder typically communicates (out of the issue of housing quality).

However, only 46% and 40% of respondents respectively communicate with AAHDPO when there is a problem with the project they have complaints about it. About 54% of SMEs regarded the AAHDPO helpful during the communication. For the same reason that SMEs SEs contact with AAHDPO, all contractors also do so. In addition, contractors do so during provisional and final acceptance. About 70% of responders who were contractors thought the AAHDPO response was helpful.

Since they depend on one another to construct high-quality housing, contractors and SMEs have the other most crucial communication. While SMEs believe they have good relations with contractors, communication with them is tough in the eyes of the contractors. There is a communication gap between the project's stakeholders, as evidenced by the conflicting opinions of the stakeholders in the communication flow. Contractors asked to categorize the kinds of connections that exist on the job site. The bulk of respondents (80%) claim that there is a blame culture between them and the MSEs, although they nevertheless collaborate with the other stakeholders. Additionally, the AAHDPO attests to the presence of a blame culture among contractors and SMEs. Therefore, project offices must address issues at the lowest level feasible when they develop on the job site. However, 65% of contractors who responded to the survey complain that they always forced to wait a long time whenever there are concerns or problems that need for quick action. Therefore, they contend, effective problem-solving techniques not used in the workplace.

The Addis Ababa Integrated Housing Development Program (IHDP) (20/80 condominium housing) later known as Housing development Corporation is organization established by government in 2004 to construct low cost houses for low-income citizens.

Before one year, Addis Ababa Integrated Housing Development Program (IHDP) (20/80 condominium housing) merged with Addis Ababa Saving house development enterprise (40/60 condominium housing project) and it is re- structure themselves named as Addis Ababa Housing Development Corporation. However, the mode of housing transfer does not change rather than

structure of the two offices only. One of the reason is the lack of communication both internally and externally.

One of Addis Ababa's megaprojects, the Addis Ababa Housing Construction Project, is providing low- and middle-income residents of Addis Ababa with homes while also transforming the perception of the city. Along with 10-90 and 40-60 housing, it is one of the projects managed by the Addis Ababa city government under the IHDP. The initiative was introduced in 2004 by the Addis Ababa city government.

The main objective of the project is to construct quality houses and transfer them to registered low and middle-class segment of the city residents who save 20% of the house cost prior to receiving the house and the 80% over extended period of years with a bank loan facilitated as a subsidy by the government to ensure home ownership of citizens.

The Housing Development Project office is in charge of the project at the site level, per the organizational structure. The office divided into two main sections: the construction department, which is in charge of construction projects, and the procurement and finance office, which is in charge of material delivery (raw materials and prefabricated materials). The construction sector is in charge of managing the consultants and contractors. The work progress follow-up office for MSEs, which oversees and aids all MSEs in the project, is the second crucial office. Under the direction of the project's principal contractors, MSE-1 MSEs serve as subcontractors and are in charge of the installation process. The administration of the procurement and finance sector is in charge of the MSE-2s, who are in charge of production work. The organizational structure of the project's enterprises shown in table 4.7, which is the project's organizational chart.

