



ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES
Department of Project Management

**PROJECT PLANNING AND ITS PRACTICE IN THE
CONSTRUCTION INDUSTRY**
(A CASE OF OROMIA HOUSING AND URBAN DEVELOPMENT BUREAU)

By

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(SGS/0537/2008A)

JUNE, 2017

ADDIS ABABA, ETHIOPIA

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**A THESIS SUBMITTED TO SAINT MARY'S UNIVERSITY, SCHOOL OF
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DECLARATION

I, the undersigned, declare that this thesis is my own original work, prepared under the guidance of Wubshet Bekalu (PhD). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis hasn't been submitted either in part or in full to any higher learning institution for the purpose of earning any degree.

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ENDORCEMENT

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

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June, 2017

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ABBREVIATIONS AND ACRONYMS

CPM	Critical Path Method
PERT	Program Evaluation and Review Technique
OBHUD	Oromia Bureau of Housing and Urban Development Bureau
WBS	Work Break Dawn Structure
PMBOK	Project Management Body of Knowledge
LFA	Logical Framework Approach

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ABSTRACT

This research deals with the study of construction project planning practice taking in to account a case of Oromia Regional state, Housing and Urban Development Bureau; an organization responsible for consulting, construction projects owned by regional public bodies. The objectives of the research were to assess Project planning knowledge of professionals, the extent to which project management knowledge areas are practiced during the planning process of construction projects and identify the level of use of project management tools and techniques during planning stage of construction projects in the organization under study. Different literatures were assessed to show the significance of project planning knowledge in the construction projects. A descriptive research design has been considered and both probability and non-probability sampling techniques applied. Findings of the assessment suggest that, project planning and management knowledge is not sufficient enough in order to successfully manage construction projects and project planning practice in the organization when evaluated from the nine project management body of knowledge perspective is found to be not satisfactory; Specifically, project risk management planning, procurement planning, project quality planning and scheduling are not well considered. Moreover, use of project management tools and techniques during project planning phase is limited to WBS and LFA; the rest are not well known and not utilized. This paper recommends the study organization equip its employees with project management knowledge and the application of tools and techniques through trainings so as to improve the poor/inadequate planning performance of the identified knowledge areas. It is also recommended that the organization structure of the study organization undertaking large number of civil work activities to from the existing process /functional based to a matrix system. A further research on how pre-project execution phase activities affect project performance in the organization is also a major recommendation of the assessment

Key Words: *Project Management, Project Planning, Tools and Techniques.*

CHAPTER ONE: INTRODUCTION

1.1. Study Background

A viable project plan serves as a road map for the execution process in the same way that a highway road map serves to guide a planned trip. In both cases, we realize that the map may not have identified all items along the way, but hopefully, the detours encountered will be minor and we will always be close to the defined target areas. Also, the plan can help us move back in the desired direction. To accomplish this goal, the project plan must accurately capture the stated requirements, map an appropriate technical work pathway to achieve those requirements, incorporate various necessary technical items into the plan to support the output, allocate required resources to work units, and integrate these together such that all necessary components are in synchronization. Deborah S.C. and Gary L. Richardson (2013)

According to Kerzner, (2003) the major responsibility of the project manager is planning. If project planning is performed correctly, then it is conceivable that the project manager will work himself out of a job because the project can run itself. This rarely happens, however. Few projects are ever completed without some conflict or trade-offs for the project manager to resolve.

Project planning in many cases is not performed well in the building industry, and, as a result, the building sector suffers from poor or incomplete scope definition, frequently experiencing considerable changes that result in significant cost and schedule overruns. Kamau, Mireri and Usman (2013) confirmed that the growing complexity of the building industry calls for increased effectiveness in the planning and control of projects.

The planning process consists of those processes performed to establish the total scope of the project effort, define and refine the objectives, and develop the course of action required to attain those objectives. These include, developing the project management plan and documents that will be used to carry out the project; such as, Schedule development, determining the budget, Work break down structure, developing the quality plan, the procurement plan, risk response plan, communication plan and human resource plan. PMI (2008)

The construction industry is complex in its nature because it comprises large numbers of parties as owners (clients), contractors, consultants, stakeholders, and regulators. Performance of projects on the other hand is becoming a source of concern to both public and private sector clients. Project activities and management efforts in any of the project phases could affect the success of a given project. This makes the management process more complex and challenging task, requiring a more comprehensive view in the projects.

In a bid to implement the urban development and urban good governance programs, Oromia Housing and urban development Bureau has been charged with the responsibility of coordination and leading the regional urban sector. Moreover, the Bureau is mandated with consultancy and supervisory role of any construction activities undertaken by any regional public bodies. With this role, the Bureau among other activities, it is involved in the whole process of construction of projects; including design development and procurements management of civil work (construction) of projects undertaken by regional level implementing bodies.

Therefore, the research tried to assess the project planning practices of construction projects consulted and managed by Oromia Housing and Urban Development Bureau. The researcher believes the study will assess the planning practices in the institution and the level of applicability of project management knowledge and make recommendations that will improve project planning performance in the organization in particular, and contribute to the research environment in general.

1.2. Statement of the Problem

Planning can be a good way to achieve a goal, because without planning, we do not have a specific path to follow and our efforts can lead us towards undesired objectives or results. Without adequate planning, it is difficult to really understand what it will take to complete a project successfully. A viable project plan serves as a road map for the execution process in the same way that a highway road map serves to guide a planned trip. Deborah Sater Carstens and Gary L. Richardson (2013)

However, inadequate analysis and planning will lead to a failed project but the more planning there is in a project, the more positive outcome is expected. Even if all the resources are available poor project planning will result to project failure. According to Wang, and Gibson (2008) planning and analysis are important and the more planning there is in a project, the more successful the project will be. Time spent on these activities will reduce risk and increase project success. On the other hand, inadequate analysis and planning will lead to a failed project, Morris (1998).

Many project managers however, spend most of their time realizing and reacting to unexpected changes and problems instead of anticipating and preparing for them. This is called crisis management. Projects caught off guard may spend a great deal of time and energy playing catch up. They use up their energy coping with immediate problems with little energy left to anticipate and prepare for the next challenges. This vicious cycle locks many organizations into a reactive posture Morris (1998).

In many countries the construction industry has, however, attracted criticism for inefficiencies in outcomes such as poor quality, time and cost overruns. A major bottleneck facing the building industry is why projects are not being completed on time, at the budgeted cost and within specified standards. Chandra (2010) noted that building projects especially in the public sector compromise on quality and are not completed on time and have cost overruns.

According to the parties involved in Ethiopian building construction projects, most projects are not completed in conformity to the original plan. Pär Karlsson (2011) conducted an assessment on Potential improvements in Project Management methods in Ethiopia. The studied project

involves constructing a 10,000 ha rice field in Gambela region, located in the southwest of Ethiopia. The project plan in the studied project is under development, but not completed and therefore not implemented in the project management. The project includes plans and documents for project scope, time, cost, quality, human resources, communication, risk and procurement. The project has been ongoing for one and a half years without the project plan being implemented, which has caused an overall insufficient planning and control of the project. Since the project plan is developed late in the project, and due to the lack of planning and control that the project suffers, some parts of the plan are already outdated.

In another preliminary in house assessment undertaken at Oromia Urban Land information system, a G⁺ construction project constructed in 4 different cities of the region exhibit poor performance. These four projects (Nekemte G⁺ Office Building, Shashemene G⁺ Office Building, Jimma G⁺ Office Building & Bishoftu G⁺ office Building) having their site hand over date back in September 2008EC, only Shashemene G⁺ Office Building has managed to reach 70%. Having the contract agreement signed for 365 days all projects has registered significant delay. Specially, Jimma G⁺ office building is the most underachieved project; having the original contract period completed six months before, the physical status of the project is still less than 10%. The basic factor behind the significant delay of this project according to few interviewee and official reports is the fact that the construction site for the project is not made clear from right off way problems; making the contractor unable to mobilize machineries in the area. Two technical professionals who were interviewed suggest that even other few missed items are yet to be included; if decided will definitely increase the cost of the project due to the increased unit rates.

The aforementioned two cases clearly indicate that inadequate attention have been given for project planning in particular and lack of strong project management system in general. Therefore, this study is aimed at exhaustively assessing project planning related problems; specifically, the project planning knowledge, practices and applicability of planning tools and techniques in construction projects at Oromia Housing and Urban Development Bureau.

