Assessing the Effects of communication in maintaining quality and timely delivery of Pharmaceuticals Fund and Supply Agency waste disposal land fill project in selected towns of Oromia regional state

A Research Thesis Submitted to the School of Graduate Studies of Jimma University in Partial Fulfillment of the Requirements for the Award of Master's Degree in Project management and Finance (MSc.)

BY:

SULTAN KEDIR

Under the Guidance of

Main Advisor: Arega Seyoum (PhD) and

Co-Advisor: Mr Abel Worku

JIMMA UNIVERSITY
COLLEGE OF BUSINESS & ECONOMICS
MSC.PROJECT IN ACCOUNTING AND FINANCE

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CERTIFICATE

This is to certify that the thesis entitles "*Assessing the Effects of communication in maintaining quality and timely delivery of PFSA waste disposal land fill project in selected towns of Oromia regional state*." Submitted to Jimma University for the award or the Degree of Masters of Project Management and Finance (MPMF) and is a record of genuine research work carried out by Sultan Kedir under our guidance and supervision.

Therefore, we hereby declare that no part of this thesis has been submitted to any other university or institution for the award of any degree or diploma.

Main Adviser's name	Date	Signature
Dr Arega Seyoum	_____	_____

Co- Adviser's name	Date	Signature
Mr Abel worku	_____	_____

DECLARATION

I hereby declare that this thesis entitled "*Assessing the Effects of communication in maintaining quality and timely delivery of PFSA waste disposal land fill project in selected towns of Oromia regional state*.", has been carried out by me under the guidance and supervision of Dr Arega Seyoum and Mr Abel Worku

The thesis is original and not been submitted for the award of any degree or diploma to any university or institutions.

Researcher's name	Date	Signature
Sultan kedir	_____	_____

Abstract

This research assess the effect of communication on maintaining project success of Pharmaceutical Fund and Supply Agency waste disposal land fill project in selected Oromia reginal state that is Jimma, Adama and Nekemte town. To achieve the aim a stratified sampling technique method was used to present the existing sub group The sampling frame comprise the employees of stockholder from the project client firm (PFSA) , contracting firms, consulting firm and other participants worker from each site. On which 165 respondents have been considered and 117 was returned. The data were entered and analyzed using Social Science (SPSS) software version 20 and then were analyzed using descriptive and inferential statistical tools.

The result of the analysis showed that there is positive and significant relationship between Communication process and project success, communication goals and project success. This showed that as the correlation between communication process and project success higher than that of between communication goals and project success, there is also positive and significant relationship between Communication planning and project success, communication system and project success. And the study concludes that project success has been controlled with effective communication implementation between the project owners, stakeholders, contractors and the consultants. Therefore, Pharmaceutical Fund and Supply Agency should have to align an effective communication strategy to finalize its landfill waste disposal projects

Key words: - ***project, communication, communication process, communication Goal, communication planning, communication system, project success, timely delivery, project quality.***

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CHAPTER ONE

1. INTRODUCTION

This chapter deals with different sub topics. First the researcher discusses background construction project management and communication in project management. Statement of the problem was discussed in this chapter. The general and specific objective of the study was put on a clear and understandable way. Significance of the study, scope of the study and structure of the thesis was put step by step.

1.1 Research Background

Kelly J, (2014) emphasize that for efficient and effective management of projects where there are interdependencies and where many team members and project managers are working together, information symmetry is crucial. In such scenarios, communication is important for managing interdependencies to ensure successful implementation of construction programs. According to Mead J, (2013), most projects are seldom conducted in isolated contexts, without interdependencies. Project managers or relevant team members need to plan, link and manage all project interdependencies across different phases of construction, teams, relevant departments and available resources to ensure success (Mead J, 2013). In order to achieve this, Ramesh M, (2010) notes that communication is very crucial. It is worth noting that many researchers have published on the significance of communication to the management of project interdependencies, especially with the construction industry where many construction programs involving different teams and project managers are involved. The presence or absence of proper communication can define the success of a construction project.

Similar to the case with other developing countries, the Ethiopian construction industry shares many of the problems and challenges the industry is facing in other developing countries, perhaps with greater severity. Given the critical role the construction industry plays in Ethiopia and other developing countries, and the poor level of performance of the industry in those countries, improving the performance of the industry ought to be apriority action. As contractors are one of the key players in the industry and the makers of the final product, any development and

improvement initiatives in the industry has to consider ways of improving the capacity and capability of the contractors.

Previous research works by Adams (1997) and Long, etal.(2004) and other have indicated poor managerial capability of contractors to be one of the critical problems of the construction industry in developing countries. Thus, improving the managerial capability of contractors need be one of the priority considerations for im2provement of capability of contractors in developing countries. Researches by (Dlungwana, 2004), and others have also strongly emphasized the importance of improving the management skills of contractors. As most of the works of contractors is managed as a project, improving the contractors' project management capability can significantly contribute to the overall improvement of contractors' capability to deliver successful projects.

Among the management skills which contactors must develop to get the project objective is project communication skill. Project Communications Management includes the processes required to ensure timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information. It provides the critical links among people, ideas, and information that are necessary for success. Everyone involved in the project must be prepared to send and receive communications in the project "language" and must understand how the communications they are involved in as individuals affect the project as a whole. Research shows that professionals must be able to communicate effectively to succeed in their positions.

1.2. Statements of the problem

As Jekale (2004) has summarized unreliable communication, poor support infrastructures, low level of technology, low capacity of implementing institutions, scarcity of skilled professionals and financial resources, poor and protracted documentation, high turnover of leadership and workmen, considerable political instability, low level or absence of accountability and transparency, and long and tedious formal decision making procedure are typical condition in developing countries. To ensure the success of a project much information including expectations, goals, needs, resources, status reports, budgets and purchase requests needs to be communicated on a regular basis to all major stakeholders. Project communication can often be more difficult due to challenges unique to project management. Many projects are short-term, and therefore project communication is temporary. It is truly critical for project managers to get the message

across right the first time to avoid failures in the communication process. Project managers communicate by using different mediums to convey a message. The important factors involve communicating how the project will be managed, including how information will flow into and out of the project (ksenijaculo, 2010).

Furthermore, according to (Voropajev, 1998), project management functions (processes) that are sensitive to changes such as management of risk, procurement, contracts, scope, configuration, communications, and information are more important in managing projects in developing countries than in developed countries. From the project management function in this research, the investigator will try to see the aspects of project communication management.

Project timetables often fail to take account of the time needed for certain administrative procedures that need to be completed before the project can proceed. Two typical examples are obtaining planning permission for construction work and carrying out public procurement procedures for contracting external services. Both procedures are unavoidable and need to be included in project planning. Some factors cannot be planned for. Bad weather is a typical example in infrastructure projects. The only thing to do is to include this type of problem in project risk assessments and try to develop project activities so all project progress does not depend on the completion of the activities that may be affected. Another common externality, in particular when it comes to implementation work, is if the project's work depends on the work of others. Here a typical example is when the project's material investment represents part of a large national scheme: If the large project is delayed it usually obstructs the project plan as well. In this case, leaving some leeway for unforeseen delays or regular updates on the progress of the other project might be necessary (ERDF, 2013).

Interfaces may be constraint that limits project success. In this context interfaces are boundaries between different groups within an extended project team. Many project communication problems have in fact, occurred at interfaces. In this post the researcher would attempted explore the notion of an interface as an obstacle to project communication.

The most common interfaces are: between organizations (e.g. customer-supplier), between depart ments within an organization (e.g. marketing-production), between teams within a department (e.g.testers-developers) and within geographically distributed or virtual teams. The main

communication obstacles (across interfaces listed above) can be boiled down to three broad ones (Awatik, 2007) .

Therefore, since project quality and success are a vital asset to an organization and key reason for the business success through their contribution on organizational productivity, inventiveness, competitiveness and efficiency, the researcher was rely on empirical facts which revealed a lack of communication, handling of interfaces, delay of project work at PFSA land fill disposal.

The elapsed time which result in delay of construction completion in some projects are the main problems that result in failures to meet the region's development demands in general and the road infrastructure in particular. Unfulfilled demand can lead to dissatisfaction of the end users. While the existence of frequent delays and cost overruns in construction projects in the region was recognized, no systematic research has been undertaken to document and systematically analyze the problem. Hence, this study was initiated to generate scientific information that may help policy makers to make informed decisions towards improving the performance of the construction project sector in the region.

Many studies conducted on the factors affecting the construction project quality, particularly in road construction. This study was assessed to identify the effect of communication on the project success. As to my knowledge there are no studies being conducted on the Assessing the effect of communication on the project success: in the case of Jimma town.

In light of the above facts and research gaps, the purpose of this study is to examine the effect of "communication in maintaining quality and timely delivery of PFSA waste disposal land fill project constructing in Jimma, Nekemte and Adama towns. To meet the purpose of the study, therefore, the researcher has raised the following basic research questions.

- How does the communication process have an effect on the project success?
- How do the communication goals have an effect on the project success?
- How does the communication planning have an effect on the project success?
- How does the communication system have an effect on the project success?
- What likes the areas of communication parts that project managers give attention in project communication management of waste disposal land fill under construction industry of PFSA?

1.3. Research Objectives

1.3.1 General Objective

The main objective of the study was to assess the effect of communication in project success of PFSA waste disposal land fill construction projects in Jimma, Nekemte and Adama towns.

1.3.2 Specific Objectives

In order to sufficiently address the problem and achieve the broad research objectives, the research assumes the following specific objectives.

- ⊙ To identify influence of project communication project success in case of PFSA waste disposal landfill construction projects.
- ⊙ To assess the effect of communication process on the project success.
- ⊙ To evaluate the effect of communication goals on the success of the project.
- ⊙ To examine the effect of communication planning on the success of the project.
- ⊙ To assess the effect of communication system on the project success.
- ⊙ To show the areas of communication parts that project managers give attention in project communication management in the contraction industry, in case of PFSA waste disposal land fill construction projects.

1.4Significance of the Study

Projects, by their nature, are unique and many of the more interesting ones are complex. They frequently take place over an extended period of time and demand the engagement of a wide range of resources, including people, finance, facilities, materials and intellectual property. In most circumstances, projects have defined objectives or an end-state that provides those involved in the project with a clear vision and specification of their goal. Project communication management skill guides Project Managers on how to communicate information with internal actors of the project and also with external stakeholders which is highly interested from the project. Communication management helps the project manager how to handle conflict raised at different group and smooth the information as well as material flow that leads to successful undertaking and completion of any construction project. The finding of the research will also help for any researchers as a baseline for a more extensive and inclusive research endeavor.

A study on the effect of communication on project success and timely delivery of project would lead to a better understanding of the root causes of inefficiency in construction projects. Once the most significant the role of communications are identified, the stakeholders, policy makers of the projects shall then be able to align effective communication channel their energies and deploy resources to remove the specific limiting factors and thereby reduce delays to the projects.

Therefore, the outcome of this study would provide an insight for the government in relation to the communication strategies towards the accomplishment a huge construction projects which lacks timely delivery year to year. Thus, this research could able the ways how communication would affect the project success.

1.5Scope of the Study

Pharmaceutical fund and supply agency taking big and huge waste disposal public land fill project which were eight in number throughout the country, but in this study the student researcher have purposively selected only three of the projects which were implemented in Oromia Regional state specifically, those implemented in Adama, Jimma and Nekemte towns. Moreover, in an attempt to assess the effect of communication on project success, the study involved communication process, communication goals, communication planning, and communication systems as independent factors; and project success has been used as explained variable. Furthermore, the study attempted to identify the areas of communication parts that project managers give attention in project communication management and communication management problems that hamper the successful completion of construction projects.

1.6Limitations of the Study

Like all research, this study has limitations. The sources of difficulties encountered in this study were described as follows:

A problem that was encounter the study could be operator's reluctance to cooperate due to suspicion that disclosing information may lead to negative effect on their business. It is very important to note that these limitations did not have any significant interference with the outcome of the study. This study focuses only on identifying the effect of communication on the project success. The study aims on the national wise organization level but to utilize the available time and resource constraints, only concentrate construction project of the organization in conducted in Oromia regional state. There was a lack of some secondary materials.

1.7 Organization of the Research

The study was organized in to five chapters. Chapter-one presented the introductory part of the study that comprises, among others, the background of the study, statement of the problem along with the objectives and hypothesis of the proposed study. Chapter-two would deal with the review of the existent literature related to the topic of inquiry; whereas chapter-three would gave detail account of the design and methodological aspects that will be employed. The analysis of the study data, presentation of the results and corresponding discussions were comprised under chapter-four. Chapter-five will be culminates the thesis by providing brief conclusions and relevant suggestions on the basis of the findings of the study.

CHAPTER TWO

2 LITERATURE REVIEW

This chapter presents Literature review and it has stated different scholars and researcher findings has been stated and the following sub topics would be included on it: definition of communication, communication in construction, project definition, importance of communication in project, stockholder theory in project management, empirical review and conceptual frame work

2.1Defining Communication

Many researchers have defined communication differently, however; the core meaning remains the same. Communication is the process in which information is encoded and imparted by a sender to a receiver via a channel/Medium (Perumal, 2001). The message is then decoded by the receiver and feedback given to the sender. According to Axley (1984) communication can be defined as a metaphorical 'pipeline' along which information is transferred from one person to another. It is the essential component of any system of human interaction as deprived of it, no significant or logical activity can take place (Thomason, 1988). Nevertheless, defining the term communication is difficult as it is such a multifaceted and vague concept. Communication can have a diversity of meanings, contexts, forms and impacts and so will mean diverse things to different people in various situations (Dainty et al, 2006). This is undoubtedly the case within the construction industry, where a plethora of dissimilar communication occurs concurrently. Communication requires that all parties must have an area of communication commonality (Perumal, 2001). According to the author, these communication commonalities include auditory means such as speaking, singing and at times tone voice as well as nonverbal and physical means such as body language, sign language, eye contact and even written communication. It is a process by which we assign and convey meaning in an attempt to create shared understanding.

This process necessitates a wide repertoire of skills in intrapersonal and interpersonal processing, listening, observing, speaking, questioning, analyzing and evaluating. Collaboration and cooperation occur through communication. They are three categories of communications in business (Perumal, 2001): written, verbal and non-verbal communication. Written communication comprises letters, emails, memos, reports and formal documents. Verbal communication

comprises chat, presentation and voicemails. Non-verbal communication uses signals to communicate and study body language (Thomson, 2002).

The elements in the communication process determine the quality of communication. A problem in any one of these elements can reduce communication effectiveness (Keyton, 2010). For example, information must be encoded into a message that can be understood as the sender intended. Selection of the particular medium for transmitting the message can be critical, because there are many choices.

