ADDIS ABABA UNIVERSITY
SCHOOL OF COMMERCE
MASTERS OF ARTS IN PROJECT MANAGEMENT

THE EFFECT OF PROJECT COMMUNICATION MANAGEMENT ON PROJECT PERFORMANCE:

A CASE OF AMAHARA DEVELOPMENT ASSOCIATION WATER PROJECTS

By

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DECLARATION

I, the undersigned, declare that the study entitled "*Effect Of Project Communication On Project Performance: A Case Of Amahara Development Association Water Projects*" is the result of my own effort and study that all sources of materials used for the study have been acknowledged. I have conducted the study independently with the guidance and comments of the research advisor.

This study has not been submitted for any degree in any university. It is conducted for the partial fulfillment of the Master of Arts Degree in Project Management.

_____ _____

Abrham Kuma Date

LETTER OF CERTIFICATION

This is to certify that Abrham Kuma has conducted this project work entitled "*Effect Of Project Communication On Project Performance: A Case Of Amahara Development Association Water Projects*" is under my supervision.

This project work is original and suitable for the submission in partial fulfillment of the requirement for the award of Master of Arts Degree in Project Management.

Abdurezak Mohammed (PhD) _____

Date and Signature

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LIST OF ABBREVIATIONS AND ACCRONYMS

ADA :Amahara Development Association

APM- Association of project management

CORHA- Council for Outbreak Response Healthcare Associated

DFID- Department for International Development

OBS- Organization Breakdown Structure

PCM- Project communication management

PDT- Project department team

PMBOK: Project Management Body of Knowledge

PMI: Project Management Institute

PMO- Project Management Office

RBS: Resource breakdown structure

SPSS: Statistical Package of Social

UNFPA- United Nation Population fund

WBS :Work Breakdown structure

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ABSTRACT

Prior studies demonstrate the importance of project communication management for the success of a project. This study focused on practices of project communication management in ADA water project in Ethiopia. The objectives of this study was to examine the practice of project communication management, and establish a potential relationship between project communication and project performance in water projects of Amhara Development Association in Ethiopia. Explanatory research design and quantitative approach was adopted. Out of a sample size of 214, 175 responded implying 81% of response rate). Primary data were collected from project team member using questionnaires. Data analysis were done using descriptive as well as inferential data analysis techniques. The findings of the study show that the practice of project communication management, communication method, and communication channel had statistically positive significant influence on project performance. Barriers to communication had statistically negative significant influence on project performance. Oral communication method was the most frequently used relatively to others. Bottom-up flow of information was the predominant pattern of communication flow followed by horizontal (lateral) flow of information. The study, therefore, recommends that strengthening the deployment of project communication management and communication method; top –down communication in the project shall be encouraged; and on avoiding barriers to effective communication, revising the established line of communication, building trust between employees must get attention.

Key Words: *communication management, project performance*

CHAPTER ONE
INTRODUCTION

In this chapter, brief background of the study, statement of the problem, objectives of the study, research hypothesis, and significance of the study, and scope of the study will be presented.

4.1 Background of the study

There are numbers of indigenous non-governmental and non-profit making organization in Ethiopia established with different aim/objective which carry outs their business using project-based approach. Though the effectiveness and sustainability of aid projects are still debatable, most rural development projects are assumed to have contributed to the improvements of livelihoods of rural households. The success of projects run by Amhara Development Association in Ethiopia depends on how well it was planned and executed to context as well as controlled or monitored. Studies show that project success is strongly linked to communication and cooperation between internal and external project stakeholders. Effective communication creates a bridge between diverse stakeholders who may have different cultural and organizational backgrounds, different levels of expertise, and different perspectives and interests, which impact or have an influence upon the project execution or outcome (PMI, 2013) . According to Culo and Vladimir (2010, p. 234), effective project managers spend about 90% of their time communicating with team members and other project stakeholders, whether they are internal (at all organizational levels) or external to the organization.

In the context of project management, the role of project communication management application on water projects plays a vital role in providing an information lifeline among all members of the project. Hence, this study attempts to examine the practice of project communication management, and relationship between project communication and project performance in water projects of Amhara Development Association in Ethiopia.

4.2 Amhara Development Association (ADA)

The Amhara Development Association (ADA) is an indigenous non-governmental and non-profit making organization which was established in May 1992 by the people of Amhara region. It has emerged as a local initiative to promote the economic and social progress of the people of Amhara region.

Currently ADA is one of the leading membership organization in Ethiopia with more than two million registered members who regularly contributing money to its cause. It is operating throughout Amhara region and has established branch offices in the different zones and woredas of the region.

It has the mission to support the development endeavors of the people of Amhara region by intervening in key development areas especially in health, education, basic skills training, environmental protection and other related development activities by mobilizing resources from members, supporters, and donors.

Since its establishment, ADA has implemented a wide range of development projects that benefited millions of people in the region. The association has also made great achievements in the areas of skill training for youth job seeker and contributes a lot to graduate many construction workers who are working in all over the region and proudly ascertain that almost all are engaged in construction works to the extent of being a contractor level in many construction sites.

Currently, ADA is implementing different community based projects like reproductive health and maternal health, environmental, water and education projects in partnership with the following key organizations: Pathfinder Ethiopia/USAID, JSI/L10K, Engender health Ethiopia, Interact worldwide funded by Big Lottery, German Foundation for world Population /DSW/, Pact Ethiopia, Packard Foundation, CORHA, Save the children Denmark, European Union, UNFPA, World health organization, DFID, etc. Above all, ADA has productive working relationship with the community, stakeholders, and government line offices. Moreover, ADA has very good record in project and financial management. It has a strong organizational structure and long years of experience to support the project activities up to grassroot level.

4.3 Statement of the Problem

The essential role of effective communication for project success is undeniable . Project communication management, one of the areas of project management, is considered to be of crucial importance to the success of the project (Ofori, 2013; Kerzner, 2013). Project communication management ensures timely and appropriate generation, collection, dissemination, storage, and disposition of project information. Open and clear communications are required among planners, implementers, and all levels of the organization for project success. It includes having a communication plan, information distribution path, progress reporting, and information sharing system for management and customers (Kwak, Ibbs, 2002). However, projects fail due to many reasons and one of the reason is communication problem. Goatham (2014), as widely described in literature, it is evident that effective and efficient project communication has a direct impact on the success of a project. Although ADA had accomplished different projects, there are still a number of water projects which failed to meet the objective. Therefore, the study aims to examine the practice of project communication management, and relationship between project communication and project performance in water projects of Amhara Development Association in Ethiopia.

4.4 Research Questions

This study aims at addressing the following specific research questions:

1. How do team members in ADA water projects value communication?
2. What are the communication means and channels practiced by project professionals in ADA water projects ?
3. Does project communication management relate to project performance in water projects of ADA?
4. What are the main barriers to communication in water projects of ADA Ethiopia?

4.5 Research Objectives

The general objective of this study is to examine the practice of project communication management, and establish a potential relationship between project communication and project performance in water projects of Amhara Development Association in Ethiopia.

The specific objectives of this study are as follows:

1. To assess how project team members in ADA water projects value project communication,

2. To examine the various communication method and channels practiced by project professionals in ADA water projects,
3. To analyze the relationship between project communication and project performance in water projects of ADA, and
4. To determine barriers to communication on water project in ADA ,

4.6 Significant of the study

a. The study may provide management of ADA Ethiopia with an independent assessment of the role that the extent of project communication management application played on project performance.
b. It is also hoped that such a study will contribute to fill the gap of knowledge on communication-performance relationship.
c. The study will provide local source of literature for further studies on the concept of project communication and perceived project performance.

4.7 Scope of the Study

The scope of the research is delimited to water projects out of the many projects that are currently undergoing by ADA which may be viewed as a restriction that limits the generalization of the result. The study limits its coverage to Amhara Region. The scope of the study is delimited on one of the Project management Knowledge area out of the ten project knowledge areas which is only project communication management.

4.8 Research Hypotheses

The following are research hypotheses of the study.

H_1: There is significant relationship between project communication management practice and project performance.

H_2: There is significant relationship between communication channels and project performance.

H_3: There is significant relationship between communication method and project performance.

H_4: There is significant relationship between barriers to communication and project performance.

4.9 Definition of significant terms as used in the study

The following terms were used in this study. The meaning of each term in the context of this study is given below:

Communication Management: is a process of supervising information transfer in all directions (upward, downward, horizontally or diagonally), which may be formal or informal. He also states that project performance directly depends on Project manager's competence in managing communications (Kerzner, 2009).

Communication channel (Pattern) : a regular and intelligible form or sequence discernible in the way in which something happens or is done" or "an excellent example for others to follow (Karolina Muszyńska, 2011).

Communication Methods- are standard methods to communication which are speaking, writing by a sender and listening or reading the receiver, accessed 4 May 2019, <https://www.cliffsnotes.com>

Project communication- Project communication refers to information exchanges intended to create understanding among project stakeholders (Ruuska, 1996)

Project Performance: defining and evaluating project performance differs when different perspectives are employed (Shenhar et al. 1997; Chan and Chan 2004). In this study, it is the accomplishment of projects measured against preset known standards of cost, time and quality of ADA water project in Ethiopia.

4.10 Organization of the study

This project paper covers the following areas: The first chapter contains the background of the study, the statement of the problem, purpose of the study, objectives, Research questions, significance of the study, scope of the study, and the definitions of significant terms.

The second chapter which is the Literature Review containing the Introduction, Concept of communication, project communication management, project performance, project communication management influence on project Performance , Conceptual framework and Gaps in Literature Review and summary of the Literature review. The third chapter is the Research methodology and it contains the introduction, Research Design, Target population, Sample size and sample selection, Data Collection Instruments, Pre- testing, Validity, Reliability, Procedure of Data Collection, Methods of data Analysis, Operational Definition of the Variables and Ethical Considerations. Chapter four is Data analysis, presentation and

interpretation. Chapter five is conclusion and recommendations containing introduction, conclusion, recommendations, and recommendation for further studies.

CHAPTER TWO: LITERATURE REVIEW

Introduction

This chapter contains Theoretical literature on communication, styles of communication , method of communication, theories of communication, project communication management process, project life cycle and communication, tools and method of project communication, project success in relation to project communication, barriers to effective communication , empirical studies, summary of the empirical studies, and Conceptual framework.