1.3. Basic Research question

1. What is the level of practice of Project planning process at Oromia Housing and Urban Development Bureau?
2. To what extent does project management knowledge areas are practiced/ implemented during the planning process of construction projects at Oromia Housing and Urban Development Bureau?
3. To what extent does project management tools and techniques are applied during planning stage of construction projects at Oromia Housing and Urban Development Bureau?

1.4. Objective of the research

1.4.1. Genera Objective

The main objective of the study is to assess the practice of project management knowledge during the planning phase of construction projects consulted by Oromia Housing and Urban Development Bureau.

1.4.2. Specific Objectives

- ✓ To assess the Project planning knowledge of professionals at Oromia Housing and Urban Development Bureau?
- ✓ To study the extent to which project management knowledge areas are practiced during the planning process of construction projects at Oromia Housing and Urban Development Bureau?
- ✓ To study the extent to which project management tools and techniques are applied during planning stage of construction projects at Oromia Housing and Urban Development Bureau?

1.5. Significance of the Study

The study has tried to examine the construction project planning practice of the study organization against the planning knowledge areas and the level of use of different project management tools and techniques.

The study will provide lessons that will help Bureau of Housing and Urban Development to improve its overall project performance thereby improving project planning knowledge within the organization.

To this effect, the research findings are expected to contribute towards the project planning and management capacity of the public sector in particular and to the growth of project management knowledge in the country in general.

1.6. Scope of the Study

1.6.1. Geographic Scope

The study is conducted in Addis Ababa; specifically at Lafto Sub-city where Oromia Regional Public Sector offices are located. Among the various regional government institutions located in Addis, the research will be limited to Oromia Housing and Urban Development Bureau.

1.6.2. Conceptual Scope

The study is limited to assessing the project planning practice of construction projects at Oromia Housing and Urban Development Bureau in relation to project management body of knowledge areas.

1.6.3. Methodological Scope

As clearly defined in the problem statement the study will be an assessment on the existing situation/variables without making any inference. Thus, a descriptive research design is employed and both quantitative and qualitative data analysis techniques are used to suit the research objective.

1.7. Organization of the Research

This thesis contains five chapters as described below;

Chapter one is an introductory part containing discussions on study background, research problems, Research question, objective of the research, and significance of the research, scope of the research and organization or layout of the research.

Chapter Two on the other hand presents literature review with general descriptions by different researchers in the area of project planning and management

Chapter Three discusses about the research design and methodology

Chapter Four presents data analysis and presentation

Chapter Five contains summary, conclusions and recommendations based on what is discussed in the previous chapters.

CHAPTER TWO: LITERATURE REVIEW

2.1. Theoretical Review

2.1.1. What is a Project?

A project is a temporary endeavor undertaken to create a unique product or service. The fact that a project is temporary does not mean that the result of the project also will be temporary. Most projects are undertaken to create a long lasting result PMI (2004). In order to differentiate projects from operational activities, Kim Heldman (2001) defined Projects as temporary in nature, while operations are ongoing. Projects have definitive start dates and definitive end dates. A project is completed when the goals and objectives of the project are accomplished. Sometimes projects end when it's determined that the goals and objectives cannot be accomplished and the project is canceled. Operations involve work that is continuous without an ending date and often repeat the same process.

Projects are the driving force for many organizations in most industries. Projects can be looked upon as the change efforts of society, and the pace of change has been increasing. Therefore, effectively and efficiently managing change efforts is the only way organizations can survive and grow in this modern world. Paul C. D. and Jeannette C. (2006)

Projects typically have identifiable phases and each phase has a unique set of challenges for the project manager. If we view the project from the highest level, these basic project phases can be also identified as major factors influencing the project success. If one of these phases is planned or executed wrongly, the project will have a high probability of failure. According to PMBOK PMI (2004) a project generally consists of four chronological phases:

1. Initiation – The conditions are analyzed and the project's objective is specified.
2. Planning – Plans and methods for the execution are developed.
3. Execution – The main work towards completion are done.
4. Closing – The project is evaluated and closed down.

Patel and Morris (1999) have also stated that the life cycle is the only thing that uniquely distinguishes projects from non-projects. The sequence of phases through which the project will evolve will significantly affect how the project is structured. To get efficient feedback from drawn experience, the work in each phase should be evaluated as the project goes into the next phase.

2.1.2. Project Planning

Barbara Allan (2004) describes Project planning as researching the project, and thinking ahead, and identifying what needs to be done, the people who will carry out the work and the cost. In addition to this he noted that project planning involves identifying potential problems and developing contingency plans. He further divided the project planning process in to three stages of: researching the project, detailed planning, and finally documenting and communicating the plan.

Lester and Lester (2012) on the other hand defined a project plan as a road map that defines how to get to the end. Effective project planning requires particular skill far beyond writing a document with schedules and budget. Unlike small projects that involve few activities, complex projects that go beyond a certain threshold level of magnitude should proceed on the basis of a sound formal planning platform without which there may be chaos. Sound formal planning provides the basis for organizing the work on the project and allocating responsibilities to individuals.

According to PMI (2004), the main concern in the Planning Process Group is to develop and manage the project management plan. The planning processes include identifying, defining and managing all parts of the project management plan. These processes are continuously iterated as new information is discovered in order to keep the project management plan updated.

The project plan represents the basic tool for successfully executing a project. It forms the basis for all management efforts associated with the project. It is a record of plans that is expected to change over time. The project manager is responsible for bringing out the project plan, which should be accurate and complete as far as possible without being several volumes in length. It is

a document that allows the project manager to manage the details, and not be managed by the details. R.C. Mishra Tarun Soota (2005)

Morris (1998) similarly argued that “The decisions made at the early definition stages set the strategic framework within which the project will subsequently develop. Get it wrong here and the project will be wrong for a long time”.

Project planning and project performance are two complementary activities in project management and the basis of project success or failure is defined in project planning. Faniran, Oluwoye and Lenard (1998) observe that the objective of project planning is to complete a project within a fixed amount of time, at a previously estimated cost and to specify standards of quality. This assertion implies that the effectiveness of project planning is measured by project performance.

According to the Project Management Book of Knowledge (PMBOK® Guide) Fourth Edition PMI (2008), a project manager is expected to perform 42 processes, including 20 planning processes. Therefore, planning processes consist of about 48% of all processes that should be performed by a project manager during the project life cycle.

2.1.2.1. Construction Project Planning

Project management has a long history in the construction industry and there have been a number of studies in the construction project management field. The industry has the unique ability to facilitate development by providing directly for human needs, stimulating investment or generating employment and is therefore important in the socio-economic development of developing economies Hamilton (2006).

There are two main levels of planning associated with construction projects: strategic and operational Bamisile (2008). Most of the focus in project management is on tactical planning. Yet if used with the wrong strategy, tactics are of little help. It is similar to using the right approach to solve the wrong problem. Lewis, J. P. (1995).

Dvir, Raz and Shenhar (2003) on the other hand identify three levels of project planning: 1) the end-user level, in which planning focuses mainly on the functional characteristics of the project

end-product; 2) the technical level, which focuses on the technical specifications of the project deliverables required to support the functional requirements and 3) the project management level, which focuses on planning the activities and processes required to ensure that the technical work proceeds effectively. These three planning levels can otherwise be regarded as project conception planning, project design planning and construction planning, respectively

In the construction industry planning is a complex and challenging task and there is an increasing need for a more comprehensive view in the projects. When describing planning in construction the definition varies depending on who is asked. To simplify how planning is conducted in a construction project, it can be described as a process where the planner tries to identify the required activities for reaching a pre-determined result Hendrickson (1998).

The object of planning construction project therefore, is to pre-determine how the project objectives will be achieved Chitkara (2012). To achieve success in project planning according to Bennett (2003): there must be a clear understanding of the project's objectives, purposes, scope and nature by both the client/owner and organization responsible for carrying out the work and; a relationship between the client/owner and the project delivery organization must be established, with clearly defined roles and responsibilities.

2.1.3. Project Planning Knowledge Area

The planning process consists of those processes performed to establish the total scope of the effort, define and refine objectives, and develop the course of action required to attain those objectives. Accordingly the project Management plan which is the primary source of information for how the project will be planned, executed, monitored and controlled, and closed includes and documents actions required to define, prepare, and integrate, and coordinate subsidiary plans such as the detail project scope, schedule development; determine budget, quality plan, human resource plan, risk response plan, communication plan and the procurement plan PMI (2008).

