ST. MARY'S UNIVERSITY
SCHOOL OF GRADUTE STUDIES

ASSESSMENT OF STAKEHOLDER MANAGMENT PRACTICE IN ROAD CONSTRUCTION PROJECTS: THE CASE OF DEFENCE CONSTRUCTION ENTERPRISE.

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V. List of Abbreviations

DCE-	Defense Construction Enterprise
PMBOK-	Project Management Body of Knowledge
PMI-	Project Management Institute
SM-	Stakeholder Management
RII-	Relative Importance Index
IBM	International Business Management
SPSS -	Statistical Package for Social Science
ROW	Right of Way
CSF	Critical Success Factor
ERA	Ethiopian Road Authority
SD	Standard Deviation

VI. ABSTRACT

Projects stakeholder management in Defence Construction Enterprise face encounters from different groups with potentially conflicting needs and interests. The purpose of the study was to assess the current practices of stakeholder management in DCE road construction projects. The study were further identify and rank the most common factors that affect stakeholder management process in DCE road projects so as to propose mitigation measure as well. A questionnaire survey was carried out, the main respondents being, employee of DCE road project staff both at the head office and project level the questionnaires were sent via e-mails for project staff, some were distributed on person for head office staff. The study used stratified random sampling technique and the sample size was 168 out of 338 target population. One hundred sixty eight questionnaires were distributed out of this one hundred eighty questionnaires were received with 70.23% response rate. The data obtained through questionnaire has been analyzed quantitatively using descriptive statistics: frequency, mean and standard deviation through SPSS version 20 software and Relative Importance Index (RII) were used to identify and rank the factors that affect stakeholder management. The findings present that key stakeholders were not identified at the initial stage of the project and their interests were not analyzed at the required level. Lack of proper communication strategy is also identified as the major challenge to manage the project stakeholders. The study also revealed that the top three factors that affect stakeholder management process are setting common goal and objectives in the project, project manager managerial competence and assessing stakeholder attitude. Therefore, for proper implementation of stakeholders in a project, construction projects have to recruit project managers based on their competencies and delegate them a suitable degree of authority to improve the stakeholder management. Furthermore, all stakeholders should understand project goals and objectives, ensure strong communication, identify relevant stakeholders at project planning phase, institutionalized stakeholder management and ensure full commitment all stakeholders.

Key words: Defense Construction Enterprise, Stakeholders, Critical success, management

CHAPTER ONE

1. Introduction

1.1. Background of the study

Construction projects are traditionally divided into series of activities or operations undertaken by different individuals or groups who may have different levels of interest and involvement in the project (Egan,1998) Construction projects are generally unique in nature based on their fragmentation, processes and interaction with numerous parties; and just like any other venture, are constrained by time and resources (both human and material) which are needed for the projects to be delivered (Olander and Landin,2005). Therefore, the lengthy process of design and execution of construction projects constitutes a complex system which involves collaboration and negotiations among many stakeholders (Chinyio, 2010). The different parties involved both directly and indirectly on the project are referred to as the project stakeholders whose management is vital to achieving project success (Cleland,2002).Every project has stakeholders who are impacted by or can impact the project in a positive or negative way. Some stakeholders may have a limited ability to influence the project's work or outcomes; others may have significant influence on the project and its expected outcomes. (PMBOK 2017).Stakeholder management involves process and control that must be planned and guided by underlying principles (Neil, 2011).Stakeholder management therefore, has been recognized as an important strategy for achieving project success in construction project.

Ethiopia like any other developing and fast-growing country the growth of the socio-economic development is significantly affected by the construction industry of the country. road construction projects provide significant environmental, economic and social development values to society across a range of classifications and it contributes to the national output and stimulates the growth of other sectors through a complex system of linkages and can serve as an important catalyst for economic growth. However, disagreement

and change in project characteristics (time, design and budget) at the time of construction in Ethiopia was mostly occurring due to the influence and poor participation of some stakeholder in the project.

Construction project stakeholders are individuals or groups/organizations who have some aspects of right or ownership in the project and can contribute to it; or will incur or justifiably perceive they will incur a direct benefit or loss as a result of either the works during the project or the outcome of the project (Hammad,2013).Stakeholder management focuses on continuous communication with stakeholders to understand their needs and expectations, addressing issues as they occur, managing conflicting interests and fostering appropriate stakeholder engagement in project decisions and activities. Stakeholder satisfaction should be managed as a key project objective (PMI, 2013).

Poor stakeholder management is one of the main reasons which can lead to many serious problems in construction projects, such as: poor communication between construction stakeholders, poor changes in the scope of work and inadequate or excess resources assigned to the project both in terms of quantity and quality, overall of which may be the major source of delays and cost overruns (Yang, 2009). Ineffective stakeholder management can result in dissatisfaction with the final project and negative impact on the projects‘ financial plan and schedule (Olomolaiye & Chiniyo, 2010).Scholars have cited “the ignorance or poor stakeholder management” as one of the key reasons responsible for project failure.

Therefore it is necessary to carryout stakeholder management from the inception stage and continues throughout the project in order to minimize problems of protest and delays in construction projects. Therefore, it is necessary to assess the current practice of stakeholder management in road construction projects; and to investigate the factors affecting stakeholder management in road construction projects, and to review the communication system of the organization in order to ensure continuity in the process.

1.2. Statement of the Problem

Construction Projects are needed to be completed within the planned time frame, budgeted cost and required quality. Hence construction industry has complexity in its nature because it contains a large number of stakeholders. Different stakeholders have different levels and types of investments and interests in projects in which they are involved. Often the project is sensitive to actions and decisions taken by the stakeholder. To ensure a successful project, the project team must identify the stakeholders, determine their requirements and expectations, manage their influence in relation to the requirements and identify the various factors affecting the stakeholder management.

In DCE road construction projects the main participant contractual parties are both internal stakeholders and external stakeholders. The internal stakeholders are those directly involved in an organization's decision-making process (like contractor, owners, and consultant) and external stakeholders are those affected by the organization's activities in a significant way (like neighbors, local community, general public, local authorities).However, the current problem in DCE, there is conflict of interest among internal and external stakeholders. There is evidence that show conflict of interest among these participating parties rose during the implementation of projects which adversely affect the ability of project teams to deliver the project within the time frame, allocated budget and expected degree of quality. As per the reports of the company 32% of the project is located in town sections, which makes these project prone to right of way problems. Right of way problems have been and still are the main reason to the conflict of stakeholders around the project area. The client, usually Ethiopian Roads Authority, have no efficient way of solving ROW. Some of the projects affected by ROW cases are Mekelle- Dangolat- Samri- Finarwa Road project, which have 18 km of its sections in town areas, Beles – Mekane Birhan Design and Build Road Project, which have 6.5 Km of its section in towns, Ertale Ahmed Ela Rigid Pavement Road Project which have 6km of its section is affected by ROW problem and Mekelle – Adigudem – Wukro Maintenance Project. According to the enterprise (2017-2018) report, there is an average of 33.83% and 50.67% cost and time overrun respectively in the 6 of the completed road projects due to ROW problem, inadequeate involvment of suppliers, and other

stakeholder related problems. There are studies about Stakeholders Impact Analysis on Road Construction Project in Western Region (Sintayehu Assefa, Zewudu Tefera Worke, Murad Mohammed, 2015).To the best of the researcher knowledge, no research work have been done focusing on stakeholder management in road construction projects in public enterprise in Ethiopia, particularly in DCE road projects.

Thus the main aim of the study is to assess the current practice of stakeholder managment process in the ongoing DCE road projects(specifically those road project found at Mekelle area) will be investigated to fill the research gap in the problem that has been affected the effectivness of stakeholder managment practice .

1.3. Research Questions

Stakeholders' need and expectation management in handling the construction project is the target for this study. In order to achieve that, the research will be driving the following questions: -

- ✓ What is the current practice of stakeholder management in DCE Road construction Projects?
- ✓ How stakeholder communicate with each other during project implementation in DCE road construction projects?
- ✓ What are the critical success factors of stakeholder management in road project delivery in DCE?

1.4. Research objectives

1.4.1.General objective

The General objective is to assess the current stakeholder management practice and factors affecting it in DCE road construction projects.

1.4.2. Specific objective

- ✓ To assess the current practice of stakeholder management in DCE road construction projects.
- ✓ To review stakeholder communication system during project delivery

- ✓ To identify and rank the most common factors affecting the stakeholder management process in performance of road construction projects in DCE

1.5. Significance of the Study

- ✓ The objective of this study is to develop an understanding of the theoretical basis and practical implementation of stakeholder management in DCE
- ✓ It also contributes as a basic reference for other researchers to further study and come out with some guidelines on how to handle construction projects stakeholders in the future.
- ✓ By doing that it is hoped that the delivery of the projects will be improved to know how to manage their stakeholder properly and identified their problem in various stages in order to fulfill their needs and expectations.
- ✓ It will give some experiences and lesson learnt to all the staff who is involved in controlling and monitoring the construction project.

1.6. Scope and Limitation of the Study

The scope of this study is delimited to DCE road construction projects on the subject of practice of stakehoolder managment.this study will only focus on one of the ten project management knowledge areas presented in the PMBOK(project managment body of knowledge)guide 5th ED,which is project stakholder managment,The study will assess how stakeholdermanagement being practice at DCE road projects and also examine the factors that affect stakeholder management practice in the enterprise and is also review the communication system of the enterprise .

As we are well aware of the world health organization (WHO) has declared the coronavirus (COVID-19) outbreak a pandemic; and the Ethiopian government has been advising to the public to take required cautionary measure. Due to this it was difficult to address all the questionnaire on person yet distributed the questionnaires through mail and collected through different media (like DHL, email, on person etc). Furthermore, due to the pandemic all the distributed questionnaire were not collected. This leads to the methodological limitation of small sample size where only 70.23% from head office and project staffs are sampled.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1. Theoretical Framework

2.1.1. Literature Related to Stakeholder

Construction project includes process of planning, scheduling, and controlling .Proper management of these processes will lead to the successful completion of the project. Many project are not completed on time due to improper management .(Jepsen,2008) indicated that project success involves not only the iron triangle factors i.e. cost, time and quality, but also the effective management of the stakeholders involved .(Newcombe,2003) and (Olander and Landin,2005) also clarified the importance of stakeholder management in construction projects. The construction industry however, a poor record of stakeholder management during the past decades owing to the complexity and uncertainty of projects. Many problems of stakeholder management in construction projects proposed by previous scholars include inadequate engagement of stakeholders, project managers having unclear objectives of stakeholder management, difficulty to identify the invisible stakeholder, and inadequate communication with stakeholders (Bourne, 2006). In order to solve these problems, project teams need to know what the essentials are for managing stakeholders (Karlsen, 2002).

2.2. Definition of Stakeholder

The term stakeholder is described as “any group or individual who can affect or is affected by the achievement of the project’s objectives”. (Ward,2008) defined stakeholders as “individuals or organizations that are either affected by or affect the deliverables or outputs of a specific organization”, (Li, et al.,2011)defined stakeholders as “those who can influence the project process and/or final results, whose living environments are positively or

negatively affected by the project, and who receive associated direct and indirect benefits and/or losses", and (Yang,2009) defined the stakeholder "as being those who can influence the activities/final results of the project, whose lives or environment are positively or negatively affected by the project, and who receive direct and indirect benefit from it".

(Olander,2007) described project's stakeholders as a person or group of people who has a vested interest in the success of the project and the environment within which the project operates. He further referred to them as, representatives of the various interests that will be affected during the different stages of the construction project from initiation to handover both positively and negatively. According to definition of (Walker, 2008) stakeholders are individuals or groups who have an interest or some aspect of rights or ownership in the project, and can contribute to or be impacted by, either the work or the outcomes of the project. The PMI (2004) refer stakeholders as individuals or organizations who are actively involved in the project or whose interests may be affected as a result of the project execution or completion.

(Takim,2009) explores the definition of stakeholders as those who can influence the activities/final results of the project, whose life or environment are positively or negatively affected by the project, and who receive direct and indirect benefits from it. He limited these to five groups namely: client, consultant, contractor, end-users and the community of the project.

There are stakeholders in construction undertakings, just as there are stakeholders in other endeavors. The checklist of stakeholders in a construction project is often wide and would include the owners and users of facilities, project managers, facilities managers, designers, shareholders, legal authorities, employees, subcontractors, suppliers, process and service providers, competitors, banks, insurance companies, media, community representatives, neighbors, general public, government establishments, visitors, customers, regional development agencies, the natural environment, the press, pressure groups, civic institutions, and the list is almost endless(Newcombe,2003) according to Newcome, project stakeholders are groups or individual who have a stake in, or expectations of, the project's performance.

The number of stakeholders involved or interested in the project normally increases the complexity and uncertainty of the situation. Each stakeholder usually has different interests and priority that can create conflict or disagreement with the project (Karlsen, 2008).their influence may have an impact on the course of a project at some stage and some of stakeholders influence may impact the project more often than others. Thus, when diverse stakeholders are present in a construction, the project must to set up a plan for managing them in order to succeed. Stakeholders are direct and indirect representatives of interests who can make contributions to the proposed project, and may include:

- ✓ **Clients**: these include public and private clients. The interests of the public clients include: to ensure the project will support the organization's strategy; to ensure the effective and economic use of resources; provide financial support and to ensure the construction product is successfully and profitably procured.