The study of communication is important, because every administrative function and activity involves some form of direct or indirect communication. Whether planning and organizing or leading and monitoring, school administrators communicate with and through other people. This implies that every person's communication skills affect both personal and organizational effectiveness (Burn, 2010;Summers, 2010). It seems reasonable to conclude that one of the most inhibiting forces to organizational effectiveness is a lack of effective communication (Lutgen-Sandvik, 2010). Moreover, good communication skills are very important to ones success as a school administrator. A recent study indicated that recruiters rated communication skills as *the* most important characteristic of an ideal job candidate (Yate, 2009) .

Furthermore, this suggests that communication has to be a two-way process, as unless the transmitter of the information receives feedback that the message has been received, and then they will be unsure as to whether communication has taken place or if it has taken place successfully. Put simply, Therefore, communication involves the giving out of messages from one person and the receiving (and successful understanding) of messages by another in response (Torrington and Hall, 1998). The ways in which these messages can be conveyed are multifarious and may include speech, body language, writing, graphical or electronic media or any combination of these forms. As such, communication can be considered as a professional practice where proper rules and tools can be applied to improve the usefulness of the information communicated, as much as it can be a social process of interaction between people.

2.2 Communication in Construction

The literature on communication in construction has emerged in the early 1940s, mostly based on the situation in the United Kingdom (Emmitt, 2003) .Many problems regarding communication have been reported, with an emphasis on intra-supplier communication within the construction industry; demand-supply communication during the design phase; and communication between single demand and supply side parties, during the entire construction process. Here, the demand side comprises principals, users and investors and the supply side encompasses architects, contractors, subcontractors and advisors. The importance of improving communication in construction and the main factors influencing communication are discussed. The efficiency of the construction process relies upon the quality of communication. According to (Hoezen et al, 2006), the following explain the reasons why improvements in communication are important:

i. An improvement in communication within the building team, in project teams and between the project manager and contractors could minimize failure (Thomson, 2002); Franks, 1998; and Somogyi, 1999).
ii. More open communication at all levels could lead to innovations (Lenard and Eckersley, 1997) and better technical solutions (Atkin et al., 2003).
iii. Improving communication in early stages of projects would positively influence the quality as viewed by all stakeholders involved (Emmit and Gorse, 2003; and Brown, 2001).
iv. Discussing the theme of communication during staff meeting would lead to better decision making, for example, less hastiness in moving to answers and better strategies of looking at the prerequisites first (Barrett, 1995; and Salisbury, 1998).

Various factors influence communication in construction; an overview can be derived from literature:

i. The first category of factors is connected to the organization of the construction process (Hoezen, 2006). The Key aspects are the dissimilarity between formal and informal communication paths during the design stage (Mackinder and Marvin, 1982) as well as during the development stage (Pietroforte, 1992; and Higgin and Jessop, 1965); and the separation of design and production (Hill 1995).

ii. The second category involves the stakeholders themselves. Conflicting interests could result in hidden agenda, usually leading to limited communication (DETR, 1998; CIB, 1997; and Brown, 2001), and all stakeholders' frames of reference are considered of great influence on communication as well (Moore and Dainty, 2001; and O'Reilly, 1996).

2.3Definition of project

Project is a temporary Endeavour with a beginning and an end, which creates unique product, service or result. It is progressively elaborated, which means that distinguishing characteristics of each unique project will be progressively detailed as the project is better understood (PMBOK 2008: 5). Project Communication is the exchange of project-specific information with the emphasis on creating understanding between the sender and the receiver (Project Communication Handbook 2007:2). In this definition an important trait of an effective communication has been emphasized, which is the involvement of both the sender and the receiver. "Project Communications Management includes the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval, and ultimate disposition of project information" (PMBOK 2008: 243).

What does the effective project communication mean? Effective communication creates a bridge between project stakeholders, connects various cultural and organizational backgrounds, different levels of expertise and various perspectives and interests in the project realization and outcomes (PMBOK 2008: 223). What are practical examples of project communications? Communication occurs in many directions: internally and externally within the core project team and vertically and horizontally within the organization. In addition, communication can be formal or informal, written or verbal. A decision, regarding which the communication type should be used, should reflect the situational context of the project as well as the goal to be achieved.

Project Communications Management includes the processes required to ensure timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information. It provides the critical links among people, ideas, and information that are necessary for success. Everyone involved in the project must be prepared to send and receive

communications in the project "language" and must understand how the communications they are involved in as individuals affect the project as a whole.

2.4Why project communication is so important?

There are several reasons to discuss project communication as one of the most important areas in project management. The research on the role of communication in management reaches back to the last decade of the twentieth century to the work of H. Mintzberg (1989). In the studies conducted among American executives, H. Mintzberg found out that managers spent on average 78 percent of their working time on communication. The author discusses interpersonal and informational managerial roles, where communication competencies are crucial for success. In the literature on project management, several examples emphasizing the important role of communications can be found: "Proper communication is vital to the success of a project" (H. Kerzner 2009: 233), "Communication is a cornerstone of effective project management" (C.L. Pritchard 2004: 1), "Project management is communication" (A. Lester 2007: 289) and "Communication is the very life blood of project management" (ibid.). This confirms the general attitude and the high position of this issue on the management research agenda.

Several studies have already confirmed that communication in project management contributes to project success. In the recent study of Project Management Institute 2013 "The Essential Role of Communications" researchers concluded that more than the half of the money at risk in projects is due to poor or substandard communication. Ineffective communication was cited as the primary cause for one-third of the project failures reported as having a negative impact on the success of over the half of the respondents' projects. The research also finds that effective communication leads to more successful projects and hence it allows organizations to become high performers (PMI 2013). Another example is a research case study of successful complex IT projects conducted by The British Computer Society in 2006. The examination of the key factors contributing to project success showed that the essential contributors to project success in complex IT project management are communication and risk management.

In addition, there is a strong interconnection of communications management with other project management areas such as: stakeholder management, human resources management, project integration management and change management. All the other areas use aspects of

communications management and can benefit from well implemented project communication plan as well as from project manager's communication skills.

Below there is a short description of project management areas, which strongly benefit from effective communications management: Stakeholder management – Identification, assessment and involvement of key project stakeholders in the project through regular and customized communication is very important to assure common understanding of the main project goals, products and the key task to be completed. Proper communication with the stakeholders prevents escalation of change requests, which may emerge during the project and allows project manager to obtain acceptance of intermediate and final project deliverables. A communication package prepared at the end of each project phase makes the decision process on project continuation much smoother and transparent.

Change management – For the project deliverables to be accepted in the organization there is a need for effective change management. Information system implementation in an organization is a good example of a project which should be accompanied by active and planned change management efforts. A final product of such a project – developed and customized IT system – does not bring about immediate results. The organization needs to accept and learn how to use the new solution. The main pillar of an effective change management is communication conducted at the right point of time to the right group of stakeholders – in this case IT system users.

Human resources management – Effective communication is the cornerstone of managing human resources on a project. In order to achieve the project goals, the project manager should communicate with the project team on a regular basis. Setting goals which are realistic, achievable and time-bound as well as delegating work to appropriate team members requires continuous communication. Providing feedback is an important factor of managing and motivating the team. Managing conflicts and supporting the team during the project includes a large component of effective communication.

Project integration management – According to the Project Management Body of Knowledge [PMBOK] this is a domain of the project manager. The project manager needs to have a holistic view on all the project areas and the ability to assess how changes in one project aspect will influence other project aspects. For example: How increasing the scope of the project will

influence project costs, time and team satisfaction? In that sense, the project manager integrates all the areas of a given project and can proactively expect and manage project risk.

Project monitoring and control – Project monitoring and control is a process underlying all the phases of a project from the planning, trough execution until project closure. Communication plays here the role in respect to progress reporting, this may embrace: project time, costs, scope reporting. In the communication plan, the type and frequency of project reporting processes need to be set up. Usually there is a weekly project status meeting and bimonthly or monthly Steering Committee meeting; however the reporting schedule is very much dependent on the length of the project.

To sum up, effective communication skills of the project manager as well as the preparation of an appropriate communication plan and strategy are important factors of project success. Communication lies at the core of project integration, stakeholder management, team management, change management as well as monitoring and controlling of project's progress.

2.5 Stakeholder theory in project management

Stakeholder defined as an individual, group, or organization who may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project (PMBOK Guide, 2004).

The concept of stakeholder management was originally introduced into organizational studies by Freeman (1984) who defined a stakeholder as any person or group which can influence or be influenced by an organization, or who claim or have legal or moral rights and interests in its activities. Cleland (1986) is widely credited with introducing the notion of stakeholder management into the field of project management by emphasizing the importance of the identification, classification, and analysis and consultation process. Subsequently, this notion became embodied in the Project Management Body of Knowledge (PMBOK) where stakeholders are defined as "the people and organizations who actively participate in a project or whose interests may be affected as a consequence of the execution of the project or of the completion of the project"(PMI, 2013). In simple terms, stakeholder management theory conceives a project as a complex, dynamic and interdependent network of multidimensional relationships with a wide

variety of stakeholders, the quality of which, can affect or be affected by its activities and vice versa. Achievement of organizational objectives depends on how well organizations manage and nurture these relationships strategically and importantly, how they are perceived to manage them by the stakeholders (Winch, 2004, Mansell, 2013, Littau, 2015, Baumfield, 2016: Touzi et al., 2016). Beyond commercial goals directed at shareholders, organizations also have a wider responsibility to society, embodied in regulations such as the UK's Social Value Act and government licenses to operate.

In order to understand how to manage different types of stakeholders effectively, the stakeholder management literature has produced many classification typologies, although as Loose more and Phua (2011: 65) suggest, stakeholders and their relationships with a project are in a dynamic state of flux which "often makes it difficult to untangle or decipher stakeholders into neat categories". For example, Mitchell et al. (1997) propose a typology based on a stakeholder's power to influence an organization, the legitimacy of a stakeholder's relationship with the organization, and the urgency of the stakeholder's claim. According to Mitchell et al. (1997) all three attributes must be considered if managers are to serve the legal and moral interests of stakeholders. Van Oosterhout et al. (2008) approach to classifying stakeholder salience is based on whether a project manager can maintain mutually beneficial relationships with a stakeholder. When this is not possible then they should be excluded from the consultation process. More recently, Littau (2015) adopted Winch's (2004) categorization of the stakeholders along the three dimensions of power, interest and attitude, organizing them into six categories with different project stakeholder management strategies:

(1) Acquaintances (keep them informed with a transmit only communication style);
(2) Sleeping Giants (sleeping till other actors, normally negative ones, — awake them for having their claims considered. Managers should act proactively to engage them for supporting the project);
(3) Irritants (interested in social and environmental aspects, clear and transparent communication is essential);
(4) Friends (project managers should use them as confidants);
(5) Saboteurs (power derives from other stakeholders like Media or Governments. Project manager may change their attitude providing voice to their claims and using clear and

transparent communication. If this is not deemed possible, managers should gain other players' support to reduce their power); and

(6) Saviors (these are key players the project manager should pay attention to and keep on side).

2.6 Empirical Study Review

Ethiopia has embarked on a long-term development strategy which aims at achieving sustainable human development with all pre-requisites for a middle income country by the year 2025 E.C (GTP, 2010 and PASDEP, 2000).This envisages creation of a strong, diversified, resilient and competitive economy that can effectively cope with the challenges of development and that can easily adapt to the changing market and technological conditions in the regional and global economy. The priorities identified as the essential catalyst for the attainment of the Vision 2025 objective include development of infrastructure as an important ingredient towards attainment of faster economic growth.

A few selected related articles were presented in this section on causes and effects of delay on construction works. Yates (2003) studied construction delays; the study developed a decision support system for construction delay analysis called (DAS). The main categories of delays in DAS according to the study, includes engineering, equipment, external delays, labor, management, material, owner, subcontractors, and weather. Similarly, Mansfield et al., (1994) studied the causes of delay and cost overrun in construction projects in Nigeria. The results showed that the most important factors are financing and payment for completed works, poor contract management, changes in site conditions, shortage of material, and improper planning.

The construction industry in Ethiopia is the major sector where public and private sectors are investing huge amount of fund. The percentage share of the construction sector to GDP at constant basic price has increased from 4.3 % in 1999/2000 to 5.8% by2011/12 (National Bank of Ethiopia, 2011/12).Expansion of economic infrastructure (railways, roads, telecom, power, irrigation) being critical towards achieving the country’s Growth and Transformation Plan (GTP). Significant amount of the country’s budget is allocated to economic development through financing infrastructures for development of educational and power projects, construction of

railways and road projects which increased road network density, construction of health projects, access for water and Sanitation infrastructure.

Controlling project time and costs requires a heads-up kind of attitude. The ability to anticipate and ward off potential project disruptions is a basic characteristic of the successful construction manager. However, even when the project team applies all of the tools and techniques available to them, most projects will still be derailed somewhere along the way. Practically every job will experience time delays, cost overruns, or quality failures during the course of construction (Jackson, 2002).

As hard as we try to make a perfect plan, it is virtually impossible to predict and anticipate every possible occurrence that could cause a hiccup in our scheme. So hiccups are inevitable. Therefore, it is a good idea to know in advance where these glitches might come from. There are a number of factors that can influence our job performance. Some of them are beyond our control, and some of them are a result of poor management or lack of foresight. The factors listed below and explain how they can influence project performance(Jackson, 2002).

Late deliveries are probably one of the most frustrating causes of schedule delays and cost growth in construction. Once again, the contractor has very little influence or control over the manufacturing or fabrication processes involved in the making of many of the products or equipment used on the project. However, the stakes can be very high for the project if items arrive late. That’s why on projects with critical lead-time items, it is best to assign someone to do nothing but expedite deliveries and stay on top of the project buyout schedule (Ibid).

Completion of the whole or part of designs whatever type of contract modalities followed is mandatory for the execution of the works on the basis of some conceptual designs is a common practice that worked specially for fast track kind of projects. In Ethiopian construction industry context the misconception of fast track construction practices have been a cause of rework, uneconomical selection of alternatives as well as decisions complicate the project management and control of the projects. Responses from 45 respondents were in agreement 100% yes, that most of the constructional related problems seen at project level were caused by the incompleteness of design and lack of knowledge by the owner what he exactly needs not

communicated in the design preparation stage. As the extension of this root cause of design problems were asked on level of causes for claim and forced design change (Hailemeskel, 2013).

The current Ethiopian construction industry well explained by its wastage of resources like manpower usage, supply and usage of material delay. This has an implication directly on project cost. The main cause for this was efficiency control in terms of manpower, machinery material usage not established at project sites, thus, resulting wide amount of wastage. Similarly, Effective management control of projects is an outcome of technological capacity and research development. The study on project control management in construction industry in Ethiopia the result had shown the perception of the current industry on the basis of efficiency and effectiveness. According to the 45 respondents 77.8% showed their agreement on the inefficiency of Ethiopian construction industry besides 48 % showed their agreement ineffectiveness of the construction industry towards expected delivery (Ibid).