James P. Lewis (2007) on the other hand identified planning phases as; defining the problem to be solved by the project, developing a mission statement; followed by statements of major objectives, developing a project strategy that will meet all project objectives, Writing a scope

statement to define project boundaries (what will and will not be done), develop a Work Breakdown Structure (WBS), Using the WBS, estimate activity durations, resource requirements, and Prepare the project master schedule and budget, decide on the project organization structure and get the plan signed off by all project stakeholders.

Planning processes develop the project management planning process group. This group will be focusing on identifying, defining and maturing the project scope, project cost; also it will help scheduling all activities which may occur throughout the project. Planning process group covers development of the project management plan and other subsidiary plans such as; scope planning, risk management planning, purchase and acquisition plan, scheduling, cost budgeting, human resource and communication plan. Ngoc Se (2010)

2.1.3.1. Project Scope Planning

The scope planning process yields a scope management plan, and the scope definition results in an updated scope management plan, scope statement and requested changes to the project scope PMI (2008). This effort is proven to be an effective way of increasing the chances of project success while significantly decreasing the risks that could arise during project implementation Wang Y& G. E. (2008)

Project scope includes the features and functions that characterize the product, service, or event, and includes the work that must be done to deliver it with its specified features and functions. Scoping a project is putting boundaries around the work to be done as well as the specifications of the product to be produced. When defining scope, it is wise to articulate not only what is included within the scope but also what is excluded. Paul D. and Jeannette C. (2006).

Ideally, the scope of a project should remain constant throughout the life of the job. Naturally, this seldom happens. In most cases the magnitude (scope) of the work increases as a result of overlooked details, unforeseen problems, or an inadequately defined problem. The most common reason for scope changes is that something is forgotten. Lewis, J. P. (1995)

2.1.3.2. Risk Management Planning

According to Hillson D, (2009), risk is defined as an uncertainty that matters. These uncertainties that matter could include threats or adverse conditions which have negative effects on achievement of objectives and opportunities which if they were to occur would be helpful towards achieving the goal or objective of the project. According to Suleman A.B. (2007), risk in relation to construction is defined as "a consideration in the process of a construction Project whose variation results in uncertainty in the final cost, duration and quality of the project".

There will always be some uncertainty associated with any project which represents risk. If risk exists then the way to manage it has to be found. According to Suleman A.B. (2007), formal risk management in the construction industry became an integral process only within the past 20 years. Since the effect is not specified risk could mean either negative or positive and taking this into consideration risk has been defined by PMBOK of the PMI (2008), as an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more of the project's objectives.

A project, by definition, is something that we have not done previously and will not do again in the future. Because of this uniqueness, we have developed a "live with it" attitude on risk and attribute it as part of doing business. According to Kerzner, Harold (2003) If risk management is set up as a continuous, disciplined process of planning, assessment (identification and analysis), handling, and monitoring, then the system will easily supplement other systems as organization, planning and budgeting, and cost control. Surprises will be diminished because emphasis will be on proactive rather than reactive management. It forces us to focus on the future where uncertainty exists and develop suitable plans of action to prevent potential issues from becoming potential problems and adversely impacting the project. Kerzner, Harold (2003).

Risk management according to Paul D. and Jeannette C. (2006) is a formal process whereby risk factors are systematically identified, assessed, and provided for. The term risk management tends to be misleading because it implies control of events. Risk management must be seen as preparation for possible events in advance, rather than simply reacting to them as they happen.

2.1.3.3. Procurement Planning

Synonymous with the word ‘procurement’ in the Oxford Dictionary of English (2010) are: ‘the act of getting possession of something’; ‘to acquire something’; and ‘the action of obtaining or procuring something’ According to PMI, (2008), procurement planning involves a process of documenting project purchasing decisions, specifying the approach and identifying potential sellers. The outputs from this process include; Procurement Management Plan, Procurement Statement of Work, Make or Buy decisions, Procurement Documents, Source selection Criteria and Change request.

Ocharo (2013) in his study on the factors affecting procurement performance: a case of ministry of Energy in Kenya notes that planning is the process of choosing the most appropriate contractor to deliver a specified project so that the achievement of best value for money. Procurement methods are one of the critical steps in planning and bid evaluation methods are the key procedures through which a contractor is selected. Ocharo (2013) states that planning is one of the main decisions made by the clients. In order to ensure that the project can be completed successfully, the client must select the most appropriate contractor. He further describes procurement methods as the procedures used by the procuring entity to acquire goods, services and works.

Advance planning of the contracting and procurement activities is particularly critical on large projects. Subcontracting activity has a direct effect on project costs, schedules, and overall success, so it normally receives attention early in the planning process. Paul D. and Jeannette C. (2006). Construction procurement process on the other hand is defined as a series of operations or actions taken to achieve the intended aim of construction project procurement Harris & McCaffe (2005)

2.1.3.4. Schedule Development and Cost Estimation

Definition and sequencing include depicting what is intended to be done and in what order or sequence. Estimating is the determination of the duration required to perform each activity or of the availability and capacity of the resources to carry out the activity. Scheduling portrays the duration on a calendar, recognizing both time and resource constraints. The final deliverable

from the scheduling process is the estimated time target to complete the entire project. Paul D. and Jeannette C. (2006).

Developing a schedule according to PMI (2008) is the process of analyzing sequences, duration, resource requirements, and schedule constraints to create the project schedule. Outputs from this process include; project schedule, schedule baseline and schedule data. Determining budget on the other hand is the process of aggregating the cost estimates of individual activities or work packages to establish an authorized cost baseline. A cost estimate in this case is defined as the process of developing an approximation of the monetary resources needed to complete project activities.

Similarly, Paul D. and Jeannette C. (2006) define Cost estimating as the process of assembling and predicting costs of a project. The cost budgeting process involves establishing budgets, standards, and a monitoring system by which the cost of the project can be measured and managed.

2.1.3.5. Communication Plan

According to Barbara Allan (2004), a common feature of successful projects is that the project communication process has been thought through and planned in some detail. At the project analysis stage it is worthwhile thinking about how this communication process is going to be managed. He further noted that communication involves thinking in broad terms about the answers to questions such; who will be working on the project? Who will be affected by the project? When do we need to communicate? Who is responsible for implementing the communications strategy? With whom will you communicate? What will you communicate? How to communicate? What channels are required for feedback? Who is responsible for giving, receiving and acting on feedback?

Communications Plan according to R.C. Mishra Tarun Soota (2005), it defines the information needs of the project stakeholders and the project team by documenting what, when, and how the information will be distributed. Similarly, PMI (2008) defines project communication as a process of determining project stakeholders' information need and defining a communication approach.

2.1.3.6. Quality Planning

Paul D. and Jeannette C. (2006) determine quality management as determines the quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken. According to PMBOK of PMI (2008) quality planning is the process of identifying quality requirements and/standards for the project and product, and documenting how the project will demonstrate compliance.

Quality Plan according to R.C. Mishra Tarun Soota (2005) Provides a Quality Plan that defines the person(s) responsible for project quality assurance, procedures used and resources required to conduct quality assurance.

2.1.3.7. Project Human Resources planning

Human resource planning knowledge areas is the processes used to ensure that the project organization is established in a way that provides the project with good conditions to Succeed. Major processes in human resource management knowledge area include; human resources planning, acquire project team, develop and manage project team PMBOK (2004).

Human resource planning determines project roles, responsibilities, and reporting relationships culminating in the staffing management plan to acquire project team process of obtaining the human resources needed for completing the project Walker (2007). Each role in the project team should be assigned with areas of responsibility, authority and required competence. It is important that a role with a defined area of responsibility also has the authority to make decisions within that area. Responsibility without authority makes it very hard for middle management to influence the work, which most likely will affect the project negatively Walker (2007).

2.1.3.8. Project Integration Planning

Project integration planning knowledge areas coordinates the various elements of the project and it is an important part in planning processes. Prioritizing between competing objectives and alternatives are an important task in the integration management. The plan should include general plans regarding all areas of the project such as; project objectives, time schedule, budget, etc PMI (2004).

According to R.C. Mishra Tarun Soota (2005) the primary uses of the project plan are to document planning assumptions and decisions; to facilitate communication among stakeholders, and to document approved scope, cost, and schedule baselines. Since project plan is the main document developed in the planning process and it is very important to allocate sufficient amount of time and resources for this process. A project with a poor developed project plan is most likely to be poorly executed with high costs and delays as a result Antvik & Sjöholm (2007).