- ✓ **Consultants** (project professionals): these could either be in-house or out-of-house and they include: Architect, Quantity surveyor, Engineer, construction manager and other consultants relevant to the requirements of the project. Their primary interest is carrying out their respective professional duties to their employers.

- ✓ **Contractors**: these usually include the main and sub-contractors and their employees; and the suppliers. The primary interest of the main contractor is to carry out the work successfully as designed and perform other contractual duties assigned to them in the contracts. The sub-contractors carry out work assigned by the main contractor and or the client depending on the contract terms and conditions. Similar to the sub-contractor, the suppliers' primary interest is to supply and install all materials and equipment as required of them. In the end, the main interest of the contractors is to get the job done, get paid and move on to the next job.

2.3. Types of stakeholders

(Winch,2002) uses the contractual relationship between them and the client to classifying construction project stakeholders into internal and external stakeholders. Internal stakeholders are those who have legal contractual relationship with the project owner and those assembled around the client on the demand side (e.g employees, customers, end-users and financiers) and on the supply side (architect, engineers, contractors, trade contractors and material suppliers). External stakeholders do not have any contractual relationship with the project owner, but have some rights and interests in the project and are grouped into private and public sides' stakeholders. Stakeholders can be divided into internal and external, internal stakeholders being those directly involved in an organization's decision-making process (e.g. contractor, client, consultant, employees) and external stakeholders being those affected by the organization's activities in a significant way (e.g. Neighbors, local community, general public, local authorities).

2.4. Impact of Stakeholders on Construction Projects and Organizations

The probability of project success is greatly reduced if stakeholders are ineffectively managed. The lack of participation from the stakeholders is directly affecting the project objective. In this case, the project manager has problems to clearly define the objectives of the project. Without clear and precise objectives neither the project manager nor the rest of the stakeholders will know when the project will have accomplished its objectives. Potential problems associated with ineffectively management are: a poor scope because of the lack of definition in, work problems coming from assigned sources to the project, regulatory changes that affect the project, or a negative reaction from the community against the project. All these problems put together with the lack of participation of the stakeholders in the project which affects the budget and schedules.

2.5. Stakeholder Management

Stakeholder management is an important issue in project management as a project can be seen as a temporary coalition of stakeholders to create something together. Tasmanian Government Project Management Guidelines (2011) provide an overview of the essential components of project management methodology and identify eleven key elements that should be applied throughout the project Lifecycle, and the stakeholder management is one of the key elements in the project management process, in order to ensure the success of the project.

The main participants in a construction project coalition are the client, the architect or consultant and the contractor (Cleland, 2007). The interactions and interrelationships between these participants largely determine the overall performance of a construction project, and have the crucial responsibility for delivering a project to successful completion.
Project managers need to identify and interact with key institutions and individuals in the project systems environment. An important part of the management of the project systems environment is an organized process to identify and manage the probable stakeholders in that environment, and determine how they will react to the project decisions (Cleland, 2007). On the other hand, (Jepsen, 2008) clarified the premises underlying project stakeholder management, which includes making deliberate efforts to exert influence on project stakeholders in order to gain their contributions to the project, allocating limited resources in such a way that they achieve the best possible results, and expanding efforts spread across a range of stakeholders than concentrated on a few. Therefore, project stakeholder management is indispensable to control the negative impacts of stakeholders, maximize the perceived benefits, and achieves the preset mission (Karlsen, 2002).
(Lim,2005) defined the stakeholder management as “Effective management of relationships with stakeholders”. In terms of ‘stakeholder management’, while (Karlsen, 2002) used different statements and focused on the management activities related to stakeholders. These activities include, but are not limited to: identifying stakeholders, gathering information on

stakeholders, analyzing the influence of stakeholders, communicating with stakeholders and developing strategies. According to (Shen,2009a) stakeholder management can be defined as the process of identification, analysis, communication, decision making and all other kinds of activities in terms of managing stakeholders.

2.5.1. Need for Construction Stakeholder Management

The project manager should be keen on managing the interests of multiple stakeholders throughout the entire project management process in order to achieve a successful project outcome (Lim,2005).Although principles can be adopted across boundaries, construction has its peculiarity, hence the need to evolve principles of construction stakeholder management based on empirical research. The needs to manage stakeholders in construction industry considering stakeholder management in the construction industry answers to the reason why a project manager adopt a stakeholder management approach in the construction industry. A construction project contains a series of complex activities. Different stakeholders have different levels and types of investments and interests in the project in which they are involved. (Bourne,2006) states that the project's success or failure was strongly influenced by both the expectations and perceptions of its stakeholders, and the capability and willingness of project managers to manage organizational politics. Poor stakeholder management can lead to many serious problems in construction projects, such as: poor scope and work definition, poor communication, inadequate resources assigned to the project (both in terms of quantity and quality), changes in the scope of work and unforeseen regulatory changes (Karlsen,2002), all of which may be the major source of delays and cost overruns.(Olander and Landin,2005) thought that project managers should clearly identify and analyze all types of stakeholders in the construction project and accommodate their interest and conflicts among them. The stakeholders' commitment, interest and power should be fully assessed so that the project managers can tackle and solve the key problems in the stakeholder management process. Therefore the purpose of the project should need to be understood, and feedback from stakeholders be accepted in order to achieve alignment between the stakeholders and project team to meet the project success (Jergeas, 2000). Many

Problems can be overcome if the stakeholders are actively included in the front end planning and integrated into the project team.

From these studies, it can be found that stakeholder management is important in managing construction projects, and the reasons of managing stakeholders in construction projects include:

- ✓ The construction projects are complicated with many process and parties involved.
- ✓ The relationships among stakeholders in construction projects are temporary.
- ✓ Different stakeholders have different levels and types of investments and interests, so the project manager should communicate with all of the parties to satisfy their needs.
- ✓ Every stakeholder should know their own duties and roles under the project, and what are the requirements of the program.
- ✓ Eliminating conflicting interests among stakeholders and reducing the pressure of management to produce short term result
- ✓ Providing the firm with committed stakeholders in an environment characterized by increasing competition
- ✓ Poor stakeholder management can cause time delays and cost overruns.

2.6. The Project Stakeholder Management Knowledge Areas

Project managers have limited resources for interacting with stakeholders and must decide carefully how to spend the time and resources which are available for this task. (PMI,2013) has identified four main steps for working with stakeholders.

1. Identifying stakeholders; The process of identifying the people, groups or organizations that could impact or be impacted by a decision, activity or outcome of the project; and analyzing and documenting relevant information regarding their interests, involvement, interdependencies, influence, and potential impact on project success. Depending on their complexity, size, and type, most projects have a diverse

number of internal and external stakeholders at different levels of the organization with different authority and influence levels. In order to be able to manage different groups of stakeholders, a thorough analysis of them should be conducted using structured methods. It is essential to identify as many as stakeholders as possible at the beginning and throughout the project and categorize them into different segments according to their level of interest, influence, importance, position, and expectations at the earliest stages of the project as much as possible(Karlsen,2002).in order to start the identification process we need the following inputs, project charter, procurement document, company information and lesson learned from the previous projects and the output is simply listing of stakeholders. The initial identification is exercise by project manager and followed by project team in the form of brain storming or other group facilitation method

2. Plan Stakeholder Management; The process of developing appropriate management strategies to effectively engage stakeholders throughout the project life cycle, based on the analysis of their needs interests, and potential impact on project success. The plan stakeholder management process provides a clear, actionable plan to effectively interact with stakeholders and support project's interest by defining the strategies for building close relationships with stakeholders, who can benefit the project and for minimizing the influence of stakeholders who may have a negative impact. This process is iterative and should be reviewed on a regular basis as the required level of engagement of the stakeholders' changes in the project, (Burke, 2014); and (Karlsen, 2002).

3. Manage Stakeholder Engagement; As per (PMI,2013) definition stakeholder engagement is the process of communicating and working with stakeholders to meet their needs/expectations, address issues as they occur, and foster appropriate stakeholder engagement in project activities throughout the project life cycle.(Burke,2014) stated that at this phase of stakeholder management, lines of

communication need to be established with the key stakeholders to address what information is required, when it is required and how it should be communicated.

According to the (PMI,2013), inputs for Manage Stakeholder Engagement include Stakeholder Management Plan, Communications Management Plan, Change log and Organizational Process Assets. The communications management plan includes a documentation of stakeholder's needs for communication requirements. All of this needs to be taken into consideration as inputs when managing stakeholder engagement.

4. Control Stakeholder Engagement; According to(PMI,2013) definition controlling stakeholder engagement is the process of monitoring overall project stakeholder relationships and adjusting strategies and plans for engaging stakeholders. The advantage of this process is to maintain or increase the efficiency and effectiveness of stakeholder engagement activities as the project evolves and its environment changes.

2.7. Stakeholder Engagment and Ccommunication

Project sucess is tied to effectively communicate and managing relationships with the various stakeholders of the project.this makes stakeholder managment an important issue in project managment Assudani and Kloppenborg, (2010).researcher pointed out that formal and clear communication channels/networks are needed to warrant an effecient information transfer.therefore,increasing the degree of communication amongst the project participants,the higher the participant satisfaction(Takim,2009,Leung(2004).communication is an essential process in the world of project managment.it is difficult to master,but essential to make a good effort in achieving, many times on troubled project, project team memebers fee; that if the communication had been better,the project would have run smoother.therefore,communication is often listed as one of the most needed area for improvement.to ensure the sucess of a project much information,including expectation,goal,needs,resource,status reports,budgets and purchase requests,need to be communicated on a regular basis to all major stakeholders(Culo and Skendrovic

2010).projecct managers sholud be highly skilled negotiators and communicators who are capable of managing individula stakeholder expectations and creating a positive culture changing within the overlall project(Olander and Landin,2005)

The key to effective stakeholder management is a focus on continuous communication with all stakeholders, including team members, to understand their needs and expectations, address issues as they occur, manage conflicting interest, and foster appropriate stakeholder management in project decision and activities.(PMBOK,2017)

2.8. Critical Success Factors (CSF) for Stakeholder Management

Critical success factors can be defined as area, in which results, if they are satisfactory, will ensure successful competitive performance for the organization and as a means to improve the performance of construction projects (Yang, 2010).CSFs are reviewed as those activities and practice that should be addressed in order to ensure effective management of stakeholders in construction project. All the aspect of critical success factors of stakeholder is introduced, so 31 factors contributing to the success of stakeholder management are grouping to six main groups(including management support, information input, stakeholder assessment, decision making, action and evaluation and a continuous support group),the six group CSFs and perceptions of successful stakeholder management are identified as follows.

2.8.1.The Management Support Group

Management support is the degree to which top management understands the importance of the projects process that comes in the form of sufficient resource allocated, and clear authority and power give to the project leader and team members for ensuring the success of project implementation.in the same line, management support from the implementation agencies, was essential for effective stakeholder engagement and management (Yang, 2010).in some projects, certain individuals at director level are tasked with the responsibility of overseeing their stakeholder management activities and to develop their relevance. Top management must address the principle of stakeholder consistently. To guarantee successful

stakeholder participants should be willing to share power and resource that should benefit overall organization's goal (Brook, 1997).the management support group includes the following factors: managing stakeholders with corporate social responsibility; flexible project organization and project manager competence (Olander 2006; Yang et al.2009b; Li et al.2011; Othman & Abdellatif 2011).

2.8.1.1. Managing Stakeholder with Corporate Social Responsibility

(Othman, 2011) states that the construction industry plays a significant role in the social and economic development in both developed and developing countries through constructing buildings and infrastructures projects that meet the needs of the community in the short and lone terms.in addition, it support government efforts by achieving strategic development objectives, increasing gross domestic product and offering employment opportunities.(Othman,2011) summarized their findings by confirming that stakeholder management must have social responsibilities towards supporting effective management of the stakeholder in the construction projects.(Yang,2009b) mentioned that managing stakeholders with economic, legal, ethical, environmental, and cultural responsibilities as the precondition step for stakeholder management. According to the definition of social responsibility, the economic responsibility is the obligation to produce goods and services, sell them at fair prices and make a profit; the legal responsibility refers to the obligation to obey the law; and the ethical responsibility covers those issues not embodied in law but expected by society. Because of the suitable development expectations, environmental considerations include air, flora/fauna, dust, water, and noise. The purpose is to protect the environment and to provide healthy living conditions.

The cultural responsivity is related to the consideration of cultural diversity, especially the differences of language and tradition.so according to (Shen, 2009a) the project managers should manage stakeholders taking in to consideration of all kinds of these social responsibilities to make sure the project objectives are achieved.