2.1 Theoretical Literature

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. (PMI, 2009)

1. Types of Project Communication

There are various definitions of communication. PMI(2013, p.310-320) defines Communication as: The giving, receiving, processing and interpretation of information. Information can be conveyed verbally, non-verbally, actively, passively, formally, informally, consciously and unconsciously.

The project manager and the Project Management Office (PMO) are in the key positions to develop and maintain all the communication links, both within the company and the project team, and outside the company with the client, contractors, suppliers, consultants, other stakeholders and interested parties. The purpose of a project communication system is to transfer information from one team member to another. The basic communication model was developed in the 1940s by Bell Telephone in America. Bell was focusing on the process of communicating by voice over its telephone system and how to resolve some of the problems people were experiencing at the time.

A number of different communication models have been devised by several researchers among which Shonubi and Akintaro (2016), indicated the following:

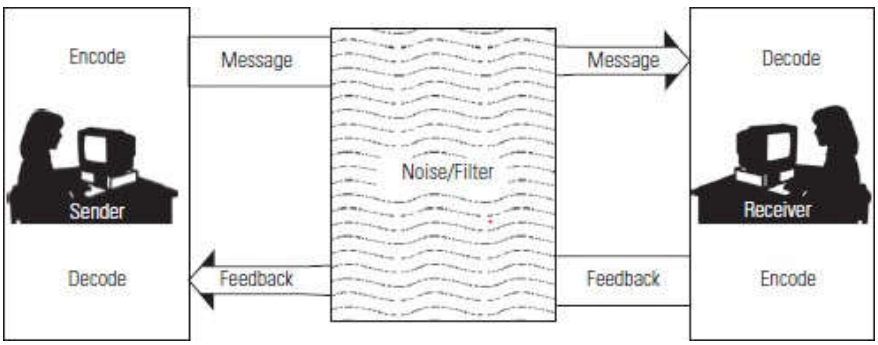
David Berlo's Model of Communication: Send -Message – Channel -Receiver (Linear Communication Model);

Harold Lasswell's Communication Model: Who – What – Which -Whom – What effect;

S.M.R.E Model of Communication: Communication explained in terms of input-output relationship involving formulation, transmission, reception, and interception. S.M.R.E. stands for Source, Message, Receiver and Effect.

The key components of the communication process are the sender who encodes and sends (transmits) the message, and the receiver who decodes and interprets the message. The receiver then feeds back a response to the sender and closes the loop. The communication model focuses on each element of the process to identify what should happen and to prevent misunderstanding.

Figure 1: communication Model



Source: adopted from Burke and Barron (2014)

Sender: The sender is the originator of the message and the starting point of the communication cycle. The sender will have a purpose to communicate. This might be to request information, send information, ask a question, issue an instruction, encourage team building, marketing, and networking or to make a courtesy call.

Encoding: Encoding is the process of converting thoughts, feelings and ideas into 'code or cipher'. These are the words, numbers, phrases and jargon used by people to express themselves, which can sometimes sound like a foreign language. In the project management context there is definitely a project management speak that will have to be learnt.

Medium: The medium is the vehicle or channel used to convey the message. Project communications can be transmitted in many forms; formal or informal, written or verbal, planned or ad hoc.

Receiver: The receiver is the person or persons who receive the transmitted message. Their ability to receive will depend on their hearing and listening skills, selective listening, eyesight and reading skills, visual activity, tactile sensitivity and extrasensory perception.

Listening skills are a key part of project leadership because both the speaker and the listener play a part in the communication process. In a conversation there has to be a speaker and a listener. Instead of being a passive recipient, the listener has considerable influence on shaping the conversation.

Decoding: This is the process of converting the message back into a readable format.

Noise, Filters and Perceptions: These are all factors that interfere with the effectiveness of the communication process. Distortions occur during encoding and decoding, communication channels can be blocked by too many messages and filters and perceptions might influence interpretations and impressions.

Ambiguity: When communicating, make sure the comments are not likely to be misinterpreted, as in this example: Two tradesmen knocking in a nail: 'When I nod my head hit it'.

Feedback: It is good manners not only to acknowledge receipt of the communication, but also to give the sender a timeframe for a reply to any questions. It is important to give feedback to the sender so that it can be gauged how effectively the message was understood, and also for the receiver to confirm if the message has been interpreted correctly. No effective communication has occurred until there is a common understanding.

2. Different Types of Communication for Effective Project Management

According to Michael Martinez PMP (2012), there are different types of communication for effective project management that depend on the following perspectives:

Project Perspective: from a project perspective, communication can be looked at as either **internal or external**. Internal communication is the communication that takes place between project team members. Generally, this type of communication is "raw." It

may involve a lot of back-and-forth discussion as plans or issues are worked out. External communication is communication between project team members and the other project stakeholders. Examples include communication with internal and external customers, other projects, and the media. Generally, this type of communication is cleaned up or otherwise prepared before being presented or sent to the receiving party.

Organizational Perspective: Communication from an organizational perspective can be categorized as **vertical, horizontal, or diagonal**. This perspective takes into account the way organizations are structured. Vertical communication is the upward and downward communication flow that happens between different hierarchical levels of the organization. An example of upward communication is when a project team member provides the project manager with a status update of his assigned tasks. An example of downward communication is when the project manager shares the project goals with the project team. Horizontal communication refers to communication between people at the same organizational level. An example of horizontal communication is when project team members discuss project topics with each other. Diagonal communication takes place between different functional divisions of the organization. Diagonal communication has become more important as matrix and project-based organizations become more common. To be effective in these types of organizations, a project manager has to be familiar with the different functions and managers within the organization and then plan his communications accordingly.

Formality Perspective: another way to look at project communication is on whether it is **formal or informal**. Some examples of formal communication include reports, presentations, and media releases. This type of communication is usually planned and takes some time and effort to prepare. Informal communication includes emails and ad-hoc discussions. Informal communication has increased as many projects start to use social networking. Many people don't put much thought into their informal communications. However, effective project managers realize this type of communication is just as important as formal communication. Whether formal or informal, you need to make sure you communicate with a purpose and that you put some thought into how you communicate in order to get the results you want.

Channel Perspective: project managers also need to give consideration to the communication channel they will deliver their message over. This perspective deals with how your message will be communicated. Therefore:

- Verbal or Non-Verbal

- Written or Oral
- Face-to-Face or via Telephone

3. Styles of Project Communication

The following styles of communication have been highlighted by Rory burke, Steve Bannon (2014, p. 304-308).

- **Formal Written:** Emails, letters, faxes, memos, minutes, drawings, specifications and reports
- **Formal Verbal:** Telephone, voice mail, meetings, video-conferencing
- **Informal Verbal:** Casual discussion between friends, networking with useful contacts
- **Non-verbal:** Body language

The use of written communication should be encouraged on the project because it addresses misinterpretation and forgetfulness. All the important agreements and instructions should be confirmed in writing. It is important to keep a written trail of agreements to refer to if and when problems develop later in the project. Written communications are acceptable for simple messages that are easy to convey and for those messages that require extensive dissemination to all stakeholders. However, verbal channels work best for complex messages that are difficult to convey, might need explanation, and where immediate feedback to the sender is valuable. Verbal communications are also more personal, and this helps to create a supportive and inspirational climate.

Non-verbal Communication: As the phrases suggest, 'A picture is worth a thousand words' and 'Actions speak louder than words'. This confirms that non-verbal actions are an important part of the communication process. They could be:

- Body Language
- Hand movements
- Facial expressions
- Eye contact
- Use of interpersonal space

4. Methods of Communication

There are several communication methods used to share information among project stakeholders KsenijaCulo, Vladimir Skendrovic (2010, p. 229). These methods can be broadly classified into:

Interactive communication: Between two or more parties performing a multidirectional exchange of information. It is the most efficient way to ensure a common understanding by all participants on specified topics, and includes meetings, phone calls, video conferencing, etc.

Push communication: Sent to specific recipients who need to know the information. This ensures that the information is distributed but does not certify that it actually reached or was understood by the intended audience. Push communication includes letters, memos, reports, emails, faxes, voice mails, press releases etc.

Pull communication: Used for very large volumes of information, or for very large audiences, that requires the recipients to access the communication content at their own discretion. These methods include intranet sites, e-learning, and knowledge repositories, etc.

5. Crisis Communication

Crisis response is the point which is characterized by short decision time, stress, complexity, and uncertainty Zhong Ying, Low Sui Pheng (2014, p. 16). Immediate and appropriate communication decision is vital and even affects the recovery stage management.

Crisis can happen to any organizations and crisis management is crucial for all organizations because effective crisis management helps to ensure the continuous well-being of an organization. Communication is particularly challenging during various stages of crises, and effective communication management is a critical tool in the management of a crisis situation. It plays an importance role in how an organization resolves a crisis it cannot avoid. The concepts of mainstream crisis management and communication management play an important role in these circumstances.

6. Theories of Communication

Shonubi and Akintaro (2016), in their assessment of the impact of effective communication on organizational performance highlighted about 23 theories of communication identified by McGraw-Hill (2001). Some of these theories which are applied on project management are:

Cognitive Dissonance Theory: This theory argues that the experience of dissonance or incompatible beliefs and actions is prone to strong aversion. Thus, people are highly motivated to award it in their effects to match their actions and seek reassurance to match their actions after making a different decision.

Communication Accommodation Theory: The theories argue that during communication, people will try to accommodate or adjust their style of speaking to others. This is done in two ways: divergence an convergence. Convergence occurs when there is a strong need for social approval, frequently from powerless to highlight their group identity.

Groupthink Theory: The theories contend that group members frequently think similarly and are reluctant to share unpopular or dissimilar ideas with others. When this occurs, groups prematurely make decision, some of which can have lasting consequences.