2.1.4. Project planning tools and techniques

The planning conducted in the early stages of the project is supposed to work as a framework for controlling and managing later on. To conduct a construction project plan there are several useful tools and techniques that are more or less frequently used. The most commonly used planning tools include; Gantt charts, Critical Path Method (CPM) and Resource planning. Claes A. & Linus R. (2012).

2.1.4.1. The Work Break Down Structure

The most useful tool for accomplishing these tasks is the Work Breakdown Structure (WBS). The idea behind the WBS is simple: A complicated task is subdivided into several smaller tasks. This process can be continued until the task can no longer be subdivided, at which time you will probably find it easier to estimate how long each small task will take and how much it will cost to perform. Lewis, J. P. (1995).

2.1.4.2. Gantt charts

Until around 1958, the only tool for scheduling projects was the bar chart. Because Henry Gantt developed a complete notational system for showing progress with bar charts, they are often called Gantt charts. They are simple to construct and to read, and they remain the best tool for communicating to team members what they need to do in given time frames. Lewis, J. P. (1995) Maylor (1996) added that the production time plan in construction projects is commonly visualized in the form of a Gantt chart that illustrates the start and finish times for activities. An advantage with the method is that it shows durations and order of activities in a simple way.

2.1.4.3. Critical Path Method (CPM)

With the CPM an analysis of the activities in a project is conducted so that critical activities can be identified. The method was originally developed for computer-aided planning, and an advantage is that changes in duration or costs are obtainable in real time. On the other side, Criticism to the technique points out that there is too much emphasis on detail Maylor (1996). Another obstacle is that the technique is said to provide deterministic plans that is difficult to follow. Moreover, there is criticism about the method being too much orientated on control rather than future. What might also be an issue is that CPM does not consider spatial dependencies between activities.

In his book of Fundamentals of Project Management, Lewis, J. P. (1995) states Gantt charts have one serious drawback—determining the impact of a slip of one task on the rest of the project is very difficult. To overcome this problem, two methods of scheduling were developed in the late 1950s and early 1960s that used arrow diagrams to capture the sequential and parallel relationships among project activities.

One method was called Critical Path Method (CPM), developed by du Pont; the other, Performance Evaluation and Review Technique (PERT), was developed by the Navy and the Booze, Allen and Hamilton consulting group. Although it has become customary to call all arrow diagrams PERT networks, strictly speaking, the PERT method makes use of probability techniques, whereas CPM does not. Lewis, J. P. (1995)

2.2. Theoretical Evidences

The theoretical part of this paper shows project planning is very important instrument in project management. If projects are not well defined, refined and sequenced during the planning phase, it'll often be difficult to manage projects successfully. This is often supported with empirical studies. Zwikael (2009) studied the contribution of the PMBOK® Guide's nine knowledge areas to project success. He reported that in the knowledge areas the Planning Phase had the highest impact on project success.

Likewise, Munns and Bjeirmi (1996) make a similar point in stating that a project which is flawed from the early stages is unlikely to be saved by good execution. In fact successful execution may matter to only to the project team, while the wider organization will see the project as a failure. Ewusi- Mensah (1997) on the other hand noted that key factors in cancelled projects are poor project goals, poor technology infrastructure and escalating costs and timelines. These would normally be analyzed and addressed in a thorough planning phase. Yeo (2002) states that of the issues of influence noted in this study of critical failure factors, project planning was ranked as number one.

Hamilton and Gibson (1996) in their *Journal of Management in Engineering*; "Benchmarking pre-project-planning effort" found that an increase in pre-project planning for construction projects increased the likelihood of a project meeting financial goals. Shehu and Akintoye (2009) on the other hand found in a study of programme management in the construction industry that effective planning was the number one critical success factor identified. Effective planning had the highest criticality index of .870 of all the Critical Success Factors (CSF) studied. Similarly, Ngoc Se (2010) added that a well-defined project scope enables successful completion of a project within the planned time, budget, and quality parameters.

Therefore, from the reviewed literature project plan is an aggregate of specific plans which are developed from each knowledge area; all of which will have a significant contribution to project success.

2.3. Conceptual Framework

It has been learnt from the literature review that construction projects often necessitate project management knowledge, tools and techniques. It is also understood that project planning is one of the most important process in project cycle which entails all knowledge areas; such as; project integration, scope, time, quality, cost, human resource, communication, risk and procurement.

This study derived its conceptual framework in relation to the above nine Project Management knowledge areas that are supposed to be applied during the planning phase of a project cycle with the application of different project planning tools and techniques. To this effect; the study will assess the project planning practices of the construction sector in view of the Oromia Housing and Urban Development Bureau.

The following figure which is developed by the researcher illustrates the intention of the study by relating important variables /project planning knowledge areas/ affecting the project planning practice of the study organization.

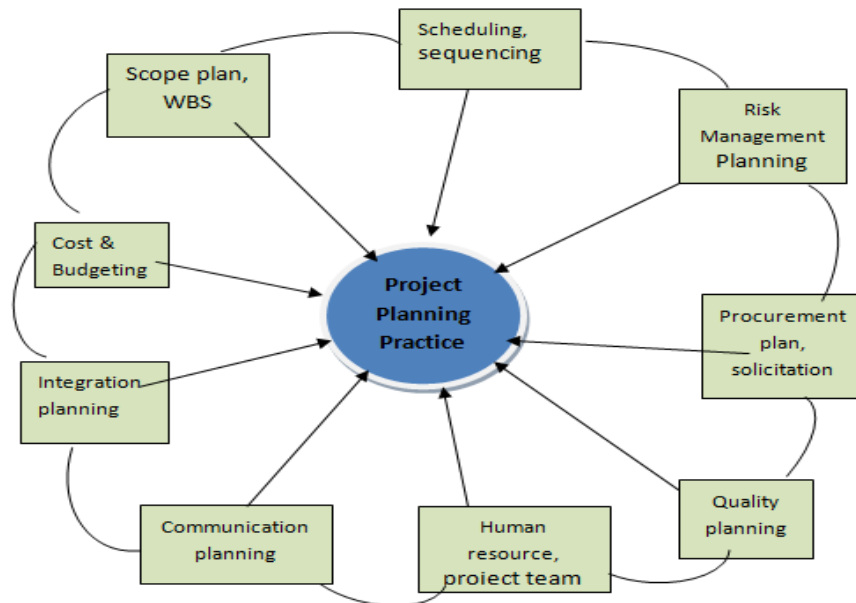


Figure 2.5 Conceptual Framework

CHAPTER THREE: STUDY DESIGN AND METHODOLOGY

3.1. Research Design

Based on the purpose of the study a descriptive research design is employed by the researcher assuming it will help to portray accurately the characteristics of the situation. According to Kothari (2008); the major purpose of descriptive research is description of the state of Affairs as it exists at present.

Moreover, Based on the process of the research and the type of data involved, both quantitative and qualitative approach is followed by the researcher. Quantitative designs are plans for carrying out research oriented towards quantification and are applied in order to describe current conditions or to investigate relationships. The study also applied qualitative approach using unstructured qualitative interviews in order to allow the researcher provide elaborate interpretations of phenomena.

3.2. Population and Sampling Technique

3.2.1. Target Population

The population under study is 171 consisting of 126 professional staff members at Oromia Housing and Urban Development Bureau, 30 contractors and 15 procurement endorsing committee members at Oromia Finance and Economic Development Bureau, Health Bureau and Urban Land Information System project office.

3.2.2. Sampling Techniques

Both probability and non-probability sampling techniques are adopted in selecting the sample.

Probability Sampling: - The size of simple random sampling is determined based on a simplified formula proposed by Yamane (1997), as cited by Singh, A. & Masuku M. (2014). By considering the above size of target population: $n = \frac{N}{1 + N(e^2)}$ Where, n is sample size, N is the population size and e is the level of precision. A 95% confidence level and $e = 0.05$, is assumed for the purpose of determining sample size for this study. Based on this 95

questionnaire were distributed and 63 responses were obtained; out of which 2 were rejected; and this is believed to be sufficient.

Non-Probability Sampling: - Non probability is a type of sampling that adopts non randomness in selecting the sample. The study also adopted purposive sampling techniques to sample the 08 procurement endorsing committee members from selected key stakeholder organizations and 06 contractors. The researcher has chosen the procurement endorsing committee members in view of their participation and experience in approval of large procurements such as civil works. On the other hand the contractors working with the study organization with in the past three years are considered.