Accordingly, the factors for the success of construction projects in Ethiopia are top ranked as follows: competent project management has high score (84.5%) ,coordinated and motivated team work second highest (84.4%) ,competent design (82.3%), ranked third, and good project definition and clear objectives and project brief agreed with clients (82.2%) ranked fourth, quality control procedure, time, financial control s (77.8%) ranked as fifth major cause ,communication (77.7%) ranked six and owner relationship (73.3%) as ranked seventh as the least major cause. Therefore, the researcher concludes that for the success of the project as the parameter reflected highest cause for success, through the Ethiopian construction industry should embrace and work out a clear objective, project definition, time control and feedback system, competent project management, finance control, quality control plan, motivation of teams, competent design, good relationship, effective communication, and documentation (Jackson,2002).

2.7 Conceptual Framework

Based on the overall review of related literatures the following conceptual frame work in which this specific study governed is developed by the researcher. As explained in the literature part in different researches, Communication has significant effect and influence on keeping project quality and timely delivery of project. Therefore in this study communication will be taken as

independent variable while project quality and timely delivery of project will be taken as dependent variable.

Communication Goals

Communication goals are defined according to the interest of shareholders. During the execution of the project, the project managers' ability to communicate is crucial to the success of the project. One of the important tasks for the project managers is to communicate with the stakeholders (Tonnquist, 2008,). Successful communication may not be always successful persuasion (Tonnquist, 2008) it is very important the basics of communication in order to exchange the right information. In the current dynamic environment, communication is still constant desirable for managing projects (Henderson, 2008). The research study in this area by (Locovou et al., 2009) demonstrate that quality communication comes from high project officials which can be credible, complete, accurate and timely information for the input of the project.

Communication System

Internal and external communication is very important for the success of projects. External communication is related with managing the flow of information or managing communication to satisfy the demands of external stakeholders (Johannessen, 2012). When the complexity of projects is limited, the interpretation of communication is serviceable, internal and external communication increases when the rate of exchange is great. According to Johansson, 2012, discussed the main reason why project fails; he highlighted that inadequate leadership (coordination, planning, and technical solutions), oppositions from important, insufficient resource and changing objectives. The communication on projects stated that, project complexity and rate changes when the social needs have related with project will change. The importance of project communication will escalate, as the project size increases and more complex (Johannessen, 2012). Larger projects need more coordination mechanisms to cope up with systematic dependence. The fundamental communication process is developing mutual understanding, exchange information, coordination activities, influencing and socialization. Transforming the communication process in to communication capabilities will be very important for the success of the projects. Communication is considered as " the nervous system of any organized groups that holds organization as a glue" communication capabilities can be defined as the system of communication that combines economic communication, technical communication,

social communication, cultural communication (Johannessen, 2012). Communication capabilities are unique competence that distinguishes the project or organization from other organization. In the study made by (Johannessen, 2012) mentioned that, the greater the new technology reduces the significance of communication capabilities in a project success.

Communication Plan

Establishing communication infrastructure is very important in any projects. Effective communication plan preset specific type of information (Klein, 1996). The aim of communication plan is to create the right information in the right time and place in an appropriate way for the audience (Hartley, 1997) highlights the importance of planning for reducing risks and mistakes. The communication plans also shows the flow of information intended to perform by the project manager, the plan usually contains information that needs to be collected and information that needs to be distributed (Tonnquivist, 2008). The following table shows how the communication plan of projects should be applied in the project organization.

The Communication Process

Two common elements in every communication exchange are the sender and the receiver. The sender initiates the communication. The sender is a person who has a need or desire to convey an idea or concept to others. The receiver is the individual to whom the message is sent. The sender encodes the idea by selecting words, symbols, or gestures with which to compose a message. The message is the outcome of the encoding, which takes the form of verbal, nonverbal, or written language. The message is sent through a medium or channel, which is the carrier of the communication. The medium can be a face-to-face conversation, telephone call, e-mail, or written report. The receiver decodes the received message into meaningful information. Noise is anything that distorts the message. Different perceptions of the message, language barriers, interruptions, emotions, and attitudes are examples of noise. Finally, feedback occurs when the receiver responds to the sender's message and returns the message to the sender. Feedback allows the sender to determine whether the message has been received and understood.

The elements in the communication process determine the quality of communication. A problem in any one of these elements can reduce communication effectiveness (Keyton, 2011). Individuals are more likely to perceive information favorably when it conforms to their own beliefs, values, and needs (Keyton, 2010).

Independent Variables *Dependent Variable*

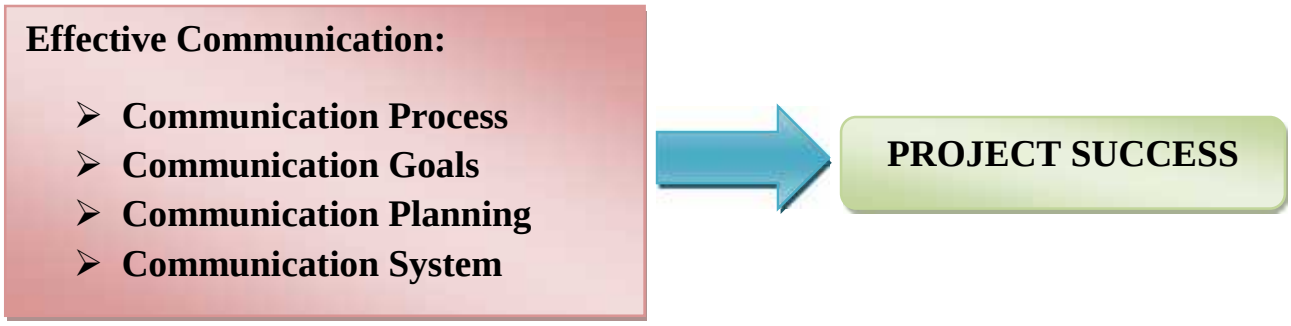

Figure 1: Conceptual framework of the study

Source: Adopted from (Source: Kraut et al., 1990)

CHAPTER THREE

3 RESEARCHDESIGNANDMETHODOLOGY

The third chapter explain about the research design and methodology when and where the research was made, the design was been used, research type, target population, sample design and procedure, methods of data collection and analysis, different model and test was been made and ethical consideration followed be illustrated.

3.1 Study Area and Period

The study was conducted in Oromia Regional State in (Jimma, Adama and Nekemte towns) which is located in the Southwest, in the Eastern and Western part of Ethiopia respectively. Jimma is found 352 km to the south west of the national capital, Addis Ababa, Capital City of Ethiopia. Whereas Nekemte is found to the Western part of the country which is 331 Km away from the capital, A.A. city.Adama is found in the eastern part of Ethiopia, under Oromia Regional state, which is about 110 Km away from the capital. The study was carried out in PFSA waste disposal landfill construction projects in Oromia regional state (Jimma, Adama, and Nekemte towns), from 10/3/2019-10/4/2019 period.

3.2 Research Design

Explanatory study a design based on quantitative method was used to analyze the data collected from respondents. This study was explanatory study design to explain, understand and predict the effect and relationship between variables that is communication (independent variable) and project quality and timely delivery of the project (dependent variables).

3.3 Research Type

This study was utilized cross-sectional survey; all relevant data were collected at a single point in time. The reason for using cross- sectional design is that it is a reasonable strategy to prefer cross-sectional survey to obtain pertinent information from cross-section of population at a single point of time (Kothari, 2004). For the purpose of this study a quantitative approach of doing research

was employed because, quantitative research answers questions through a controlled deductive process, allowing for the collection of numerical data, the prediction, the measurement of variables, and the use of statistical procedures to analyze and develop inferences from that data (Kothari,2004).

3.4Target Population

The target population of the research constitutes of project owners, management team of PFSA branches at Jimma, Adama and Nekemte towns since they are the project followers and also some selected informed staffs of the branches. Totally, about 60 staffs from the three branches (20 in Jimma hub, 20 to Nekemte hub, 20 in Adama hub were targeted as a part of PFSA staff. Additionally, 39 project team members of the agency at the three sites, 30 sub- contractors, 8 from project runners, donors, project owners were also included in the target population and 28 from the municipality, a total of 165 individuals have been considered as the target population of the study.

3.5 Sample Design and Procedures

In this study stratified sampling was used so that all existing sub groups in the population are represented. Stratified sampling technique was employed to create homogeneity among the study population. The sample size obtained will be by using the following formula by Yamane (1967):

$$n = \frac{N}{1 + N(e)^2}$$

Where n is the sample size, **N** is the target population and ***e*** is the level of precision. This study assumes a confidence level of 95% and hence precision of .05.

Applying the above formula therefore we get the following results:

$$n = \frac{165}{1 + 165\ (0.05)2} = 165/1.4125 = \underline{\underline{\boldsymbol{116.81}}}$$

The above calculation resulted in 116.81 respondents. Therefore 117 respondents were selected using stratified sampling after rounding up as shown in the table below:

From each hub the researcher selected respondents from the staffs, contractors, sub-contractors and municipality of the town of the hub since they were concerned and take a role on the project success. The researcher was calculating the percentage each hub represents among the total number of the hub representatives were use same percentage to calculate the number of respondents for that hub using regression analysis.

Table 3.1: Sample size

Hub	No of representatives of Hubs	Percentage **(%)**	Number Selected	Round up number Respondents
Jimma	65	71	46.15	46
Adama	58	71	41.18	41
Nakemite	42	71	29.82	30
Total	**165**	**71**	**117.15**	**117**

Source: HR documents of the cluster, 2011

3.6 Methods of Data Collection

Based on the objectives and research questions, a questionnaire was developed to obtain an extensive, as practicable, from these project professionals. A questionnaire was therefore prepared and self-administered to the various respondents. The questionnaire consisted of closed ended questions. For the purpose of the study, the questions were grouped under three categories. The first series of questions related to respondents' profile. This was intended to find out the background and experience of respondents. The second group of questions related to the communication in the project industry area.

A 5-point ranking system and a three-level scale of low, moderate, and high were utilize where the respondents were asked to indicate from the list of how communication is achieved currently on site, how important each is and how frequent those occurs.

3.7 Method of Data Analysis

Once data were collected, it was necessary to employ statistical techniques to analyze the information, as this study is quantitative in nature. The data were entered and analyzed using SPSS version 20.The data were analyzed using descriptive and inferential statistical tools. The descriptive statistics (frequency, mean scores, standard deviation, and standard mean) were calculated and presented in narrations and tabular forms. Inferential statistics was done through T-test and correlation to identify candidate variables for multivariate analysis and multiple linear regressions was used to identify the independent predictors and their effects on the dependent variables.

3.8 Validity and Reliability

3.8.1 Validity

In order to reduce the possibility of getting the wrong answer, attention was paid on the reliability and validity of the questionnaire. There are many different types of validity and different types of reliability. Hence, there is several ways in which they can be addressed (Cohen et al., 2005).

Validity is the degree to which a measure accurately represents what it is supposed to. It is concerned with how well the concept is defined by the measure(s). Therefore this study tried to addresses validity through the review of literature and the prepared instruments used in previous research and the questionnaire was inspected by experienced experts.

Validity refers to the extent to which the inferences made from a test (i.e., that the respondent knows the material of interest or not) is justified and accurate. Ultimately, validity is the psychometric property about which we are most concerned. The purpose of validity testing is to know how far the instruments measured correctly and accurately. Data analysis will never provide good results unless the data are of good quality. A measure is valid if it actually measures the concept we are attempting to measure. It is reliable if it consistently produces the same result. Aadne Aasland (2008). One of the tools that measure validity is correlation.

Correlation is a measure of how well two variables predict each other. Correlation can either take the form of the Pearson Product-Moment Correlation, which assumes interval data, or Spearman Rank-Order Correlation, which assumes only ordinal data. (Lars E., 1990). The Pearson's

correlation coefficient ranges from – 1to +1. The former indicates a perfect negative relationship while the later indicates perfect positive relationship.

In this work, Pearson's Product Moment Correlation Coefficient was utilized to test validity with the following decision making criteria:

- ♣ The item of a questionnaire is valid if r-statistic is higher than critical value at degree of freedom 95% (α =0.05) and otherwise rejected (i.e. if calculated value>critical value (from Pearson's table) at 95% degree of freedom or α of0.05), then accept it as "VALID" and if not, then it is invalid.
- ♣ Or if the Sig. (2-tailed) value < 0.05, then the item is valid and if Sig. > 0.05alpha, the item is invalid. (Note that the Sig. (2-tailed) value also known as the p-value, is in most valid circumstances take the "0.000" value).

3.8.2 Reliability

Cronbach's alpha is a tool for assessing reliability scale which normally ranges between 0 and 1.Internal consistency reliability is a measure of consistency between different items of the same construct. If a multiple-item construct measure is administered to respondents, the extent to which respondents rate those items in a similar manner is a reflection of internal consistency. Hence, a multiple–item measurement scale internal consistency method was used to the study. According to George and Mallery (2003) a Cronbach's alpha coefficient greater than 0.9 implies excellent, greater than 0.8 is good, greater than 0.7 is acceptable, greater than 0.6 is questionable, greater than 0.5 is poor, and less than 0.5 is unacceptable". Based on the principle in order to establish the degree of reliability, consistency, and accuracy of the instrument, a pilot study was conducted. Based on the method the consistency and reliability of the study have been measured dividing the question based on their dimension.

3.9 Model Specification

3.9.1 Multiple Regression Models

The effect of independent variables over dependent variable in the study area is explained using the following multiple regressions model or equation. It was used to predict the value of certain variable based on the other variable. This study was used cross-sectional data. The intended effect

on PFSA waste disposal project timely delivery and project quality (Project success) by communication; internal communication, external communication and also communication barriers and communication channels were considered using the following model:

$$Y = \alpha + \beta 1x1 + \beta 2x2 + \ldots \beta kxk + e \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Where;

x= is independent variable (communication effect factors)

Y= is dependent variable (Project success)

a = is constant value

β = is coefficient of independent variable to be estimated.

$$Y\ (PS) = \alpha + ß1CP + ß2CG + ß3\ CP + \ 4CS + e \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

Where;

PS= Project Success

CP= Communication Process

CG= Communication Goals

CP= Communication Planning

CS= Communication System

e = model error term

3.9.2 Regression Model Assumption Tests

The responses data was added together using variable addition tools of the SPSS to form new set of combined variables. These combined (aggregated) results gave the transformed data set from ordinal type to a scale type, which is suitable to apply multiple linear regressions. However, before the application of the regression model, the basic assumptions of Classical Linear Regression Model were tested through residuals (dependent variable) analysis in terms of the following factors:

(a) ***Normality Test***

The purpose of normality test is to know that all data of independent and dependent variables have normal distribution. For data to be normal, they must have the form of a bell curve, or

Gaussian distribution, with values dropping off in a particular fashion as they increase or decrease from the mean. In normality test, the Sig. (p) value is compared to priory alpha (α) level (level of significance for the statistic) – and a determination is made as to reject ($p < \alpha$) or retain ($p > \alpha$) the assumption. In this research, normality testing was done based on Shapiro-Wilks test statistic, in which:

- If the asymptotic significance (two tail) (i. e. p-value or the sig. column value in the output table) is *higher* than alpha ($\alpha = 0.05$), then all data have normal distribution and otherwise not.
- Or in an alternative test, a variable is reasonably close to normality if its skewness and kurtosis have values between –1.0 and +1.0.