Diffusion Theory: Humans are creatures of habits, and this is emphasized in the theory. It's difficult to change how individuals change their habits or their choice of thinking in an instant. Some individuals can easily adapt to changes while others will take time to adjust. Project managers should keep this theory in mind during the planning stage. Sudden changes in plans can disorient some team members, causing them to not function as properly as usual. Thus, plans need to be concrete and thorough to avoid disorientation among team. But when you're aware of the Diffusion Theory, you can come up with ways to make transitions effective for most, if not all, members

Social Information Processing Theory: Many individuals are quick to dismiss the effectiveness of online communication, but the Social Information Processing Theory emphasizes how online relationships can be as strong as face-to-face ones. This interpersonal communication theory points out how strong bonds can be formed through the very few clues individuals can get from online conversations. This is important in this age where email correspondences sometimes happen more often than in-person conversations. It's also inevitable to send group messages within the team to quickly disperse instructions and information. To keep in mind that online relationships also matter, project managers will put more care with their words and on how to properly

relay a message despite the lack of social context clue

7. Project Communication Management Process

Communication is a vital element of a well-managed project. There are two main groups of people with whom the project manager needs to ensure clear and effective communication, the stakeholders and the project team (Rajkumar, 2010). According to PMI's Pulse research on Essential role of communications report, 55 percent of Project Managers agree that effective communication with all stakeholders is the most critical success factor in project management. Qualitative research conducted by Beleiu, Cisan and Nistor (2015), on main factors influencing project success, 40% of project managers chose communication and consultation with stakeholders as a critical factor.

Effective communication is one of the most important factors contributing to the success of a project. Project Communications handbook 2nd edition p. 2, defines **Project communication** as the exchange of project-specific information with the emphasis on creating understanding between the sender and the receiver. PMI (PMI, 2013, p. 287) defines **project communications management** as the method that includes the processes that are required to ensure timely and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring, and the ultimate disposition of project information. Successful communication is not only developing the plan, but also implementing the plan for continuous engagement with stakeholders (PMBOK, 2004)

The Project Management Institute study notes that project communications management processes include the following:

- Identify Stakeholder
- Plan Communications
- Distribute Information
- Manage Stakeholder Expectations
- Report Performance

a) Plan Communications Management

The project communication management plan outlines how to achieve the project communication objectives Burke and Barron (2014). It is the process of developing an appropriate approach and plan for project communications based on stakeholder's

information needs and requirements, and available organizational assets. (PMBOK, 5th edition p. 289). Rajkumar (2010), identified urgency of information, technology, project staffing, project length and project environment as factors that may have an effect on communication plan. Plan communications management includes:

a. Identifying stakeholders' requirements
b. Enterprise Environmental Factors and Organization Process Assets
c. Communication requirement analysis (scope, line and method of communication

A **line** of communication is a formal or informal link between two or more people, departments, companies, suppliers, contractors or stakeholders. The lines of communication tend to follow the organization chart, which not only outlines the project manager's position, but also implies responsibility, authority and who reports to whom. Burke and Barron, (2014)

The project manager needs to agree with the stakeholders on the most appropriate **methods of communication** as well as frequency Burke and Barron (2014). The methods used to transfer information among project stakeholders may vary significantly (PMI, 2013, p.294-295). These methods include:

- **Interactive communication** - Between two or more parties performing a multidirectional exchange of information. It is the most efficient way to ensure a common understanding by all participants on specified topics, and includes meetings, phone calls, instant messaging, video conferencing, etc.
- **Push communication** - Sent to specific recipients who need to receive the information. This ensures that the information is distributed but does not ensure that it actually reached or was understood by the intended audience. Push communications include letters, memos, reports, emails, faxes, voice mails, blogs, press releases, etc.
- **Pull communication** - Used for very large volumes of information, or for very large audiences, and requires the recipients to access the communication content at their own discretion. These methods include intranet sites, e-learning, lessons learned databases, knowledge repositories, etc.

By incorporating all of the above, the communication plan is produced which is part of the overall project management plan.

b) Manage Communication Plan

It's the process by which to communicate and work with stakeholders to meet their needs and address any issues and when they occur (Project Communications Management study notes).

Distribute the Communication Management Plan: the project manager sends the draft project communication plan to the project stakeholders for review and input. The project manager or PDT members incorporate changes from the project stakeholders into the project communication plan. The project manager then distributes the final project communication plan to the project team members. (Project Communication Handbook, 2nd edition, p. 16-17)

Distribute Information: following the communication plan ensures that all members of the project team are aware of their responsibilities to communicate with external stakeholders. The more information stakeholders have regarding a project or deliverable, the less likely last minute conflicts, changes, or complaints will affect a project.

Report Communication Performance: the project manager asks the project stakeholders if the project communication is sufficient to suit the stakeholder's needs. In some cases, project stakeholders may need greater detail or more frequent delivery

c) Control Communication

Control Communications is the process of monitoring and controlling communications throughout the entire project life cycle to ensure the information needs of the project stakeholders are met. (PMBOK 5th edition, p. 303).

The inputs, tools and techniques and outputs for controlling communications according to PMBOK 5th edition 304-308 include

Inputs

- The overall project management plan
- Project Communications – comes from multiple sources and vary significantly in their format, level of detail, degree of formality and confidentiality. The information to be communicated include but not limited to deliverable status, schedule progress and cost incurred
- Issue log - used to document and monitor the resolution of issue provides both a repository for what has already happened in the project and a platform for subsequent communications to be delivered
- Work performance data - organizes and summarizes the information gathered, and presents the results of comparative analysis to the performance measurement baseline

- Organizational process

Tools and Techniques

An information management system provides the set of tools for the project manager to capture, store and distribute information to stakeholders regarding cost, schedule progress and performance. It can be in the format of t able reporting, spreadsheet analysis, and presentations.

Expert judgment is relied upon on project team to assess the impact of project communications and the need to take action. It can be provided by individual or group of people with specialized knowledge.

Communication Control process requires discussion and dialogue with the project team to determine the most appropriate way to update and communicate project performance, and to respond to requests from stakeholders for information.

Output

Work performance information organizes and summarizes the performance data gathered and provides status and progress information on the project at the level of detail required by the various stakeholders. This information is then provided to the right stakeholders

Change Requests – there will be a need for adjustment, intervention and action in the cost estimate, schedule dates, resource requirements, etc

Project Management Plan updates

Project Documents updates - Forecasts, performance reports, issue log

Organizational process updates –It will be part of historical database for both this project and the performing organization and may include the causes of issues, reasons behind the corrective action chosen, and other types of lessons learned during the project

8. Project Life Cycle and Communication

A project passes through different stages of development known as project life-cycle. The project life cycle helps to understand the progressive change in the phases of a project and that each phase last for a certain limited period (Larson and Gray, 2011, p. 7). According to the research by Pinto and Slevin (1988), effective communication and client consultation in the different stages of project life cycles are among the factors critical to success.

Larson and Gray in their book on project management the managerial process, classified project life cycle in to four major phases which may further be re- modeled depending on the type of industry involved in the project. In each stages of the life cycle different forms of communication to address various issues are used by project managers, team members and other stakeholders.

The first stage in a project life cycle is the **Initiation Phase or Conception**. Here, project specifications are set, the purpose of the project is defined, and project members are selected and given responsibilities (Larson and Gray, 2011, p. 7).

During conception, information should be communicated with the project team and other stakeholders to avoid ambiguity and address any uncertainty (Stork & Sapienza, 1992). The first thing to be addressed at the beginning of a project is clearing any task or behavior ambiguity since every team member and stakeholder have its own level of understanding of the project. One of the mistakes made by project managers is not making project teams take part at this stage (Stork & Sapienza, 1992). This results in disagreements and misunderstandings of responsibilities on the upcoming phases of the project.

To reduce such problems, team members must take part in setting the project as well as their individual goal for the project success. Any task or behavior ambiguity has to be discussed to avoid future conflicts. In addition to avoiding ambiguity, communication during conception also addresses any uncertainties in the project.

To address this gathering and sharing high volume of relevant information is required and the project manager should facilitate this (Stork and Sapienza, 1992). Burke and Barron (2014, p.297) suggested project initiation meetings at the initiation stage of a project. The meeting participants should include the project manager and the team, contractors, suppliers, and other major stakeholders. In this meeting all parties will clearly be able to know their role in the project and be able to play a role in setting the overall project framework giving them a sense of ownership and commitment for the project. The response obtained by members of the Project Management Institute showed that client consultation and acceptance is a critical success factor at the initiation phase of the project (Pinto and Slevin, 1988).

The second stage in a project life cycle is **Planning Phase**. According to Larson and Gray (2011,p. 7) concepts covered at the planning stage are: the project requirements, time, cost, quality and beneficiary party of the project. The communication management plan is formulated at the planning phase of the project life cycle. This plan helps to clearly identify the appropriate tools, methods and the type of information to communicate among the project internal and external stakeholders. The project communication plan is a result of the project management plan, stakeholder register, enterprise environmental factors and organizational process assets (PMBOK® Guide, 2013). The above inputs require tools and techniques in order to get the communication management plan as an output. Some of the tools and techniques used are communication requirements analysis, communication technology, communication models, communication methods and meetings (PMBOK). Pinto and Slevin, (1988) have again identified consulting the stakeholder and having a two-way communication during the planning phase as one of the critical success factor for a project.

The **Execution Phase** of the project is where most of the work takes place. It is the stage where everything that had been discussed in the formation stage and what had been planned is put in to action. The physical product or service that had been planned comes to reality. Time, cost and quality are used as a control factors in this stage (Larson and Gray, 2011, p. 8). In this stage a routine exchange of information must be in place to address the recurring task and behavioral problems. Among team members emails and posted messages can be considered the appropriate method of communication (Stork & Sapienza, 1992). However, the authors suggested it is inefficient and in appropriate to use emails and memos to communicate issues that change the goal and objective of the project. It is suggested to use rich media that way team members and stakeholders can discuss the issue face to face and have similar understanding of the issue. According to Burke and Barron (2014, p.297), problem solving workshop, decision making meetings and project progress meetings are some form of communication methods used during the execution phase of a project. (Pinto and Slevin, 1988) in their research, emphasized not to forget communicating with the client at this stage of the project as well.

The final stage of the project life cycle is the **Closure Phase**. Some of the activities undertaken at this phase are delivering the project output to the customer, redistributing project resources, and assessing the overall project performance (Larson and Gray, 2011, p. 7). The project manager needs to conduct a handover meeting with the client to

transfer the project to operation (Burke and Barron, 2014, p. 297). When it comes to communicating with the project teams, the media selection at this stage must be given attention. For issues concerning project tasks such as submitting documentation and deadline changes can be communicated using emails or memos. However, issues of reassigning project team members have to be communicated with care using individual and group face to face communication (Stork and Sapienza, 1992). The finding of Pinto and Slevin (1988) research shows, similar to the prior phases of the project life cycle, during closure it is essential to effectively communicate with the client for the successful transformation of the project to operation.