3.3. Types of Data and Instrument of Data Collection

3.3.1. Type and Source of Data

Both primary and secondary data are obtained using different data collection methods and instruments. The source for primary data is the sample group which is staff members at Oromia Housing and Urban Development Bureau, selected contractors and professionals from key stakeholder organizations (such as, Oromia Finance and Economic Development Bureau, Health Bureau, and Urban Land Information System project office). Secondary data on the other hand will be obtained through the use of published and unpublished documents.

3.3.2. Instruments of Data Collection

Questionnaire Survey

A closed- ended questionnaire will be developed and the response options for a closed-ended question will be exhaustive and mutually exclusive. For this purpose nominal scale such as yes or no and a Likert scale measurement will be considered. For the likert scale, the items will be scored on the 5 point Likert scale ranging from strongly agree (5) to strongly disagree (1). The researcher has chosen to use the questionnaire survey because it is thought to be cheap and fast to administer; and even it increases the degree of reliability as well enhances the chances of getting valid data.

Interviews

Interviews will be one-to-one verbal communication in which one person or a group of people were interviewed at a time. An interview is considered because it has the advantage of ensuring probing for more information, clarification and capturing facial expression of the interviewees.

Documentary Review

Documentation cannot be underestimated as it provides necessary background and much needed context both of which make re-use a more worthwhile and systematic endeavor. Secondary data is obtained through the use of published and unpublished documents. These include various reports, tender documents, contract documents, etc.

3.4. Procedure of Data Collection

The following data collection procedure has been followed by the researcher.

Data collection instrument has been developed by the researcher. The instrument is given to selected persons for review and updated /improved as per the comment forwarded. Then with the final questionnaire the researcher has made a short briefing on objectives of the research and its confidentiality.

Finally, the survey instruments distributed to respondents after a short briefing about the objective of the assessment. Similarly person to person interview is undertaken; relevant secondary data were also obtained

3.5. Method of Data Analysis

Data is analyzed using both quantitative and qualitative techniques of data analysis. For the quantitative analysis, data is sorted using the Statistical Package for Social Scientists (SPSS) version 20 and the analysis rely on descriptive statistics. The descriptive statistics includes use of frequency tables, charts, and graph. Qualitative data on the other hand is analyzed based on the description summaries from the responses against the thematic area of the study.

CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION

4.1. Project planning knowledge of professionals

Project planning plays a significant role for the success of projects as shown in the literatures. In assessment made to evaluate the planning knowledge of professional staffs at Oromia Housing and Urban Development Bureau, most of respondents are found to be less equipped. The following pie chart provides some information.

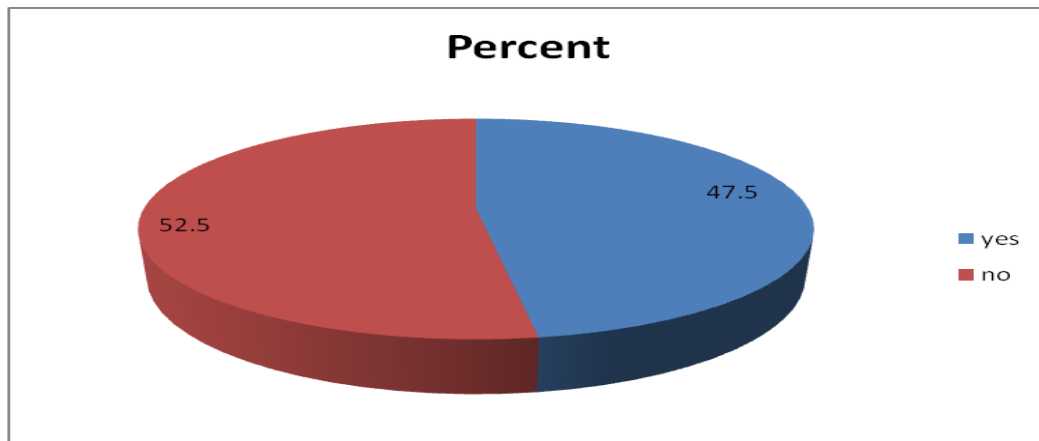


Figure 4.1 Respondents' answer for taking project management related trainings

The above figure shows that 47.5% of respondents have got trainings related to project planning and management whereas, the remaining 52.5% didn't. When they are asked a question which project management tools and techniques they are familiar with, Work break down structure and logical frame work approach is the most widely chosen option.

Table 4. 1 Respondents Knowledge of Project Management tools

Ref. No	Project Management Tools	Frequency	Percent
1	Work Break Dawn Structure (WBS)	28	45.9
2	Gantt chart	9	14.8
3	Project Management Ms software	1	1.6
4	Logical Frame Work Approach (LFA)	23	37.7

As shown in the above table, when respondents asked which of the above tools for project planning are they familiar with, 45.9% answered Work Breakdown while the other 37.7% said Logical Framework Approach.

4.2. Practice of Project Management Knowledge Area during project planning Process

It is well discussed in the literature review that project planning phase of the project management cycle is involved in all knowledge areas of project management which enables to defining the problem to be solved by the project, define the scope of project using the WBS, estimate activity durations, resource requirements, and Prepare the project master schedule and budget, decide on the project organization structure, develop the risk response plan, communication plan and the procurement plan.

To this effect, this part presents the extent to which project management knowledge areas are practiced during the planning process of construction projects in the study organization. Results of the assessment are presented as bellow.

4.2.1. Project Time Management

Project time management is one of the project management knowledge area in which contributes to the planning proces. The practice of the study organization with respect to properly scheduling project activities and compleating the whole planning process before the next phase (project execusion phase) of the construction projects could be understood from the following charts.

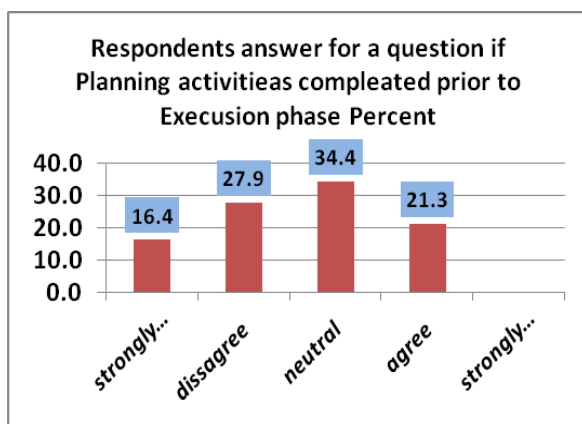


Figure 4.2.1.1 Planning activities completed

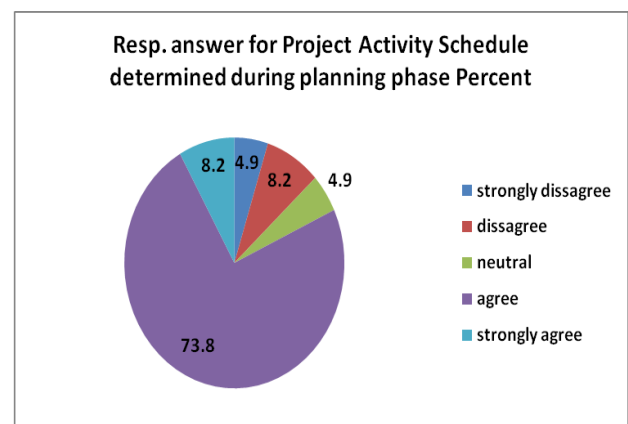


Figure 4.2.1.2 Project activity schedule determined

Only 21.3% of respondents agree that project planning activities are completed before the project execution, while 44.3% of them do not agree (i.e. 27.9% disagree, 16.4% strongly disagree). The remaining 34% are neutral.

Moreover, across tabulation result relating two basic questions; i.e. a question asked to check weather planning activates are completed on time and project site related problems which should have been completed before the execution phase justifies the above result.

Table 4.2.1 Cross Tabulation ‘Planning activities on time’ & Projects face site related problems

planning activities completed prior to completion	Responses	Projects face site related problems					Total
		strongly disagree	disagree	neutral	agree	strongly agree	
strongly disagree		0	1	2	5	2	10 (16.4%)
disagree		1	0	4	10	2	17 (28%)
neutral		1	2	5	12	1	21 (34.4%)
agree		0	4	3	6	0	13 (21.3%)
Total		2(3%)	7(11%)	14(23)	33 (55%)	5(8%)	61(100%)

Source: own survey, 2017

The result in the above table indicate that out of the 63% (i.e. 55% + 8%) of respondents who believe projects often face site related problems (such us right off way issues, site change, & soil taste changes), 31.2% of them (19 respondents) do not agree with the idea that planning activities are completed on time; and other 21.3% were neutral.