2.8.1.2. Flexible Project Organization

(Othman, 2011) suggested that a flexible project organization is used to cope with the complexity and uncertainties of construction in china.as one objective of stakeholder management was to gain an acceptance from stakeholders on the implementation and completion of the project, this will be achieved if an organization will be built to contain sufficient resources (knowledge, information, technology, specific skill, and capital) for communication and interaction with stakeholders.

2.8.1.3.Project Manager Competences

The role of the project manager should involve not simply an understanding of the technical realities at hand, but also of the links between technology, the environment, the community and the people in it. For example, a given community possesses unique information about local conditions and circumstances. In most situations the relationship with and between the stakeholders is taken care by the project manager. Therefore the results of the stakeholder management are dependent on the project manager's experience, and capability (Karlsen, 2002),(Olander,2008) found that the project managers should be highly skilled negotiators and communicators in order to be capable of managing individual stakeholder's expectations and creating a positive culture change within the overall organization project. The construction industry involves a wide range of stakeholder, each bringing them with a great variety of interests, concerns, requirements and potential opportunities.in project management, effective project managers require intuitive skill to identification of stakeholders and work with them to understand their needs and influence up on project success. This facilitates managing process that maximizes stakeholder positive input and minimizes any potential detrimental impact (Bourne, 2005)

2.8.2. Information Input Group

(Freeman, 1984) mentioned that identifying stakeholder information is an important task for assessing stakeholder's information is important as it is the backbone in the project success.

Before any management activities commence, information about the project and stakeholders around requires extensive research and analysis. The information includes project missions, full list of stakeholder, area of stakeholder's interest, and their needs and constraints to the project (Yang, 2009b), the stakeholder commitments, interest and power should be fully assessed so that the project manager can tackle the key problems in the stakeholder management process and the potential impact on success in the project. The information includes

2.8.2.1.Stakeholder Identification

Scholars who study stakeholder management (Karlsen, 2002; Olander, 2006; Walker et al, 2008; Jepsen and Eskkrrod, 2008) have pointed out the important of distinguishing stakeholders. The project stakeholders can be divided in to different types according to various criteria (Pinto, 1998).in the construction industry, during the different stages of a project from the formation through to the final operation, specific parties get involved whose expectations can affect the outcome or may be affected by both undesirable or positive events when the project is carry out (Olander, 2007).

2.8.2.2.Stakeholder Needs and Expectations

(Li et al., 2013) stated that failure of meeting the needs and expectations of stakeholders caused too many project failures. (Li et al., 2013) clarifies that stakeholders' need can provide an indication of stakeholders groups' concern, the problems the project team faces, and stakeholders' requirements of the projects. Furthermore, (Olander, 2008) also proved the importance of analysis of stakeholder concern and needs' by case studies in sewed, and (Olander and Landin,2005) considered that project manager should identify all types of stakeholder and accommodate their conflict and needs.

2.8.2.3.Setting Common Goal

Before every stakeholder management activity, project management team should have a better understanding of the tasks and objectives of the particular stage of the project.

Lifecycle, including the issues of such as cost, schedule, quality(Yang,2009b).(Jergeas,2000) proved that setting common goal, objectives and project priorities is significant for improving stakeholder management, and he also suggested that the purpose of the project should be understood, and feedback from stakeholder be solicited in order to achieve alignment between stakeholder and project team, since this the way that expectations could be managed, and hidden agendas could be brought to the surface and project priorities could be established.

2.8.3. Stakeholder Assessment Group

To enhance the understanding of project managers on stakeholders, their attributes, behavior, and potential influence need to be assessed and estimated. The conflicts and coalition among stakeholders also could be analyzed based on the information about stakeholders (Yang, 2009b).once the information about stakeholders is priorities, the assessment of stakeholder on the basis of their impact and vested interest in the project could be done, so it is important to have an accurate understanding of the stakeholder attribute in order to categorize the stakeholder according to their attribute classification. The assessment group includes

2.8.3.1.Stakeholders' Attitude

According to (McElroy, 2000) the capacity and willingness of stakeholders to threaten or cooperate with project teams should be measured during stakeholder management process. Because stakeholders may have negative or positive impact on projects, there is a need to determine objectors and supporters. Stakeholder attitude refers to whether the stakeholder supports or opposes the project (McElroy, 2000).in other words, this factor gives a clue for managers to be aware that stakeholders have positive or negative influence on project outcomes

2.8.3.2. Stakeholders' Interest

(McElroy, 2000) mentioned that stakeholder interest in a project is considered to be a factor affecting the successful outcome of a project. Furthermore,(Cleland,2007) stated that

stakeholders have a vested interest in a project for numerous reasons such as mission relevancy, economic interest, legal right, political support, health and safety, lifecycle, opportunism and survival. Hence, it can be concluded that vested interest is an important driver of the stakeholder-project relationship. There are various stakeholders' interest due to the complex nature of construction project (Yang, 2009b), and (Freeman, 2007) believe that identifying stakeholder interest is significant to assess stakeholders, these interest including product safety, integrity of financial reporting new product services, and financial returns.

2.8.3.3.Stakeholders' Influence

(Olander, 2007) states that project management procedure is affected by project stakeholders. Therefore recognizing the stakeholders' influence is important factor to plan and execute a sufficiently rigorous stakeholder management process (Olander and Landin, 2005).

2.8.3.4.Stakeholders' Conflicts and Coalitions

Conflicts in construction projects involve stakeholders external or internal to the project or a combination of those. Analyzing the conflicts and coalition among stakeholders is an important step for stakeholder management (Freeman, 2007).in fact, conflicting parties seek mutually satisfactory solutions, which can be achieved by joint problem solving to seek alternative solutions.(Sutterfield,2006)stated a good level of communication among the construction parties can help in achieving a mutually acceptable solution proposed a set of steps in order to resolve differences between stakeholders, to deal with conflict by resolving a difference before and after it reach the stage of a dispute.

2.8.3.5.Stakeholders' Power

(Bourne,2005) defined the power as an individual or group that may have to permanently change or stop the project or other work, the power as a factor is considered to be a key driver of stakeholder-manager relations for several reasons, since the definitions of stakeholders undoubtedly imply that relationships between stakeholders and the project reflect social-business exchanges, and power means the ability to control resource, create

dependencies, and support the interests of some organization members or groups over others(Mitchell,1997).(Bourne,2006) believe that successful project managers should have the ability to understand the invisible power among stakeholders.

2.8.3.6.Stakeholders' Legitimacy

(Freeman, 2007) stated that legitimacy of a stakeholder is a prerequisite for the success of transactions with stakeholders. (Mitchell, 1997) concluded that legitimacy is a social good something larger and more shared than mere self-perception that many be defined and negotiated differently at various levels of social organization. Legitimate stakeholders are those whose actions and claims must be accounted for by managers, due to their potential effects up on normative stakeholders. Legitimacy reflects the contractual relations, legal and moral rights in relationships between stakeholders and a project.

2.8.3.7.Stakeholders' Urgency

(Mitchell, 1997) described urgency as the degree to which stakeholder claims call for immediate attention. They argue that urgency only exist when a relationship or a claim is a time sensitive nature and when claim is critical to the stakeholder. The urgency attributes of stakeholders decides the extent to which they exert pressure on a project manager by calling for emergency action.

2.8.3.8.Stakeholders' Proximity

According to (Bourne,2005) proximity means the extent to which a stakeholder is involved in the project and argue the need to take proximity in to account stakeholder analysis by stating that stakeholders who may have strong power and influence but are relatively far from the project core may seem transparent/invisible.

2.8.3.9.Stakeholders' Knowledge

(Yang, 2009) mentioned that automation and integration technology may contribute significantly to project performance in terms of stakeholder success. They argue that due to technological development, stakeholders can seek a variety of information from numerous sources. For sure the more knowledge a stakeholder has about the project, the more he/she is

able to influence it.(McElroy,2000) suggest stakeholder knowledge ranges from full awareness up to total ignorance. The former refers to the intention of stakeholders to gain knowledge of the project by finding the fact to help them achieve their own objectives.

2.8.4. Decision Making Group

Based on the outcomes in 'information input', and the outcome in 'stakeholder assessment', the project management team has the responsibility to compromise conflicts among stakeholders by choosing the transparent evaluation of the alternative solution based on stakeholder concern, and to decide on the levels of stakeholder engagement in order to ensure effective communication, and formulate appropriate strategies to deal with the issues raised by stakeholders at this stage. The decision making group includes

2.8.4.1.Transparent Evaluation of Alternative Solutions based on stakeholder concern

(Olander, 2008) states that based on the concern of stakeholders, clear and transparent evaluation of alternative solution for the development of a construction project would help project managers to establish the basis of trust needed for an adequate stakeholder management process. (Bourne,2006) also mentioned that the solution identification process is a cornerstone of the involvement program as it is the first step in incorporating the stakeholder input in the decision making process. Since it includes the development of alternative solutions based on stakeholder input, analysis of these different solution with respect to technical design criteria and stakeholder opinion, evaluation of the solutions, and finally selection of preferred solution(s) and development of preliminary mitigating measures.

2.8.4.2. Ensuring Effective Communication between the Project and its Stakeholders

(Jergeas,2000) stated that is communication with stakeholders is one aspect of improvements for managing the stakeholder.to ensure the success of a project much information, including expectations, goals, needs, resource, status reports, budgets and purchased requests, need to be communicated on a regular basis to all major stakeholders. Communications includes the

process required to ensure timely and appropriate generation, collection, distribution, storage, retrieval, and ultimate disposition of project information. 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.

2.8.4.3. Formulation Appropriate Strategies to Deal with Stakeholder

(Karlsen, 2002) stated that there are different types of the strategies, but basically the stakeholder management strategy is the attitude how the project management team treats different stakeholders.in order to identify different kinds of strategies which are enacted by organizations as responses to the demands presented by external stakeholders, through an empirical analysis of four different projects, (Aaltonen, 2009) explained the used and emergence of the response strategies.

2.8.5. Continuous Support Group

(Bourne, 2005) stated that construction projects are transient, but organizations are correspondingly permanent. according to (Shen, 2009a) many stakeholders such as government, local communities and media, would be involved in later stages of the project process or in future projects the project managers, as the representatives of different organizations, have the responsibility to realize the change of their influence and relationships, communicate with them properly and frequently and promote a smooth relationship with them. The continuous support includes the following

2.8.5.1.Communicating with the Stakeholders Properly and Frequently

Communication is a basic ingredient needed to maintain the support, commitment and loyalty of the project stakeholders. (Shen, 2009a) stated that it is important for a project management team to manage their differing demands through good communication in the early stages of a project once the stakeholders have been identified. Many times on a troubled projects, project stakeholders feel that if the communication had been better, the project would have run smother. Project success is tied to effectively communicate and managing

relationship with the various stakeholders of the project. Therefore to ensure the success of a project much information, including expectations, goals, needs, resources, status reports, budgets and purchased requests, need to be communicated on a regular basis to all major stakeholders. Therefore, communication is often listed as one of the most needed area for improvement.(Olander and Landin,2005) mentioned that project managers should be highly skilled communicators and negotiators who are capable of managing individual stakeholder expectation and creating a positive culture change within the overall projects.

2.8.5.2. Stakeholder Involvement in Decision Making

Participation of project stakeholders in different stages of construction project (e.g. the planning and development phases) can be beneficial in several ways (Li et al., 2013).according to (Atkin,2008) identifying and analyzing stakeholder concern in construction projects are indispensable task during the participation process in order to arrive at a consensus and avoid project failures. Various problems have been encountered on infrastructure project around the world that has eventually led to project failure. Public opposition due to various factors has been reported as the main reason for failure in several instances, so the stakeholder involvement in infrastructure projects plays a very important role.

2.8.5.3. Promoting Relationship with Stakeholders

Successful relationships between the project management team and its stakeholders are vital for successful delivery of projects and meeting stakeholder expectations (Jergeas,2000).(Karlsen,2008) states that it is wrong to ignore the stakeholders or attempt to impose a rigid detailed control on the project-stakeholder relationship, he was recognized that several factors such as trust; uncertainty and control; resource and knowledge; and goal congruence affect project-stakeholder relationship, and identified the following factors as being the most interesting and important for building relationships between a project and its stakeholders.

2.8.5.4.Realizing Changes of Stakeholder

(Freeman, 1984) acknowledged the concepts of the change and dynamics of stakeholders. According to him, in reality stakeholders and their influence change over time, and this depends on the strategic issue under consideration. The uncertainty caused by stakeholders includes who the stakeholders are, the influence of them, their need, and the implications of relationship among stakeholders (Ward, 2008).the process of identifying, prioritizing, and engaging stakeholders cannot be a once-only event. The work of managing stakeholder does not stop according to plan activities. Since the nature and membership of the project stakeholder change according to the project lifecycle stage, so the team needs to consciously scan their project stakeholder for unplanned occurrences that may trigger a review when the activity moves from one stages of its implementation to others stages(Bourne,2010).as a result of that the evaluation of stakeholder demands and influence should be considered as a necessary and important step in the planning, implementation, and completion of any construction project (Olander and Landin,2005)

2.8.5.5. Higher Authorities Support

According to (Yang,2011b) findings that the top-level support is important for management activities, in an organization with a mature stakeholder management environment, the higher authorities always monitor the management process, help figuring out problem, and used the effects of stakeholder management as an indicator for performance measurement of the management team.