9. Tools and Methods of Project Communication

Communication in project management is very critical. The common management skills of effective communication are crucial to project success because as indicated previously, project management involves formal and informal communication at different levels in the organization (Jana Smakova, Kristina Koltnerova Rudolf, Rybansky; project communication in functions, process and project oriented industrial companies).

Project team members use a variety of tools to organize and present project information. The following are some of them:

a) Project Fact sheet: this contains summary data for stakeholders outside the project team. There is no set of standards exist for a project sheet.
b) Filling system: this is a set of agreed upon folder and file naming conventions used to classify project documents to make them easier to find.
c) Work Breakdown structure (WBS): WBS is a deliverable oriented grouping of project elements that organizes and defines the total scope of the project. Project communication related to WBS elements. Team members use the WBS to create the communication plan.
d) Resource breakdown structure (RBS): this is a standardized hierarchical list of roles that is used to produce a project deliverable. Project team members use the RBS to determine what roles are needed to produce project specific WBS and to identify who needs to receive certain communication products.
e) Project Charter: this documents the agreement between the sponsor and the project manager over key elements of a project and component.

f) Organization Breakdown Structure (OBS): This groups personnel into successively smaller units, each reporting to a single manager or supervisor.
g) Performance Reporting: this involves the collection of all baseline data and distribution of performance information to stakeholders. Performance reporting generally provide information on scope, schedule, cost and quality.

Project team members use a variety of methods in a project environment. The following are some of them:

a) Project development meeting: its purpose is to develop a formal baseline work plan which is used to define monitor and manage project execution. And also it identify the basic task elements of a project and assess the resource needs for delivering a project within an assigned time frame.
b) Project management senior staff meeting: it communicates changes in department policy or procedures, manage program expectations and enhance training processes.
c) Project status review meeting: this helps to know report status and progress scheduled milestones and activities. It also identify and discuss problems and solutions for project obstacles.
d) Project team meeting: report project status and progress of scheduled milestones and activities. It also identify and discuss project issues and corrective actions.
e) Office meeting: report status and progress of projects and schedule tasks it also identify and discuss office related issues.
f) External Customer and/or Supplier meeting: this involves external customers and suppliers in the project.
g) Project internet site: report status and progress of scheduled milestones and activities.
h) Teleconference: Communicate changes in department policy procedures, manage program expectations and enhance training processes. It also identify and discuss problems and solutions for project obstacles.
i) Correspondence (Letters, memos, email, etc.): document status of action items, decision made and problems encountered.
j) Site visit: Identify and discuss problems and solutions for project obstacles

10. Evaluating the Effectiveness of Communication

An effective communication system, by which information can be exchanged in a clear and understandable manner is necessary, though not sufficient, for any project to succeed.

Communication is the basis of every human interaction and the foundation of every community. It is the process by which information is exchanged between individuals through a common system of symbols (Holzman & Globerson, 2003)

Kerzner (2001) suggests a graphical model for representation of responsibility matrix of communications management in project. The matrix provides an overall picture of the communications process during the project life cycle and answers the following questions: What information should be transferred? Who transfer the information and to whom? When should the information be transferred? How the information should be transferred?

From the study made by M. D. Murray,J. E. Tookey, A. Langford1 and C. Hardcastle (2000) ,the Construction Industry Institute (CII) from the USA identified six categories of communications effective as a measure of project communication effectiveness .i.e accuracy, procedures, barriers, understanding, timeliness and completeness.

For research purpose the measurement of general communication effectiveness was reduced to the gagging of the following four attributes:
Completeness – monitors whether the information transfers sustain all the requirements allocated to the transfers without any loss of relevant data.
Timing – monitors whether the information transfers, actually arrive within the assigned time frame.
Accuracy – monitors whether the transfers to and from, the receiver, are actually, clear, legible, understandable and precise.
Volume – monitors whether all the required information is transferred, while unnecessary and irrelevant information that might clog the system is rejected.

These attributes, or dimensions, are equivalent to four parameters - breadth, depth, quality and timeliness – that affect the organizational knowledge as suggested by Alavi and Leidner (2001) in a discussion on information technology and knowledge management initiatives.

11. Project Success in Relation to Project Communication

In the 1960's the measures of project success it was just on a finishing and operational basis. Most of the earlier studies (1980s) which were concerned, being determined on a basis of time, cost and quality. Project effectiveness is usually referred as project success

in most of the Project Management literature (Stamatia, K. Dr George, B. & Leif, H & Dr Tanev, 2012, p. 212-213). For the past several decades, it has been estimated that project managers spend about 90 percent of their time on communication-related issues. This is why it is imperative to apply and manage communication in a project environment appropriately so that every project staff and stakeholder of a project can communicate effectively and efficiently for the success of a project .

Poor communication is often used as a scapegoat during periods of adversity and disappointing project development. When unexpected issues, changes in plans and other common factors arise during project implementation, the phrase "it's a communications issue" is often heard. This umbrella term usually refers to a multitude of problems, all of which can affect the successful completion of a project.

To avoid this pitfall, it is important that project managers and team leaders have the ability to communicate effectively and efficiently with a diverse set of stakeholders. These include anyone from senior executives and contractors, to technical specialists and various functional groups. Effective communication with a broad range of stakeholders requires the project leader to possess a number of interpersonal skills, most of which center on communications.

12. Barriers to effective communication

Some of the barriers to effective communication include the following.

Differing frames of reference – individuals interpret the same communication differently depending on their previous experience.

Selective perception: occurs when people block out new information, especially when it conflicts with what they believe.

Poor listening skills- Value judgments: receivers make value judgments by assigning an overall worth to a message prior to receiving the entire communication.

Semantic problems

Filtering – typical in upward communication. It amounts to manipulating information so that the information is perceived as positive by the receiver.

Communication overload- people feel buried by information and data that they cannot adequately absorb.

Time pressures – can produce short-circuiting wherein someone has been left out of the formal channel of communication who normally would be included.

13. Improving communications in projects

- **Following up-** attempting to determine whether the intended message was actually received
- **Regulating information flow**- Attempting to eliminate communication overload.
- **Utilizing feedback**- sent by receivers of the messages.
- **Developing empathy**- placing oneself in the shoes of the receiver to anticipate how the message will be decoded
- **Simplifying language-** Encoding messages into words and symbols that the receiver understands.
- **Effective listening**- Entails listening with understanding- removing distractions, putting the speaker at ease, showing interest to listen and asking questions.
- **Utilizing the grapevine** – informal communication systems.
- **Promoting ethical communications**- Send communications which adhere to ethics.

2.2. Empirical literature

The importance of communication in the success of a project is immense and prior studies have analyzed and concluded the impact of communication on performance is vital.

In present scenario, extensive physical distance between project participants, sometimes extending over national boundaries is the main cause leading to delays in decision-making. Under such project environment, wide communication problems, ranging from delays to distortion of messages, impose strains on project management in construction.

Numerous studies have highlighted the importance of effective communications for project success (Biggs 1997). It was concluded in a study that the top 30 potential problems contributing to poor project performance could be classified under five categories, out of which communication problems are listed as the third category and all five categories involve communications to some extent (Thomas et al. 1998). For example, time delays and increased cost in construction projects can be traced back to poor coordination caused by inadequate, insufficient, inappropriate, inaccurate, inconsistent, late information or a combination of them all.

Communication has also been linked to team effectiveness, the integration of work units across organizational levels, characteristics of effective supervision, job satisfaction, and overall organizational effectiveness.

Jiang and Pretorius (2011) in their descriptive survey study of cross-cultural communication behaviors in international engineering projects from Chinese and South Africa perspectives showed that there is a significant and strong relationship between communication behavior and project management activities such as project communication, negotiation, conflict resolution, contract process and project team building.

Nguyen and Rukavishnkikova (2013), a case study made on Communication in Cross-Functional New Product Development Teams with qualitative method and approach in an inductive way indicated that , several critical factors in building effective communication were identified as team size, centralization of communication, early involvement, physical proximity, and leadership. Meetings were considered as a major and efficient method of communication within the project. Based on these issues, recommendations for improving internal communication within the project were suggested.

Karolina (2015), a literature-based research on real life project management communication practices and accompanying factors described in the subject literature, indicated that ensuring proper and effective project communication is not only a matter of preparing a communication plan, creating, collecting, distributing, storing project information and identifying responsibilities for project team members and other project stakeholders (i.e., activities related to the strategic and informational categories of communication practices).

The communication methods that are the most important to use during execution of a project are written, oral and electronic communication of which written and oral communication are regarded as the most effective communication methods (Zulch, 2014).

A descriptive survey study by Linda Berg (2017) indicated that an appropriate choice of communication tools will likely have great impact on project performance as communication tools enable project communication. but also of having good personal contact with team members, developing positive relationships and obeying fundamental rules of clear and positive communication (i.e., activities related to the emotional and practical categories of communication practices).

Bond-Barnard and Steyn (2013) in their study of the program benefits of improving project team communication through a contact center found out that by using a contact center to improve the communication between project team members, their perception of

communication effectiveness, quality of project deliverables, service delivery and customer satisfaction of the program dramatically increases.

With regard to organization structure of projects, a descriptive survey study by Jana *et al* (2012) on project communication in function, process and project-oriented industrial companies in Slovak Republic have found that process- oriented and project-oriented companies have better communication management during all project life cycle.

Al-Nady, B.A-H.A *et al* (2016) using multiple regression analysis of the role of time, communication and cost management on project management success in Makkah City of Saudi Arabia found that cost management, communication management and time management have significantly positive effect on project management success.

Diallo and Thuilier (2005) found out that there is a strong link between project success and trust, communication and cooperation between stakeholders.

Arthur Ahimbisibwe and Sudi Nangoli (2012) study revealed that project communication, individual commitment, and social networks were significant predictors of project performance.

Leif Brandes & Donja Darai (2014) on their study on their The Value of Top-Down Communication for Organizational Performance revealed that top-down communication is a profitable way for managers to increase employee performance in the presence of uncertainty.