4.2.2. Project Scope Planning

An assessment result for reviewing the scope planning process at OBHUD show that irrespective of the quality of work during, the process of defining and refining scope of construction project is well undertaken. Almost 64% of respondents agree with the idea that project scope planning is part of the project planning process in the study organization. Only less than 30% of respondents do not agree with the idea. The following table and chart provide additional information.

Table 4.2.2 Respondents opinion on; Project scope is well defined

Responses	Frequency	Percent
strongly disagree	2	3.3
disagree	15	24.6
neutral	5	8.2
agree	38	62.3
strongly agree	1	1.6
Total	61	100.0

Source: own survey, 2017

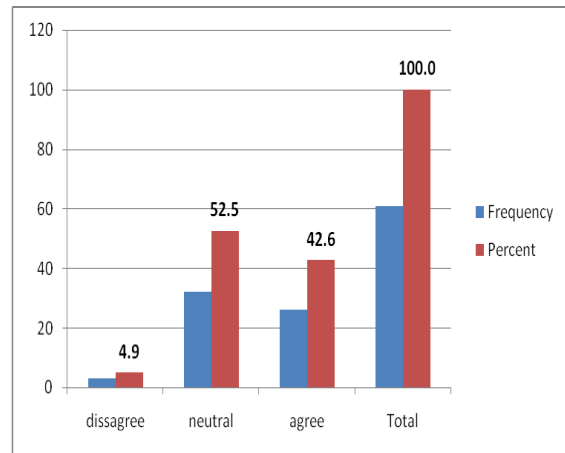


Figure 4.2.2.1 WBS is used to define project scope

According to the respondents, work break down structure is also used to define the project scope. The above chart shows that around 43% of respondents agree with the idea that project work break down structure is used to decompose /define/ the project scope. The remaining 52% are neutral or doesn't know.

4.2.3. Project Quality Planning

This section presents the result of the assessment which portrays the extent to which independent project quality plan is prepared in order to meet the quality requirements of construction projects in the study organization. According to the results of the survey presented bellow, there is no as such clearly known experience with regards to preparation of independent project quality plan.

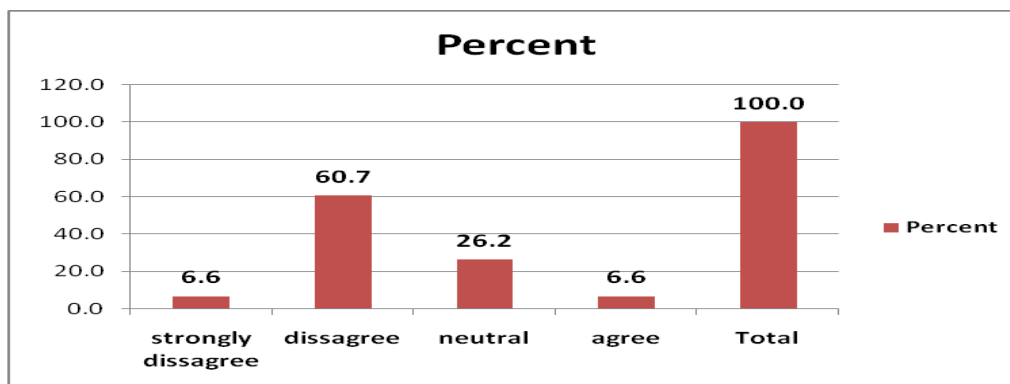


Figure 4.2.3.1 Respondents Answer; Project quality plan is prepared

Source: own survey, 2017

The above chart illustrates that more than 60. % of the respondents do not agree with the question asked if project quality plan is prepared. Only 6.6% agree with the idea that the study organization has the practice of developing project quality plan.

In addition to the quality planning, the assessment also involves if sufficient time is allocated to develop project designs (e.g. arctectural design, structural, sanitary, and electrical). Another point considered in the questionnaire was if projects face design changes during execution /implementation phase of the construction activities. The following cross tabulation table shows the relationship between the responses given for sufficient time given for design development and the idea that projects face design changes during execution phase activities.

Table 4.2.3 Cross tabulation ‘sufficient time is given for design development and projects face design change during construction phase.

Response		projects face design changes during execution phase			Total
		disagree	neutral	agree	
sufficient time is given for project design	strongly disagree	0	0	2	2 (3.3%)
	disagree	5	8	26	39 (64%)
	neutral	0	15	4	19 (31%)
	agree	0	0	1	1(1.6%)
Total		5(8.2%)	23(27.7%)	33(54.1%)	61(100)

Source: own survey, 2017

As it could be understood from the above table 64% (39) respondents do not agree with the idea that sufficient time is allocated for developing designs for construction projects. Only one respondent believes enough time is allocated; the other 19 respondents (39%) have no idea. Regarding responses related to the design change, More than 50% of surveyed respondents agree that projects managed and/consulted by the study organization face design changes during project execution phase. Moreover, the cross tabulation result which relates the two variables, depict that 64% (26) of respondents who believe the time allocated for design development isn't sufficient, similarly agree with the idea that construction projects face design changes during execution phase activities.

4.2.4. Risk Management Planning Practice

It is well discussed in the literature review part that risk in relation to construction projects is one of the most important factor to be considered during the planning process and if underestimated whose variation results in uncertainty in the final cost, duration and quality of the project.

To this effect, the risk management planning practice of the study organization has been assessed from the perspective that risk identification and analysis has been conducted, risk management planning is prepared during the planning process, and if the organization has a separate unit or body to deal with construction project risk related issues; as the organization is involved in the management and consultation of various civil work activities representing the regional government. The results of the assessment show that risk management planning practice at the study organization is not satisfactory. According to most of the respondents there is no separate unit or responsible body to specifically deal with risk related issues.

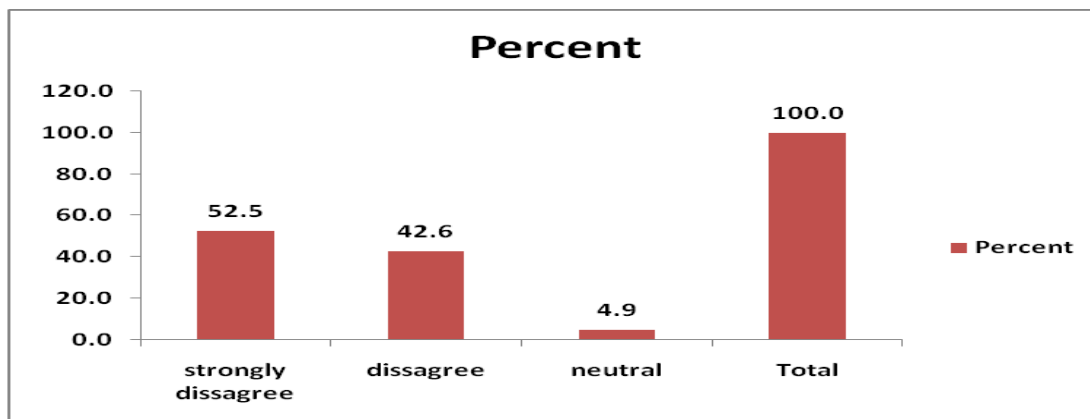


Figure 4.2.4.1 Respondents opinion for; is there is a separate unit to deal with risk related issues?

The above bar chart clearly illustrate that more than 95% of respondents agree that there is no separate unit to deal with risk management related issues. The remaining 5% are neutral about the issue.

Likewise, another question has also been considered in the survey instrument if there is a practice of developing separate risk management plan and weather risk analysis is done with

respect to construction projects in the organization. The following information has been obtained.