2.8.5.6. Trust

(Pinto, 2009) have stated to the importance of trust as a facilitator of positive and smooth relationships among project stakeholders. Trust is argued to enhance a variety of intra-organizational relationships, including project team dynamics, top management support and coordination across functional departments. Likewise, trust is argued to improve the inter-

organizational relationships among the principals' actors in project development, such as contractors, owners, consultants and suppliers.

2.8.5.7.Reduce Uncertainty

(Turner, 2003) whom argue that most projects are subjected to uncertainty and these inherent uncertainties need to be integration in order to deliver beneficial objectives change. They underlined that an important way to reduce this uncertainty was to choose a partnering relationship where the risk was shared between stakeholders.

2.8.5.8.Maintain Alignment

Goal congruence means that there are aligned goals, and therefore it is easier to trust the partner doing the job.in addition, (Karlsen, 2008) argue that the willingness to take risks may be an indicator of aligned goals. This may be the reason why we found goal congruence to be more crucial for trust building between the project management and the stakeholders. Access to resource and knowledge was seen as an important factor in the formation of relationships. (Karlsen, 2008) argue that alliances between organizations cab provide a' means for survival'. The key is learning relationships and knowledge transfer. Acquiring knowledge from other organizations is not a deceitful act, but rather represents a commitment to utilize each other's skill. This is supported by case studies done by (Karlsen, 2008) whom finds that the project event was an opportunity to acquire knowledge about the main supplier's new technology and this learning purpose a close relationship was necessary.

2.8.6. Action and Evaluation Group

The action and evaluation group is the final management activity group in the process of stakeholder management. The inputs required are the formulated strategies, and the level of stakeholder engagement to ensure effective communication. The group includes three management activities.

2.8.6.1. Implementing the Strategies

Developing policy implementation strategy development grid can help planners and decision makers gain a clearer picture of what will be required for implementation and help them develop action plans that will tap stakeholder interest and resource (Bryson, 2004). This activity is self-explanatory. The formulated strategies should be implemented accordingly. The outcome of this activity is to keep the project moving forward.

2.8.6.2.Predicting Stakeholders' Reactions

After the strategies being implemented, the evaluation the stakeholders' reactions to the strategies should to improve the objectives in the succeeding stakeholder management process. Predicting stakeholders' reaction is an important factor when project managers make decisions about strategies to deal with stakeholders (Freemen, 2007).the stakeholder analyses have a longer time aspects that are more related to the management of the whole project lifecycle and project management must be aware when designing strategies on how to respond to stakeholder claims.

2.8.6.3.Evaluating Stakeholder's Satisfaction

(Yang, 2011a) placed an emphasis on the recognition of the fact that there are several stakeholders whose expectations and influences must be included in the project management process and it has been emphasized that if a project's key stakeholders are not satisfied with the ongoing project outcomes, the project team will as a result be required to adjust scope, time, cost and quality in order to meet the stakeholders' requirements and expectations.in terms the construction industry, stakeholder satisfaction can be defined as the achievement of stakeholders' pre-project expectations in the actual performance of each project stage.

2.9. Empirical Review

(Nabil El sawalhi,2015) on his thesis on factor affecting stakeholder management in construction project in the Gaza strip identify the most critical success factors that affect stakeholder management literature was reviewed on topics related to stakeholder management a questionnaire survey was carried out among professional in the construction industry. Ninety eight questionnaires were distributed to express from government, municipality, and non-government organization, sixty seven questionnaires were received, with a 68% response rate. The mean and relative importance index was used to analyze the questionnaire result. From the study he found out that main factors affecting the stakeholder management process are hiring a project manager with high competence, transparent evaluation of the alternative solution, ensuring effective communication between the project and its stakeholder, setting common goals and objectives for the project, and exploring the needs and expectations.

Asma P (2018) on his thesis on factor affecting stakeholder management process in construction project in the India. the study used to identify and evaluate critical success factors affecting stakeholder management in construction projects, using a questionnaire survey among construction professional for validate 30 critical success factors identified from the literature reviewed and relative importance index and SPSS for analysis were used from the study the researcher found out the main factors affecting the stakeholder management process are, setting common goal and objectives of the project, transparent evaluation of alternative solution, stakeholder involvement in decision making, formulate appropriate strategy to deal with stakeholder and communication with the engaging stakeholder properly and frequently.

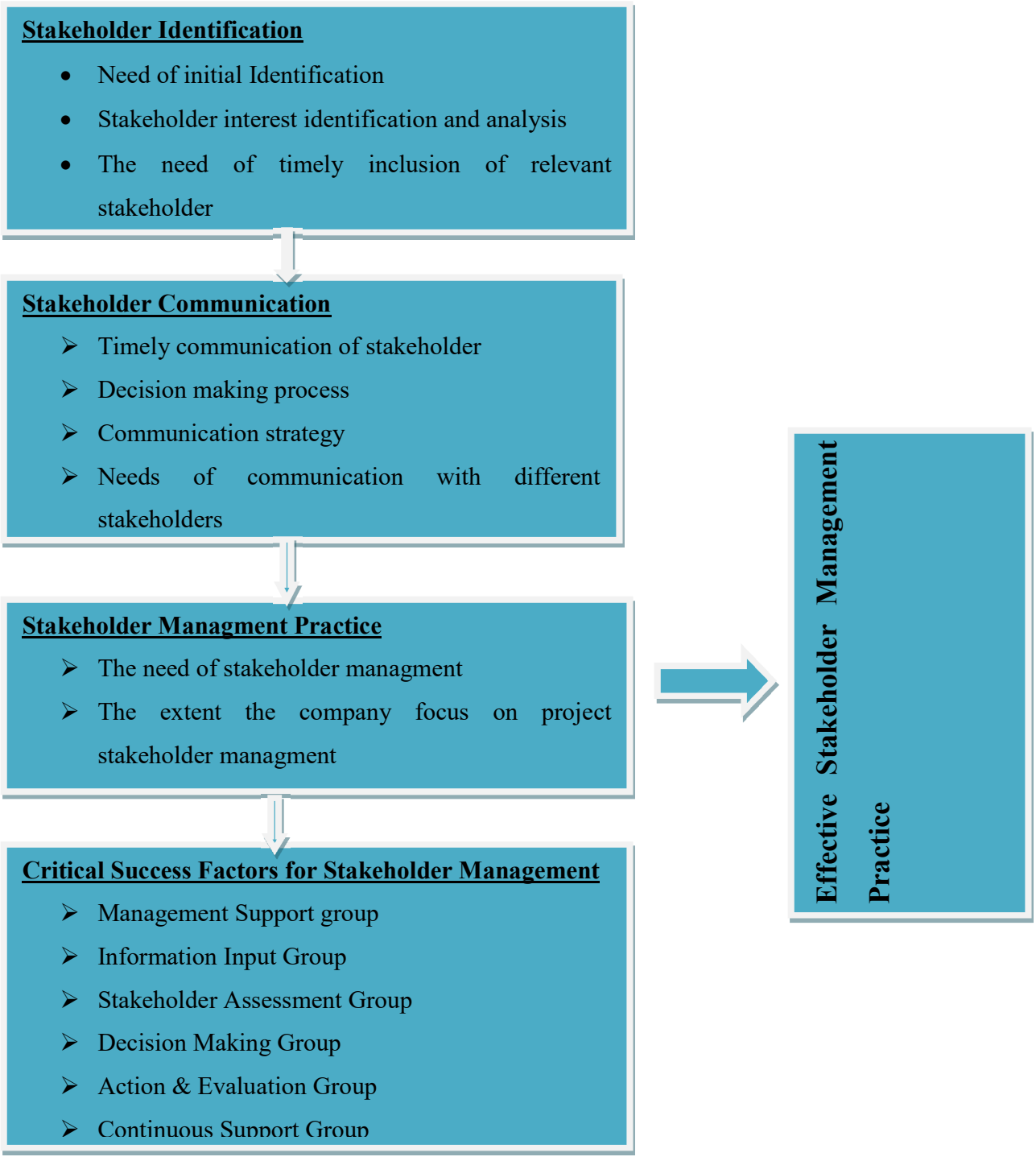
A study entitled exploring critical success factors for stakeholder management in construction projects aimed to identify CSFs associated with stakeholder management in construction projects, and explore their ranking and underlying relationship. 15 CSFs were

identified through a literature review, and consolidated by interviews and pilot studies with professionals in construction industry. A questionnaire instrument containing these 15 CSFs was used. The top three ranked factors for stakeholder management were “managing stakeholders with social responsibilities”, “assessing the stakeholders' needs and constraints to the project”, and “communicating with stakeholders properly and frequently”. Using factor analysis and considering the high importance of the factor “managing stakeholders with social responsibilities”, the 15 CSFs were grouped into five dimensions namely, precondition factor, stakeholder estimation, information inputs, decision making, and sustainable support. All these five groupings and their relationship were included in a framework for successful stakeholder management in construction projects. These findings help to clarify what the high prioritized factors are, and could also be used as an assessment tool to evaluate the performance of stakeholder management and thus help to identify areas for improvement.

2.10. Conceptual Framework

The conceptual fromework in this study will used to show various variable for effective stakeholder managment of road projects.

Figure 2-1 - conceptual framework



Source: (Own Model)

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Introduction

This section describes the procedures undertaken to achieve the research objectives. This chapter specifically presents the research design,type and source of data,data gathering instruments,population, sample size, method of data analysis and presentation,validity and reliability of the data and ethical consideration of the work.

3.2. The Study Organization

Defense Construction Enterprise was established in 2010 by Ethiopian ministry of council regulation NO 185/2010 as public enterprise and National Defense as supervising authority of the enterprise. The purpose for which the enterprise is established is to engage in any construction activity mainly to satisfy the national defense construction and infrastructural development needs. Besides, toengage inthe construction of roads, dams, irrigation infrastructure, Buildings and other construction related works in the country.Henceforth it establishment, the enterprise had completed 20 roads, dam, irrigation, building and real estate projects which worth around birr 4.2 billion in the last five years. Currently, there are 33 construction projects under construction which worth around 8.1 billion. 11 of them are road projects. The enterprise annual income turnover is around 1.4 billion on average for the last seven years.The focus area of the study were 11 road projects of defence construction enterprise and this 11 Road projects defence construction enterprise currently engages are attached on **Appendix E**.

3.3. Research Design

The present study consists of a survey conducted in DCE to assess stakeholder managment practice in road consrtuction projects.The research used descriptive type of research design hence, descriptive type of research is used to describe the characteristics of the phenomena that is being studied. This method focus more on the ‘’what’’ of the research subject. It also involves gathering data that describe events and then organizes, tabulates, depicts and describes the data collection (Glass & Hopkins, 1984)

The study adopts quantitative data collection method. Quantitative approaches seek to gather factual data and to study relationships between facts and how such facts and relationships accord with theories and the findings of any research executed previously (Fellow, 2008)

3.4. Target population, Sample Size Distribution and Sampling Frame

The target population for the study were skilled employee of 11 ongoing road projects of defence construction enterprise and head office staffs who have abundant experiences in stakeholder managment of road construction projects.The target population for this study will be summarized as follow:-

Table 3-1 Target Population

S.N	Target population	Number of Employee
	Project Office	
1.	Project managers	11
2.	Site and office Engineers	120
3.	Construction Engineers	22
4.	Procurement Department	50

5.	Equipment Administration Team	20
6.	Resource Supply Team	30
7.	Consultant Representative	50
	Head Ofice	
1.	Road, Irrigation and Dam Core Process Department	10
2.	Procurement Department	10
3.	Resource Supply Department	15
Total		**338**

Source: DEC Human Resource Department Report

3.4.1. Sampling size Determination

Sample size determination is the act of choosing the number of observation or replicates to include in a statistical sample**.** The study use stratified random sampling to select the sample. Statistical equation were used in order to calculate the sample size for the respondent

Equation 1. Was used to determine the sample size of the population.

$$n=\frac{Z^2*P\,(100-P)}{E^2}\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\text{Equation 1}$$

Where:

n= the required sample size

p =the percentage occurence of a state or condition

E= the Percentage maximum error required (5%error is used for sample size needed)

Z= the value corresponding to the level of confidence required

The study used stratified random sampling technique.A sample size of 168 was selected for the study this comprise of 148 from road project staff and 20 from head office road staff.the

sample size was determind from (Gill et al.,2010) sample size determination table. The sample size determined were based on the available budget for the study, time available for conducting the reserach work and the reliability of the respondent.