(b) ***Multicar-linearity Test***

Multi co-linearity is a condition in which one or more independent variables are in a linear contribution with other independent variables (Suyono & Hariyanto, 2012). A useful approach is the examination of the variance inflation factors (VIFs) or the tolerances of the explanatory variables. The tolerance of an explanatory variable is defined as the proportion of variance of the variable in question not explained by a regression on the remaining explanatory variables with smaller values indicating stronger relationships. The VIF of an explanatory variable measures the inflation of the variance of the variable's regression coefficient relative to a regression where all the explanatory variables are independent (Sabine L. & Brian S. E., 2004).The VIFs are inversely related to the tolerances with larger values indicating involvement in more severe relationships (according to a rule of thumb, VIFsv above 10 or tolerances below 0.1 are seen as a cause of concern) (Sabine L. &Brian S.E., 2004). Hence, in this research multi co-linearity testing was conducted using variance inflation factor (VIF) in which:

- If the value of VIF lies between 1 &10 is less than 10 or tolerance more than 0.1, there is no multi co linearity;
- If the VIF <1 or >10 or tolerance less than 0.1, then there is multi co linearity.

C. Sample characteristics of Heteroscedasticity

Based on Output Coefficients of Park Glejser test, the obtained value of sig. (p-value)shows that significance of communication process (0.63), communication goals (0.094), communication

planning (0.078), communication system (0.23) and project success (0.290), all are higher than alpha ($\alpha = 0.05$). It means that there is no heteroscedasticity in this model.

3.10 Ethical Considerations

The goal of ethics in research is to ensure that no one is harmed or suffers adverse consequences from the research activities (Cooper and Schindler, 2001). There are certain ethical protocols that were followed by the researcher. The first one is soliciting explicit consent from the respondents. This ensures that their participation to the study is not out of their own volition.

The researcher also was ensured that the respondents were aware of the objectives of the research and their contribution to its completion. The other ethical measure exercised by the researcher was treating the respondents with respect and courtesy (Leary, 2004). This was done so that the respondents was at ease and more likely to give honest responses to the questionnaire.

There is also ethical measures that were followed in the data analysis. To ensure the integrity of data, the researcher was checking the accuracy of encoding of the survey responses. This was carried out to ensure that the statistics generated from the study are truthful and verifiable.

CHAPTER FOUR

4. FINDINGS AND DISCUSSIONS

This chapter contains the presentation, analysis and interpretations of data. The statistical techniques that were outlined in chapter three were applied to the data, and the results obtained are presented in this chapter. The first part describes the demographic characteristics of respondents in terms of positions, representing organizations, and education service years.

In the second part the analysis and interpretation of data gathered through questionnaire were discussed descriptions of the variables with different assumption tests, result of goodness of fit test and result of independent variables effect tests.

4.1 Response Rate and Finding of Demographic Analysis

The study sought to collect data from 117 respondents from the study area the researcher managed to collect 112 questionnaires. This represents a response rate of 95.73 percent which is very good for analysis. According to Babbie (2004) a response rate of 60 percent is good and that of 95.73 percent is very good. Therefore, here under the result regarding respondents' background information like:- position, representing firm/organization and work experience has been presented with tables as shown below.

Table 4.1 – Profile of Respondents

Profile	Clients' firm/PFSA		Contracting firm		Consulting firm		Others		Overall response	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Position: Branch manager & Deputy	5	9.10	-	-	-	-	-	-	5	4.46
Project Manager	3	5.45	3	13.64	1	8.33	2	8.70	9	8.03
Principal consultant	-	-	-		9	75	3	13.64	12	10.71
Managing director	-	-	3	-	-	-	2		5	4.46
Contractor	-	-	14	63.64	-	-	4	17.40	18	16.07
Team leaders & officers	45	81.8	-		-	-	-	-	45	40.18
Others	2	3.64	2	9.10	2	16.67	12	52.17	18	16.07
Total	**55**	**100**	**22**	**100**	**12**	**100**	**23**	**100**	**112**	**100**
Years of Experience										
<5Years	9	16.4	4	18.18	3	25	3	13.64	19	17
5-10Years	13	23.6	5	22.73	4	33.3	7	30.43	29	25.9
11-15 Years	24	43.6	8	36.34	3	25	9	39.13	42	37.5
≥16 Year	9	16.4	5	22.73	2	16.7	4	17.4	22	19.6
Total	**55**	**100**	**22**	**100**	**12**	**100**	**23**	**100**	**112**	**100**
Have you ever had any form of communication on a project?										
Yes	31	56.4	22	100	12	100	13	56.5	78	69.6
No	24	43.6	0	0	0	0	10	43.5	34	30.4
Total	**55**	**100**	**22**	**100**	**12**	**100**	**23**	**100**	**112**	**100**

Source: SPSS Output from Survey Data, 2019

The demographic variables were presented in table 4.1 above. The survey as presented in the Table 4.1 shows that 40.18 % of the questionnaires were filled by respondents from clients' firm those were team leaders and officers, who were involved as a technical team of PFSA, followed by 16.07% contractors and other groups (Architecture, project engineers etc.) in equal proportions, 10.7% were principal consultants and 8.03% by Project Managers. The least group 4.46% of respondents were branch managers and deputy managers. An overwhelming majority of

83% of the respondents had more than 5-years of experience in their job areas. It was necessary to find out the working experience of the respondents so as to be able to obtain practical and convincing answers to the questions asked. Overall, 69.6% of all the respondents were having a form of communication on a project. This implies that most of the study participants could understand more the subject matter of the study to answer confidently.

4.2 Descriptive Analysis

The descriptive statistics utilized are based on frequency tables to provide information on the demographic variables. Through tables, summary statistics such as means, standard deviations, minimum and maximum were computed for each communication factors and project success (based on project timeliness & project quality) in this study. The findings which identified on this study presented as follows;

A calculated mean value that ranges from 1 to 1.80 implies strong disagreement, a mean range from 1.81 to 2.6, from 2.61 to 3.4,from 3.41 to 4.2 and from 4.21 to 5.00 represented respondents' perceptions of somewhat disagree, neutral, somewhat agree and strongly agree respectively. The 0.8 served as a boundary for each elements of the measurement in the questionnaire. According to this study the average variability of the mean within the scale was 0.81, which is almost 0.8.

Table4.2.1: Descriptive Statistics

	Mean	Std. Deviation	N
Communication Process	3.92	1.140	112
Communication Goals	3.97	1.086	112
Communication Planning	3.89	1.142	112
Communication System	4.01	1.053	112
Project Success	3.96	1.090	112

Source: SPSS Output from Survey Data, 2019

Table4.2.1 represents the calculated means and standard deviations for the dependent variable (Project Success) and independent variables (Communication process, Communication goals, and communication planning and communication system). The mean of communication process is 3.92 which showed that average employees on the study areas were reported for the importance of

communication process for the project success, on timeliness and quality aspects on the study area. On the other hand the mean of communication goals shows that (3.97) this figure was found in the cut of range for agreement of most of the respondents 3.42-4.2.The finding indicates the importance of communication goals which were agreed on average respondents on the study area towards the project success, here the same to communication planning which showed the mean value of (3.89) which indicated it's important enough to the project success. Whereas communication system with the mean of 4.01 which implies average proportion of respondents were agreed on the importance of communication system to the project success. This could suggest communication system, communication goals, communication process &communication planning are important enough for the project success in time and quality bases in the study areas. In the same vein the mean value of project success was 3.96 the findings showed that almost importance enough as agreed on by average respondents in the study area. This could suggest the communication established in the study area could able to signify the importance of the project success, as a result delay might not happened on the projects and also attained the quality concern efficiently. The possible delay might be happened due to site selection, bureaucratic handover of the selected sites from the owners and so on.

Concerning the standard deviation of the dataset as the fact indicated on the statistical figure interpretation a small standard deviation means that the value in a statistical data set are close to the mean of data set on average. Therefore, communication system (SD=1.053) close to a mean of data set, followed by Communication goal (SD=1.086), project success (SD= 1.090), communication process (SD=1.140) and communication planning (SD=1.142). The result showed that as the standard deviation increases the mean value decreases and was indicate its farness from the mean value data set. These figures could varied through different studies the reason for this might be due to the responses vary due to difference in the management level of the respondents, the level of educational status they attain and also difference of the work nature on the organizations.

The major response category on all variables of respondents' presented with tables, through applying descriptive statics as shown below. The indicated response category, positive response includes responses very important, important and moderately important, negative responses include, less important and not important at all.

4.2.1 Communication Process of the projects on the study area

Table 4.2.2 - Respondents' Responses towards Communication process on PFSA waste disposal land fill project

S/N	Items	Degree of relative agreement quoted by the respondents				
		1	2	3	4	5
1	The messages in the communication process sent on effective channels	5(4.5%)	15(13.4%)	15(13.4%)	33(29.5%)	44(39.3%)
2	Site meetings are an important channel of communication between the consultants and contractor on site.	6 (5.4%)	14 (12.5%)	17(15.2%)	32(28.6%)	43(38.4%)
3	Different perceptions of the message, language barriers, interruptions, emotions, and attitudes had been noticed in the process	8 (7.1%)	15 (13.4%)	11(9.8%)	36(32.1%)	42 (37.5%)
4	Poor and distorted information will affect the level of work done on site.	5(4.5%)	17 (15.2%)	14(12.5%)	35(31.3%)	41(36.3%)
5	Poor means of communication leads to distorted information on site.	6 (5.4%)	16 (14.3%)	13(11.6%)	34(30.4%)	43(38.4%)
6	The importance of language used among operatives is very essential for effective communication on site.	5(4.5%)	14 (12.5%)	15(13.4%)	35(31.3%)	43 (38.4%)
7	Feedback had been utilized to confirm the message understood by the receiver in the communication.	5(4.5%)	14 (12.5%)	16(14.3%)	34(30.4%)	43 (38.4%)
8	The communication process had been followed could assist the progress of the project.	6 (5.4%)	15 (13.4%)	12(10.7%)	35(31.3%)	44 (39.3%)
9	Effective communication reflecting openness and tolerance of cultural differences	6 (5.4%)	13(11.6%)	14(12.5%)	39(34.8%)	40(35.7%)
10	Clear and understandable communication process had been aligned around the project tasks.	5 (4.5%)	16 (14.3%)	13(11.6%)	38(33.9%)	40(35.7%)

Source: SPSS Output from Survey Data, 2019

According to the information observed on the above table 4.2.2, regarding the communication process for the project the finding showed that, larger proportions (68.8%) of respondents were reported as they were agreed/strongly agreed on the messages in the communication process sent on effective channels. This could assure the project progress for success. This shows that most of the respondents believe that sent a message on effective channels is important for project success.

Concerning Site meetings are an important channel of communication between the consultants and contractor on site, the findings showed that larger proportions, 67.4% of the respondents' were stated as they were agree/strongly agree on the impotence of site meeting. This might be improving the effectiveness of the communications which could support the success of the project through observing the site status. Additionally, 69.6 % of the study participants were reported as they were agree/ strongly agree on different perceptions of the message, language barriers, interruptions, emotions, and attitudes had been noticed in the process. Thus, this could imply that perceptions, message, language barriers and interruptions, emotions and attitudes measures for the effectiveness of the communication held. Thus attentions should have to pay for the indicated measures in order to attain effective communication.

Regarding Poor and distorted information will affect the level of work done on site , the study showed that larger proportions 67.6 % of respondents were reported their agree /strongly agree on the issues. This could suggest as the information is poor and distorted it had been failed to transmit the intended and right messages. So failing to transmit the right messages could affect the intended outcome of the project. Thus, in order to keep the project success, the managers should have to protect poor and distorted information through their communication. About 68.8 % of the study participants were state their agree/strongly agree on Poor means of communication leads to distorted information on site. This could suggest that as the means of communication is poor it might lead to sharing distorted information which as a result lead to delayed work done; it implies the delay of the work done which could be impacted on the timely process of the project.

Regarding the importance of language used among operatives is very essential for effective communication on site the result of this study showed that majority of the respondents 69.7% were reported as they were agree/strongly agree the importance of the issues towards the project success. This could assure as languages were a possible media to transfer messages/information without distortion.

On the other way regarding Feedback had been utilized to confirm the message understood by the receiver in the communication larger proportion 68.8% of respondents were agree/strongly agree to the points. Thus, through confirming message via feedback utilization the mangers could able to handle distort information and maintain communication gap. Since Communication is also about the transferring of information that helps a person to understand the purpose of the message. Communications occur in both one-way and two-way. Two-way communication is about two parties transmitting information. Additionally, majority 70.6% of respondents were agree/ or strongly agree on the communication process had been followed could assist the progress of the project. This could suggest as communication could had a significant potential to exert its effect on the project success. Similarly, 70.5% of respondents could be assured as effective communication reflecting openness and tolerance of cultural differences. Thus, the communication process of projects was characterized by performance report, requested changes, forecasts, organizational process and updates (Olsson & Johansson, 2011). One fundamental process of communication is to exchange of information so that it will socialize the employees by socialization, coordination and mutual understanding in the projects, since communication is the nervous system of any organized group and the glue that hold organization together (Olsson & Johansson, 2011). Generally, the findings on this study as indicated above the communication process conducted on the project had been potential enough for the success of PFSA waste landfill construction projects.