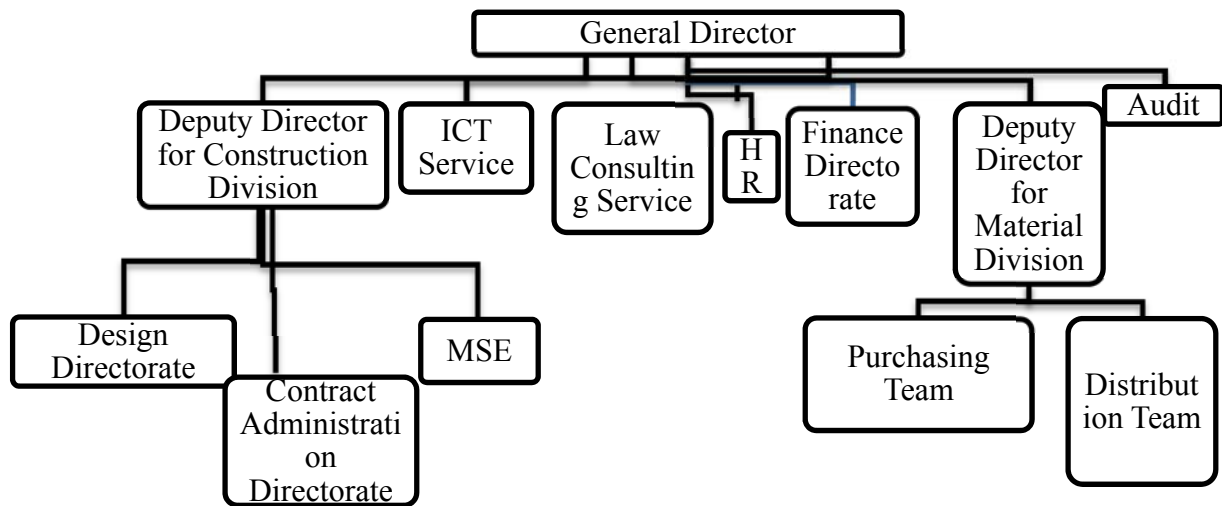


Table 4-7: Head office organization structure 40/60 Condominium Housing Project

Source: Addis Ababa Housing development Corporation, 2022

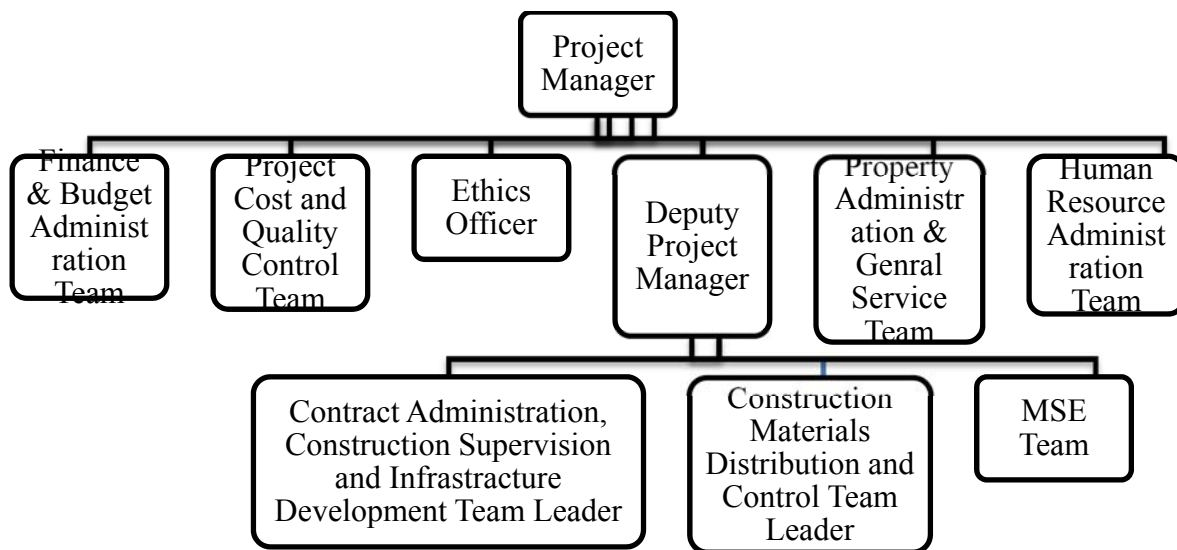


Table 4-8: Branch Project office organization structure 40/60 Condominium Housing Project

Source: Addis Ababa Housing development Corporation branch project office, 2022

4.4.1. Identification of Causes of Poor Communication to Stakeholders Depending on Average Relative Importance Index

Before identifying major causes of poor communication the study wanted to show the reliability of the data using the Cronbach's alpha, normality of the data using Shapiro-Wilk, and kurtosis and skewness values, ANOVA test and Pearson correlation coefficients.

4.4.1.1. Cronbach's alpha (α) coefficient

Cronbach's alpha used to determine the reliability or internal consistency of variables. It assumes respondents get similar scores on each question that asked on the same issue. Cronbach's alpha coefficient was used to test the reliability or consistency of the questionnaire survey and its value ranges from 0 to 1. The Cronbach's alpha values were determined using SPSS software taking causes of poor communications α -values is 0.924 (high consistency).

Table 4-9: Cronbach's alpha value for causes of poor communications

Reliability Statistics	
Cronbach's Alpha	N of Items
.924	33

Source: Own Survey, 2022

4.4.1.2. Normality Tests

Normality of the data used in this study can assessed by obtaining skewness and kurtosis values. In a normal distribution (i.e. not too skewed, and not too many or too few scores at the extremes) the values of skew and kurtosis are 0 (i.e. the tails of the distribution are as they should be). If a distribution has values of skew or kurtosis above or below 0 then this indicates a deviation from normal.

In this study when static value of skewness and kurtosis is divided for their respective value of standard error all values are ranges from -ve 1.850 to +ve 1.908 which ranges from ± 1.96 . So the data is normally distributed. (The result Attached on the appendix of this study)

Shapiro-Wilk and Kolmogorov-Smirnov test are also another method to test normality. In this case, for Shapiro-Wilk is more applicable for small sample sizes (50 samples) and Kolmogorov-Smirnov used to test larger size sample $n \geq 50$. For both tests list above, the null hypothesis states that data taken from normal distributed population. When $P > 0.05$, null hypothesis accepted and data called as normally distributed.

For this study since the sample size is more than 50, Shapiro wilk is used. All significance value is more than 0.05 ($P > 0.05$). So the data is normally distributed.

Table 4-10: Normality test table

Tests of Normality							
	Which organization do you represent?	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Causes of Poor Communication	Client	.139	28	.179	.944	28	.138
	Consultant	.148	58	.003	.966	58	.103
	Contractor	.110	39	.200*	.974	39	.494
Effects of poor communication	Client	.129	28	.200*	.939	28	.105
	Consultant	.131	58	.015	.885	58	.213
	Contractor	.065	39	.200*	.984	39	.846
*. This is a lower bound of the true significance.							
a. Lilliefors Significance Correction							

Source: Own Survey, 2022

4.4.1.3. Pearson Correlation Coefficient

Table 4.11 below shows that relationships between the variables are negative. Significant relationship also found between variables. Pearson correlation coefficient for causes of poor communication related to effect of poor communication is -0.038, which is significant ($p < 0.001$ for a two-tailed test), based on 128 complete observations. So H_0 rejected. Contractor related causes poor communication and effect of poor communication have a statistically significant linear relationship ($p < .001$). The direction of the relationship is negative and the magnitude, or strength, of the association is 0.038 which is low negative relationship ($-0.3 < |r| < 0$).

Table 4-11: Pearson Correlation Coefficient

Correlations			
		Causes of Poor Communication	Effects of poor communication
Causes of Poor Communication	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	128	
Effects of poor communication	Pearson Correlation	-.038	1
	Sig. (2-tailed)	.000	
	N	125	125

4.4.1.4. Analysis of Variance

The table 4-12 below result shows that $F\text{-statistic} = 1.12 < F\text{-critical} = 3.0$ at an α -value of 0.05, reject the null hypothesis (H_0) and choose alternative hypothesis (H_a), i.e. the groups can be assumed as random samples from the same population.

- The mean of causes of poor communication is not significantly different for at least one of the other groups ($F_{2, 125} = 1.141, p < 0.05$).
- The mean of effects of poor communication is not significantly different for at least one of the other groups ($F_{2, 122} = 2.714, p < 0.05$).