3.4.2. Sample Size Breakdown

Table 3-2-Sample size breakdown table

S.N	Target population	Sample of Employee	%age
	Project Office		
1	Project managers	11	7
2	Site and office Engineers	60	35
3	Construction Engineers	22	13
4	Procurement Department	13	8
5	Equipment Administration Team	5	3
6	Resource Supply Team	7	4
7	Consultant Representative	30	18
	Head Ofice		
1	Road, Irrigation and Dam Core Process Department	10	6
2	Procurement Department	5	3
3	Resource Supply Department	5	3
Total		**168**	**100%**

3.5. Source and Tool of Data Collection

This study used both primary and secondary data sources.primary source of data includes closed ended questionnaires with a five-point likert scale ranging from a high of 5 to a low of 1 the question of the research questionnaire are constructed based on literature review, observation and other researcher related work (Kirubel Tesaye,2019) and The secondary source of data were obtained from contract document,published journals,books,report of completed projects, previous research on stakeholder management,conference paper,internate,etc

3.5.1.Method of Data Collection

3.5.1.1.Questionnaires

Questionnaires were distributed to project manager, site and office engineers, construction engineers, and other officers both at head office and project level. This target group was selected as respondents because they are deemed to be knowledgeable about stakeholder management practice of road projects of Defense Construction Enterprise

In order to be able to select the approprate method of analysis,the level of measurement must be understood.For each level of measurement,there are/is an approprate method/s that can be applied and not others.In this research,ordinal scale has been used.Ordinal scale is a ranking or a rating data normall use integer in asending and desending order.Hence,the questionnaires were structured based on those used by Iyoha and Faboyede (2011),and sharif (2010).The respondents have been asked to indicate thier level of agreement on a five point likert scale.On the likert scale a score of 5 or 4 indicates that the item is perceived to be essential while a score of 3 or 2 indicates that the item is perceived to be fairly important, but not essential, while a score of 1 indicates that the item could be disregarded for being un important.

3.5.1.2. Questioner Design

The good design of the questionnaire is a key to obtain good survey results and warranting a high rate of return. The questions of the research questionnaire are constructed based on literature review and observation. The questionnaire also gathered background information of the respondents in order to ensure that they have the required background and years of professional experience to take part in this survey. The questionnaire consists of three parts to meet the objectives of this research, as follows:

1) Part I: General personal information about the respondents.
This part is mainly designed to provide general information about the respondents in terms of age, position or job title, experience and education level of the respondent.
2) Part II: Current practice of stakeholder management in Defense Construction Enterprise Road Projects
The need to study the current practice of stakeholder management in road construction projects is identified from the literature review as one of the objectives of the study. This part is designed to assess the practice about

- ✓ Stakeholder management decisions and responsibilities;
- ✓ Change in stakeholder interests towards the project;
- ✓ Stakeholder communication
- ✓ Challenges of stakeholder management

3) Part III: A factor affecting the stakeholder management in road construction projects.one of the objectives of this research is to investigate factors affecting the stakeholder management in DCE road projects. So, the previous studies were used to build a comprehensive list of critical success factors affecting the stakeholder management process.

Factors affecting the stakeholder management in construction project.31 factors affecting stakeholder management in construction project were selected. These factors are grouped in to six groups based on literature review.

3.6. Method of Data Analyses

Analysis of data included sorting, cleaning and organization of data from the questionnaires. The study generated quantitative data. The quantitative information was then coded and entered into a spreadsheet and analyzed using Statistical Packages for Social Sciences (SPSS) Version 20 in order to make a descriptive analysis of data,which enabled to present quantitatively using mean value, frequency and percentage and Cronbach's Alpha for Reliability and the following statistical tool were used

3.6.1. The Relative Importance Index (RII)

Likert scaling was used for ranking questions that have an agreed level. the respondents were required to rate the importance of each factor on a five point Likert scale using 1 for strongly disagree(not important at all),2 for disagree(no importance),3 for neutral(somewhat important),4 for agree(important) and 5 for strong agreement(very important).then the Relative Importance Index was computed using the following equation:

$$RII = \frac{\sum_{i=1}^{5} Wini}{AN}$$ **……..Equation 2**

Where: RII=Relative Importance Index

Wi= Range give to each factor range from 1-5, (n1=number of respondents for strongly disagree, n2=number of respondents for disagree, n3=number of respondents for neutral, n4=number of respondents for agree, n5=number of respondents for strongly agree).

A= the highest weight (i, e.5 in the study)

N=the total number of samples. The relative importance index ranges from 0 to 1.

3.7. Data Coding

For the ease of the analysis codes have been using while analyzing in SPSS 20.the code have been given per the questionnaires order.all the coding's used in the SPSS 20 analysis has been attached in Appendix B.

3.8. Validity of the instruments

To ensure validity of the research instrument,the questionnaires is prepared in advance and presented using a small number of respondents,randomely selected from target respondents.this assist in removal of any ambiguities hence focused the questionnaire to collect data relevant to the study.in addition,the researchers give the questionnaire for expert opinion to ensure validity of the data collection instrument.this involved going through the questionnaire in relation to the set objectives and making sure that contains all the information that can enable answer these oobjectives.

3.9. Reliability of Instruments

The reliability of the questions used in the study was tested with the Cronbach's alpha test using a statistical Package for social sciences (SPSS) version 20, as this ensures reliability of research questions. Cronbach's alpha reliability test is an estimate of the internal consistency associated with the score that can be derived from a scale or composite score (Tavakol & Dennivk, 2011:53). Data in table 5 shows that the Cronbach's alpha coefficient vales are greater than 0.7(>0.7), and Tavakol and Dennick (2011:53) endorsed that the score values between 0.7-0.95 are standardized values for the reliability of a test to be secured.

Reliability of Research Instrument

Table 3-3 - Reliability

S/No	Question Number	Heading	Number of Item	Cronbach's alpha coefficient value
1	Section B(Stakeholder Management Practice)	A. Stakeholder Identification	03	0.7
		B. Stakeholder Communication System	04	0.72
		C. Stakeholder Management Practice	04	0.7
2	Section C(Factors Affecting Stakeholder Management)	D. Management Support Group	04	0.98
		E. Information Input Group	03	0.847
		F. Stakeholder Assessment Group	09	0.814
		G. Decision Making Group	03	0.937
		H. Action and Evaluation Group	03	0.866
		I. Continuous Support Group	09	0.944

3.10. Ethical Consideration

Ethics is an important aspect in any research.the researcher made sure that ethics of the research were followed.respondents participated in the study willingly,confidenntiality and discretion was observed.the respondent were infofrmed about the objectives of the study with a promise that collected data will only be utilized for academic pirposes.

CHAPTER FOUR

4. DATA ANALYSIS AND PRESENTATION

4.1. Introduction

This chapter provides explanation for data collection such as distribution of the questionnaires,collection of responses and subsquent analysis of the data acquired through the response from professionals and staffs who are working in road projects of Defence Construction enterprise.the principal purpose is to assess the current stakeholder managment pracice of DCE road projects and to identify and rank the most common factors that affect stakeholder management so as to find out the way how to enhance effective stakeholder managment practice on ongoing road projects of DCE.A questionnaries survey has been conducted to gather the required information from staffs at project and head office of DCE.

A total of 168 questionnaries were sent to selected sample of respondents which comprise of 148 or 88% from the selected 11 road projects and 20 or 12% from head office.Hence, the focus area for the study were project. A sample of the questionnaries is attached in Appendex.A

4.2. Response Rate

A total of 168 questionnaires were sent to the two groups of respondents in the company. out of 168 questionnaires,118 questionnaries were collected on person from head office staffs and through different medias from project staffs.Out of the returened 98 or 83% are from the project site staffs and 20 or 17% are from head office staffs.descriptive statstics were used to analyze the 118 questionnaries collected.the collected questionnareis are inserted in to SPSS verssion 20 in order to make a descriptive analysis of the data,which enable to present using freqence and percentage and Relative Importance Index were also used to identify and rank the most common factors that affect stakeholder management.

The table below shows the breakdown of response from the two sample groups

Table 4-1 Respond Rate

Group	Questionnareis Distributed	Questionnaries Returned	Percentage Returned
Head Office Staff	20	20	100%
Project Staffs	148	98	66%
Total	**168**	**118**	**70%**

Source: own survey (2020)

4.3. Respondents Demographic Information's

I. Gender

The following figures show the gender composition of respondents as per the collected responses. Accordingly, 65.3% respondents are male and 34.7% are female.it means most of the respondents are male.

II. Age and Educational Background Composition

The following table shows respondent's age composition and educational background and the total percentage they possess. Accordingly, majorities (48.3%) of the respondents were aged between 35 and 45 years and 36.4% are between 26 and 35 years and 15.3% are above 45 years. In case of educational background/level of respondents, majorities (56.8%) are first degree holder and the rest are diploma and second degree holder

III. Position and Experience of Respondents

The following table shows respondent's position in DCE and this work experience on road projects and the total percentage they possess. Accordingly, majorities (61%) of the respondents were senior engineer mostly working on site and the rest are supporting staffs. in case of respondents experience on road projects; majorities (38.1%) have 5-10 years of experience while 21.2% have more than 15 years' experience. These distribution implied that

most of the respondents are well experienced and had closer know how the stakeholder management practiced on DEC. combination of this professionals gives ample response to the information been sought which further validate the outcome of the analysis.

Table 4-2 Background Information

Background information		Frequency	Percent
Gender	male	77	65.3
	female	41	34.7
Respondent Age	26-35	43	36.4
	36-45	57	48.3
	Greater than 45	18	15.3
Education level	Diploma	9	7.6
	Degree	67	56.8
	Post Graduate	42	35.6
Respondent positon	Senior engineer	72	61
	Project manager	11	9.3
	Team leader	07	5.9
	Supporting Staff	28	23.7
Experience	<5	11	9.3
	5-10	45	38.1
	10-15	37	31.4
	>15	25	21.2

Source: Own Survey (2020)

4.4. Stakeholder Management Practice in DCE Road Projects

The need to study the current practice of stakeholder management in road construction projects was identified from the literature review as one of the objectives of the study. This chapter presents the analysis of survey results on the current practice of stakeholder management in road construction projects of DCE. Data obtained from the questionnaire about stakeholder identification, stakeholder communication and stakeholder management practice were analyzed and presented. Finally, the results were discussed and conclusions drawn from these results are highlighted.

4.4.1.Stakeholder Identification

The respondents' level perception towards stakeholder identification in DCE road construction project is presented in the following table.

Table 4-2 Stakeholder Identification

Stakeholder Identification Variable	N	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Mean	Std. Deviation	Rank(r)
All relevant stakeholders were not identified at the initial stage of the project in DCE road projects	118	66.9	22.0	3.4	7.6	0	4.48	.884	1
Stakeholders' interest have not been clearly identified and analyzed with enough details in DCE road projects	118	64.4	29.7	2.5	3.4	0	4.55	.711	2
Project team members were not participate in identifying stakeholders in DCE road projects	118	32.2	46.6	9.3	11.9	0	3.99	.947	3
Overall Mean Score	**118**						**4.34**	**0.85**	

Source: Own survey (2020)

Table 10 shows that identification of stakeholder at the initial phase of the projects with (mean=4.48 and SD=0.884) was identified as the most important variable for stakeholder identification. A high 66.9% of the respondents strongly agree that the enterprise did not identify the stakeholder at the initial phase of the project. This variable is important as it

answers the question of "who are the project stakeholders that affect the performance of projects.'' This helps the project manager to manage individuals or groups of stakeholders accordingly, and this is in line with Prisca (2017). Likewise, identification and analysis of stakeholder interest with (mean=4.55 and SD=0.711) also identified as the second important variable for stakeholder identification. A high (64.4%) of the respondents strongly agree that the enterprise did not identify and analyzed stakeholder interest. This result is in line with Cleland, (1999) and Freeman et al. (2007) as it is remarked that identifying stakeholders ''interest'' is important for assessing stakeholders. Hence, construction projects are complex in nature and there are various stakeholders with different interest. If the enterprise is to remain competitive in the long run, they need to develop and better understand their relations with their customers, suppliers, employees, lenders and the wider community, as suggested by Love et al. (2000).there is also an agreement among the respondents as there is no participation of project team member in the identification of stakeholders in DCE road construction projects. Overall, most respondents agreed that key stakeholders were not identified at the initial phase of the projects and their later existence has a risk of project delay and potentially project cancellation. Furthermore, stakeholders' interest and expectations were not analyzed with the required level of clarity.