4.2.2 Communication Goals effect on the Project Success

Communication goals are defined according to the interest of shareholders. During the execution of the project, the project managers' ability to communicate is crucial to the success of the project. The concern was identified on this study and the findings were presented on the table 4.2.3, which presented below;

Table 4.2.3 - Respondents' Responses towards Communication goals on PFSA waste disposal land fill project

S/No	Items	Degree of relative agreement quoted by the respondents				
		1	2	3	4	5
1	The communication goals were established based on the shareholders' interests	3(2.7%)	12(10.7%)	15(13.4%)	36(32.1%)	46(41.1%)
2	The project goals revealed the project managers‟ ability to communicate is crucial to the success of the project	3(2.7%)	15(13.4%)	14 (12.5%)	33(29.5%)	47(42%)
3	The communication had been made could able to deliver clear information.	3(2.7%)	14 (12.5%)	14 (12.5%)	36(32.1%)	45 (40.2%)
4	Communication with accurate and timely information for the input of the project.	4(3.6%)	11(9.8%)	12(10.7%)	38(33.9%)	47(42%)
5	Project managers should have excellent communication skills	4(3.6%)	14 (12.5%)	11(9.8%)	36(32.1%)	47(42%)
6	Two way communications must be encouraged	3(2.7%)	13 (11.6%)	15 (13.4%)	36(32.1%)	45 (40.2%)
7	On-going communication between project proponents and its stakeholders	3(2.7%)	12(10.7%)	16(14.3%)	38(33.9%)	43 (38.4%)

Source: SPSS Output from Survey Data, 2019

According to the information observed on the above table, larger proportion of the respondents were reported their agreement/ or strong agreement for all aspects of communication goals effects on the project success on the study area. Therefore, according to the findings;

- ✓ The communication goals were established based on the shareholders' interests (as confirmed by 73.2% of the respondents).
- ✓ The project goals revealed the project managers' ability to communicate is crucial to the success of the project (as confirmed by 71.5% of respondents)
- ✓ The communication had been made could able to deliver clear information (as stated by 72.3% of respondents)
- ✓ Communication with accurate and timely information for the input of the project (as approved by 75.9% of the respondents)

- ✓ Project managers should have excellent communication skills (as stated by 72.3% of the respondents)
- ✓ Two way communications must be encouraged (as stated by 72.3% of the respondents), and
- ✓ On-going communication between project proponents and its stakeholders (according to 72.3% of the respondents).

Thus, the above findings could imply as a communication goal could attain the possibility for the project success under the study area. As suggested literally, one of the important tasks for the project managers is to communicate with the stakeholders (Tonnquist, 2008). Successful communication may not be always successful persuasion (Tonnquist, 2008) it is very important the basics of communication in order to exchange the right information. Therefore, the managers on the study area should capable of communicating with stake holders and should align the right track to exchange the right information as an input for the project success.

4.2.3 Communication Planning effect on the Project Success

Establishing communication infrastructure is very important in any projects. Effective communication plan preset specific type of information (Klein, 1996). The findings on the effect of communication planning on the project of this study presented as shown below.

Table 4.2.4 - Respondents' Responses towards Communication planning on PFSA waste disposal land fill project

S/No	Items	Degree of relative agreement quoted by the respondents				
		1	2	3	4	5
1	The project could be established the communication infrastructures	3(2.7%)	12(10.7%)	22(19.6%)	32(28.6%)	43(38.4%)
2	The communication plan had been present to create clear information	6 (5.4%)	11(9.8%)	16(15.2%)	30(26.8%)	49(43.8%)
3	The communication established on the project had been aimed to create the right information to the right person at the right place.	8 (7.1%)	12 (10.7%)	18(16.1%)	28(25%)	46 (41.1%)
4	The communication existed could show the clear flow of information.	7(6.3%)	14 (12.5%)	18(16.1%)	26(23.2%)	47(42%)
5	There is an access of accurate information significant for project success	5(4.5%)	10 (8.9%)	20(17.9%)	28(25%)	49(43.8%)
6	Effective communication reflecting openness and tolerance of cultural differences	7(6.3%)	11(9.8%)	17(15.2%)	31 (27.7%)	46 (41.1%)
7	Clear communication clarifying roles of stakeholders	6(5.4%)	10 (8.9%)	15(13.4%)	36 (32.1%)	45 (40.2%)
8	Open communication is required to provide management with some control	7 (6.3%)	13 (11.6%)	14(12.5%)	34(30.4%)	44 (39.3%)

Source: Survey Data, 2019

According to the information observed above on table 4.2.4, the finding of this study showed that, larger proportion 67% of respondents were state their agreement/ or strong agreement for the project could be established the communication infrastructures. This could suggest that the organization planning of communication is good enough for the project success. Concerning the plan creating information most of the respondents 70.6 % the respondents were agree/ or strongly agree on the communication plan had been pre-set to create clear information. Thus, the communication planning on this study could be attained its aim. Thus, through main aim of

communication planning the organization could able to reduce mistakes and errors on creating information.

Regarding creating the right information to the right target the finding showed that larger proportion 66.1% of the study participants were agree/ or strongly agree for the communication established on the project had been aimed to create the right information to the right person at the right place at the study area. Therefore, right information had been reached to the right person at the right place on the study area. This could suggest as the information had been transmitted on the right way at the right path towards the success of the project.

4.2.4 Communication System effect on the Project Success

Internal and external communication is very important for the success of projects. External communication is related with managing the flow of information or managing communication to satisfy the demands of external stakeholders (Johannessen, 2012). The results on the communication system effect on the project success were summarized on the table below.

Table 4.2.5 - Respondents' Responses towards Communication system on PFSA waste disposal land fill project

S/No	Items	Degree of relative agreement quoted by the respondents				
		1	2	3	4	5
1	The project had been used internal and external communication for the project success.	3(2.7%)	12(10.7%)	19(17%)	29(25.9%)	49(43.8%)
2	The information flow in the project managed with the external communication system	2 (1.7%)	13(11.6%)	22 (19.6%)	27(24.1%)	48(42.9%)
3	Project proponents and stakeholders communicate throughout the project	5 (4.5%)	11(9.8%)	12(10.7%)	33(29.5%)	51 (45.5%)
4	Communication plan reviewed regularly and adjusted if need be	4(3.6%)	10 (8.9%)	16(14.3%)	34(30.4%)	48(42.9%)
5	Project type and duration has a beading on communication strategy and structure	2 (1.8%)	10(8.9%)	21(18.8%)	32(28.6%)	47(42%)
6	The communication held could build mutual understanding	4(3.6%)	11 (9.8%)	19 (17%)	29(25.9%)	49 (43.8%)
7	Appropriate communication media for specific purposes/audiences are necessary	5(4.5%)	10(8.9%)	15(13.4%)	29(25.9%)	53 (47.3%)
8	Effective communication strategies are needed to minimize potential disputes and misunderstandings	5 (4.5%)	11 (9.8%)	20(17.9%)	28 (25%)	48 (42.9%)
9	Understanding the language(s) and practices of local culture enhances communication	2 (1.8%)	11(9.8%)	17(15.2%)	33 (29.5%)	49(43.8%)
10	Communication gives project stakeholders the opportunity to comment or cast a vote	3 (2.7%)	15 (13.4%)	14(12.5%)	33(29.5%)	47(42%)

Source: SPSS Output from Survey Data, 2019

According to the information revealed on the above table, larger proportion 69.7% of the respondents were reported as they were agree/ or strongly agree for the project had been used internal and external communication for the project success. This suggests as PFSA south eastern cluster had been used internal and external communication system for the success of landfill

waste disposal construction project. Concerning the information flow within the project the finding showed that, 67% of respondents were agree/ or strongly agree on the information flow in the project managed with the external communication system. This imply as external communication was the possible way of managing the information flow within the project. In the other ways 75% and 73.3% of respondents were reported their agreement/ or strong agreement for project proponents and stakeholders communicate throughout the project and communication plan reviewed regularly and adjusted if need be respectively. This could suggest the communication system conducted on the study area could be assured its sustainability, coordinated and functioned for the success of the project.

Regarding the communication strategy to follow closely the project type and duration 70.6% (larger proportion) were agreed/ or strongly agreed on project type and duration has a beading on communication strategy and structure. So, the communication strategy and structure had a potential to follow the project type and duration. Therefore, the communication strategy on the study area could able to keep the timeliness to deliver the project and also to keep project quality. On the other way 69.7 % of respondents were agree/ or strongly agree for the communication held could build mutual understanding. So, messages are clear as ensured mutual understanding it could be reduced the communication barriers. This could suggest the communication system which installed on the study area were integrated and coordinated enough in order to assure the project success.

Regarding the communication media majority 73.2% of respondents were reported their agreement/ or strong agreement of Appropriate communication media for specific purposes/audiences are necessary. Thus, the project on the study area had been used appropriate communication media to deliver messages for specific purpose of the project. Whereas according to 67.9% of respondents perceptions to be agree/ or strongly agree on Effective communication strategies are needed to minimize potential disputes and misunderstandings. Thus, effective communication strategies were taken as a means to minimize unclear messages and misunderstandings. Additionally, 73.3% of respondents were accepted for Understanding the language(s) and practices of local culture enhances communication. Thus, the effectiveness of the communication established could be assured by understanding languages and local culture. Therefore, communication planning should have to be concern the local languages and culture to

build trust of ownership and enhance participatory issues. Based on 71.5% of respondents' belief they were agree/ or strongly agree on communication gives project stakeholders the opportunity to comment or cast a vote. This imply the communication implemented on the project of the study area had been could provide a chance of access for the stakeholders to suggest/ incorporate their comment on the progress of the project.

4.2.5 Project Success

Projects are a certain work with a strong focus of goals. Projects needs to be bounded in a specific resource, specific time limit and unique work organization, so that the goal has to be clearly accomplished accordingly (Tonnquist, 2008). PMI (2013) stated that the temporary nature of projects indicate that a project has a definite beginning and end. Temporary does not necessarily mean the duration of the project is short. It refers to the project's engagement and its longevity. Project success is effectively and efficiently achieving all project objectives in scope, on time and within budget. Thus, the project success for this study was measured based on timeliness and project quality aspects. Therefore, the findings were summarized as presented below.

4.2.5.1 Project Timeliness

Table 4.2.6: **Respondents for project timeliness as a project success of PFSA land fill waste disposal construction project**

S/No	Items	Degree of relative agreement quoted by the respondents				
		1	**2**	**3**	**4**	**5**
1	Effective internal communication established to keep the timeliness of the project	6(5.40%)	15(13.4%)	23(20.5%)	33(29.5%)	35(31.3%)
2	External communication had a potential for maintaining the project time lines	10 (8.9%)	13(11.6%)	17 (15.2%)	34(30.4%)	38(33.9%)
3	Regular and sustainable communication established to run the project on time	9(8%)	14(12.5%)	19 (17%)	31(27.7%)	39 (34.8%)
4	Communication barrier is there that make the project delay	9(8%)	10 (8.9%)	18(16.1%)	34(30.4%)	41(36.6%)
5	Barriers are identified and managed which identified in a communication to continue project progress	6(5.40%)	12(10.7%)	20(17.9%)	37(33%)	37(33%)
6	Using different communication channels to avoid the project delay	6(5.40%)	14(12.5%)	20(17.9%)	36(32.1%)	36(32.1%)
7	The communication channels used effective for the progress of the project on time base	4(3.6%)	18(16.1%)	18(16.1%)	38(33.9%)	34(30.4%)

Source: SPSS Output from Survey Data, 2019

According to the information observed above on table 4.2.6, concerning the effect of internal communication to keep the timeliness of the project the result showed that, more than half 60.8% of respondents were agree/ or strongly agree on effective internal communication established to keep the timeliness of the project. This imply that PFSA had been established effective enough internal communication in order to keep the timeliness of the project as a project success. While larger groups 64.3 % of the study participants were state as they were agree/ or strongly agree for external communication had a potential for maintaining the project time lines. Thus PFSA had been established both internal and external communication for the timeliness to deliver landfill waste disposal construction projects. Concerning conducting regular communication, the findings revealed that, larger proportion 62.5% of respondents were reported as PFSA had been regular

and sustainable communication established to run the project on time. This implies that PFSA had been pay a great concern of communication for the project to be deliver on time.

Regarding the communication barriers 67% of respondents were assured of Communication barrier is there that make the project delay. This could suggest the barrier happened during site selection for the project construction. However, the events had been economically managed to avoid delay through the great effort made by communicating different stakeholders and responsible bodies. These issues could be supported by as 66% of respondents those were confirmed as barriers are identified and managed which identified in a communication to continue project progress. Thus, the organization could able to handle barriers efficiently through communications which held in different ways. Regarding the communication which used by PFSA, 64.3% of respondents were agree/ or strongly agree for the communication channels which used by PFSA effective for the progress of the project on time base. Thus, the agency could able to manage the timeliness the project to deliver with its effective communication systems.

4.5.2 Project Quality

Table 4.2.7 ***Respondents response for project quality as a project success of PFSA land fill waste disposal construction project***

S/No	Items	Degree of relative agreement quoted by the respondents				
		1	2	3	4	5
1	Continues follow up and communication have been made to ensure that the project maintained its specification	4(3.6%)	15(13.4%)	19 (17%)	48(42.9%)	26(23.2%)
2	The material which availed to the project met the standard which indicated on the specifications	4(3.6%)	17 (15.2%)	19 (17%)	47(42%)	25(22.3%)
3	The contractors which operate the project had occupied the required criteria	4(3.6%)	17 (15.2%)	19 (17%)	46(41.1%)	26 (23.2%)
4	The selected site which is feasible for the project	4(3.6%)	16 (14.3%)	22(19.6%)	46(41.1%)	24(21.4%)
5	The project concerned quality in economical ways	4(3.6%)	15(13.4%)	21(18.8%)	48(42.9%)	24(21.4%)
6	Effective communication had established to understand the standard of the project	4(3.6%)	15(13.4%)	21(18.8%)	48(42.9%)	26 (23.2%)
7	The specification and implementation have been evaluated with a consultants	4(3.6%)	17 (15.2%)	18(16.1%)	42(37.5%)	33(29.5%)

Source: SPSS Output from Survey Data, 2019

As indicated on table 4.2.7, above, concerning continuous follow up for communication, larger proportion 66.1% of respondents were agree/ or strongly agree for Continues follow up and communication have been made to ensure that the project maintained its specification. This implies PFSA had made a continuous communication to follow the project meeting its specification across the stakeholders and the consultants. Thus, the communication established had a potential to keep the project quality. Regarding the materials availed for the project 64.3% of respondents were reported that the material which availed to the project met the standard which indicated on the specifications. This could suggest as standard materials availed to the project which had been ensured the project quality.

Regarding the contractors which run the projects 64.3% of the study participants were agree/ strongly agree on the contractors which operate the project had occupied the required criteria. This could suggest as the contractors had a potential to construct the project with a desired standard and quality. In other ways concerning the selecting site for the project 62.4% of the respondents were stated their agreement/ or strong agreement on the selected site which is feasible for the project. Thus, the project had practical and constructed on the accessible and economical sites. Regarding the concern for the project quality 64.3% of the respondents were stated their agreement/ or strong agreement on the project concerned quality in economical ways. So, the project should be evaluated with its quality as economic concern trough measuring or analyzing the cost consideration. Concerning the communication held to understand the standard of the project larger proportions (64.3%) were reported their agreement or strong agreement for Effective communication had established to understand the standard of the project. This implies that with the communication held it could be able to understand the project standard. Thus, communication could make possible to follow and maintain the project quality in the study area. Regarding evaluating the project specifications 65.2% of the respondents were agree/ or strongly agree on the specification and implementation have been evaluated with a consultants. Thus, through evaluating the specifications identified error can be handled and checked. As a result the project quality can be maintained.