Table 4-12: ANOVA Analysis table

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Causes of Poor Communication	Between Groups	932.980	2	466.490	1.141	.000
	Within Groups	51106.137	125	408.849		
	Total	52039.117	127			
Effects of poor communication	Between Groups	1035.642	2	517.821	2.714	.000
	Within Groups	23280.726	122	190.826		
	Total	24316.368	124			

Source: Survey, 2022

4.5. The Analysis of Average Causes of poor communication in Condominium housing construction project

Table 4-13: Performance of condominium housing project in Akaki Kaliti Sub City, Koye Feche Site

No.	Activities	Typology	
		G+4	G+7
	Project 08		
1	Total number of blocks	65	56
2	Contract time	540 days	720 days
3	Revised Contract Time	February 5, 2014	February 5, 2014

4	Completion date	April 11, 2014	April 2, 2014
5	Revised Completion date	June 30, 2023	June 30, 2023
6	Elapsed time to date	102 months	102 months
7	Accomplished to date	99.41 %	99.53%
	PROJECT 11		
1	Total number of blocks	71	54
2	Contract time	540 days	720 days
3	Revised Contract Time	February 5, 2014	February 5, 2014
4	Completion date	April 17, 2014	March 31, 2014
5	Revised Completion date	June 30, 2023	June 30, 2023
6	Elapsed time to date	102 months	102 months
7	Accomplished to date	99.01%	98.91%
	PROJECT 12		
1	Total number of blocks	55	69
2	Contract time	540 days	720 days
3	Revised Contract Time	February 5, 2014	February 5, 2014
4	Completion date	April 1, 2014	April 15, 2014
5	Revised Completion date	June 30, 2023	June 30, 2023
6	Elapsed time to date	102 months	102 months
7	Accomplished to date	99.34%	99.71%
	TOTAL SUMMARY		
1	Total number of blocks	191	179
2	Contract time	540 days	720 days
3	Revised Contract Time	February 5, 2014	February 5, 2014
4	Completion date	August 15, 2014	August 3, 2014
5	Revised Completion date	June 30, 2023	June 30, 2023
6	Elapsed time to date	102 months	102 months
7	Accomplished to date	99.28%	99.12%

In table 4-13 above, in the first row total number of blocks 65 and 56 for G+4 and G+7 respectively. The contract time for G+4 is 540 days and for G+7 are 720 days. The revised contract time for G+4 is 540 days (extra 90 days) but the revised contract time for G+7 is 720 days (extra 90 days). The commencement date April 11, 2014 and April 04, 2014 for G+4 and G+7 respectively. In the next row there is revised completion date for the second time up to June 30, 2023 for both G+4 and G+7 the revised contract time. Total elapsed to date based on row 7; about 102 months

are passed for each G+4 and G+7 blocks. Finally, the performance accomplished to date for G+4-project site is 99.41% and 99.53% percent for G+7 or an average accomplished to date 99.28 % for G+4 and 99.12% for G+7 blocks.

To identify the different causes of poor communication, relative importance index (RII) analysis accompanied. To determine relative importance index of each cause of poor communication responded by the three stakeholders (Client, Contractor and Consultant), the five-point Likert scale (strongly disagree-1, disagree-2, neutral-3, agree-4 and strongly disagree- 5) was used as shown in table 4.14 below. The top fifteen causes of poor communication identified in accordance of average relative importance index of the stakeholders in Addis Ababa Housing Development Corporation housing construction project site.

As table 4-14 below indicates that lack of support for advanced communication technologies ranks first with relative importance index 0.80 (high medium importance level), lack of understanding among parties ranks second with relative importance index 0.78 (high medium importance level). Poor planning and coordination ranks third with relative importance index of 0.76 (high medium importance level). Poor communication management ranked fourth with relative importance index of 0.76 (high medium importance level) and weak organizational structure ranked fifth with relative importance index of 0.76 (high medium importance level). Not only had the above variables, the following variables also identified as causes of poor communication in their respective ranks. These includes lack of effective communication system and platform, slow information flow between parties, lack of adequate representation for project stakeholders, improper communication time management, unavailability of information in the time of need are top ten variables. While technology malfunction, lack of effective communication between construction parties, lack of communication plan, personal barrier, poor communication skills, inaccurate delivery of project information, frequent changes of project contract, lack of appropriate communications medium, possessing differed skills levels among construction teams, poor detailed drawing are variables identified as top twenty. And lack of communication procedure and training, inaccessibility of information, possessing different level of education among construction teams, contractual barrier, incorrect instructions or technical information, improper communication channels, lack of clear objectives, complexity of the construction industry and inaccurate delivery of project information are also another causes for poor communication listed.

Table 4-14: Relative Importance Index for causes of poor communication

Descriptive Statistics					RII	Rank
	N	Minimum	Maximum	Mean		
Lack of support for advanced communication technologies	128	2	5	3.98	0.80	1
Lack of understanding among parties	128	2	5	3.88	0.78	2
Poor planning and coordination	128	1	5	3.82	0.76	3
Poor communication management	128	1	5	3.79	0.76	4
Weak organizational structure	128	1	5	3.78	0.76	5
Lack of effective communication system and platform	128	1	5	3.74	0.75	6
Slow information flow between parties	128	1	5	3.73	0.75	7
Lack of adequate representation for project stakeholders	128	1	5	3.72	0.74	8
Improper communication time management	128	1	5	3.68	0.74	9
Unavailability of information in the time of need	128	1	5	3.66	0.73	10
Technology malfunction	128	2	5	3.65	0.73	11
Lack of effective communication between construction parties	128	1	5	3.64	0.73	12
Lack of communication plan	128	1	5	3.59	0.72	13
Personal barrier	128	1	5	3.56	0.71	14
Poor communication skills	128	1	5	3.54	0.71	15
Inaccurate delivery of project information	128	1	5	3.54	0.71	16
Frequent changes of project contract	128	1	5	3.53	0.71	17
Lack of appropriate communications medium	128	1	5	3.52	0.70	18
Possessing differed skills levels among construction teams	128	1	5	3.46	0.69	19
Poor detailed drawing	128	1	5	3.45	0.69	20
Lack of communication procedure and training	128	1	5	3.40	0.68	21
Inaccessibility of information	128	1	5	3.38	0.68	22
Possessing different level of education among construction teams	128	2	5	3.34	0.67	23
Contractual barrier	128	1	5	3.33	0.67	24
Incorrect instructions or technical information	128	1	5	3.31	0.66	25
Improper Communication channels	128	1	5	3.20	0.64	26
Lack of clear objectives	128	1	5	3.17	0.63	27

Complexity of the construction industry	128	1	5	3.13	0.63	28
Diversity of culture and ethics among construction team	128	1	5	3.02	0.60	29
Lack of mutual respect and trust among construction teams	128	1	5	2.95	0.59	30
Noise interruption	128	1	5	2.82	0.56	31
Gender differences	128	1	5	2.66	0.53	32
Language barrier	128	1	5	2.34	0.47	33
Valid N (listwise)	128					

Source: Own computation, 2022

As the project involves so many stakeholders, it is necessary to identify the type of relationship and flow of communication among project participant. From the survey data collected to find out when and how often each stakeholders usually communicates, the majority of stakeholders mostly SMEs communicate with AAHDPO for payment follow up, material request, and for other type of meetings (out of the issue of housing quality).