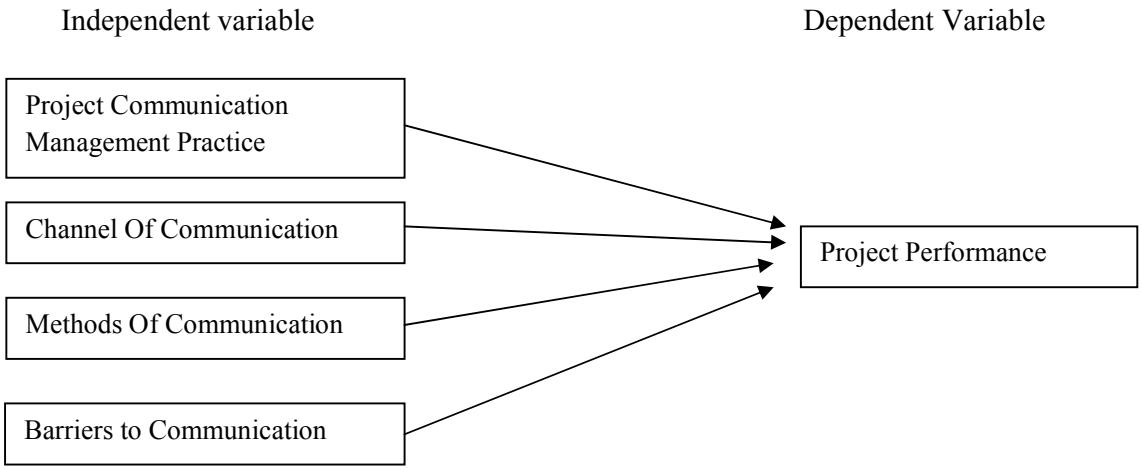
Summary of Empirical Studies

Many of these studies shows that communication in project has impact on project performance. Most of the reviewed empirical studies on the subject were of descriptive in their research design while others have applied exploratory design. With regard to data analysis, the reviewed studies used descriptive statistics such as correlation coefficient, mean and percentages while others have used more rigorous methods of data analysis such as structural equation modeling, multiple regression analysis and confirmatory factor analysis. The review of empirical studies show that little research has explored the practice of project communication management and project success in the context of rural development projects run by such indigenous non-governmental and non-profit making organization in Ethiopia. This study will attempt to bridge this gap through a guidance of a research question “Does project communication management relate to project performance in water projects of ADA? “

Conceptual framework

This study aimed to examine the various communication method and channel practiced by project team members in ADA water project, to analyze the relationship between project communication management and project performance in water project of ADA, and to determine barriers to communication and project performance in water project of ADA. The independent variable for this study was project communication management practices, channel and methods of communication being used, and barriers to communication; while the dependent variable is project performance as presented in the diagram

Figure 2: Conceptual Framework of the study



Source- Self develop from literatures

CHAPTER THREE
RESEARCH METHODOLOGY

Introduction

This chapter discusses procedures and activities undertaken, focusing on the study's research design, questionnaire design, data collection methods and instrument of data collection, sampling strategy, data processing and analysis and instrument development. Besides, the section deals with a discussion on the ethical issues followed while conducting the study.

3.1 Research Design

This study applied quantitative approaches of research. The research design employed under this study was explanatory and also descriptive. The study is explanatory because it emphasizes to explain the association between project communication management and project performance. It is partly descriptive because it attempts to describe and determine practice of project communication management (the pattern or channel of communication, describe methods of communications and barriers to effective communication in the context of ADA water project).

3.2 Sampling Strategy and Technique

The study population consists of a total of 459 project teams who have been working in six ADA water projects in Amhara Region. The unit of analysis in this study is individual project teams. The sample size was determined using sample size determination formal of Yamana (1967) as presented below.

$$n_0 = N/(1 + Ne^2)$$

Where n_0 = sample size; N = population size; e = sampling error or level of precision (5%). Hence, using N=459 and 5% significance level, the sample size is n0 = 214. The sampling units were selected by using stratified random sampling technique, where the entire population was divided into sub-groups (projects). The size of the sample in each stratum (project) was determined in proportion to the size of the stratum, termed as proportional allocation. Using identity numbers of project team member, a simple random sample of study participants were selected from within each project. Stratification was employed due to its administrative convenience and a gain in

precision in the estimates of the characteristics of the whole population over the simple random sampling technique.

Table 3.1: Study population by project type and final sample size

No	Ongoing water Project/woreda	Project Team /size	Proportion in %	Sample size per project
1	Dejen	76	16.60%	35
2	Dembecha	34	7.40%	16
3	North Achefer	96	20.90%	45
4	Dangila	78	17%	36
5	Jawi	111	24.20%	52
6	Zigem	64	13.90%	30
		459	**100**	**214**

Source: ADA Water Project Database

3.3 Sources of Data and Instrument of Data Collection

The study used both primary and secondary data. The study utilized cross-sectional survey data. Survey instrument was a questionnaire implemented using Online(web based) and analysis of the results. Most of the expected respondents had access to e-mail; using this online tool ensured data integrity. Responses to the survey questions were based on five-point Likert-scale in order to enable project teams respond to each statement in terms of their own degree of agreement or disagreement. In addition, secondary data from project database of ADA was used to provide additional information where appropriate. Besides, books and published articles were reviewed to make the study fruitful.

3.4 Validity and Reliability of data collection instruments

The research instrument used for this study was self-administered questionnaires. Validity shows whether the items measure what they are designed to measure. Pre-testing was conducted to assist in determining accuracy, clarity, and suitability of the research instrument. Borg and Gall (1989) notes that two to three cases are sufficient for some pilot studies. For this study, a sample of 10% of the respondents was sufficient. Content validity was examined to ensure the instruments would answer all the research questions. Based on the analysis of the pretest results, corrections were made, adjustments, and additions to the research instrument.

Using the primary method of data collection like the questionnaire ensured the reliability of the data since they were collected first hand from the respondents. The stratified sampling that was used followed by simple random sampling from each stratum ensured that all the respondents had equal chances of being selected therefore ensuring accurate representation hence reliability. Questions were pre-tested before the actual study to ascertain their appropriateness and relevance to the study.

3.5 Data Analysis

This study used both descriptive as well as inferential data analysis techniques. It was descriptive as it involved analysis of percentages, correlation coefficient, mean, standard deviation, coefficient of variation. It was also inferential as it involved regression analysis of independent and dependent variable. Both descriptive as well as inferential analysis was done using SPSS 21 for windows.

3.7 Ethical Issues

Regarding ethical consideration, ADA Ethiopia provided permission to conduct the study and clearance for the use of the subscribed premier on-line data collection tool called, Survey Monkey and access to internal procurement documents. All the research participants included in this study were appropriately informed about the purpose of the research and their willingness and consent was secured before the commencement of filling in web-based self-administered questionnaire. Regarding the right to privacy of the respondents, the study assured and maintained the confidentiality of the identity of each participant. In all cases, names were kept confidential thus collective names like ‘respondents’ or ‘study participants’ were used. In addition, all sources cited in this study are appropriately acknowledged.

3.8 Constructs, Variables and Measures

The constructs and items used in this study are mostly adopted or adapted from previous studies and literatures’. Five-item scales on methods of communication, patterns of communication, barriers to communication was adapted from Peter and Florence (2014). A ten item scale on project performance assessment of developed from literatures with in a frame of Time, Cost and Quality.

CHAPTER FOUR
RESULTS AND DISCUSSION

Introduction

This chapter covers data analysis, presentation and interpretation of the general information of the respondents which includes the study of the respondents demographics. It also tackles the research questions where each of the questions is answered by the analysis of the obtained data and presented through tables. The practice of project communication management and its impact on project performance is evaluated by the research findings obtained and analyzed using frequencies, correlation, regression and percentages of the responses given. The chapter also gives the summary of the analysis.

4.1.1 Demography of the participants

In the study, the researcher collected data from 81% (n=175) of the sampled population. This is good as compared to the 75 % recommended by Mugenda (2009) in her description of the required sample, only 19% (n=39) were missing, Table 4.1 below illustrates this information.

Table 4.1 Socio-demographic profile of the respondents

Age	**Frequency**	**Percent**
20-30	49	28.0
31-40	62	35.4
41-50	44	25.1
51-60	20	11.4
Sex		
Male	148	84.6
Female	27	15.4
Educational level		
Below diploma	10	5.7

Diploma	54	30.9
Bachelor's degree	86	49.1
Master's degree	25	14.3
Project		
Dejen	29	16.6
Dembecha	13	7.4
North Achefer	36	20.6
Dangila	29	16.6
Jawi	43	24.6
Zigem	25	14.3
Role in project		
Team member	145	82.9
Project manager	4	2.3
Others	26	14.9
Experience in project		
6 - 10 years	13	7.4
11 - 15 years	43	24.6
16 - 20 years	74	42.3
> 20 years	45	25.7

4.1.2 Gender of the Respondents

Respondents were asked about their gender and analysis was done using frequencies and percentages. 84.6% (n=27) of the respondents were male while 15.4% (n=27) were female, this indicates that majority of the respondents were male.

4.1.3 Age of the Respondents

Respondents were asked about their age and analysis was done using frequencies and percentages. Majority, 35.4% (n=62) of the respondents were aged between 31-40 years, 28% (n=49) were 20-30 years, 25.1% (n=44) were aged between 41-50 years, while 11.4% (n=20) were aged between of 51-60 years, this indicates that most respondents were young and their age lies between 20-51 years.

4.1.4 Education Level of the Respondents

Respondents were asked about their education level and analysis was done using frequencies and percentages. Majority 49.1% (n=86) of the respondents had a Bachelor degree, 30.9% (n=54) had diploma, 14.3% (n=25) had Master's Degree, and 5.7%(n=10) were below diploma. This clearly indicates that most of the respondents were completed first Degree implies that the respondents have educational knowledge enough to thoroughly respond to the area of the study.

4.1.5 Location Of Water Project Of The Respondents

Respondents were asked in which water project they are currently working and analysis was done using frequencies and percentages. Majority, 25.1% (n=44) of the respondents were working in Jawi project, 20.6% (n=36) were working in North-Achafer project,16.6% (n=29) were working in Dejen & Dangila project,14.3% (n=25) were working in Zegiem project, and 7.4% (n=13)were working in Dembecha project. This indicates the response rate from within each stratum was fairly good with a response rate 82%.