4.3 Result of Inferential Statistics

4.3.1 Finding of Validity and Reliability Testing

Validity and reliability testing of effect of communication was measured based on 49 items (Items 1-49) of the sub scale, or Communication Process 10 items (Items 1-10) for Communication Goal was 7 (Item 11-17), for Communication Planning 8items (Item 18-25), for Communication System 10 items (Items 26-35), for Project Success 14 items (Items 36-49).

The result of reliability test as measured by Cronbach's alpha for all the 49 items of the main questionnaire part was .992. Effect of Communication scored Cronbach's alpha of 0.996, for Communication Process, 0.988, for Communication Goals, 0987, for Communication Planning 0.995, for Communication System and for Project Success was0.995See table on reliability in the table 4.3.1 below.

Table 4.3.1: Reliability test			
Items	**Cronbach's Alpha**	**Cronbach's Alpha Based on Standardized Items**	**No. of Items**
Communication Process	.996	.996	10
Communication Goals	.988	.988	7
Communication Planning	.987	.987	8
Communication System	.995	.995	10
Project Success	.995	.996	14

Source: SPSS Output from Survey Data, 2019

According to George and Mallery (2003) a Cronbach's alpha coefficient greater than 0.9 implies excellent, greater than 0.8 is good, greater than 0.7 is acceptable, greater than 0.6 is questionable, greater than 0.5 is poor, and less than 0.5 is unacceptable". Thus, it is excellent for this study since it is greater than 0.9.

4.3.2Results of the Classical Linear Regressions Assumption Tests

(a) Sample characteristics of normality test

According to normal Q-Q plots and box plot showed that the data communication effect, communication process, communication goals, communication planning, Communication system and project success were normally distributed with the value of asymptotic significance (p-value) 0.912 which is higher than alpha ($\alpha = 0.05$). The value of asymptotic significance for communication process was 0.918, for communication goal was 0.818, for communication planning is 0.858, for communication system was 0.762 and for project success was 1(See on the table 4.3.2 below).

Table 4.3.2. Tests of Normality						Observed Correlations Coefficient
Dependent Variable	**Variables**	**Kolmogorov-Smirnov[a]**		**Shapiro-Wilk**		
		Statistic	**Sig.**	**Statistic**	**Sig.**	
Project success (Timeliness & project quality)	Communication process	.360	.007	.664	.001	.918
	Communication goals	.253	.003	.816	.003	.818
	Communication planning	.324	.000	.752	.000	.858
	Communication System	.409	.000	.664	.000	.762
	Project success	.404	.000	.682	.000	1.000
a. Lilliefors Significance Correction						

Source: SPSS Output from Survey Data, 2019

(b)Sample characteristics of Multi co linearity

Output of variance inflation factor (VIF) column in the coefficients table of the regression output shows that VIF for communication process is (6.913), communication goals (3.956), for communication planning (5.123) and communication system (3.197), all are smaller than 10. It means that there is no problem of multico-linearity between independent variables. This can be further ascertained from the Tolerance column of the same table in which the tolerance for the four independent variables is 0.145, 0.253, 0.195 and 0.313 respectively all > 0.1 indicating that there is no multi co linearity (see table 4.3.3).

Table 4.3.3.Co-linearity Statistics

Model		**Collinearity Statistics**	
		Tolerance	**VIF**
1	(Constant)		
	Communication Process	.145	6.913
	Communication Goals	.253	3.956
	Communication Planning	.195	5.123
	Communication System	.313	3.197

Dependent variable: Project success

Source: SPSS Output from Survey Data, 2019

4.3.3. Result of Goodness of fit test

We want to run a regression of **project success** (timeliness & project quality) (Y) on communication (X) factors communication process (X**1**), communication goals (X**2)**, Communication planning (X3) and communication system (X**4**) for land fill waste disposal construction project of PFSA. Project success (timeliness & project quality) (Y) = function of communication process (X**1**), communication goals (X**2)**, Communication planning (X3) and communication system (X**4**) or, as relevant text book will have it,

$$\mathbf{Y=\sim+\ 1x1+\ 2x2+\ kxk+e}$$

The real question here is that "does this model works? How can we know that? Three ways to answer this question. Always we have to look at the model fit ("ANOVA") first. We do not have to make the mistake of looking at the R-square before checking the goodness of fit.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	113.114	4	28.278	161.433	.000[b]
	Residual	18.743	107	.175		
	Total	131.857	111			

a. Dependent Variable: Project success

b. Predictors: (Constant), Communication System, Communication goals, Communication planning, Communication process

Source: SPSS Output from Survey Data, 2019

Significance of the model *("Did the model explain the deviations in the dependent variable")*

The last column in the above table (ANOVA-table) shows the goodness of fit of the model. It is p-value or observed significance of the F. The lower this numbers the better the fit. Typically, if "Sig" is greater than 0.05, we conclude that our model could not fit the data. The F is comparing the two models below:

1. ***PS*= 0 + 1*C* + 2*CB*+ 3*CB* + et ,**

2. ***PS*** = **0**

(In formal terms, the F is testing the hypothesis: **0**= 1 = 2 = 3 = 4= 5=0)

If the F is not significant, then we cannot say that model 1 is any better than model2. The implication is obvious-the use of the independent variables has not assisted in predicting the dependent variable. If Sig < .01, then the model is significant at 99%, if Sig < .05, then the model is significant at 95%, and if Sig <.1, the model is significant at 90%. Significance implies that we can accept the model. If Sig >.1 then the model was not significant (a relationship could not be found) or "R-square is not significantly different from zero", the model does not work at all. Note that p-value is the Sig. column value.

Test of the goodness of fit of the model in this research showed negative results. From the result of F-test, it is known that the F-statistic161.433is higher than the critical value 4.141 (from the t-table)and the probability (p-value or the Sig. value) 0.000 is smaller than alpha (0.05). Therefore, the model is fit. The third confirmatory test is looking at the R^2 value of the model summary which is .858 > 0. As this value approaches to +1, the better the model will be.

Table 4.3.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.926[a]	.858	.853	.419	.858	161.433	4	107	.000

a. Predictors: (Constant), Communication System, Communication goals, Communication planning, Communication process

b. Dependent Variable: Project success

Source: SPSS Output from Survey Data, 2019

If we had to compute it by hand the F value, it would be… $F= \frac{R^2/_{k-1}}{1-R^2/_{(N-k)}}$

Where:

F=F-value that is resulted from the calculation;

R^2 =coefficient of determination;

k=number of variables (# of dependent and independent variables);

N=number of observations (# of sample respondents).

(K-1) = degree of freedom

Given:

R^2=0.858……..from regression summary table

K-1 = 5 – 1 = 4, 1 - R^2= 1-0.858 = 0.142 and N-k = 112 - 5 = 107=df2

Therefore, F= 0.858/4 ÷0.142/107

= 0.858/4 * 107/0.142 = .2145*107 ÷ .0.142 = 22.9515/.142 = 161.63

= 0.2145*753.52 = 161.63

The value is similar, **161.63=161.43**; the difference could be the effect of rounding.

The results from the regression model summary and analysis of variance above indicate that communication factors, communication process, communication goals, communication planning and communication system could significantly contribute towards the R^2 value, which is a statistical measure of how close the data are to the fitted regression line Based on the R^2-value of 0.858, these four variables could explain 85.8 % variation in the project success (including both timeliness and project quality). The remaining 14.2% of the variations could be explained by other factors not included in the model.

Table 4.3.6: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.371	.167		2.229	.028
	Communication Process	.649	.092	.679	7.088	.000
	Communication Goals	.207	.073	.206	2.836	.011
	Communication Planning	.174	.079	.183	2.214	.029
	Communication System	0.214	.067	0.233	3.19	.001

Source: SPSS Output from Survey Data, 2019

The regression coefficients are shown in the above table. The intercept, 0.371, is representing the estimated average value of Project Success when communication process; communication goals, communication planning and communication system are zero. Thus a project with no

communication process; communication goals, communication planning and communication system will have severe impact on the success of landfills waste disposal projects of PFSA. The slop of independent variables also exhibits useful predictive information about the implication. The slop of communication process, communication goals, communication planning and communication system, which were 0.679, 0.206, 0.183 and 0.233 means that project success in timeliness and quality changes increased by0.679, 0.206, 0.183 and 0.233 when communication process, communication goals, communication planning and communication systems respectively increases by 1.

An examination of these four independent variables indicated that communication process presented the strongest positive interference on the project success with the standard beta of 0.679 followed by communication system with beta of 0.233, communication goals with β=0.206, and communication planning with beta of 0.183.Thus the statistical results prove that positive and linear relationship exists between the dependent and independent variables.

Table 4.3.7: Summary of the Regression Output

Variables	F-test and T-test						R^2	K	N	Conclusion
	F-statistic	Critical value	Regression coefficient	t	Critical value	p-value				
Goodness of fit test	161.433	4.141				0.000				Significant
(Constant)			.371	2.229	4.141	.028	0.858	5		Significant
Communication Process			.679	7.088	4.141	.000	0.858	5	112	Significant
Communication Goals			.206	2.836	4.141	.146	0.858	5	112	Significant
Communication Planning			.183	2.214	4.141	.029	0.858	5	112	Significant
Communication System			.233	3.19	4.141	.001	0.858	5	112	Significant

Source: SPSS Output from Survey Data, 2019

Based on the result in the above table, the regression model will be filled in as follows:

Y = 0.371 +0.649X1 +0.107X2+0.174X3+0.214X4+ε

4.4 Results of Pearson Correlation Analysis

Table 4.4.1: The relationship between Communication Dimensions and Project Success

Correlations						
		Communication Process	Communication Goals	Communication Planning	Communication System	Project Success
Communication Process	Pearson Correlation	1	.842**	.879**	.826**	.918**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	112	112	112	112	112
Communication Goals	Pearson Correlation	.842**	1	.833**	.709**	.821**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	112	112	112	112	112
Communication Planning	Pearson Correlation	.879**	.833**	1	.758**	.858**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	112	112	112	112	112
Communication System	Pearson Correlation	.826**	.709**	.758**	1	.762**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	112	112	112	112	112
Project Success	Pearson Correlation	.918**	.821**	.858**	.762**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	112	112	112	112	112
**. Correlation is significant at the 0.01 level (2-tailed).						

Source: SPSS Output from Survey Data, 2019

Table 4.4.1, demonstrates the results of Pearson‘s Product Moment Correlation on the relationship between communication dimensions (communication process, communication goals, communication planning and communication system) and project success. It shows that, the correlation coefficients for the relationship between communication dimensions and project success are linear and positive ranging from medium to strong correlation coefficients.

The results in the above table indicate that, there is positive and significant relationship between Communication process and project success ($r = 0.918$, $p < 0.01$) and communication goal and project success ($r=0.821$, $p<0.01$). This showed that as the correlation between communication process and project success higher than that of between communication goals and project

success, there is positive and significant relationship between Communication planning and project success (r = 0.858, p < 0.01) and communication system and project success (r=0.762, p<0.01). The finding on table 4.4.1 above further indicates that the highest relationship was found between Communication process and project success. And It was also found that there was greater relationship between the Communications dimensions (independent variables) and that of Project Success (dependent variable).

Individual variables effect/interference testing was based on Pearson correlation coefficients ***r*** and P-value to test whether the variables have interference or not, whether the effect is positive or negative.

(a) Result of first Independent variable effect testing

The results of Pearson correlation summary, as presented in the table above (on table 4.4.1), Correlation analysis indicates that, there is a positive, substantially strong, though statistically significant, relationship between communications process interference with project success (r=918, p=0.000, p<0.01). The result suggests that communication process have been positively interfere the project success of PFSA land fill waste disposal construction project. This fact suggested as communication simplified the complexity which found in constructions project. As literature supported that, Communication carries a special importance within the industry as a result of its project-based structure. Given that construction is such a fragmented, dynamic and disparate sector, effective communication becomes essential "for the successful delivery of performance goals (productivity, profitability and repeat working opportunities" (Dainty et.al, 2006).

(b) Result of second Independent variable effect testing

The results in the table above, the correlation analysis revealed communication goals has a positive and significant relationship with project timeliness and project quality (r = 0.821, p < 0.01), (p=0.000) at 99% confidence level). This proves which a positive relationship exists between life to communication goals and project success on the study area.

Communication goals are defined according to the interest of shareholders. During the execution of the project, the project managers‟ ability to communicate is crucial to the success of the project. One of the important tasks for the project managers is to communicate with the

stakeholders (Tonnquist, 2008). Successful communication may not be always successful persuasion (Tonnquist, 2008) it is very important the basics of communication in order to exchange the right information. Thus effective communication had effective communication goals which directed to the project success. Therefore, the findings suggest as communication goals effectively settled towards the success of landfill waste disposal project of PFSA. And hence the interference indicates positive interference.

(c) Result of third Independent variable effect testing

As shown on the table above, communication planning has a positive and significant relationship with project success ($r = 0.858$, $P < 0.01$, at 99% confidence interval).So, the results of the p value which indicated that a positive and substantially strong and significant relationship exist between communication planning and project success. As many literatures supported the findings as the project communication could be determined by communication channels as the means of a message clear delivered from the senders to the delivers. The aim of communication plan is to create the right information in the right time and place in an appropriate way for the audience (Hartley, 1997) highlights the importance of planning for reducing risks and mistakes. The communication plans also shows the flow of information intended to perform by the project manager, the plan usually contains information that needs to be collected and information that needs to be distributed (Tonnquivist, 2008). Thus, the communication planning for land fill waste disposal construction project could able to exert positive effect on the project success.

(d) Result of fourth Independent variable effect testing

As shown on the table above, communication system has a positive and significant relationship with project success ($r = 0.762$, $P < 0.01$, at 99% confidence interval).So, the results of the p value which indicated that a positive and medium strong and significant relationship exist between communication system and project success. Thus, the finding implies that PFSA had established strong enough communication system for its land fill waste disposal construction project. This could suggest the fact that the well-established communication system could ensure the project success.

Internal and external communication is very important for the success of projects. External communication is related with managing the flow of information or managing communication to satisfy the demands of external stakeholders (Johannessen, 2012). When the complexity of

projects is limited, the interpretation of communication is serviceable, internal and external communication increases when the rate of exchange is great. Thus, PFSA fairly implemented both an internal and external communication system towards the project success. However, the organization had failed to fully implement both communication systems.