4.4.2. Stakeholder Communication

The respondents' level perception towards the communication system of stakeholders in DCE road construction project is presented in the following table

Table 4-3 - Stakeholder Communication

Stakeholder Communication Variable	N	S A (%)	A (%)	N (%)	DA (%)	SD (%)	Mean	SD	Rank
Important decision were not made timely with the required level of urgency in DCE road projects	118	66.9	22.0	2.5	6.8	1.7	4.46	.958	1

Project team members have influence on the decision making process in DCE road projects	118	32.2	46.6	9.3	11.9	0.0	4.44	.992	2
Important decision were not made as per the appropriate chain of command in DCE road projects	118	70.3	6.8	3.4	13.6	5.9	4.22	1.334	3
There was no formal communication system in DCE road projects	118	44.9	15.3	6.8	33.1	0	3.72	1.333	4
Overall Mean Score	**118**						**4.21**	**1.15**	

Source: Own survey (2020)

Table 11 shows that making decision with the required level of urgency with (mean=4.46 and SD=0.958) was identified as the most important stakeholder communication variable essential for stakeholder management practice. A high 66.9% of the respondents strongly agree that the enterprise did not make important decision timely with the required level of urgency. In DCE road construction projects there are different stakeholders both internal and external stakeholders involved in the middle, quickness of decisions making process is significant to cope up with the current altering environment. Policies and regulations in Ethiopia are continuously fluctuating and it is essential to promptly adapt and take appropriate decisions. This delay in decision making process would affect the project performance and instantly would leads to cost and schedule overrun. Participation of project team member in the decision making process (with mean=4.44 and SD=0.992) was the second most important variable related to stakeholder communication. This result is in line with Kolltveit and Gronhaug(2004) that suggest effective and efficient involvement of project participants will better assist in improving the total quality of a constructed project and will significantly leads to greater project value. Communication system of the enterprise (with mean=3.72 and SD=1.333) A high 53% of respondents agree that in the enterprise

there was no formal communication system. There is also an agreement among respondents that in the enterprise road project decision were not made with the appropriate chain of command and there is a tendency that influential stakeholders overrun the chain of command in the projects.in the enterprise available information, including expectations, goals, needs, resources, status reports, budgets and purchase requests were not communicated on a regular basis to all major stakeholders. Overall in the enterprise there is no proper and frequent communication system all this leads to project cost overrun, time overrun, and dissatisfaction of client/sponsor and customers/end users of the project. Hence communication is essential for maintaining the support and commitment of all stakeholders. This result is in line with Prisca et al (2007), which states that communication needs to be effective, regular and well planned if, project to be success.

4.4.3. Current Stakeholder Management Practice in DCE Road Projects

The respondents' level of perception towards the current practice of stakeholder management in DCE road construction project is presented in the following table.

Table 4-4 - Current Stakeholder Management Practice

Current Stakeholder Management Practice Variable	N	S A (%)	A (%)	N (%)	DA (%)	SD (%)	Mean	SD	Rank
project stakeholder management make a difference in the performance of DCE road projects	118	80.5	19.5	0.0	100.0		4.81	.398	1
The company did not allocated enough fund for stakeholder management	118	67.8	17.8	1.7	7.6	5.1	4.36	1.159	3
there was no separate unit in DCE road projects that is responsible for stakeholder management	118	51.7	29.7	11.0	7.6	0	4.25	.935	4

There was no standardized stakeholder management practice in DCE road Projects	118	51.7	34.7	1.7	5.1	6.8	4.19	1.149	2
Overall Mean Score	**118**						**4.40**	**0.91**	

Source: Own survey (2020)

Table 12 shows that the need for stakeholder management with (mean=4.81 and SD= 0.398) was identified as the most important stakeholder management practice related variable. A high 80.5% of respondents strongly agreed on the importance of project stakeholder management and they are aware of the subject matter. this result is in line with Karlsen (2002) that suggest the reason for performing a stakeholder management practice: first to become acquainted with the projects stakeholders; second, it is important for ensuring the balance between contribution and reward; third it is a basis for managing the stakeholders; fourth, it is a basis for deciding who should be involved in determining the project goal and how success should be measured.

Allocation of funds toward improving stakeholder management practice with (mean=4.36 and SD=1.159) was identified the second most important variable for current practice of stakeholder management. A high 67.8% of the respondents strongly agree that the enterprise did not allocate enough funds to the project for stakeholder management. There is also an agreement among the respondents that in the enterprise there was no standardized stakeholder management practice and there was also no separate unit responsible for stakeholder management assigned on the project. Overall in the enterprise there was no stakeholder management practice which demonstrates low attention was given to the subject matter This may lead to many serious problems in the enterprise road projects, such as: poor scope and work definition, poor communication, inadequate resources assigned to the project (both in terms of quantity and quality), changes in the scope of work and unforeseen regulatory changes all of which may be the major source of delays and cost overruns

4.5. Factors Affecting the Stakeholder Management Process

This part consists of result and discussion of factors that influence the stakeholder management process. These factors were grouped in to six groups. The first group is related to factors affecting the management support in stakeholder management process. The second group is related to factors influencing the information input for stakeholder management. The third group is related to factors influencing the stakeholder assessment. The fourth group is related to factors that affect the decision making in the stakeholder management. The fifth group is related to factors of action and evaluation of the stakeholder management process. The last group is related to factors that can make the continuous support efficiently.

The Relative Importance Index (RII) and the ranks of each group affecting the stakeholder management process. Thirty one factors have been identified through the literature review. The critical success factors will be discussed based on the following assumption: all the factors with mean score 4 and above will be discussed in each group related to the research objectives and research questionnaire, and at the end of the discussion of each group.

RII's and test value for groups affecting the stakeholder management process

Table 4-5 RII and Test values for Groups Affecting Stakeholder Management in DCE Road Projects

Groups	Mean	RII	Rank
Information Input Group	4.48	89.4%	1
Management Support Group	4.42	88.8%	2
Action and Evaluation Group	4.44	88.6%	2
Decision Making Group	4.38	88.4%	3
Stakeholder Assessment Group	4.31	87.04%	4
Continuous Support Group	4.14	82.4%	5

Source: Own survey (2020)

4.5.1. Factors Affecting the Management Support Group (Group 1)

Table 4-6 RII and Test Values of Factors Affecting the Management Support Group

No	Management Support Group	Code	N	Mean	RII	Rank
1	managing stakeholder with corporate social responsibilities (economic, legal, environmental and	D1	118	4.34	0.732	3
2	Flexible project organization	D2	118	4.31	0.729	4
3	Project manager technical competences	D3	118	4.37	0.749	2
4	PM managerial competence	D4	118	4.64	0.754	1
			Average	**4.42**	**0.741**	

Source: Own survey (2020)

From table 14, it is shown that the project manager managerial competency was ranked in the first position by the respondents under this group as a critical factor influencing the management support in the stakeholder management process with Relative Important Index of (75.4%).the role of project manager must involve not only an understanding of the technical process, but also understanding of the link between techniques, the community and how to manage it. The obtained result clarifies that project manager should acquire knowledge and use his competencies to engage stakeholder effectively. Thus, the implemented agencies should hire the project manager with a high competence, to manage the stakeholder. The obtained results are in line with the findings of (Hammad, 2013) and (Olander, 2008) they confirmed that the project managers should be highly skilled negotiator communicators in order to be capable of managing individual stakeholder's expectations and creating a positive culture change within the overall organization project.

Project manager technical competence was ranked in the second position by the respondents under this group as a critical factor affecting the management support group in stakeholder management process with Relative Important Index of (74.9%).the role of project manager must involve an understanding of the technical process uses his competencies to engage stakeholder properly to increase the performance of the construction projects. In most

situations the relationship with the stakeholder is taken care of by the project manager. The obtained results are in line with (Karlsen, 2002) he confirmed that the results of the stakeholder management are dependent on the project manager's experience, relationships, and capability.

Managing stakeholder with corporate social responsibility was ranked in the third position by the respondents under this group as a critical factor influencing the management support in the stakeholder management process, with Relative Important Index of (73.2%).since the construction industry plays an important role in the social and economic development through construction road that meet the needs of the community in the short and long terms, and supports government efforts by achieving strategic development objectives, offering employment opportunities. The obtained results are in line with the findings (Yang, 2011b) he confirmed that managing stakeholder with economic, legal, ethical, environmental and cultural responsibilities as the precondition step for stakeholder management.

Flexible project organization was ranked in the last position by the respondents under this group with Relative Importance Index of (72.9).since one objective of stakeholder management was to gain an acceptance from stakeholders on the implementation of the project, so project manager needs authority from his top management in order to able to reach the objective of construction project, a similar result was found by (Olander, 2008)

4.5.2. Factors Affecting the Information Input (Group Two)

Table 4-7 RII and Test Values of Factors Affecting Information Input Group

No	**Information Input Group**	Code	N	Mean	RII	Rank
1	Identifying stakeholders	E1	118	4.42	0.736	3
2	Exploring the stakeholder need and expectation	E2	118	4.44	0.740	2
3	Setting common goal and objective of the project.	E3	118	4.58	0.757	1
		Average		**4.48**	**0.741**	

Source: Own survey (2020)

From table 15, it is shown that setting common goal and objective of the project was ranked in the first position by the respondents under this group as a critical factor influencing the

stakeholder management with Relative Important Index of (75.7).Since the project manager should have a good understanding of the tasks and objectives at each particular stage of the project lifecycle, including such as the issues about cost, schedule, and budget, it is very important to set a common goal to achieve the project success. The obtained results are in line with the findings of (Hammad, 2013) and (Yang, 2011b)

Exploring the stakeholder need and expectation was ranked in the second position by the respondents under this group as a critical factor influencing the information input in stakeholder management with Relative Importance Index of (74%).all stakeholders' needs should be assessed so that a satisfactory and realistic solution to the problem being addressed is obtained. failing to address and meet the concerns and expectations of the stakeholders involved has resulted in many project failures. the obtained results are in line with the findings of (Olander,2008)

Identifying stakeholders was ranked in the last position by the respondents under this group as a critical factor influencing the information input group in stakeholder management process with Relative Importance Index of (73.6%).project manager need to identify and interact with key stakeholder in the project system's environment and the expectations concerning rewards for contributions, as a prerequisite requirement for stakeholder assessment in project for management in the construction project. A similar results was found by (Hammad, 2013) and (Karlsen, 2002)

4.5.3.Factors Affecting the Stakeholder Assessment Group (Group three)

Table 4-8 RII and Test Values of Factors Affecting the Stakeholder Assessment Group

No	**Stakeholder Assessment Group**	Code	N	Mean	RII	Rank
1	Assessing stakeholders' attitude	F1	118	4.46	0.753	1
2	Understanding area of stakeholders' interests	F2	118	4.45	0.752	2
3	Predicting the influence of stakeholders	F3	118	3.89	0.664	8
4	Analyzing conflicts and coalitions among stakeholders	F4	118	4.44	0.751	3
5	Evaluate the stakeholder power(capacity to influence the action of other stakeholders)	F5	118	4.26	0.710	6

6	Evaluating the stakeholder legitimacy (perceived validity of claims)	F6	118	4.12	0.672	7
7	Understand the stakeholder urgency (degree to which stakeholders' claims requires immediate attention)	F7	118	4.42	0.734	4
8	Determine the stakeholder proximity (level of association or closeness with the project)	F8	118	4.31	0.725	5
9	Determine the stakeholder Knowledge	F9	118	4.42	0.734	4
			Average	**4.31**	**0.721**	

Source: Own survey (2020)

As shown in Table 16, the assessing stakeholders' attitude was ranked in the first position by the respondents under this group as a critical factor influencing the stakeholders' assessment with Relative Importance Index of (75.3%).the capacity and willingness of stakeholders to threaten or cooperate with project teams should be measured during stakeholder management process because stakeholders may have negative or positive impacts on projects success. A similar results was found by (MCElroy, 2000)

Understanding the area of stakeholders' interest was ranked in the second position by the respondents under this group with Relative Importance Index of (75.2%).stakeholders have a vested interest in a project for numerous reasons such as mission relevancy, economic interest, legal right, political support, health and safety, lifestyle. therefore, interest is an important driver of stakeholder project relationship. The obtained results are in line with the findings of (Hammad, 2013) and (Karlsen, 2002)

Analyzing conflict and coalition among stakeholder was ranked in the third position by the respondents under this group with Relative Importance Index of (75.1%).analyzing the conflicts among the construction parties can help in achieving a mutually acceptable solution proposed a set of steps in order to resolve difference between stakeholders, to deal with conflict by resolving a difference before and after it reach the stage of a dispute. the obtained results are in line with the findings of (Olander,2008)

Understanding the stakeholder urgency was ranked in the fourth position by respondents under this group with Relative Importance Index of (73.4%).urgency is the degree to which stakeholder claim for immediate attention, and it decides the extent to which they exert pressure on a project manager by calling for emergency action. the obtained results are in line with the findings of (Hammad, 2013).