Table 4.2.4 Resp. Answer for; ‘Risk Management Plan prepared during planning phase’

Responses	Frequency	Percent
strongly disagree	12	19.7
disagree	22	36.1
neutral	23	37.7
agree	4	6.6
Total	61	100.0

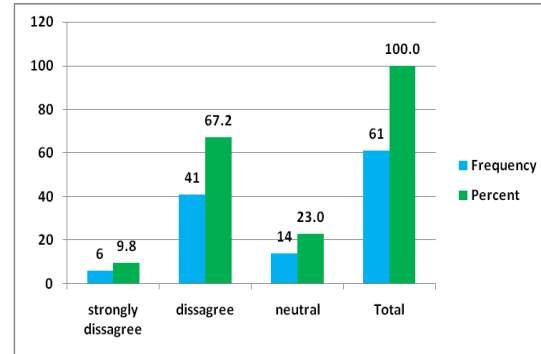


Figure 4.2.4.2: Respondents Answer for; Does risk analysis conducted during planning?

The above table depicts that more than 56% of respondents believe that there is no experience of preparing independent risk management plan in the organization. I.e. 36% of respondents disagreeing and the other 19.7% strongly disagreeing, where as the remaining 37.7% are neutral

In addition to the survey, an effort has been made by the revisit some secondary data /document review/ and face to face interview in view of the advantage of ensuring probing for more information. To this effect, it is understood that a sort of generic SWOT analysis (not specific to each project and more of general) conducted during the preparation of organizational plan. In addition to this, according to some interviewee and review of some documents some of project related risks will be transferred and /shared between the client/consultant organization and the contractor to which the construction activity is outsourced to through a procurement process. Despite this fact, it is also observed that the tender document and /the contractual agreement signed between the project owner organization can't address all risks related to construction projects.

4.2.5. Project procurement Planning Practice

Procurement planning is also one of the most important components in project management knowledge area discussed in the literature section. The researcher has also considered this section as one of the most important one. This is owing to the fact that the study organization outsources all of its construction projects to contractors through procurement process and is also involved in procurement endorsement of any of construction projects owned by regional level public bodies as the study organization is charged with the responsibility of consulting the public institutions with construction projects.

Therefore, the procurement planning practice of the organization is assessed in view of whether procurement plan is prepared for construction projects, the time by which procurement bid evaluation is conducted and when most of projects are outsourced /awarded to contractors. The assessments made with regards to those thematic areas indicate that the procurement planning area is not adequately considered by the study organization. The following tables and charts justify this idea.

Table 4.2.5.1: Respondents opinion on 'Procurement Plan is prepared'

Respondents	Frequency	Percent
strongly disagree	3	4.9
disagree	24	39.3
neutral	25	41.0
agree	9	14.8
Total	61	100.0

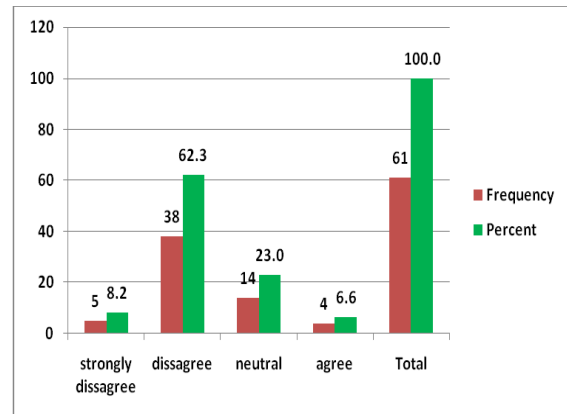


Figure 4.2.5.1: bid evaluation is conducted early

Survey results of respondents in the above table show that more than 44% of respondents believe that there is no practice of preparing procurement planning document specific to construction projects. The remaining 39.3% are neutral and only less than 15% (nine respondents) of them agreeing.

The other point considered in the survey instrument was to check if bid /tender evaluation process is completed with in the first two quarters of the budget fiscal year; i.e. before the Month of January. The resulted depicted in figure 5 depicts that more than 70% of respondents (i.e. 62.3% those doesn't agree and 8.2% those strongly disagree) answered against the idea. This means, most of them believe that tender evaluation process which enables to identify best candidates to construct the project will be identified during the later quarter/months of the budget year. This will obviously reduce the time to pass to the execution phase.

Another analysis has also been made that could support the above idea. Across tabulation result relating /linking two variables; procurement plan is prepared vs most of projects are awarded in the last two quarters. The result of the cross tabulation show that from those respondents who believe with the inadequacy of practice of project procurement planning, similarly agree with the idea of project award time being third and fourth quarters of the budget fiscal year.

Table 4.2.5.2: Cross tabulation result for procurement plan prepared vs. projects awarded 3rd & 4th Quar.

		<i>Most projects are awarded 3rd & 4th Quar.</i>				Total
		disagree	neutral	agree	strongly agree	
<i>procurement plan is prepared during planning</i>	strongly disagree	0	0	0	3	3(5%)
	disagree	0	4	20	0	24(39.4%)
	neutral	2	4	18	1	25(40%)
	agree	0	2	6	1	9(14.8%)
Total		2(3.3%)	10(16.4%)	44(72%)	5(8%)	61(100%)

Source: own survey, 2017

It is illustrated in the table above that 72% of respondents believe most of construction projects are awarded to contractors during 3rd and 4th quarters of budget year. Out of those respondents who said projects are awarded in the later stages, 20 (46%) of them do not agree with the idea that project procurement planning is prepared for construction projects. An effort made to assess the procurement practice of projects at the sudsy organization shows that in all the variables considered for the assessment proof it is not adequately considered yet.

4.2.6. Project Cost Estimation

Project cost planning is also another important variable considered in the assessment to examine the practice of the study organization with respect to cost planning. Respondents were asked if project cost is well estimated in the planning phase and if they know that there is always difference between the estimated cost and the contract amount.

Table 4.2.6.1 Respondents opinion for ‘Project cost is well estimated there is difference between estimated cost & contract price’

Responses	Project cost is well estimated in the planning phase	
	Frequency	Percent
strongly disagree	2	3.3
disagree	33	54.1
neutral	13	21.3
agree	12	19.7
strongly agree	1	1.6
Total	61	100.0

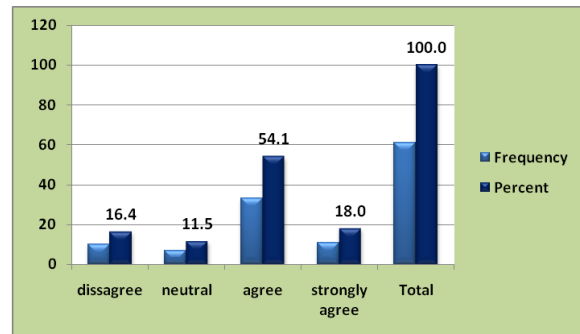


Figure 4.2.6.1: difference b/n estimated cost & contract price

It is presented in the above table most of respondents asked if they know project cost is well estimated in the study organization do not agree. More than 58% of respondents disagreeing and the other 21% being neutral, most of peoples involved in the assessment believe project cost is not well estimated. Whereas on the other hand, around 20% of them believe it is well estimated.

The other result of the study described in the bar chart depicts if respondents know whether estimated project costs differ from the contract winning price by which projects are outsourced /contracted to another party; contractor. The responses of surveyed officers were mainly towards the idea that there is disparity between estimated cost and contract amount; with 54.1% of them agreeing and another 18% significantly agreeing with the idea. With only 16% of responses against the idea and another 11% being neutral, the response of many respondents indicate that the market price by which projects are awarded is differs with the amount estimated by professionals during the planning phase.

Table 4.2.6.2: Cross tabulation / cost is well estimated vs. estimated cost is different from market value/

	Responses	disparity between estimated cost and contract price				Total
		disagree	neutral	agree	strongly agree	
project cost is well estimated in the planning phase	strongly disagree	0	0	2	0	2
	disagree	1	2	22	8	33
	neutral	5	4	4	0	13
	agree	4	1	4	3	12
	strongly agree	0	0	1	0	1
Total		10(16%)	7(11%)	33 (54%)	11(18%)	61

Source: own survey, 2017

It could be visualized from the table above that most of respondents who believe cost is not adequately estimated, doesn't reflect the contract amount of projects. 54% of respondents who believe there is a difference between estimated cost and contract winning price of construction projects, 66% (22 respondents) of them argue that project cost is not well estimated in the planning phase in the study organization.

4.2.7. Project Communication Planning Practice

Project Communication management is another important knowledge area supposed to be considered throughout the project cycle including the planning phase. With regard to this study, communication planning practice of the organization under study is assessed in view of whether the organization has the experience of developing project communication plan and strategy to deal with construction projects, if communication channels are established early in the planning phase and the extent to which it is maintained.