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS& RECOMMENDATIONS

This is the last chapter and presents summary of the research, conclusion seen by finding and recommendation given by the researcher.

5.1 Summary of Major Findings

According to the collected data from the study population, after the study was processed and analyzed this raw data in order to present relevant result of the study with full of interpretation and discussion. The findings on the result part of the study were sorted with descriptive and inferential statistics presentation. Therefore, based on the identified result of the study, the researcher could able to summarize the major findings of the study and present as shown below.

- The study sought to collect data from 117 respondents from the study area the researcher managed to collect 112 questionnaires. This represents a response rate of 95.73 percent which is very good for analysis. According to Babbie (2004) a response rate of 60 percent is good and that of 95.73 percent is very good.
- The survey as presented in the study shows that 40.18 % of the questionnaires were filled by respondents from clients' firm those were team leaders and officers, who were involved as a technical team of PFSA, followed by 16.07% contractors and other groups (Architecture, project engineers etc) in equal proportions, 10.7% were principal consultants and 8.03% by Project Managers. The least group 4.46% of respondents were branch managers and deputy managers.
- An overwhelming majority of 83% of the respondents had more than 5-years of experience in their job areas. It was necessary to find out the working experience of the respondents so as to be able to obtain practical and convincing answers to the questions asked. Overall, 69.6% of all the respondents were had a form of communication on a project. This implies as most of the study participants could understand more the subject matter of the study to answer confidently.
- The mean of communication process is 3.392 which showed that average employees on the study areas were reported for the importance of communication process for the project

success, on timeliness and quality aspects on the study area. On the other hand the means of communication goals shows that (3.97) this figure was revealed importance of communication goals which were agreed on average respondents on the study area towards the project success, here the same to communication planning which showed the mean value of (3.89) which indicated its important enough to the project success. Whereas communication system with the mean of 4.01 which implies average proportion of respondents were agreed on the importance of communication system to the project success.

- Regarding the communication process for the project the finding showed that, larger proportions (68.8%) of respondents were reported as they were agreed/strongly agreed on the messages in the communication process sent on effective channels. This could assure the project progress for success. This shows that most of the respondents believe that sent a message on effective channels is important for project success.
- Concerning Site meetings are an important channel of communication between the consultants and contractor on site the findings showed that larger proportions, 67.4% of the respondents' were stated as they were agree/strongly agree on the impotence of site meeting.
- Additionally, 69.6 % of the study participants were reported as they were agree/ strongly agree on Different perceptions of the message, language barriers, interruptions, emotions, and attitudes had been noticed in the process. Thus, this could imply as perceptions, message, language barriers and interruptions, emotions and attitudes a measures for the effectiveness of the communication held. Thus attentions should have to pay for the indicated measures in order to attain effective communication.
- Regarding Poor and distorted information will affect the level of work done on site , the study showed that larger proportions 67.6 % of respondents were reported their agree /strongly agree on the issues. About 68.8 % of the study participants were state their agree/strongly agree on Poor means of communication leads to distorted information on site. This could suggest that as the means of communication is poor it might lead to sharing distorted information which as a result lead to delayed work done; it implies the delay of the work done which could be impacted on the timely process of the project.

- With regard to the importance of language used among operatives is very essential for effective communication on site the result of this study showed that majority of the respondents 69.7% were reported as they were agree/strongly agree the importance of the issues towards the project success. This could assure as languages were a possible media to transfer messages/information without distortion. On the other way regarding Feedback had been utilized to confirm the message understood by the receiver in the communication larger proportion 68.8% of respondents were agree/strongly agree to the points.
- Moreover, majority 70.6% of respondents were agree/ or strongly agree on the communication process had been followed could assist the progress of the project. This could suggest as communication could had a significant potential to exert its effect on the project success. Similarly, 70.5% of respondents could be assured as effective communication reflecting openness and tolerance of cultural differences.
- The communication goals were established based on the shareholders' interests (which confirmed by 73.2% of respondents).The project goals revealed the project managers" ability to communicate is crucial to the success of the project (according to the response of 71.5% of respondents).The communication had been made could able to deliver clear information (as stated by 72.3% of respondents).
- Communication with accurate and timely information for the input of the project (approved by 75.9% of the respondents). Project managers should have excellent communication skills (as stated by 72.3% of respondents). Two way communications must be encouraged (as stated by 72.3% of respondents) and. On-going communication between project proponents and its stakeholders (according to 72.3% of respondents.
- Concerning the plan creating information most of the respondents 70.6 % the respondents were agree/ or strongly agree on the communication plan had been pre-set to create clear information. Thus, the communication planning on this study could be attained its aim. Thus, through main aim of communication planning the organization could able to reduce mistakes and errors on creating information.
- Regarding creating the right information to the right target the finding showed that larger proportion 66.1% of the study participants were agree/ or strongly agree for the communication established on the project had been aimed to create the right information to the right person at the right place at the study area.

- Concerning the information flow within the project the finding showed that, 67% of respondents were agree/ or strongly agree on the information flow in the project managed with the external communication system. This imply as external communication was the possible way of managing the information flow within the project. In the other ways 75% and 73.3% of respondents were reported their agreement/ or strong agreement for project proponents and stakeholders communicate throughout the project and communication plan reviewed regularly and adjusted if need be respectively.
- Regarding the communication strategy to follow closely the project type and duration 70.6% (larger proportion) were agreed/ or strongly agreed on project type and duration has a beading on communication strategy and structure. So, the communication strategy and structure had a potential to follow the project type and duration. On the other way 69.7 % of respondents were agree/ or strongly agree for the communication held could build mutual understanding. So, messages are clear as ensured mutual understanding it could be reduced the communication barriers.
- With respect to the communication media majority 73.2% of respondents were reported their agreement/ or strong agreement of Appropriate communication media for specific purposes/audiences are necessary. Thus, the project on the study area had been used appropriate communication media to deliver messages for specific purpose of the project. Whereas according to 67.9% of respondents perceptions to be agree/ or strongly agree on Effective communication strategies are needed to minimize potential disputes and misunderstandings. Thus, effective communication strategies taken as a means to minimize unclear messages and misunderstandings.
- Additionally, 73.3% of respondents were accepted for Understanding the language(s) and practices of local culture enhances communication. Thus, the effectiveness of the communication established could be assured by understanding languages and local culture. Based on 71.5% of respondents' belief they were agree/ or strongly agree on communication gives project stakeholders the opportunity to comment or cast a vote.
- Concerning the effect of internal communication to keep the timeliness of the project the result showed that, more than half 60.8% of respondents were agree/ or strongly agree on effective internal communication established to keep the timeliness of the project. While larger groups 64.3 % of the study participants were state as they were agree/ or strongly

agree for external communication had a potential for maintaining the project time lines. Concerning conducting regular communication, the findings revealed that, larger proportion 62.5% of respondents were reported as PFSA had been regular and sustainable communication established to run the project on time.

- With regard to the communication barriers 67% of respondents were assured of Communication barrier is there that make the project delay. This could suggest the barrier happened during site selection & allocation the construction. This issue could be supported by as 66% of respondents those were confirmed as barriers are identified and managed which identified in a communication to continue project progress. Regarding the communication which used by PFSA, 64.3% of respondents were agree/ or strongly agree for the communication channels which used by PFSA effective for the progress of the project on time base.
- Concerning continuous follow up for communication, larger proportion 66.1% of respondents were agree/ or strongly agree for Continues follow up and communication have been made to ensure that the project maintained its specification. Regarding the materials availed for the project 64.3% of respondents were reported that the material which availed to the project met the standard which indicated on the specifications.
- Regarding the contractors which run the projects 64.3% of the study participants were agree/ strongly agree on the contractors which operate the project had occupied the required criteria. In other ways concerning the selecting site for the project 62.4% of the respondents were stated their agreement/ or strong agreement on the selected site which is feasible for the project. Regarding the concern for the project quality, 64.3% of the respondents were stated their agreement/ or strong agreement on the project concerned quality in economical ways.
- Concerning the communication held to understand the standard of the project larger proportions 64.3% were reported their agreement or strong agreement for Effective communication had established to understand the standard of the project. Regarding evaluating the project specifications 65.2% of respondents were agree/ or strongly agree on the specification and implementation have been evaluated with a consultants. Thus, through evaluating the specifications, identified error can be handled and checked. As a result the project quality can be maintained.

- The result of reliability testing as measured by Cronbach's alpha for all the 49 items of the main questionnaire part is .992. Effect of communication scored. Cronbach's alpha of 0.996 for communication process, 0.988 for communication goals, 0987 for communication planning, 0.995 for communication system and for project success is 0.995.
- Output of variance inflation factor (VIF) column in the coefficients table of the regression output shows that VIF for communication process is (6.913), communication goals (3.956), for communication planning (5.123) and communication system (3.197), all are smaller than 10. It means that there is no problem of multi co-linearity between independent variables. This can be further ascertained from the Tolerance column of the same table in which the tolerance for the four independent variables is 0.145, 0.253, 0.195 and 0.313 respectively all > 0.1 indicating that there is no multi co linearity.
- Test of the goodness of fit of the model in this research showed negative results. From the result of F-test, it is known that the F-statistic**161.433** is higher than the critical value 4.141 (from t-table) and the probability (p-value or the Sig. value) 0.000 is smaller than alpha (0.05). Therefore, the model is fit. The third confirmatory test is looking at the R^2 value of the model summary which is .858 > 0. As this value gets approach to +1, the better the model will be.
- The results from the regression model summary and analysis of variance above indicate that communication factors, communication process, communication goals, communication planning and communication system could significantly contribute towards the R^2 value, which is a statistical measure of how close the data are to the fitted regression line Based on the R^2-value of 0.858, these four variables could explain 85.8 % variation in the project success (including both timeliness and project quality). The remaining 14.2% of variations could happen by other factors.
- The slop of communication process, communication goals, communication planning and communication system, which are 0.679, 0.206, 0.183 and 0.233 means that project success in timeliness and quality changes increased by0.679, 0.206, 0.183 and 0.233 when, communication process, communication goals, communication planning and communication systems respectively increases by 1.

- An examination of these four independent variables indicated that communication process presented the strongest positive interference on the project success with the standard beta of 0.679 followed by communication system with beta of 0.233, communication goal with β 0.206, and communication planning with beta of 0.183.. Thus the statistical results prove that positive and linear relationship exists between dependent and independent variables.
- The results in the above table indicate that, there is positive and significant relationship between Communication process and project success ($r = 0.918$, $p < 0.01$) and communication goal and project success ($r=0.821$, $p<0.01$). This showed that as the correlation between communication process and project success higher than that of between communication goals and project success, there is positive and significant relationship between Communication planning and project success ($r = 0.858$, $p < 0.01$) and communication system and project success ($r=0.762$, $p<0.01$). The finding further indicates that the highest relationship is found Communication process and project success. And also there found greater relationship between communication dimensions and project success.

5.2 Conclusions

Within the land fill waste disposal construction of PFSA, there is a strong appreciation of the importance of project communication and its importance within the industry. Indeed, various levels and channels of communications have been established within the construction industry, for example communication between the clients and consultants or consultants and contractors. In spite of that, there have been many hindrances to effective communication on construction project in the project of PFSA. The results of this study indicate that, there is positive and significant relationship between Communication process and project success, communication goals and project success. This showed that as the correlation between communication process and project success higher than that of between communication goals and project success, there is also positive and significant relationship between Communication planning and project success, communication system and project success. The finding further indicates that the highest relationship is found Communication process and project success. And also there found greater relationship between communication dimensions and project success. The result shows that both formal and informal communications are the mechanisms use to maximize effective communication for its effective communication system to enhance the project success on the study area.

This research has shown that Communication process and project success. And also there found greater relationship between communication dimensions and project success. Therefore, clearly establishing and managing the structures of communication on project must always be on the agenda of team leaders and management before the commencement of every project.

5.3 Recommendations

Based on the findings and conclusions of the study, the researcher forwards the following recommendations to the management of PFSA:-.

- Project success has been controlled with effective communication implementation between the project owners, stakeholders, contractors and the consultants. Therefore, PFSA should have to align an effective communication strategy to finalize its landfill waste disposal projects.
- The communication plan, goal, process and system showed a significant contribution to the project success in this study. Therefore, PFSA should have to pay a great concern for these communication processes in order to achieve the project success.
- On the project under this study barrier happened during site selection & allocation the resources to the construction. Therefore, an organization should have to conduct an assessment for site selection of the project and resources should have to plan intensively according to the scope of the project.
- In order to achieve project success the organization should have to conduct a continues follow up, aligned two way communication to identify the gap mutually and solve in collaboration.

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APPENDICES

Appendix-I

SPSS OUTCOME TABLES AND FIGURES

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.371	.167		2.229	.028		
	Communication process	.649	.092	.679	7.088	.000	.145	6.913
	Communication goals	.207	.073	.206	2.836	.010	.253	3.956
	Communication planning	.174	.079	.183	2.214	.029	.195	5.123
	Communication System	0.214	.067	-.013	3.19	.001	.313	3.197

Table 4.3.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.926[a]	.858	.853	.419	.858	161.433	4	107	.000

a. Predictors: (Constant), Communication System, Communication goals, Communication planning, Communication process

b. Dependent Variable: Project success

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	113.114	4	28.278	161.433	.000[b]
	Residual	18.743	107	.175		
	Total	131.857	111			
a. Dependent Variable: Project success						
b. Predictors: (Constant), Communication System, Communication goals, Communication planning, Communication process						

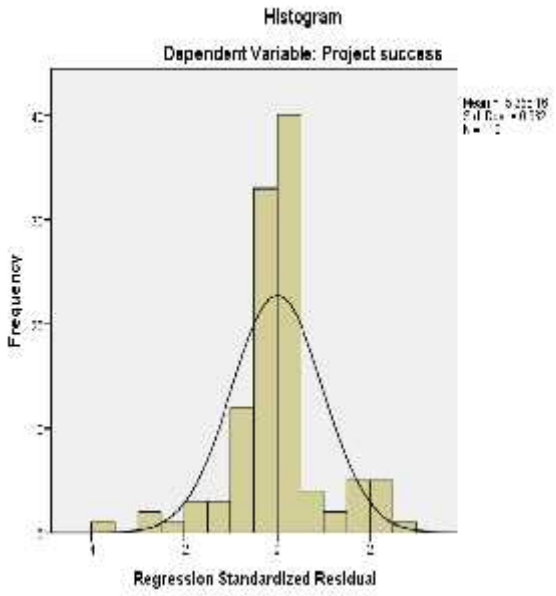
Table 4.3.1: Reliability test

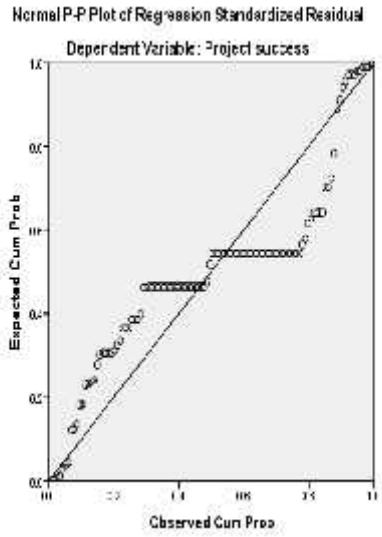
Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Communication process	.996	.996	10
Communication goals	.988	.988	7
Communication planning	.987	.987	8
Communication system	.995	.995	10
Project success	.995	.996	14