Determine the stakeholder Knowledge was ranked in the same position with understanding the stakeholder urgency. The more knowledge a stakeholder has about the project, the more is able to influence the project either positively or negatively. A similar result was found by (Olander, 2008) and (Bourne, 2005)

4.5.4.Factors Affecting the Decision Making (Group Four)

Table 4-9 RII and Test Values of Factors Affecting Decision Making Group

No	**Decision Making Group**	Code	N	Mean	RII	Rank
1	Transparent evaluation of the alternative solution based on stakeholder concern.	G1	118	4.38	0.737	2
2	Ensuring effective communication between the project and its stakeholder.	G2	118	4.41	0.739	1
3	Formulate appropriate strategy to deal with stakeholder.	G3	118	4.35	0.732	3
			Average	**4.38**	**0.736**	

Source: Own survey (2020)

From table 17,it is shown that, ensuring effective communication between the project and its stakeholders was ranked in the first position by the respondents under this group as a critical factor influencing decision making with Relative Importance Index of (73.9%).poor communications and misunderstanding between the stakeholders is a major factor causing time overrun in road construction project. the lack of coordination between the project stakeholder is an influencing factor for the success of road construction project; and the information coordination between stakeholder is a factor affecting the performance of road construction project in DCE. The obtained results are in line with the findings of ((Hammad, 2013)

Transparent evaluation of the alternating solution based on stakeholder concern was ranked in second position by the respondents under this group as a critical factor influencing decision making with Relative Importance Index of (73.7%), since this factor reflects the style of management of the construction manager that leading the success of construction projects. the obtained results are in line with the findings of (Olander, 2008)

Formulate appropriate strategy to deal with stakeholders was ranked in the last position by the respondents under this group with Relative Importance Index of (73.2%).stakeholder management strategy is the attitude how the project management team treats different stakeholders based on their interest and attitude in order to meet the objective of the project the obtained results are in line with the findings of (Karlsen, 2002)

4.5.5.Factors Affecting Action and Evaluation (Group five)

Table 4-10 RII and Test Values of Factors Affecting Action and Evaluation Group

No	**Action and Evaluation Group**	Code	N	Mean	RII	Rank
1	Implementing the strategy based on schedule plans.	H1	118	4.52	0.746	1
2	Flexibility in the implementing strategy to deal with stakeholder' reaction.	H2	118	4.36	0.727	3
3	Evaluating the stakeholder satisfaction in terms of achievement of the stakeholder pre - project expectation.	H3	118	4.43	0.742	2
			Average	**4.44**	**0.738**	

Source: Own survey (2020)

From table 18, it is shown that, implementing the strategy based on schedule plans was ranked in the first position by the respondents under this group as a critical factor influencing the action and evaluation with Relative Importance Index of (74.6%).the formulated strategies should be implemented accordingly, and the outcome of this activity is to keep the project moving forward and achieve the project success. a similar result was found by (Hammad, 2013)

Evaluating the stakeholder satisfaction in terms of achievement of the stakeholder pre-project expectation was ranked in the second position by the respondents under this group as a

critical factor influencing the action and evaluation group with Relative Importance Index of (74.2%).it has been emphasized that if a project's key stakeholders are not satisfied with the ongoing project outcome, the project team will as a result be required to adjust scope, time, cost and quality in order to meet the stakeholders' requirement and expectations. A similar result was found by (Olander, 2008)

Flexibility in the implementing strategy to deal with stakeholders' reaction was ranked in the last position by the respondents under this group with Relative Importance Index of (72.7%), project management must be aware when designing strategies on how to respond to stakeholder claims, and be aware of the implication of their responses to different dimensions of the project success. A similar result was found by (Karlsen, 2002)

4.5.6. Factors Affecting Continuous Support (Group Six)

Table 4-11 RII and Test Values of Factors Affecting the continuous Support Group

No	**Continuous Support Group**	Code	N	Mean	RII	Rank
1	Communication with the engaging stakeholder properly	I1	118	4.47	0.751	1
2	Stakeholder involvement in decision-making.	I2	118	4.45	0.725	2
3	Keeping and promoting an ongoing relationship with	I3	118	3.97	0.661	7
4	Analyzing the change of multiple stakeholder	I4	118	3.94	0.657	8
5	Obtain support assistant from higher authorities.	I5	118	3.88	0.647	9
6	Mutual trust and respect among the stakeholders	I6	118	4.08	0.681	4
7	Reduce the uncertainty	I7	118	4.35	0.718	3
8	Maintain alignment between or among the stakeholder	I8	118	4.06	0.677	5
9	Access to resource and knowledge	I9	118	4.03	0.671	6
			Average	**4.14**	**0.687**	

Source: Own survey (2020)

From table 19, it is shown that, communication with the engaging stakeholder properly and frequently was ranked in the first position by the respondents under this group as a critical factor affecting continuous support with Relative Importance Index of (75.1%), formal and

clear communication networks are needed to warrant an efficient information transfer. Therefore, increasing the degree of communication amongst the project participants, the higher the participant satisfaction and contribution to the project success. A similar result was found by (Karlson, 2002) and (Olander, 2008)

Stakeholder involvement in decision making was ranked in the second position by the respondents under this group as a critical factor affecting continuous support with Relative Importance Index of (72.5%). The result implies that identifying and analyzing stakeholder concern in DCE are indispensable tasks during the participation process in order to arrive at a consensus and avoid project failure. Participation of project stakeholder in different stages of construction project (e.g. the planning and development phases) can be beneficial in several ways (Li, and Skitmore, 2012)

Reduce the uncertainty was ranked in the third position by the respondents under this group as a critical factor affecting continuous support group with Relative Importance Index of (71.8%).most projects are subjected to uncertainty and these inherent uncertainties need to be integrated to succeed the project objective.to reduce this uncertainty the enterprise should be choose a partnering relationship where the risk was shared between the stakeholders. A similar result was found by (Hammad, 2013) and (Karlsen, 2002)

Mutual trust and respect amongst the stakeholder was ranked in the fourth position by the respondents under this group as a critical factor affecting continuous support with Relative Importance Index of (68.1%).mutual trust is a facilitator of positive and smooth relationships amongst project stakeholders. Trust is argued to enhance a variety of stakeholder relationship, including the project team, owner, contractor, consultant, and other stakeholder. A similar result was found by (Yang, 2011b)

Maintaining alignment between or among the stakeholder was ranked in the fifth position by the respondents under this group as a critical factor affecting continuous support with Relative Importance Index of (67.7%).

4.6. Summary of Major Findings

The survey achieved an overall response rate of 70.24%.the analyses of the survey revealed the following key observations:

- The responsec rate of 70.24% was considered more than adequeate for the study.hence most of the road projects the study focused were found more than 300km far from addis ababa and due to world health organization declared the corona virus (COVID-19) outbreak a pandemic; and the Ethiopian government has been advising to the public to take required cautionary measure. Due to this it was difficult to address all the questionnaire on person yet distributed the questionnaires through mail and collected through different media (like DHL, email, on person etc).
- The outcome indicated that the road construction industry is male dominated,implying an imbalance in geneder representation.The respondents had considerable experience in the road construction sector having been involved in many projects and were well educated with majority holding a degree level and above,implying that the information obtained from them was very credible.
- With regard to identification of stakeholders and analysis of thier respective interest the finding present that key stakeholders were not identified at the initial stage of the project and thier later existance has a risk of project delay and potentially project cancelation.Stakeholders interest and expectations were also not analyzed with the required level of clarity and Lack of proper communication channel is also identified as the major challenge to manage stakeholders in the project
- The study assess the current pracitice of stakeholder management and the critical factors that affect stakeholder management process of DCE road projects. from the findings of the research, stakeholder management is yet to be fully embraced by the enterprise as a deliberate strategy in the management of DCE road construction projects.the challenge for embracing stakeholder managment can be the inability of the enterprise to set aside some funds to support stakeholder managment

process.furthermore,the results revealed the need for the enterprise to assign the responsibilities for stakeholder managment to specific professionals in addition to deciding to undertake stakeholder managment in the construction road projects.

- As per the Relative Importance Index test the analysis revealed that as a category (taking average value) Information input group are the main (ranked 1st) factors affecting stakeholder management process of DCE road construction project whereas management support group and action and evaluation groups are one of the top three factors affecting stakeholder management process of DCE road construction projects.
- As per the relative importance index (RII) the following are the top ten factors which affect stakeholder management process of DCE road projects identified by the respondents.

4.6.1. The Top Ten Important Factors Affecting the Stakeholder Management Process

Table 4-12 Top Ten Important Factors Affecting Stakeholder Management Process.

S/No	Factor	RII	Rank	Category
1	Project Manager managerial competence	75.4	2	Management support
2	Setting common goal and objective of the project	75.7	1	Information input
3	Implementing the strategy based on schedule plans.	74.6	7	Action and evaluation
4	Communicate with the engaging stakeholder properly and frequently.	75.1	5	Continuous support
5	Analyzing conflicts and coalitions among stakeholders	75.1	5	Stakeholder assessment
5	Assessing stakeholders' attitude	75.3	3	Stakeholder
6	Understanding area stakeholders' interest	75.2	4	Stakeholder
7	Evaluating the stakeholder satisfaction in terms of achievement of the stakeholder pre-project expectation.	74.2	8	Action and evaluation

8	Exploring the stakeholder need and expectation	74	9	Information input
9	Ensuring effective communication between the project and its stakeholder.	73.9	10	Decision making
10	Project managers technical competence	74.9	6	Management support

Source: Own survey (2020)

Table 20, shows "setting common goal and objectives of the project.'' under the group of "information input(group two)'' with Relative Importance Index of (75.7%), "project manager managerial competences'' under the group of "management support (group one)'' with Relative Importance Index of(75.4%),and "Assessing stakeholder attitude'' under the group of "stakeholder assessment(group three)'' with Relative Importance Index of(75.3%) were ranked in the top of the three factors that affect stakeholder management process.

- All these factors are the main cause for the change in the scope of work, poor communication, slow decision making, rejected projects by end user, additional work, inadequate assigning of resource to the project, delay and cost overrun, slow information flow between parties and project failure.

Based on the data found in the company performance report: name of selected projects, contract and actual completion time and cost, rate of time overrun and cost overrun are described in the Appendix D. The rate of time overrun ranges from a minimum of 36% to the maximum of 73% of the contract time; and cost overrun ranges from a minimum of 15% to the maximum of 71% of the contract amount. Completed road project with respect to time and cost is attached in Appendix. D

CHAPTER FIVE

5. CONCLUSION AND RECCOMENDATIONS

5.1. Conclusion

Effective stakeholder management will facilitate project success. Failure to adequately manage stakeholder can result in project delays, cost overrun, dissatisfaction with the final project, negative impact on the projects 'financial plan and schedule' overall the ignorance or poor stakeholder management are one of the key reasons responsible for project failure. Therefore, carrying out a research in this area will have a paramount importance. The aim of this research as indicated in Chapter one is to assess the current stakeholder management practice and to investigate the factors affecting stakeholder management in DCE road construction projects. From the analysis the following conclusions have been drawn:

A. The study established that key stakeholders were not identified at the initial phase of road project and their later existences have a significant influence in the road project. Furthermore, their interest and expectation were not analyzed with the required level of clarity and conflicting interest created at the later stage.
B. The research finding present that in DCE road projects important decision were not made with appropriate channel and with appropriate level of urgency there is a tendency that influential stakeholders overrun the chain of command in the road projects. As per the enterprise annual report available information, including expectations, goals, needs, resources, status reports, budgets and purchase requests were not communicated on a regular base to all major stakeholders.
C. The research finding noted that in the enterprise road projects Stakeholder management is yet to be fully embraced as deliberate strategy. The main challenge for embracing stakeholder management can be said to be the inability of the enterprise to set aside some fund to support stakeholder management process. Therefore, it is recommended that some financial provisions should be made in

agreement between the client (sponsor) and key project team. Especially for stakeholder management related issue that may not be included in the project bill.

D. There is need for firms to assign the responsibilities to for leading stakeholder management to specific professionals in addition to deciding to undertake stakeholder management in construction projects. This should be done for each of the main stages of construction projects as well as for the overall process of stakeholder management on the projects.

E. The findings from the study shows that the main factors that affect the stakeholder management in the enterprise are management support, information input, stakeholder assessment, decision making, action and evaluation and continuous support group. All of these factors affect stakeholder management either positively or negatively. among these the most top three factors that affect the stakeholder management process in DCE road construction projects were ranked based on their Relative Importance Index(RII) are: Setting common goal and objectives of the project(RII=75.7%), hiring a project manager with high managerial competencies(RII=75.4%),and Assessing stakeholders' attitude(RII= 75.3).

5.2. Recommendations

To improve the stakeholder management process in DCE road construction projects, there is a need of effort from all main stakeholders'. Therefore, the researcher recommends the following.

A. All relevant stakeholders should always be identified from project inception stage, prioritize their need, develop engagement strategy and communication plan to accomplish project goal.
B. There is need of effective communication between the stakeholders participating in the road project to improve the performance of the project.
C. Some financial provisions should be made in agreement between the client (sponsor) and key project team. Especially for stakeholder management related issue that may not be included in the project bill to embrace stakeholder management practice
D. There is need for the enterprise to assign the responsibilities to for leading stakeholder management to specific professionals in addition to deciding to undertake stakeholder management in construction projects. This should be done for each of the main stages of construction projects as well as for the overall process of stakeholder management on the projects
E. The enterprise need to guarantee better understanding about projects general goal and objectives among all stakeholders and ensure strong communication with all stakeholders from project initiation up to close out period.
F. The top management should hire a project manager with highly managerial competent skilled negotiators and communicators, in order to be capable of managing individual stakeholder's expectations and creating a positive culture change within the overall organization projects to improve stakeholder management process in the road project.
G. The enterprise needs to create awareness on the importance of stakeholder management and effective communication mainly between internal stakeholders.

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8. APPENDICES

8.1. Appendix A-Questionnaire

St. Mary's University

Assessment of Stakeholder Management Practice in Road Construction Project: The Case of Defence Construction Enterprise.