It is obvious that drawing, specification and standards are one major communications between stakeholders participating in the construction industry. Actually, construction is undergoing in old practices rather than approving these communications means and apply it for more output. Due to this reason, construction time could not undergoing within the required time and its cost also over budgeted cost.

According to survey findings, major parties in all sites where there was no integration in both sites had very little integration. For projects 08 and 11, the level of single team focus and objective was also less than the required output. The survey's findings make it clear that clients, consultants, and contractors involved in the construction of homes lacked a single team's focus and aim.

A difficulty in the building industry especially in Housing Development Corporation is poor communication. As data obtained from interview shows, in Addis Ababa Housing Development miscommunications, however, can also be detrimental to a project by confusing everyone involved, from key stakeholders to industry experts and field employees. On the job site and in the office, inconsistent reporting, incomplete reporting, confusing reporting, and delayed reporting are all issues that can result in project delays and cost overruns.

It is obvious that concise, clear communication helps prevent confusion in construction industry. Keeping communications brief, direct, and uncomplicated shortens project duration and minimize cost of project. So focusing on each communication on the housing construction project have great advantage especially for a client to minimize cost of the house through adapting communications to the degree of knowledge of the audience. Additionally, the stakeholders of housing construction project have to stay away from jargon and other terms they might not be familiar. On the other hand, project manager should not require that much information. For the project team to maintain efficiency, written communication is crucial and prioritize.

As data obtained from interview shows, real-time communication is always preferable when it comes to keeping everyone involved in the construction industry. If everyone is on the same page, mistakes can often avoided in construction organizations. Poor communication in the construction industry is a major contributor to project delays Addis Ababa Housing Development project. It can take several forms, such as delays in the flow of information, directing communication to the wrong person or area, and unclear communication leading to confusion or wrong interpretation. Any of these components of ineffective communication can result in mistakes and lead to delays. Ordering an incorrect material, missing a step in the construction process, misappropriating workers all these scenarios can result in delays on the project.

A disagreement is the worst-case scenario especially in housing development construction industry where thousands of dwellings are waiting for house. One of the main reasons disputes arise in building projects is poor communication. To prevent misunderstandings, it is crucial to keep stakeholders frequently informed and up to date on the project. Reporting via the correct channels is also crucial.

According to data obtained from interview, more than half of all project budget overrun in Addis Ababa Housing Development is attributable to poor project communication and time management. Costs are frequently increases because of poor or incorrect communication. A budget can be destroy by adding a zero to a material quantity. Communication can fail in numerous additional ways. The price of incorrectly ordered material, for instance, if a change in the building material is not conveyed in a timely manner. Terminology can sometimes be the problem. For instance, the organization could not be using the same name for a material as the designer. Misunderstandings

might also result in improper task execution. When that occurs, modifications may result in both time delays and budget overruns.

The Condominium housing construction offers numerous risk factors for injuries, including trips and falls, trench and scaffold collapses, electrical shocks, and the use of improper safety gear. However, inadequate safety communication is one of the most typical causes of many workplace injuries. As the data obtained from the interview, three main factors contribute to poor safety communication in condominium housing construction projects. These are:

- The terminology employed in safety training is unfamiliar to workers. This shows that the workers have never received safety training on and off the site.
- When workers find a safety danger, they are reluctant to report it. If they alert a peer or a supervisor to a potential threat, they can be afraid of being criticize. It is simpler to take the safe route.
- Employee perception of safety communications is frequently negative. The beneficial deeds frequently avoided, but only the negative events discussed or emphasized

When employees suffer an injury at work, it may mean lost productivity, extra expenses, project delays, and lowered team morale. If the safety communications put all employees on the same page and speaking the same language, most of this might be prevent. Nowadays, condominium housing projects exposed to safety problem frequently.

Multiple parties, including owners, designers, investors, general contractors, project managers, subcontractors, and employees, are involved in condominium housing building project. The efficient and wide sharing of information among a project's stakeholders is crucial to its success. Rework, for instance, is the devil of condominium housing projects. It may lead to disagreements amongst stakeholders, increased project expenses, and delays. All rework on a project has caused by bad project data and misunderstandings between project stakeholders.

4.6. The Analysis of Average Effects of poor communication in condominium housing project

The second objective of this study was addressed by using descriptive statistics to assess the effects of poor communication on Addis Ababa Housing Development selected Project sites. These

effects had five-point scale ranged from 1 to 5 and the results of the questionnaire and interview were presented and discussed accordingly.

Table 4-15: Cronsbach's alpha coefficient of effects of poor communication

Reliability Statistics	
Cronbach's Alpha	N of Items
.924	21

To identify the effect of poor communication, relative importance index (RII) analysis accompanied. To determine relative importance index of each effects of poor communication responded by the three stakeholders (Client, Contractor and Consultant), the five-point Likert scale (strongly disagree-1, disagree-2, neutral-3, agree-4 and strongly disagree- 5) was used as shown in table 4.21 below. More than 20 variables identified in accordance of average relative importance index of the stakeholders in 40/60 construction project site.

As table 4-16 below indicates that time overrun ranks first with relative importance index 0.85 (high medium importance level), waste generation ranks second with relative importance index 0.83 (high importance level). Cost overrun ranks third with relative importance index of 0.81 (high importance level), poor risk management ranked fourth with relative importance index of 0.80 (high importance level), rework and redesign occurrence ranked fifth with relative importance index of 0.77 (high medium importance level). Not only had the above variables, the following variables also identified as causes of poor communication in their respective ranks. These includes poor planning, poor project documentation, poor team work, unclear channels, low level of satisfaction among construction parties, affects design process, low productivity, demotivated workforces, frequent remedies in design and planning schedule, failure of the project, conflict among construction parties, design errors, misunderstanding, late response to disaster, misinterpretation and high accident rate.