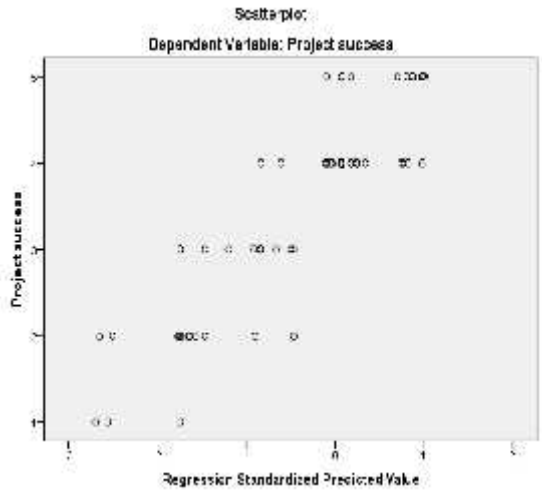
Correlations

		Communication process	Communication goals	Communication planning	Communication System	Project success
Communication process	Pearson Correlation	1	.842**	.879**	.826**	.918**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	112	112	112	112	112
Communication goals	Pearson Correlation	.842**	1	.833**	.709**	.821**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	112	112	112	112	112
Communication planning	Pearson Correlation	.879**	.833**	1	.758**	.858**
	Sig. (2-tailed)	.000	.000		.000	.000

	N	112	112	112	112	112
Communication System	Pearson Correlation	.826**	.709**	.758**	1	.762**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	112	112	112	112	112
Project success	Pearson Correlation	.918**	.821**	.858**	.762**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	112	112	112	112	112
**. Correlation is significant at the 0.01 level (2-tailed).						






Scatterplot
Dependent Variable: Project success
Project success
Regression Standardized Predicted Value

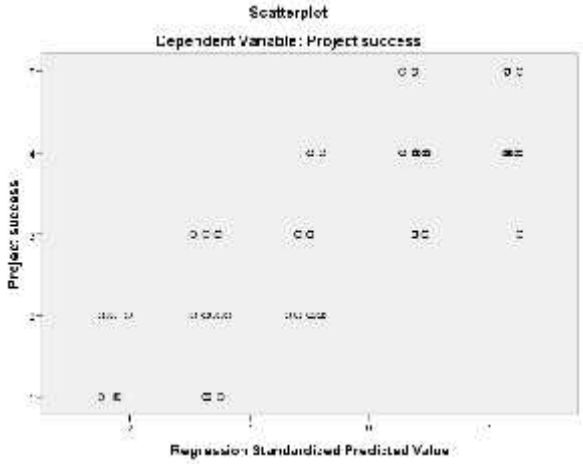

Scatterplot
Dependent Variable: Project success
Project success

Table A3 The *t*-distribution

The table gives critical values of *t* for significance at various levels, in a two-tailed/non-directional or a one-tailed/directional test, for different numbers of degrees of freedom. These critical values are the values beyond which lies that proportion of the area under the curve which corresponds to the significance level.

	Significance level: two-tailed/non-directional				
	0.20	*0.10*	*0.05*	*0.02*	*0.01*
Degrees of freedom	*Significance level: one-tailed/directional*				
	0.10	*0.05*	*0.025*	*0.01*	*0.005*
1	3.078	6.314	12.71	31.82	63.66
2	1.886	2.920	4.303	6.965	9.925
3	1.638	2.353	3.182	4.541	5.841
4	1.533	2.132	2.776	3.747	4.604
5	1.476	2.015	2.571	3.365	4.032
6	1.440	1.943	2.447	3.143	3.707
7	1.415	1.895	2.365	2.998	3.499
8	1.397	1.860	2.306	2.896	3.355
9	1.383	1.833	2.262	2.821	3.250
10	1.372	1.812	2.228	2.764	3.169
11	1.363	1.796	2.201	2.718	3.106
12	1.356	1.782	2.179	2.681	3.055
13	1.350	1.771	2.160	2.650	3.012
14	1.345	1.761	2.145	2.624	2.977
15	1.341	1.753	2.131	2.602	2.947
16	1.337	1.746	2.120	2.583	2.921
17	1.333	1.740	2.110	2.567	2.898
18	1.330	1.734	2.101	2.552	2.878
19	1.328	1.729	2.093	2.539	2.861
20	1.325	1.725	2.086	2.528	2.845
21	1.323	1.721	2.080	2.518	2.831
22	1.321	1.717	2.074	2.508	2.819
23	1.319	1.714	2.069	2.500	2.807
24	1.318	1.711	2.064	2.492	2.797
25	1.316	1.708	2.060	2.485	2.787
26	1.315	1.706	2.056	2.479	2.779
27	1.314	1.703	2.052	2.473	2.771
28	1.313	1.701	2.048	2.467	2.763
29	1.311	1.699	2.045	2.462	2.756
30	1.310	1.697	2.042	2.457	2.750
40	1.303	1.684	2.021	2.423	2.704
60	1.296	1.671	2.000	2.390	2.660
120	1.289	1.658	1.980	2.358	2.617
∞	1.282	1.645	1.960	2.326	2.576

Table A9 The Pearson product–moment correlation coefficient

The table gives the critical values of the Pearson product–moment correlation coefficient, r, for different numbers of pairs of observations, N. For significance, the calculated value of r must be *greater than or equal to* the critical value.

	Significance level: two-tailed/non-directional			
	0.20	*0.10*	*0.05*	*0.01*
	Significance level: one-tailed/directional			
N	*0.10*	*0.05*	*0.025*	*0.005*
3	0.951	0.988	0.997	1.000
4	0.800	0.900	0.950	0.990
5	0.687	0.805	0.878	0.959
6	0.608	0.729	0.811	0.917
7	0.551	0.669	0.754	0.875
8	0.507	0.621	0.707	0.834
9	0.472	0.582	0.666	0.798
10	0.443	0.549	0.632	0.765
11	0.419	0.521	0.602	0.735
12	0.398	0.497	0.576	0.708
13	0.380	0.476	0.553	0.684
14	0.365	0.458	0.532	0.661
15	0.351	0.441	0.514	0.641
16	0.338	0.426	0.497	0.623
17	0.327	0.412	0.482	0.606
18	0.317	0.400	0.468	0.590
19	0.308	0.389	0.456	0.575
20	0.299	0.378	0.444	0.561
21	0.291	0.369	0.433	0.549
22	0.284	0.360	0.423	0.537
23	0.277	0.352	0.413	0.526
24	0.271	0.344	0.404	0.515
25	0.265	0.337	0.396	0.505
26	0.260	0.330	0.388	0.496
27	0.255	0.323	0.381	0.487
28	0.250	0.317	0.374	0.479
29	0.245	0.311	0.367	0.471
30	0.241	0.306	0.361	0.463
40	0.207	0.264	0.312	0.403
50	0.184	0.235	0.279	0.361
60	0.168	0.214	0.254	0.330
70	0.155	0.198	0.235	0.306
80	0.145	0.185	0.220	0.286
90	0.136	0.174	0.207	0.270
100	0.129	0.165	0.197	0.256
200	0.091	0.117	0.139	0.182

Table A10 The Spearman rank correlation coefficient

The table gives the critical values of the Spearman rank correlation coefficient, ρ, for different numbers of pairs of observations, N.

	Significance level: two-tailed/non-directional			
	0.20	*0.10*	*0.05*	*0.01*
	Significance level: one-tailed/directional			
N	*0.10*	*0.05*	*0.025*	*0.005*
5	0.800	0.900	1.000	—
6	0.657	0.829	0.886	1.000
7	0.571	0.714	0.786	0.929
8	0.524	0.643	0.738	0.881
9	0.483	0.600	0.700	0.833
10	0.455	0.564	0.648	0.794
11	0.427	0.536	0.618	0.755
12	0.406	0.503	0.587	0.727
13	0.385	0.484	0.560	0.703
14	0.367	0.464	0.538	0.679
15	0.354	0.446	0.521	0.654
16	0.341	0.429	0.503	0.635
17	0.328	0.414	0.488	0.618
18	0.317	0.401	0.472	0.600
19	0.309	0.391	0.460	0.584
20	0.299	0.380	0.447	0.570
21	0.292	0.370	0.436	0.556
22	0.284	0.361	0.425	0.544
23	0.278	0.353	0.416	0.532
24	0.271	0.344	0.407	0.521
25	0.265	0.337	0.398	0.511
26	0.259	0.331	0.390	0.501
27	0.255	0.324	0.383	0.492
28	0.250	0.318	0.375	0.483
29	0.245	0.312	0.368	0.475
30	0.240	0.306	0.362	0.467
35	0.222	0.283	0.335	0.433
40	0.207	0.264	0.313	0.405
45	0.194	0.248	0.294	0.382
50	0.184	0.235	0.279	0.363
55	0.175	0.224	0.266	0.346
60	0.168	0.214	0.255	0.331

Appendix II

Jimma University

College of Business and Economics

Department of Accounting

Questionnaire to be filled by the community parts (inhabitants around the project site), members from the municipality and project team of PFSA waste disposal land fill construction at Jimma, Nekemte and Adama towns.

Research topic: -

ASSESSING THE IMPORTANCE OF COMMUNICATION IN MAINTAINING QUALITY AND TIMELY DELIVERY OF PFSA WASTE DISPOSAL LAND FILL PROJECT

Introduction Just like in any other discipline of business the importance of communication cannot be overemphasized in managing projects. Statistics show that seventy four percent of projects are unsuccessful. One of the many factors that contribute to the failure of these projects is poor or insufficient communication. For this reason, there is a need to assess the current management of project communication in the PFSA waste disposal land fill construction project.

This research is therefore being undertaken to find out from the primary stakeholders to any construction project (namely the client, consultant, contractor, community and government bodies) how, in their opinion communication is being carried out and whether that has an effect on project deliveries. This study is conducted as part of a graduate study at Jimma University. It is my belief that the stakeholders will provide practical and convincing answers to the questions below to enable me present a good report. Thank you in advance for your contribution to this research study. Please respond to the following by either writing in the blank space provided or ticking the appropriate box.

Section One - Respondent Profile

1.1 What type of organization do you belong?

a) Clients organization (PFSA) b) Contracting firm c) Consulting firm

d) Others (specify).....

1.2 Which of the following describes your position?

a) Branch Manager& Deputy manager b) Project Manager c) Principal consultant d) Managing director e) Contractor f) team leaders from the hub h) Others (specify) …….....

1.3 How many years of experience do you have?

a) Less than 5years b) 5 years to 10year c) 10 years to15 yearsd) 16 years and above

1.4 Have you ever had any form of communication on a project?

Yes ☐ No ☐

1.5 If yes, what for did it take?

(Specify)…….....
.....

Part II. Effects of communication in the project success of PFSA land fill waste disposal project: based on communication aspects of process, goals, planning and system.

This part of the questionnaire consists of ___ () questions. The main purpose of this instrument is to examine "Effects of communication in the project success of PFSA land fill disposal projects in Jimma, Adama and Nakamite towns".

Judge how frequently each statement fits the situation of your organization. Use the following rating scale, and put "√" mark for each rating. Strongly agree (5), Agree (4), Neutral (3), Disagree (2), and strongly disagree (1).

S/No	COMMUNICATION	5	4	3	2	1
	Communication Process					
1	The messages in the communication process sent on effective channels					
2	Site meetings are an important channel of communication between the consultants and contractor on site.					
3	Different perceptions of the message, language barriers, interruptions, emotions, and attitudes had been noticed in the process					
4	Poor and distorted information will affect the level of work done on site.					
5	Poor means of communication leads to distorted information on site.					
6	The importance of language used among operatives is very essential for effective communication on site.					
7	Feedback had been utilized to confirm the message understood by the receiver in the communication.					
8	The communication process had been followed could assist the progress of the project.					
9	Effective communication reflecting openness and tolerance of cultural differences					
10	Clear and understandable communication process had been aligned around the project tasks.					
	Communication goals					
1	The communication goals were established based on the shareholders interests					
2	The project goals revealed the project managers‟ ability to communicate is crucial to the success of the project					
3	The communication had been made could able to deliver clear information.					
4	Communication with accurate and timely information for the input of the project.					
5	Project managers should have excellent communication skills					

6	Two way communications must be encouraged					
7	On-going communication between project proponents and its stakeholders					
	Communication planning					
1	The project could be established the communication infrastructures					
2	The communication plan had been pre-set to create clear information					
3	The communication established on the project had been aimed to create the right information to the right person at the right place.					
4	The communication existed could show the clear flow of information.					
5	There is an access of accurate information significant for project success					
6	Effective communication reflecting openness and tolerance of cultural differences					
7	Clear communication clarifying roles of stakeholders					
8	Open communication is required to provide management with some control					
	Communication System					
1	The project had been used internal and external communication for the project success.					
2	The information flow in the project managed with the external communication system					
3	Project proponents and stakeholders communicate throughout the project					
4	Communication plan reviewed regularly and adjusted if need be					
5	Project type and duration has a beading on communication strategy and structure					
6	The communication held could build mutual understanding					
7	Appropriate communication media for specific purposes/audiences are necessary					
8	Effective communication strategies are needed to minimize potential disputes and misunderstandings					
9	Understanding the language(s) and practices of local culture enhances communication					
10	Communication gives project stakeholders the opportunity to comment or cast a vote					

	Project success					
	Timeliness					
1	Effective internal communication established to keep the timeliness of the project					
2	External communication had a potential for maintaining the project time lines					
3	Regular and sustainable communication established to run the project on time					
4	Communication barrier is there that make the project delay					
5	Barriers are identified and managed which identified in a communication to continue project progress					
6	Using different communication channels to avoid the project delay					
7	The communication channels used effective for the progress of the project on time base					
	Project quality					
1	Continues follow up and communication have been made to ensure that the project maintained its specification					
2	The material which availed to the project met the standard which indicated on the specifications					
3	The contractors which operate the project had occupied the required criteria					
4	The selected site which is feasible for the project					
5	The project concerned quality in economical ways					
6	Effective communication had established to understand the standard of the project					
7	The specification and implementation have been evaluated with a consultants					

THANK YOU IN ADVANCE FOR YOUR COOPERATIONS