4.1.6 Role in project

Respondents were asked about their role in the project and analysis was done using frequencies and percentages. Majority, 82.9% (n=145) of the respondents were team members, 2.3% (n=4) were project managers, 14.9% (n=26) were others who are evolved in the project.

4.1.7 Experience of the Respondents

Respondents were asked about their experience in a project and analysis was done using frequencies and percentages. Majority 42.3% (n=74) of the respondents had experience of between 16-20 years, 25.7% (n=45) had experience of >25 years, 24.6% (n=43) had experience of between 11-15 years, and 7.4%(n=13) had experience of between 6-10 years. This clearly indicates that most of the respondents were highly experienced (16-20 years) and are familiar with terms used in responding on the area of the study.

4.2 Correlation Analysis

4.2.1 Relationship between the variables

Table 4.2. Summary of means, standard deviations and correlations of Project communication practice, communication channel, communication methods, Barriers and Project performance

Variables	Mean	Std. Deviation	Correlation Matrix				
			Practice of PCM	Barriers	Project performance	Communication channel	Communication Method
Practice of Project communication management	4.0586	.51483	1	.810**	.392**	.497**	.293**
Barriers	3.9726	.65367	.810**	1	.335**	.384**	.266**
Project performance	4.0451	.65290	.392**	.335**	1	.952**	.984**
Communication channel	4.0937	.58321	.497**	.384**	.952**	1	.933**
Communication Method	4.1131	.70319	.293**	.266**	.984**	.933**	1

Source: own survey data 2019

***Correlation is significant at the 0.01 level (2-tailed).*

Table 4.2 shows the statistical description of Project communication management practice, communication channel, communication methods, Barriers and Project performance of 175 respondents, respondents evaluated communication method with the highest mean score (i.e., Mean = 4.1131, S.D. = 0.70319) to be the most leading followed by communication channel used (Mean = 4.0937, S. D. = 0.58321), followed by practice of PCM (Mean =4.0586 , S.D. = 0.51483), followed by the project performance (Mean=4.0451, S.D 0.65290) then Barriers with lowest mean score of 3.9726, S.D 0.65367. In addition, Table 4.2 shows that practice of project communication management, communication channel, communication methods, and Barriers are positively correlated with Project performance.

Objective 1. To assess how project team members in ADA water projects value project communication were assessed hereunder.

4.2.2 The significance of project communication management in ADA water projects in Ethiopia

Table 4.3. Summary of response on project team members perception on significance of project communication management in a project

	Project teams' response							
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	Std. Dev	Rank
Communication has impact on time, cost and quality	0	2	5	46	122	4.65	.597	1
Communication improves teamwork	3	9	11	51	101	4.36	.936	2
Language is essential for effective for communication	2	9	12	56	96	4.34	.902	3
Information is disseminated timely	1	4	26	60	84	4.27	.839	4
Communication clarifies project goals and creates collaboration	3	9	40	66	57	3.94	.957	5
Lines of communication are kept open at all times	1	13	41	77	43	3.85	.900	6

Source: own survey data 2019

Participants were asked to assess their understanding about the significance of communication in ADA water project in Ethiopia. Table 4.3 shows that impact of communication on cost, time and quality, communication for team work improvement, and essentiality of language for effective communication are the top three methods that are perceived to be predominantly significant in the projects. This is followed by information dissemination, communication for clarification of goals, and openness of line of communication, taking fourth, fifth and sixth ranks, respectively.

4.2.3 Practice of project communication management in ADA water project in Ethiopia

4.4. Summary of response on practice of project communication management in a project

	Project teams' response							
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	Std. Dev	Rank
Reasonably detailed level of information was delivered to stakeholders	0	5	16	73	81	4.31	.757	1
Required resources was assigned for communication execution	3	9	22	46	95	4.26	.982	2
The format that information was delivered was clear	0	11	34	67	63	4.04	.899	3
Project stakeholders' communication requirements were clearly defined	0	9	39	81	46	3.94	.832	4
Methods of transfer for each piece of information were clear to project team members.	4	9	42	60	60	3.93	.998	5
Timing and frequency of delivering information was adequate	4	9	42	60	60	3.93	.998	5
Required information was delivered to stakeholders	1	13	41	74	46	3.86	.912	6
There was a system of updating and changing the communications plan	0	9	51	72	43	3.85	.851	7
Proper documentation of names of people responsible for data distribution was maintained	1	13	41	77	43	3.85	.900	7
The purpose of communicating this information was defined and clear	1	27	28	79	40	3.74	.998	8
List of people and groups who receive project information was properly documented	1	27	28	79	40	3.74	.998	8

Source: own survey data 2019

Table 4.4 shows that practice of project communication management in ADA water project in Ethiopia. On defining project stakeholder communication requirement, participants responded 46% (Agreed) and 26.3% (strongly agreed); on delivering required information to stakeholders, participants responded 42% (Agreed) and 26.3% (Strongly agreed); delivering reasonable detail level of information, participants responded 35.3% (Agreed) and 36%(Strongly agreed); Assigning required resource for communication; participants responded 54.3%(Strongly agreed) and 26.3% agreed.

Objective 2.To examine the various communication method and channels practiced by project professionals in ADA water projects were examined hereunder.

4.2.4 Communication method used in ADA water project in Ethiopia

Table 4.5. Project teams' perception of predominantly used communication method

	Project teams' response							
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	Std. Dev	Rank
Oral	1	5	22	46	101	4.38	.855	1
Electronic	1	3	19	82	70	4.24	.758	2
Visual	1	4	23	87	60	4.15	.774	3
Written	3	9	40	66	57	3.94	.957	4
Non-verbal	3	9	40	81	42	3.86	.902	5

Source: own survey data 2019

Table 4.5 shows that Oral, Electronic and visual communication methods are the top three methods that are perceived to be predominantly being used in the projects. This is followed by written and non-verbal communication, taking fourth and fifth ranks, respectively. In particular, Oral communication method was ranked first with a rating of extremely important by 101 (57.71%) respondents. Non-verbal communication is rated as the least or not mainly used communication method in the context of the projects of ADA.

4.2.5 Pattern or channel of project communication in ADA water project in Ethiopia

Table 4.6. Project teams' perception of pattern or channel of project communication

	Project teams' response							
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	Std. Dev	Rank
Information flows from the lower level team member to the management of project.	1	5	22	46	101	4.38	.855	1
Information, ideas and opinions flow horizontally.	1	3	19	82	70	4.24	.758	2
Ideas of senior team members are taken into consideration in taking decision	1	4	23	87	60	4.15	.774	3
Every member is encouraged to communicate freely with all other member.	3	9	40	81	42	3.86	.902	4
Information flows from the project manager down the hierarchy to project teams.	1	13	41	77	43	3.85	.900	5

Source: own survey data 2019

Participant's perception of pattern of project communication is summarized under Table 4.6. This table shows that Bottom-Up flow of information is the predominant pattern of communication with mean score of 4.38. Following this, Horizontal flow of information takes second rank taking a mean score of 4.24. On the other hand, consideration of senior team member ideas ranked 3rd with mean score of 4.15. Following this, freedom of communication among all team members ranked 4th with mean score of 3.86 and lastly information flow from top-down is the least pattern of communication with mean score of 3.85.This may suggest that top-down information flow is ineffective in ADA water projects in Ethiopia; which might have been seemingly caused by lack of understanding of other areas or functions of projects.

Research Objective 4. To determine barriers to communication on water project in ADA were determined hereunder.

4.2.6 Barriers to effective project communication in ADA water project in Ethiopia

Table 4.7. Project teams' perception of barriers to effective project communication

	Project teams' response							
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	Std. Dev	Rank
There is lack of trust among members of project team.	0	5	16	73	81	4.31	.757	1
Lines of communication in the project is short and well established.	3	9	40	66	57	3.94	.957	2
Selective perception is a barrier to effective communication.	4	9	42	60	60	3.93	.998	3
Project managers are afraid to reveal difficulties, losses or other conditions that make them look weak.	4	9	42	60	60	3.93	.998	3
Differing frames of reference is a barrier to effective communication.	1	27	28	79	40	3.74	.998	4

Source: own survey data 2019

Referring to Table 4.7, respondents have rated lack of trust among project team members as the first barrier to effective communication with mean score of 4.31. Shortness and wellness of established lines of communication in the project were rated as the second barrier to effective communication each with a mean score of 3.94. Selective perceptions and absence of reveling information by project manager are rated as the third barrier to effective communication each with mean score of 3.93. Lastly, differing frames of reference was rated 4th with mean score of 3.74. This result may suggest that existence of short and well established lines of communication in a project may not necessarily guarantee effective communication unless they are properly observed with support from top management.

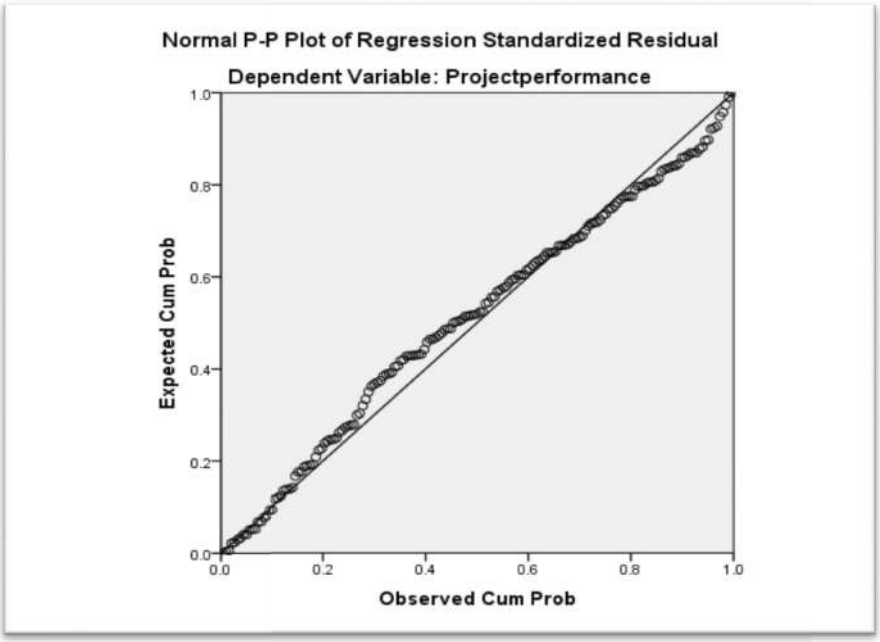
4.3 Regression Analysis

In this study to explain association between project communication management and project performance, Linear regression analyses was applied. Therefore, project communication management plan, channel of communication, communication method and barriers of communication (i.e., independent variables) were regressed using linear method on project performance (i.e., dependent variable. This method will help to measure the relative strength of the associations of independent variables with dependent variables.