Table 4-16: Relative Importance Index of effects of poor communication

Descriptive Statistics						
	N	Minimum	Maximum	Mean	RII	Rank
Time overrun	128	2	5	4.23	0.85	1

Waste generation	128	1	5	4.13	0.83	2
Cost overrun	128	2	5	4.07	0.81	3
Poor risk management	128	1	5	4.00	0.80	4
Rework and redesign occurrence	128	2	5	3.84	0.77	5
Poor planning	128	1	5	3.73	0.75	6
Poor project documentation	128	1	5	3.68	0.74	7
Poor team work	128	1	5	3.68	0.74	8
Unclear channels	128	1	5	3.63	0.73	9
Low Level of satisfaction among construction parties	128	1	5	3.62	0.72	10
Affects design process	128	1	5	3.61	0.72	11
Low productivity	128	1	5	3.48	0.70	12
Demotivated workforces	128	1	5	3.45	0.69	13
Frequent remedies in design and planning schedule	128	1	5	3.45	0.69	14
Failure of the project	128	1	5	3.27	0.65	15
Conflict among construction parties	128	1	5	3.23	0.65	16
Design errors	128	1	5	3.20	0.64	17
Misunderstanding	128	1	5	3.19	0.64	18
Late response to disaster	128	1	5	3.15	0.63	19
Misinterpretation	128	1	5	2.89	0.58	20
High accident rate	128	1	5	2.68	0.54	21
Valid N (listwise)	128					

Source: Own survey, 2022

The AAHDPO considered as a special type of project because it formulated through a policy. The policy has two intentions, one is obviously to construct houses with low cost and the other is to create employment. No tendering procedure was necessary because the price is already set by the office and the intended participants are already available.

Any contractor who has a construction license of less than grade-6 can register to participate in the construction of condominium houses in Addis Ababa. Civil engineers who have the educational background related to construction and the necessary work experience have the right to get a construction license from their respective Sub-Cities. However, the type of the license varies from Building Contractor/General Contractor of grade 9 to grade 1 (BC/GC 9- 1) based on the

educational level of the manager, educational level and number of key employees, and own capital of the company.

Up on registration, interested contractors are only expect to present their company profile, VAT registration and renewal certificate together with their license. After registration, the housing Development Office prepares training program for 3-5 days. However, the contractors could not get information and upgrade their capacity within three to five days. Additionally, most of contractors come from other business in which government invites them to participate in construction industry. The training is prepared to give insight and knowledge about the project. Following the training, the contractors are assign to different project sites through the lottery drawn at the AAHDPO main office. Contractual agreement for works contract are sign between AAHDPO and the contractors. It is obvious that the capacity (knowledge on construction and financial) of contractors are limits affects the construction duration and limits the contractors' output.

From 44 contractors who assigned to project 08 and project 11, only 18 contractors are proceeding to work and the rest 26 contractors terminated. AAHDPO indicate the contractors as a defaulter for the termination. From their explanation, many contractors ceased the work because of their incapability (financial constraints or lack of management) to cope with the project.

On the other hand, while the project was start there are no specific criteria and hierarchy of management and clear communication system to establish SMEs and it done voluntarily. Any interested citizens who wish to participate in the project can register individually in their respective sub-cities based on their area of interest. No educational background is required to select an area of specialization except for electrical works, which sometimes require some experience or vocational school certificate. After registration, the MSEs, development office prepares training program with the intention to build technical and management capability of MSEs. The training given for only 3-7 days based on their selection of specialization, upon completion of the training; the sub-cities give certificate for the participants. The trainees then form an association, which consists of two to twenty members or can start working individually. The sub-city's SMEs development office then certifies and gives recognition to the association formed. However, these enterprises lacks communication skills and knowledge of construction. Due to this problem, they produce under quality production, which affects the quality of the construction and increase

wastage in construction and increases the cost of construction as well. In addition, these enterprises are not responsible for the contractors for which they supply products rather than other government agencies. Due to this long bureaucracy, the intercommunication between contractors and enterprises is weak and brings cost overrun on projects as much as time was extended and inflation increases.

During the open-ended interviews and questionnaires regarding the opinions of Addis Ababa housing project office employees at both sites, many people stated that some contractors lack expertise, experience, and specialized professions. The absence of expertise is the main cause for miscommunication between stakeholders that participate in the construction of condominium houses. For instance, the contractors do not have specialized engineers, accountants, or leaders; instead, the organization of contractors is represented by an unexpected and lone person to save their administrative costs. Additionally, some contractors have no loyalty or affection for their nation; instead, their only concern is to get paid by the government.

Since the aforementioned issues relate to the construction of condominium housing, it is assumed that these issues will cause the project to take longer to complete and cost more money. Since lack of communication in construction of condominium houses is the major factor in daily project activities of housing construction project, this will also result in the failure of the projects' goals. For the project to continue, it is crucial to monitor and regulate the variables that have a negative impact on time and cost.

The sense of ownership is the other significant issue brought up by the respondents. Because of the absence of clear communication and project has direct ownership participation, the use of material resources and time is extremely strictly followed up on and controlled when it comes to the time schedule, cost (budget), and quality of the home when it is being built in private households and the public sector. However, in the context of the government sector especially in condominium housing project, the sense of ownership or moral obligation to the project is undeniable because, as we have seen in real life, everyone is concerned about his or her own personal accountability and monthly salary. Additionally, some people (officials) are corrupt, and the project is seen as a source of personal gain for them by forming miscommunication. The government's lack of communication and ownership, moral decay, and corruption make it impossible for the condominium housing project to achieve its goals. The questions that need to

be answered why people enrolled for condominium housing and waited 20, 30, or more years to receive a house, and why the government tries to work harder than it can.

The government should play its roles based on mobilizing the entire society and government capacity to build houses quantitatively and qualitatively, with a special emphasis on the poor society. Currently, the real capacity to build houses is in the hands of individual households and private sectors because some households and most private sectors have the capacity to build their homes without wasting time and resources through good communication.