Dear sir/madam

I refer to the above subject matter and hereby confirm that I am second year MA in **Project Management** student of the above named institution, carrying out my thesis for academic purposes. Your willingness and cooperation in giving reliable information is well appreciated and the information you provide will be used for academic purpose and will be kept strictly confidential.

Knowing that your time is valuable please, take few minutes of your time to complete the questionnaire.

In case of any question please contact me via martinat2721@gmail.com /+251-913-879185.

Martha Haile

Instructions:

- ✓ Please answer this questionnaire with reference to your previous experience about stakeholder management of one representative project that you have participated.
- ✓ Please answer the questions by ticking the appropriate box.

Section A- Demographic Information

1. Gender of respondent

   Male ☐ Female ☐

2. Age of Respondents`

   Below 25 ☐ between 36-45 ☐

   Between 26-35 ☐ Above 45 ☐

3. Please indicate your years of professional experience in construction.

   Less than 5 years ☐ Between 10 and 15 ☐

   Between 5 and 10 ☐ More than 15 years ☐

4. Please indicate your position (Job title).

   Project manager ☐ Site Engineer ☐

   Team Leader ☐ Office Engineer ☐

   Others..... ☐

5. Educational background

   Diploma certificate ☐ Master's degree ☐

   Bachelor degree ☐ Others---------- ☐

Section B–Project Stakeholder Managment .

Please indicate by ticking the extent to which you agree with the following statements.

Key:

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

A. Stakeholder Identification						
Indicators		(5)	(4)	(3)	(2)	(1)
1	All relevent stakeholders were not identified at the initial stage of the project in DCE road projects					
2	Stakehloders' interest have not been clearly identified and alayzed with enough details in DCE road projects					
3	Project team members were not participate in identifying stakeholders in DCE road projects					
B. Stakeholder Communication						
Indicators		(5)	(4)	(3)	(2)	(1)
1.	Important decision were not made timely with the appropriate level of urgency in DCE road projects					
2.	Important decision were not made as per the appropriate chain of command in DCE road projects					
3.	There was no formal communication system in DCE road projects					
4.	Project team members have influence on the decision making process in DCE road projects					

C. Stakeholder Management practice						
Indicators		(5)	(4)	(3)	(2)	(1)
10	project stakeholder management make a difference in the performance of DCE road projects					
11	There was no standardized stakeholder managment practice in DCE road Projects					
12	The company did not allocated enough fund for stakeholder managment					
13	there was no separate unit in DCE road projects that is responsible for stakeholder management					

Section C- Factors Affecting the Stakeholder Management Practice in DCE Road Construction Projects.

Based on your experience in the field of project management, please give feedback to the following question.

Please tick the appropriate response for each item

1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree and 5 = Strongly Agree,

To what extent do you think that the following factors are effective in managing the stakeholders?

N.O	Factors	(5)	(4)	(3)	(2)	(1)
D	**Management Support Group**					
1	managing stakeholder with corporate social responsibilities (economic, legal, environmental and ethical)					

2	Flexible project organization					
3	Project manager technical competences					
4	PM managerial competence					
E	**Information Input Group**					
1	Identifying stakeholders					
2	Exploring the stakeholder need and expectation					
3	Setting common goal and objective of the project.					
F	**Stakeholder Assessment Group**					
1	Assessing stakeholders' attitude					
2	Understanding area of stakeholders' interests					
3	Predicting the influence of stakeholders					
4	Analyzing conflicts and coalitions among stakeholders					
5	Evaluate the stakeholder power (capacity to influence the actions of other stakeholders)					
6	Evaluating the stakeholder legitimacy (perceived validity of claims)					
7	Understand the stakeholder urgency (degree to which					

	stakeholders' claims requires immediate attention)					
8	Determine the stakeholder proximity (level of association or closeness with the project)					
9	Determine the stakeholder Knowledge					
G	**Decision Making Group**					
1	Transparent evaluation of the alternative solution based on stakeholder concern.					
2	Ensuring effective communication between the project and its stakeholder.					
3	Formulate appreciate strategy to deal with stakeholder.					
H	**Action and Evaluation Group**					
1	Implementing the strategy based on schedule plans.					
2	Flexibility in the implementing strategy to deal with stakeholder' reaction.					
3	Evaluating the stakeholder satisfaction in terms of achievement of the stakeholder pre - project expectation.					
I	**Continuous support group**					

1	Communication with the engaging stakeholder properly and frequently.					
2	Stakeholder involvement in decision-making.					
3	Keeping and promoting an ongoing relationship with stakeholder.					
4	Analyzing the change of multiple stakeholder engagement and the relation.					
5	Obtain support assistant from higher authorities.					
6	Mutual trust and respect among the stakeholders					
7	Reduce the uncertainty					
8	Maintain alignment between or among the stakeholder					
10	Access to resource and knowledge					

Thank you for giving your precious time

8.2. Appendix B-Coding's

No	Code	Variables	Group
A. Stakeholder Identification			
1.	A1	All relevant stakeholders are not identified at the inital stage of the project.	**Stakeholder Identification**
2.	A2	Stakeholders' interests have not been clearly identified and analyzed with enough details.	
3.	A3	Project team members were not participating in identifying stakeholders.	
B. stakeholder Communication			
1.	B1	Important decision were not made timely with the appropriate level of urgency in DCE road projects	**Stakeholder Communication**
2.	B2	Important decision were not made as per the appropriate chain of command in DCE road projects	
3.	B3	There was no formal communication system in DCE road projects	
4.	B4	Project team members have influence on the decision making process in DCE road projects	
C. Stakeholder Management Practice			
1.	C1	project stakeholder management make a difference in the performance of DCE road projects	**Practice of Stakeholder Management**
2.	C2	There was no standardized stakeholder managment practice in DCE road Projects	
3.	C3	The company did not allocated enough fund for stakeholder managment	
4.	C4	there was no separate unit in DCE road projects that is responsible for stakeholder management	
Factors Affecting Stakeholder Management			
D. Management Support Group			
1.	D1	managing stakeholder with corporate social responsibilities (economic, legal, environmental and ethical)	**Management Support Group**
2.	D2	Flexible project organization	

3.	D3	Project manager technical competences	
4.	D4	PM managerial competence	
E. Information Input Group			
1.	E1	Identifying stakeholders	**Information Input Group**
2.	E2	Exploring the stakeholder need and expectation	
3.	E3	Setting common goal and objective of the project.	
F. Stakeholder Assessment Group			
1.	F1	Assessing stakeholders' attitude	**Stakeholder Assessment Group**
2.	F2	Understanding area of stakeholders' interests	
3.	F3	Predicting the influence of stakeholders	
4.	F4	Analyzing conflicts and coalitions among stakeholders	
5.	F5	Evaluate the stakeholder power (capacity to influence the actions of other stakeholders)	
6.	F6	Evaluating the stakeholder legitimacy (perceived validity of claims)	
7.	F7	Understand the stakeholder urgency (degree to which stakeholders' claims requires immediate attention)	
8.	F8	Determine the stakeholder proximity (level of association or closeness with the project)	
9.	F9	Determine the stakeholder Knowledge	
G. Decision Making Group			
1.	G1	Transparent evaluation of the alternative solution based on stakeholder concern.	**Decision Making Group**

2.	G2	Ensuring effective communication between the project and its stakeholder.	
3.	G3	Formulate appreciate strategy to deal with stakeholder.	
H. Action and Evaluation Group			
1.	H1	Implementing the strategy based on schedule plans.	**Action and Evaluation Group**
2.	H2	Flexibility in the implementing strategy to deal with stakeholder' reaction.	
3.	H3	Evaluating the stakeholder satisfaction in terms of achievement of the stakeholder pre - project expectation.	
I. Continuous support group			
1.	I1	Communication with the engaging stakeholder properly and frequently.	**Continuous Support Group**
2.	I2	Stakeholder involvement in decision-making.	
3.	I3	Keeping and promoting an ongoing relationship with stakeholder.	
4.	I4	Analyzing the change of multiple stakeholder engagement and the relation.	
5.	I5	Obtain support assistant from higher authorities.	
6.	I6	Mutual trust and respect among the stakeholders	
7.	I7	Reduce the uncertainty	
8.	I8	Maintain alignment between or among the stakeholder	
9.	I9	Access to resource and knowledge	

8.3. Appendix C- Computation of RII and Rank

	FACTOR AFFECTING THE STAKEHOLDER MANAGEMENT PROCESS																												
	Questions																												
ID	D1	D2	D3	D4	E1	E2	E3	F1	F2	F3	F4	F5	F6	F7	F8	F9	G1	G2	G3	H1	H2	H3	I1	I2	I3	I4	I5	I6	I7	I8	I9
1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
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7	5	5	5	5	5	5	5	5	5	2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5
8	5	5	5	5	4	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
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5	74	67	68	94	75	78	89	66	61	40	66	59	62	73	68	73	69	77	65	88	68	72	83	78	55	54	46	58	72	51	42
Total	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118
Σ(Wini)	518	516	530	534	521	524	536	533	541	470	533	503	476	521	508	520	522	523	518	528	515	525	508	532	468	465	458	482	513	479	475
RII	0.73	0.73	0.75	0.75	0.74	0.74	0.76	0.75	0.75	0.66	0.75	0.71	0.67	0.73	0.73	0.73	0.74	0.74	0.73	0.75	0.73	0.74	0.75	0.73	0.66	0.66	0.65	0.68	0.72	0.68	0.67
Rank	**14**	**15**	**6**	**2**	**12**	**9**	**1**	**3**	**4**	**24**	**5**	**19**	**22**	**13**	**17**	**13**	**11**	**10**	**14**	**7**	**16**	**8**	**5**	**17**	**25**	**26**	**27**	**20**	**18**	**21**	**23**
	D1	D2	D3	D4	E1	E2	E3	F1	F2	F3	F4	F5	F6	F7	F8	F9	G1	G2	G3	H1	H2	H3	I1	I2	I3	I4	I5	I6	I7	I8	I9

8.4. Appendix D- DCE Sample Completed Road Projects

S/No	Name of Projects	Contract completion time(days)	Actual Completion time(days)	Contract Completion cost in million(ETB)	Actual Completion cost in million(ETB)	Rate of time overrun (%)	Rate of cost overrun (%)
1	Agula Berhale Desigh & Build Road Project	1095	1690	969.92	1279.53	54	32
2	Berhale- Dallol Design & Build Road Project	1095	1895	1245.26	1435.1	73	15
3	Mekelle Abi-Adi Design & Build Road Project	1095	1460	482.679	643.180	36	33
4	Awash-Mile Contract-2 Asphalt Overlay Project	1095	1586	518.303	655.243	45	26
5	Awash-Mile Contract-4 Asphalt Overlay Project	730	1069	301.732	381.579	46	26
6	Tendaho Dan & Irrigation Project	730	1095	324.675	555.793	50	71

8.5. Appendix E- DCE Sample Ongoing Road Projects

Defense Construction Enterprise ongoing Road Projects

No	Name of the Projects	Client	Contract Amount	Time of Completion(Days)	
				Based on Original Contract	Based on Remaining Work
1	Dicheto Galafi Junction-Elidar Belho Rigid Pavement Road Project	ERA	2,316,229,584.13	4-Jan-19	April,2020
2	Ertale-ahmed Ela Rigid Pavement Road Project	ERA	1,342,824,580.31	1-May-20	May,2022
3	Adigudom-MekelleWukro Road upgrading Project	ERA	893,586,879.31	28-Jul-19	July,2023
4	Beles-MekaneBirhan Design and Build Road Project	ERA	886,045,532.17	1-Oct-19	March 27,2020
5	Nekemt Airfield design and Build project	Airport	591,935,525.16	18-Apr-19	April,2020
6	Musli-Bada design and Build Project	ERA	1,036,542,661.60	27-Jan-19	March 28,2020
7	Mekelle-dangolat-Samre-Finariwa Design and Build Road project	ERA	1,261,005,462.56	30-Oct-19	April 28,2020
8	Tarmaber-Meleya-Sefedmeda Upgrading Road Project	ERA	1,657,565,475	23-Dec-21	23-Dec-2021
9	Adishuhu-Dela-Samre Road Project	ERA	1,838,302,668	8-May-22	8-May-2022
10	Ambo Woliso Road Upgrading Project	ERA	948,680,547	26 May 2022	26 May 2022
11	Chelchel Dam Project	ERA	1,640,032,348	08 January 2022	08 January 2022

Source: (Road, Irrigation and Dam Core Process Department, 2020)

DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Abdurezak Mohammed (PhD). All sources of material used for this thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institutions for the purpose of earning any degree.

Martha Haile W/Mariam _____ _____

Name Signature

St. Mary's University College, Addis Ababa **June, 2020**

ENDORSEMENT

This thesis has been submitted to St. Mary's University College, School of Graduate Studies for the examination with my approval as a university advisor.

Dr.Abdurezak.Mohammed _____

Advisor

_____

Signature

St. Mary's University College, Addis Ababa

June, 2020