4.3.1 Test for Normality of Residuals

One of the assumptions of linear regression is the assumption of normality of residuals. There are many tests which can be applied to test the normality of regression residuals. In this study, the assumption of residuals is tested using Percentile-Percentile plot or P-P plot. As it is shown in Figure 3, the P-P plot dots are closer to the 45-degree diagonal line implying that the assumption of normality of residuals holds true.

Fig 3. Normality test



4.3.2 Testing of Multicollinearity

Multicollinearity refers to the correlation among predictor variables. High multicollinearity lowers the significance levels of best coefficients. In this study, variance inflation factor (VIF) was used to check degree of multicollinearity among explanatory variables. As a rule of thumb, a variable whose VIF values are greater than 10 may merit further investigation. As it is shown in Table 4.8(a), VIF of betas coefficients were less than ten implying that multicollinearity was not a serious concern in this study.

Table 4.8 (a) Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.181	.060		-3.022	.003		
	Practice of PCM	.130	.029	.103	4.541	.000	.212	4.708
	Communication	.112	.044	.100	2.522	.013	.198	5.050
	Barriers	-.016	.018	-.016	-.884	.378	.317	3.153
	Method	.803	.033	.865	24.028	.000	.136	7.352

a. Dependent Variable: Project performance

4.4 Testing of Autocorrelation

In this study, residuals from an ordinary least-squares regression were tested as to whether they were are linearly auto-correlated or not using Durbin-Watson test statistic (d). As a rule of thumb, if Durbin-Watson test statistic falls between 1.5 to 2.5, it implies absence of autocorrelation of residuals. Results from Table 4.8(b) shows a calculated DW statistic of 1.826 which falls in the range of 1.5 to 2.5. This result suggests that residuals were not auto –correlated.

Table 4.8(b) Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.991[a]	.982	.981	.08970	1.826

a. Predictors: (Constant), Method, Barriers, Practice of PCM, Communication

b. Dependent Variable: Project performance

4.4.1 Relationship Among study variables

Table 4.9. Result of regression analysis of Project communication management, Communication Method, Barriers of communication, and Communication channels on Project performance

Table 4.9(a) 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
	.991[a]	.982	.981	.08970	.982	2262.034	4	170	.000

Predictors: (Constant), Communication Method, Barriers of communication, PCM plan, Communication channel

According to Table 4.9 (a) Communication Method, Barriers of communication, Project communication management, and Communication channel collectively all together explains 98.2% of the total variation in Project performance.

Table 4.9 (b) Analysis of Variance, ANOVAa

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	72.805	4	18.201	2262.034	.000[b]
Residual	1.368	170	.008		
Total	74.173	174			

a. Dependent Variable: Project performance

b. Predictors: (Constant), Method, Barriers, Practice of PCM, Communication

Table 4.9(b) shows that the calculated F-statistic for both model 1 is high indicating the model is statistically significant (p-value 0.000 < 0.01). This implies that regression analysis suggests that the data support to retain communication Method, Barriers, Practice of PCM, Communication channel variables in the regression equation to jointly explain variation in performance of water projects.

Table 4.9 (c). Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.181	.060		-3.022	.003
Practice of PCM	.130	.029	.103	4.541	.000
Communication	.112	.044	.100	2.522	.013
Barriers	-.016	.018	-.016	-.884	.378
Method	.803	.033	.865	24.028	.000

a. Dependent Variable: Project performance

Table 4.9(c) shows that practice of communication management, communication channel and communication methods have appositive effect on project performance with coefficient of (β=0.130), (β=0.112), and (β=0.803) respectively. However, barriers have a negative effect on project performance with coefficient of (β=-0.16).

The coefficient practice of project communication management (β=0.130), shows that a unit increase in practice of project communication management will lead to a 13% unit increase in project performance. The t-statistic for practice of project communication management variable(t=4.541) shows practice project communication management has a statistically significant influence on project performance(i.e.-value=0.000<0.05).

The coefficient of communication channel (β=0.112), shows that a unit increase in communication channel will lead to 11.2% unit increase in project performance. The t-statistic for communication channel variable(t=2.522) shows project communication channel has a statistically significant influence on project performance(i.e.-value=0.013<0.05).

The coefficient of communication method (β=0.803), shows that a unit increase in communication method will lead to 80.3% unit increase in project performance. The t-statistic for communication method variable(t=24.028) shows project communication method has a statistically significant positive influence on project performance(i.e. P-value=0.000<0.05).

Likewise, the coefficient of communication barriers (β=-0.16), shows that a unit increase in communication barrier will lead to 16% unit decrease in project performance. The t-

statistic for communication barrier variable(t=-0.884) shows project communication barrier has a statistically significant influence on project performance (i.e. P-value=0.378>0.05).

The findings from explanatory study suggest that, the practice of project communication management and communication method have positive and statistically significant influence on project performance, relatively communication method is higher than the other variables (i.e Practice of PCM, communication channel, and Barriers). Likewise, communication channel has also statistically positive effect on project performance. Barriers to communication has statistically negative effect on project performance.

Research Objective 3.To analyze the relationship between project communication and project performance in water projects of ADA were tested hereunder.

4.4.2 Relationship Among project communication management practice and project performance

Table 4.10(a) 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	.392[a]	.154	.149	.60233	.154	31.444	1	173	.000

a. Predictors: (Constant), Practice of PCM

According to Table 4.10(a) Practice of project communication management only explains 14.9% of the total variation in Project performance.

Table 4.10 (b) Analysis of Variance ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.408	1	11.408	31.444	.000[b]
	Residual	62.765	173	.363		
	Total	74.173	174			

a. Dependent Variable: Project performance

b. Predictors: (Constant), Practice of PCM

Table 4.10(b) shows that the calculated F-statistic for model 1 is high indicating the model is statistically significant (p-value 0.000 < 0.01). This implies that regression analysis suggests that the data support to retain Practice of PCM variable in the regression equation in explain variation in performance of water projects.

Table 4.10(C) Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.027	.363		5.585	.000
	Practice of PCM	.497	.089	.392	5.607	.000

a. Dependent Variable: Project performance

Table 4.10 (C) shows the coefficient practice of project communication management (β=0.497), shows that a unit increase in practice of project communication management will lead to a 49.7% unit increase in project performance. The t-statistic for practice of project communication management variable(t=5.607) shows practice of project communication management has a statistically significant influence on project performance(i.e. p-value=0.000<0.05).

4.4.3 Relationship Among Communication Channel and project performance

Table 4.11(a) 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	.952[a]	.906	.906	.20030	.906	1675.832	1	173	.000

a. Predictors: (Constant), Communication

According to Table 4.10(a) Communication Channel only explains 90.6% of the total variation in Project performance.

Table 4.11 (b) Analysis of Variance ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67.233	1	67.233	1675.832	.000[b]
	Residual	6.941	173	.040		
	Total	74.173	174			

a. Dependent Variable: Project performance

b. Predictors: (Constant), Communication

Table 4.11(b) shows that the calculated F-statistic for model 1 is high indicating the model is statistically significant (p-value 0.000 < 0.01). This implies that regression analysis suggests that the data support to retain Communication Channel variable in the regression equation in explain variation in performance of water projects.

Table 4.11 (C) Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.318	.108		-2.955	.004
	Communication	1.066	.026	.952	40.937	.000

a. Dependent Variable: Project performance

Table 4.11(C) shows the coefficient communication channel (β=1.066), shows that a unit increase in communication channel will lead to a 106% unit increase in project performance. The t-statistic for communication channel variable(t=40.937) shows communication channel has a statistically significant influence on project performance(i.e. p-value=0.000>0.05).

4.4.4 Relationship Among Communication Method and project performance

Table 4.12 (a) 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	.984[a]	.969	.969	.11585	.969	5353.247	1	173	.000

a. Predictors: (Constant), Communication Method

According to Table 4.12(a) Communication method only explains 96.9% variation in Project performance.

Table 4.12 (b) Analysis of Variance ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	71.851	1	71.851	5353.247	.000[b]
	Residual	2.322	173	.013		
	Total	74.173	174			

a. Dependent Variable: Project performance

b. Predictors: (Constant),Communication Method

Table 4.12(b) shows that the calculated F-statistic for model 1 is high indicating the model is statistically significant (p-value 0.000 < 0.01). This implies that regression analysis suggests that the data support to retain Communication method variable in the regression equation in explain variation in performance of water projects.

Table 4.12(C) Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.286	.052		5.496	.000
	Method	.914	.012	.984	73.166	.000

a. Dependent Variable: Project performance

Table 4.12(C) shows the coefficient communication method (β=91.4), shows that a unit increase in communication method will lead to a 91.4% unit increase in project performance. The t-statistic for communication method variable(t=73.166) shows communication method has a statistically significant influence on project performance(i.e.p-value=0.000>0.05).

4.4.5 Relationship Among Barriers to communication and project performance

Table 4.13 (a) 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	.335[a]	.112	.107	.61689	.112	21.907	1	173	.000

a. Predictors: (Constant), Barriers

According to Table 4.13(a) Communication barriers only explains 10.7% variation in Project performance.

Table 4.13 (b) Analysis of Variance ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.337	1	8.337	21.907	.000[b]
	Residual	65.836	173	.381		
	Total	74.173	174			

a. Dependent Variable: Project performance

b. Predictors: (Constant), Barriers

Table 4.13(b) shows that the calculated F-statistic for model 1 is high indicating the model is statistically significant (p-value 0.000 < 0.01). This implies that regression analysis suggests that the data support to retain barrier variable in the regression equation in explain variation in performance of water projects.

Table 4.13 (C) Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.715	.288		9.426	.000
	Barriers	.335	.072	.335	4.681	.000

a. Dependent Variable: Project performance

Table 4.13(C) shows the coefficient barrier (β=0.335), shows that a unit increase in barrier will lead to a 33.5% unit decrease in project performance. The t-statistic for barrier variable(t=4.681) shows barrier has a statistically significant influence on project performance(i.e.p-value=0.000>0.05).