In general, during interview the study conducted an interview with the deputy general manager of the Addis Ababa housing project office. The interview titled "fulfilling house demand by only Addis Ababa housing project office (government) is very difficult," and the deputy general manager gave the paper his response: "it is impossible to fulfill Addis Ababa housing demand only by the interference of government and as a principle individuals should build their house." He also spoke about the difficulties associated with the achievement of the condominium housing project's international purchasing system, currency issue, and contract administration obstacles in which poor communication have a lion share on these variables.

The respondents to the open-ended surveys and interviews stated that they were unable to comment on the general quality of condominium housing because different materials, professionals, technologies, leaderships, etc. used in different projects. As a result, not all sites' projects are of the same quality. However, in some project locations, it is challenging to say whether the quality of condominium housing transferred to the beneficiaries, particularly in projects without infrastructure exposed to quality assurance because they lack the availability of water, electricity, and roads from block to block, especially these buildings do not get adequate water faced to poor quality of homes.

Another issue raised by the respondents is the extremely subpar finishing of condominium housing projects, which exposes beneficiaries to additional fees after getting a home from the government. The majority of respondents noted that the finishing costs they incurred were very high because the government transferred the condominium housing project sites before the projects had finished their finishing work. This cost is a major headache for the individual households, as they must complete inside tasks like replacing the agro-stone work and installing doors, windows, floors, and walls. Therefore, in essence, the house looks like a genuine house after a significant amount of

money spent, which means that the condominium housing inhabitants' efforts were required to complete the projects.

4.7. Conclusion of the Findings

Following are significant findings from the analysis and discussion of data from numerous sources that are particularly pertinent to properly responding to the study questionnaires, interviews, and secondary data under consideration.

There are a number of issues with this that are of concern to the government, including difficulties finding qualified consultants and dependable contractors, a lack of project manager leadership abilities, poor coordination and communication with contractors, consultants, and suppliers, and financial problems.

The primary problems with the consultant became clear. This includes the organization's consultant's lack of expertise and experience, poor management and the challenge of managing contractors, the consultant engineer's poor coordination and communication with project stakeholders, the consultant engineer's slow response regarding testing and inspection and progress payments to contractors, and the lack of commitment to ensure construction work is completed in accordance with specification and design.

The primary restrictions are as follows, and they are similar to how the organizations of the contractors were stated. These include the following: a lack of experience and technical expertise; poor planning, scheduling, and project management; financial difficulties and delays in payments to subcontractors; a lack of coordination and communication with project stakeholders; a lack of leadership qualities in the contractor's organization; and others.

Further, the limitations that identified by the research participant were based on elements that affected the timing and expense of condominium housing projects. These factors include the owner's lack of professional expertise and leadership in planning, managing, and controlling the project operations. They also include the owner's inadequate choice of competent consultants and reliable contractors. These include; government's rigid rules and regulations, the contractor's poor project planning, scheduling, and management, the shortage of materials and their rising prices, as well as the delay in their delivery to the project sites, the consultant's lack of experience and expertise in engineering, procurement, and finance, and the consultant's slow response time.

Finally yet importantly, the serious issue that the majority of respondents identified is that, regarding factors affecting quality in the construction of condominium housing projects. These include; poor selection of competent consultants and reliable contractors, lack of management commitment to continual quality improvement, poor quality of workmanship of supply of labor, equipment, and raw materials, less quality techniques and mechanisms are adopted, unavailability and delay in supply of materials, and others.

Recall that the analysis of communication issues in construction projects was the thesis' primary goal. Three questions can be used to condense the several specific objectives that created for this purpose. These queries succinctly and briefly addressed in this section. Punctuating the most important points.

Understanding how key features, including communication, operate is crucial to the project's proper development. However, the response to this is that it depends. Construction projects are distinctive and extremely challenging to complete. A construction project's organizational structure depends on communication. The sort of procurement procedure, the structure of communication, and the communication networks that formed will all vary depending on the parties engaged in the project.

The key is to have a good system for communication, to encourage communication that is supported by good practices, and to be clear about the structure of communication from the outset, both with the organization involved in the project and between the organizations that must work together to carry it out. It is crucial to take every action possible to people participating in the project to foster communication, in addition to establishing a hierarchy, a clear process, and a strong communication network. Set aside personal goals in favor of the project's success.

The following communication issues are a result of many communications being informal when they should not be. The value of informal contact has been discussed in literary research, yet everything has its limits. It is necessary to understand the line dividing issues that require formal resolution from those that may be handled informally. To avoid many mistakes in the project's development, it is crucial to be aware of this obstacle and to conduct the essential meetings and procedures in a proper and official manner.

The project's base fault, which is the excessive decrease of the bid price, is the cause of the majority of the observed communication issues. This decrease in the bid price indicates that the project's principal contractor wants to make numerous changes to cut costs, which is why the project management team is opposed to it. The project management team and the construction company then engage in an ongoing disagreement that affects the entire construction project. According to the interviewers' experience, this issue rarely resolves amicably and ought to avoid.

The most crucial factor in solving issues with documentation management is having an effective management system. The primary communication tool for the project should made clear from the start, and all engaged parties should use it and abide by the managers' usage guidelines. The construction industry should gradually implement new communication technologies, such as BIM technology, which substantially facilitate this document management.

The challenges with casual communication addressed in the following block of solutions. To prevent issues, a strong formal communication structure and procedures are essential. To avoid major issues broadcast on the radio; all discussions about topics that are crucial to the project should take place within this formal communication network and recorded. For this reason, it is crucial to include the views of every project participant in this official communication framework and avoid excluding the workers, as is customary.

The most straightforward theoretical answer to the communication issues brought on by budget cuts may also be the trickiest to put into practice. However, it is still possible to make extremely significant reductions now. The solution is as straightforward as restricting such cutbacks in the budget for the bid. If this cannot prevented, the construction's promoter will then defend the project management. This prevents the builder from making alterations at their discretion and lowering the project's quality.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

This section includes a summary, findings, and suggestions that will aid in the prompt delivery of future condominium buildings or other projects of a similar nature in order to satisfy stakeholders. It also offers advice on lessons to be remember for similar projects in the future. Additionally, it offers concrete guidelines for those involved in condominium construction. Concerning the causes and repercussions of poor communication in construction, these parties include the customer, contractors, and consultants.

5.1. Summary

The project's performance was negatively affect if the various project participants, including the contractors and others, do not effectively communicate and collaborate. All respondents likewise ranked rework brought on by building mistakes fifth overall. Rework may be necessary for a number of reasons, and it will delay project completion and have a substantial impact on it.

This study's primary goal was to determine the reasons for and impacts of the poor communication throughout the construction of the condominium houses for the selected Projects. To this goal, a questionnaire and an interview conducted to determine the main reasons for and effects of the poor communication during this project's construction. Methods of descriptive statistics employed for the data analysis.

The building business may find the analysis's findings to be highly relevant. Ethiopian construction has experienced significant performance issues, much like any other building industry throughout the world. Depending on the political and socioeconomic situation of each country, the causes of poor communication in the construction business can vary, but they all have a lot in common.

The following factors discovered to be the top ten among the selected factors. These include lack of support for advanced communication technologies, lack of understanding between parties, poor planning and coordination, poor communication management, slow information flow between parties, weak organizational structure, lack of an effective communication system and platform, lack of adequate representation for project stakeholders, technological malfunction, and improper communication time management.

The results revealed that, in contrast to other literature and contrary to what anticipated, a lack of support for modern communication technologies is the primary contributing factor. Lack of support for the use of communication technology might make communication more difficult rather than easier. Using communication technologies, shareholders should be able to convey detailed

information. To demonstrate to shareholders how to utilize this cutting-edge instrument effectively, technical help must be offered. The second-ranking factor, a lack of understanding, warrants considerable consideration in order to prevent poor communication.

Analysis of the impact of inadequate communication on project work also done. The effects with the highest ranking were waste generation, time overrun, and cost overrun. Time is a very important aspect in all of the operations that must be completed in accordance with the contract document. A particular time period is allotted for the completion of a project, and if that period is exceeded, additional funds are frequently expended, which may increase the project's overall cost and, in the worst case scenario, result in cost overruns, disputes, and project failure. In order to avoid time and expense overruns, it is imperative to address the main causes of poor communication that have been listed.

5.2. Conclusions

A better project execution's quality and performance depend on effective communication. To put it another way, poor communication can result in a variety of performance and quality issues during project execution. However, up until recently, the importance of communication in building projects was underappreciated. The researcher has also not come across any research on communication issues in Ethiopia.

Thus, the causes of inadequate communication on condominium construction projects investigated in this study. Additionally, it evaluated how poorly communicated building projects were affected. Using information gathered from a carefully constructed questionnaire given to construction industry professionals who took part in Condominium housing projects. The study was able to identify the main contributors to poor communication as well as its main repercussions on construction projects.

Even yet, effective communication is a key component of completing construction projects successfully.

The survey discovered that those involved in the construction industry are still trailing behind in the use of effective communication. The lack of support for advanced communication technologies, lack of understanding between parties, poor planning and coordination, poor communication management, slow information flow between parties, weak organizational structure, lack of an effective communication system and platform, inadequate representation for

project stakeholders, technology malfunction, and improper communication techniques were the factors responsible for poor communication on construction projects studied. These elements discovered to contribute significantly to poor communication on construction projects. Cost and time overruns, waste production, inadequate risk management, occurrence of rework and redesign, and waste generation are the main repercussions of poor communication on construction projects. As a result, there is a significant impact of poor communication on building projects.

5.3. Recommendations

The following suggestions given to enhance communication on building projects and to lessen the impact of bad communication;

- Overcoming poor communication requires the cooperation of management. Modern communication technology purchased with a sufficient budget so that the organization can effectively disseminate information. Additionally, with management support, outdated technology must be replaced and broken ones maintained properly.
- To prevent bad communication, management should set up a platform where all stakeholders may share a similar understanding. The setting can be a physical morning meeting or a virtual one.
- For monitoring and controlling communications on building sites, all stakeholders should create a unified communication plan. The communication routes, reporting structures, and feedback mechanisms will often be specified in the strategy.
- To avoid or prevent poor communication management, management should work on enhancing communication management systems through trainings and brief workshops.
- Slow information flow among stakeholders could slow down the project's execution. Therefore, decision-making stakeholders should act quickly and avoid bureaucratic roadblocks.
- To strengthen the organizational structure's communication wing, management must play a part in integrating efficient communication systems.
- In order to prevent communication gaps that result in bad communication, every stakeholder should be effectively represented.

This study was helpful to construction stakeholders who are involved in condominium housing or similar projects in terms of communication planning and risk management. The main contributing factors noted, and suitable mitigation strategies recommended. Additionally, participants in the

sector will gain from this study by enhancing their communication techniques to enhance project success. If successful project delivery achieved, poor communication should be avoided because it leads to poor project performance. If a similar study already exists, this one expands the body of knowledge on communications in the construction business.

Because of the sample size, geographic scope, and resource limitations of this study, generalizing the results is difficult. To compare the findings, a similar study should be widely conducted in an Ethiopian context. As a result, this study could provide information for future research.

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Appendix A

Questionnaire

Addis Ababa University

School of Graduate Studies

School of Commerce

Examining causes and effects of poor communication in construction projects: the case of housing development corporation condominium housing projects for low income householders

Dear respondents,

This is academic research which aims to assess the causes and effects of poor communication in construction of condominium house particularly Project 8 and 11 housing development construction. Through this study, I would like to investigate the cause and effect of poor communication that currently exist in the construction of condominium house of Project to give the way forward and lesson to be learned in the future condominium construction.

All the information you provide will kept in strict confidentiality and it will only used for academic research. Please answer each question carefully. There is no right or wrong answer. If you are unsure of an answer, please respond with your best estimate.

I value your participation and thank you for the commitment of time, energy and effort. If you have any further questions, I can be reached at the address below.