4.4.6 Summary of regression made for each variables relationship among project performance

Table 4.14 Summary of regression of variables

Variables	Beta	Adjusted R square	Sig.	Rank
Communication Method	1.066	0.906	.000[b]	1
Communication channel	0.914	0.969	.000[b]	2
Practice of PCM	0.497	0.149	.000[b]	3
Barrier	0.335	0.107	.000[b]	4

Table 4.13 shows the magnitude and sign of each of β coefficients as well as R-square for each of the models.

As the table 4.13 shows coefficient of communication method (β=1.066), shows that a unit increase in communication method will lead to a 106.6% unit increase in project performance and statistically significant (p-value 0.000 < 0.01); coefficient of communication channel (β=0.914), shows that a unit increase in communication channel will lead to a 91.4% unit increase in project performance and statistically significant (p-value 0.000 < 0.01); coefficient of Practice of PCM (β=0.497), shows that a unit increase in practice of project communication management will lead to a 49.7% unit increase in project performance and statistically significant (p-value 0.000 < 0.01), and lastly coefficient of Barrier (β=0.335), shows that a unit increase in barrier will lead to a 33.5% unit decrease in project performance and statistically significant (p-value 0.000 < 0.01). Relatively communication method contributes most (106.6%) and Barrier shows (35%) least to project performance.

4.4.7 Hypotheses Test Result

H_1: There is significant relationship between project communication management practice and project performance.

H_1 : Accepted Beta= 0.497, (.000), p<0.05

H_2: There is significant relationship between communication channels and project performance.

H_2: Accepted Beta= 0.914, (.000), p<0.05

H_3: There is significant relationship between communication method and project performance.

H_2: Accepted Beta= 1.066, (.000), p<0.05

H_4: There is significant relationship between barriers to communication and project performance.

H_2: Accepted Beta= 0.335, (.000), p<0.05

4.5 Discussion Of Results

This section gives the researchers discussion on the study findings obtained where the findings are compared with the results of previous studies which were done by different scholars from different institutions .

The objective of the study was to analyze the relationship between project communication and project performance and the finding reveals that practice of project communication management has a statistically significant influence on project performance which is consistent with Al-Nady, B.A-H.A *et al* (2016); Arthur Ahimbisibwe and Sudi Nangoli (2012); Cheung, M.ASCE; Yiu, and Lam (2013), finding.

Regarding communication method and channel practiced by the team members in ADA water projects, the findings shows that communication method and channels are statistically significant and have positive influence on project performance which is consistent with finding of Zulch,(2014).

CHAPTER FIVE
CONCLUSION AND RECOMMENDATION

Introduction

This chapter discusses the conclusions of the study and suggest appropriate recommendations which seek to direct future research. The objectives of this research were to assess how project professionals value project communication, the communication method used, the various communication channels employed, and to determine the association between project communication management and project performance of ADA water project in Ethiopia. Also the research was to determine what causes communication barriers on project in ADA water project in Ethiopia.

5.1 Conclusion

The main conclusions of the study corresponding to research objectives are summarized hereunder.

1) Project team members' response shows project team members believe importance of project communication within the project.

2) Oral, Electronic and visual communication methods are the most frequently used ones compared to written and non-verbal communication; Bottom-Up flow of information is the predominant pattern of communication flow is the primary channel followed by horizontal (Lateral) flow of information is being used in ADA water projects in Ethiopia.

3) The explanatory study confirmed that the practice of project communication management has statistically positive and significant influence on project performance.

4) Lack of trust among project team members is rated the primary barrier to effective communication. Selective perception and shortness of line of communication are rated as secondary and third barriers to communication in ADA water project.

5.2 Recommendation

As a result of these study findings, the researcher put forward the following recommendations:

1) Strengthening the deployment of project communication management on a project by defining and clarifying the purpose of communicating the information for the project team members, by having meeting or seminar to enhance the project performance.

2) Strengthening communication method being used shall be encouraged. It could be by setting up meeting regular basis where the stakeholders get together to discuss and share ideas.

3) For effective communication, the transfer of information from top -down shall be encouraged to increase employee performance by using multiple means of communication. For example, hold town hall meetings to convey strategic initiatives and other vital information so that project team members can hear it directly from the top manager. as one Business Week article (BusinessWeek, 2000) put it succinctly: "Keep Employees in the Dark, and They'll Go Where It's Light."

4) On avoiding barriers to effective communication, revising the established line of communication, building trust between employees like by having informal discussions where opinions, information are exchanged to improve the atmosphere and relationships among the team members.

5.3 Recommendations for Further Research

Further research should be undertaken on the following areas: Effective project communication Management influences on project performance; since the study findings and every research question indicate just a mere extent of association between project communication and project performance in ADA water project in Ethiopia,

This research solely focuses on exploring the practice of project communication management and association between project communication management practice, communication channel, communication method and barriers on project performance in the context of ADA water project in Ethiopia. However, this association may be affected by other mediating, intervening or moderating factors.

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Appendix

Addis Ababa University

School of Commerce

Masters of Arts in Project Management Program

Questionnaire on practice of project communication management and project performance. In case of water projects of Amhara Development Association in Ethiopia

Dear Participants:

My name is Abrham Kuma, I am a MA student in Project Management at Addis Ababa University School of Commerce. As part of my MA project work, I am studying the project communication management practice and project performance in ADA water projects in Ethiopia. I kindly request you to participate in this research study by completing the attached questionnaire. The information you provide will be used purely for academic purpose and will be kept confidential and please do not write your name. As well I sincerely request you to respond to the questions as honestly as possible and return the completed questionnaires. Knowing that your time is valuable please, please take few minutes of your time to complete the questionnaire. Thank you very much for your time and assistance in my educational endeavors.

I. DEMOGRAPHIC PROFILES OF RESPONDENTS

1. What is your age in years?
   1) 20-30 yrs 2) 30-40yrs 3) 40-50yrs 4) 50 yrs and above
2. Gender:
   1) Male 2) Female
3. Level of Education
   1) Below Diploma 2) Diploma 3) Bachelor's Degree 4) Master's Degree
   5) Doctorate Degree
4. In which water project are you in?
   1) Degen 2) Dembecha 3) North Achefer 4) Dangila 5) Jawi 6) Zigem
5. What is your role in the project?
   1) Team member 2) Project manager 3) others
6. How many years of experience do you have in project works?
   1) 1-5 years 2) 6-10 years 3) 11-15 years 4) 16-20 years 5) Above 20 years

II. Practice project communication management

Think of communication practice in your project and choose the number that best describes your agreement on the following if communication plan is clearly defined and stated.

1=strongly disagree 2=disagree 3 = neutral 4=agree5=strongly agree

S.N.	Items	1	2	3	4	5
1	Language used among operatives is essential for effective for communication.					
2	Communication in the workplace clarifies project goals and helps coworkers collaborate					
3	Information is disseminated timely					
4	Communication has impact on time, Cost, and quality					
5	Line of communication are kept open at all times					
6	Communication improves teamwork					
7	Project stakeholder' communication requirements were clearly defined.					
8	Required information was delivered to stakeholders.					
9	The format that information was delivered was clear.					
10	Reasonably detailed level of information was delivered to stakeholders.					
11	The purpose of communicating this information was defined and clear.					

12	Timing and frequency of delivering information was adequate.					
13	Proper documentation of names of people responsible for data distribution was maintained.					
14	List of people and groups who receive project information was properly documented.					
15	Methods of transfer for each piece of information were clear to project staffs.					
16	Required resources was assigned for communication execution.					
17	There was a system of updating and changing the communications plan.					

III. **Channel of Communication**

Think of the communication flow in your project and choose the number that best describes your agreement and disagreement about the following.

1=strongly disagree 2=disagree 3 = neutral 4=agree5=strongly agree

S.N.	Items	1	2	3	4	5
1	Information flows from the project manager down the hierarchy to project teams.					
2	Information, ideas and opinions flow horizontally.					
3	Information flows from the lower level staff to the management of project.					
4	Ideas of senior staff are taken into consideration in taking decision.					
5	Every member is encouraged to communicate freely with all other member.					

IV. Communication Methods Used

Think of the communication methods that are regarded as mostly important and are used most often in the project that you are working on and choose the number that best describes how you feel about the statements.

1 = not important 2= least important 3= neutral 4= important 5=extremely important

S.N.	Items	1	2	3	4	5
1	Written communication method					
2	Electronic communication method					
3	Oral communication method					
4	Visual communication method					
5	Non-verbal communication method					

V. Barriers to Communication

Think of barriers to effective communication in your project and choose the number that best describes your judgment about the following.

1=strongly disagree 2=disagree 3 = neutral 4=agree5=strongly agree

S.N.	Items	1	2	3	4	5
1	Lines of communication in the project is short and well established.					
2	There is lack of trust among members of project staff.					
3	Project managers are afraid to reveal difficulties, losses or other conditions that make them look weak.					
4	Differing frames of reference is a barrier to effective communication.					
5	Selective perception is a barrier to effective communication.					

VI. PROJECT PERFORMANCE

Think of your project performance and choose the number that best describes your judgment about the following.

1=strongly disagree 2=disagree 3 = neutral 4=agree5=strongly agree

S.N.	Items	1	2	3	4	5
1	The length of time this project has taken is within the time-line that was set before commencement.					
2	Based on the pace that we are using, this project is projected to be completed within the time set for its completion.					
3	There has been no problem in getting the resources required and therefore there is no likely reasons for delays in finishing the project.					
4	The cost that the project has consumed so far is within the budgeted figure based on the level the project has reached.					
5	There has been no shortage of finances for running the project as finances are being managed well.					
6	Monitoring and Evaluation of the project is carried out by competent team.					
7	The budget that was initially set for this project is					

	going to be enough to complete the whole project based on the level the project is in and the cost that has been consumed so far.					
8	Monitoring and Evaluation of the project is carried out on a regular basis.					
9	There is no member of the contractor's staff who interferes with monitoring and Evaluation and is being carried out by County's management staff independently.					
10	According to my view, the efficiency of the management practices brings about better performance of the project.					

Once again **Thank You** for your time!