Sincerely,

Yoseph Megersa

Postgraduate student specializing in Project Management

SCHOOL OF GRADUATE STUDIES

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Part 1: General information

1. Which organization do you represent?
Client [Owner] ☐ Consultant ☐ Contractor ☐ Others ☐
2. What is your Project Sites? Project office branch 08 ☐ Project office branch 11 ☐
3. What is your education level?
Diploma ☐ BSc ☐ MSc ☐ PhD ☐
4. Respondent designation/title in the company
Project Coordinator ☐ Resident Engineer ☐ Forman ☐ Office Engineer ☐
Site Supervisor Engineer ☐ Others ☐
5. Your work experience in the construction project
[0-5) years ☐ [5-10) years ☐ [10-15) years ☐ >=15 years ☐

PART 2. Causes of Poor communication in Construction of Condominium

Please show causes of poor communication below by using a tick (☐) symbol. The five-point scale ranges from 1 to 5.

1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= Strongly Agree

S/No	Causes of Poor Communication	1	2	3	4	5
1	Lack of effective communication between construction parties					
2	Lack of effective communication system and platform					
3	Poor communication skills					
4	Language barrier					
5	Improper Communication channels					
6	Possessing different level of education among construction teams.					
7	Lack of support for advanced communication technologies					
8	Diversity of culture and ethics among construction team					
9	Personal barrier					
10	Technology malfunction					
11	Possessing differed skills levels among construction teams					
12	Complexity of the construction industry					
13	Lack of communication plan					
14	lack of appropriate communications medium					
15	Inaccessibility of information					
16	Slow information flow between parties					

17	frequent changes of project contract					
18	improper communication time management					
19	Poor planning and coordination					
20	poor communication management					
21	lack of clear objectives					
22	lack of mutual respect and trust among construction teams					
23	Weak organizational structure					
24	Inaccurate delivery of project information					
25	unavailability of information in the time of need					
26	Lack of communication procedure and training					
27	contractual barrier					
28	lack of adequate representation for project stakeholders					
29	Lack of understanding among parties					
30	Noise interruption					
31	Poor detailed drawing					
32	Incorrect instructions or technical information					
33	Gender differences					

Part 3: Effects of Poor communication in Construction of Condominium

Please indicate the effects of poor communication below by ticking (✓). The five-point scale ranges from 1 to 5.

1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= Strongly Agree

Sr.No	Effects of Poor communication	1	2	3	4	5
1	Time overrun					
2	Conflict among construction parties					
3	Cost overrun					
4	Rework and redesign occurrence					
5	High accident rate					
6	Failure of the project					
7	Demotivated workforces					
8	Poor team work					
9	Late response to disaster					
10	Low productivity					
11	Misunderstanding					
12	Misinterpretation					

13	Design errors						
14	Low Level of satisfaction among construction parties						
15	Frequent remedies in design and planning schedule						
16	Waste generation						
17	Unclear channels						
18	Poor risk management						
19	Poor project documentation						
20	Poor planning						
21	Affects design process						

Part 4: Interview for selected Project Stakeholders on measures to be taken to overcome the cause and effect of poor communication

1. What do you think measures to taken to minimize the cause and effect of poor communication in Addis Ababa Housing Development Corporation?
2. What is the responsibility of each stakeholders to minimize the effect of poor communication?
3. When the project started?
4. How long is the implementation (construction phase) of the project?
5. Does the scale of project affect the organization structure (design team structuring)? If yes, in what sense?
6. To what extent are you involved in the communication process?
7. How are tasks assigned?
8. Does the nature of project affect the organization structure? How?
9. How is the team structure maintained?
10. How are tasks assigned?
11. What is the nature of collaboration maintained?
12. What are the major factors that enhanced communication in this project?
13. What are the major factors that inhibited communication in this project?

Annex: Normality Test Table

Descriptives					
	Which organization do you represent?			Statistic	Std. Error
Causes of Poor Communication	Client	Mean		115.64	4.309
		95% Confidence Interval for Mean	Lower Bound	106.80	
			Upper Bound	124.48	
		5% Trimmed Mean		114.76	
		Median		118.50	
		Variance		519.868	
		Std. Deviation		22.801	
		Minimum		81	
		Maximum		165	
		Range		84	
		Interquartile Range		37	
		Skewness		.407	.441
		Kurtosis		-.307	.858
	Consultant	Mean		110.21	2.523
		95% Confidence Interval for Mean	Lower Bound	105.16	
			Upper Bound	115.26	
		5% Trimmed Mean		109.72	
		Median		109.50	
		Variance		369.149	
		Std. Deviation		19.213	
		Minimum		75	
		Maximum		165	
		Range		90	
		Interquartile Range		30	
		Skewness		.352	.314
		Kurtosis		-.317	.618
	Contractor	Mean		115.95	3.279
		95% Confidence Interval for Mean	Lower Bound	109.31	
			Upper Bound	122.59	
		5% Trimmed Mean		116.07	
		Median		118.00	
		Variance		419.418	
		Std. Deviation		20.480	
	Minimum		75		

Effects of poor communication		Maximum		165	
		Range		90	
		Interquartile Range		30	
		Skewness		-.156	.378
		Kurtosis		-.206	.741
	Client	Mean		71.00	2.802
		95% Confidence Interval for Mean	Lower Bound	65.25	
			Upper Bound	76.75	
		5% Trimmed Mean		71.62	
		Median		74.00	
		Variance		219.778	
		Std. Deviation		14.825	
		Minimum		30	
		Maximum		102	
		Range		72	
		Interquartile Range		17	
		Skewness		-.816	.441
		Kurtosis		1.637	.858
	Consu ltant	Mean		71.98	1.992
		95% Confidence Interval for Mean	Lower Bound	67.99	
			Upper Bound	75.97	
		5% Trimmed Mean		73.08	
		Median		75.50	
		Variance		230.193	
		Std. Deviation		15.172	
		Minimum		30	
		Maximum		102	
		Range		72	
		Interquartile Range		17	
		Skewness		-1.034	.914
		Kurtosis		1.034	.818
	Contra ctor	Mean		77.82	1.689
		95% Confidence Interval for Mean	Lower Bound	74.40	
			Upper Bound	81.24	
		5% Trimmed Mean		77.61	
		Median		78.00	
		Variance		111.204	
		Std. Deviation		10.545	
		Minimum		54	

		Maximum	102	
		Range	48	
		Interquartile Range	13	
		Skewness	.172	.378
		Kurtosis	.178	.741