Results of respondent survey presented in the following table below show that, the experience of developing separate project communication plan and defining channels communication is limited, but project communication is maintained throughout the project cycle.

Table 4.2.7.1: Respondents opinion Communication planning practice

Responses	Communication plan and strategy established during planning		Communication channel established during planning		Ongoing communication with stakeholders	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
strongly disagree	6	9.8	1	1.6		
disagree	26	42.6	34	55.7	12	19.7
neutral	18	29.5	10	16.4	12	19.7
agree	11	18.0	16	26.2	37	60.7
Total	61	100.0	61	100.0	61	100.0

Source: own survey, 2017

Respondents result presented in the above table show that the experience of the study organization in relation to developing independent project communication plan and channels of communication early in the planning phase is limited; whereas on the other hand, the organization maintained communication with stakeholders.

In a discussion/ interview taken with one communication officer and a review of secondary data made by the researcher, the organization has a generic and consolidated organizational plan that every process unit /department is participated. The major problem here is there is no separate project communication plan and even the document /organizational plan/ doesn't clearly define how to communicate project activities (construction project), with whom to communicate, when to communicate, the communication channels and strategy that best suit to construction projects.

4.2.8. Project Human Resource Planning Practice

It is well discussed the review of literature that projects often require acquisition of adequate project team that effectively implement construction projects. In order to assess the human resource planning practice, questions are asked if the organization has the experience of planning /allocating project team early in the planning phase, if team members /officers are motivated to participate in the planning process, weather frequent project planning and/management training is given to the staff and if most of project team leaders and/ managers assigned are capable enough to successfully manage construction projects.

Responses of the assessment presented bellow depict that in view of the above mentioned questions, according to most of respondents the human resource planning practice is not well considered by the study organization.

Table 4.2.8.1: Respondents answer for ‘Project team is planned /allocated during planning’

Responses	Frequency	Percent
strongly disagree	19	31.1
disagree	27	44.3
neutral	5	8.2
agree	10	16.4
Total	61	100.0

Table 4.2.8.2: Respondents answer; Project team members motivated to participate in planning

Responses	Frequency	Percent
strongly disagree	8	13.1
disagree	27	44.3
neutral	19	31.1
agree	7	11.5
Total	61	100.0

Results of respondents’ survey presented in the above table demonstrate that project team for supervising and inspecting project activities is not determined along the planning process. I.e. over 70% of respondents, do not agree with the idea that project team is allocated during planning phase. Similarly, a civil engineer in the study organization is considered for an interview after the survey has supported the above result. According to him, Even though, project officers are assigned to supervise and inspect project implementation activities, the number of professionals and their composition with respect to each construction projects is not initially determined during project plan preparation.

In addition to human resource allocation, respondents were asked to give their view on if they believe that project officers are motivated and /happy to participate in the planning process. Most of the responses from the survey is found to be against the idea. I.e. more than 53% of respondents do not agree with the idea which favors project officers are motivated to take part in planning; whereas the remaining 31% are natural.

Likewise, another question has been raised to respondents in order to support the assessment. Result of the assessment presented bellow show that most of project team leaders assigned is not capable enough to handle the big task, and they also argue frequent training on project planning and management isn’t given.

Table 4.2.8.2 Respondents opinion on project management training given

Responses	Frequency	Percent
strongly disagree	7	11.5
disagree	31	50.8
neutral	18	29.5
agree	5	8.2
Total	61	100.0

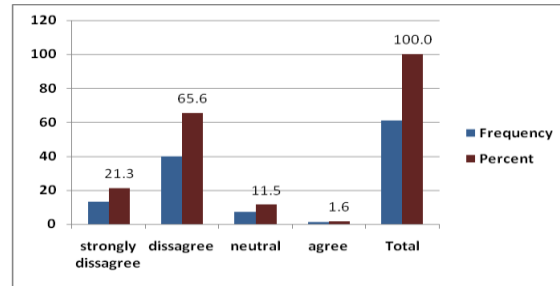


Figure 4.2.8.1: Project team leaders are capable

According to respondents view illustrated above, project management trainings are not frequently provided to staff; with over 60% of respondents arguing there is lack of project management training. Regarding the capacity of project team leaders /managers, more than 80% of respondents (getting 65.6% support, and another 21.3% strong support) believe that, project team leaders are not capable enough to manage construction projects managed and/consulted by the study organization.

4.3. Use of project Management tools and techniques

Reviews of literatures suggest that in order to conduct a construction project plan there are several useful tools and techniques that are more or less frequently used. To this effect, the extent to which project management tools and techniques are applied during project plan preparation process is considered in the assessment. The results of the assessment are presented here bellow.

Table 4.3.1.1: Respondents view on usage of Work Break Dawn Structure is used during planning

Responses	Frequency	Percent
disagree	3	4.9
neutral	26	42.6
agree	32	52.5
Total	61	100.0

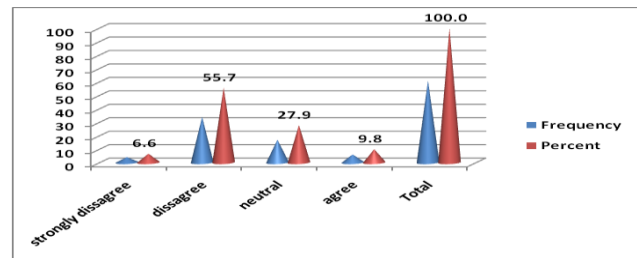


Figure 4.3.1.1: Scheduling tools & techniques used

Results of respondents' survey in the above table indicate that Work Break Dawn Structure is used to decompose /define scope of construction projects. With 52.5% of respondents in

agreement with the idea if WBS is used to define project scope, the other 3 respondents in disagreement and the remaining 42.6% being neutral, it is possible to understand that WBS is utilized for the purpose of defining project scope.

Similarly, another project management tools used during activity scheduling and sequencing; such us, CPM, PERT, Gant Chart is found to be not well used during project planning process. This fact is supported with the suggestion of surveyed respondents; 56% of them not in agreement with the idea and similarly another some 7% of respondents supporting the idea that those tools are not well utilized in the study organization.

Similarly, respondents were asked to give their view if they know the organization under study effectively utilizes use Logical Frame Work Approach and Project Management Ms software for the purpose of developing project plan. A result of the survey is presented in the following table.

Table 4.3.1.2: Resp. View on the usage of LFA is used during planning

Responses	Frequency	Percent
disagree	6	9.8
neutral	29	47.5
agree	19	31.1
strongly agree	7	11.5
Total	61	100.0

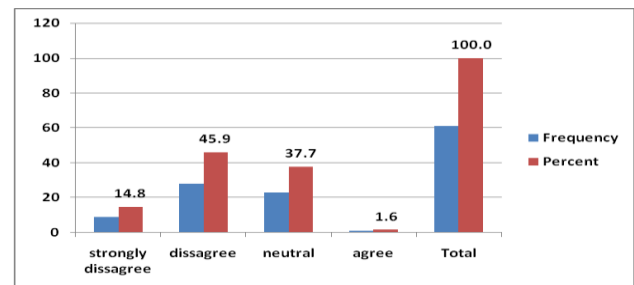


Figure 4.3.1.2: Project Management /PM Software used

Respondents survey results in the above table and chart show that Logical Framework Approach is considered during project planning process according to 31% of respondents and the remaining others being neutral. Project Management software on the other hand is found to be not utilized in the study organization according to more than 60% of respondents.

In addition to survey results, in an interview made with two professionals suggest that from the above project management tools considered in the survey, work break down structure is used during project quantity development while logical frame work is partially used during over all organization plan by the planning, monitoring and evaluation department.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Summary

This research had three major objectives which were to assess the Project planning knowledge of professionals at Oromia Housing and Urban Development Bureau, to study the extent to which project management knowledge areas are practiced during the planning process of construction projects and identify the level of use of project management tools and techniques during planning stage of construction projects in the organization under study.

The reviewed literature showed that project planning process involves vital role for the management of successful projects, including construction activities. The process of project plan development which is understood to encompass project scope planning, activity scheduling and sequencing, cost estimation, human resource planning, communication planning, risk management planning and procurement planning have all been considered in the assessment. It is also assessed that these planning activities are undertaken using different project management tools and techniques.

The questionnaire survey was believed to contain all the important research questions which were helpful in fulfilling the research questions. The results of the questionnaire survey and discussion of the findings in line with the literature review were presented in the previous section. In this section the conclusions derived from the research findings and the recommendations are presented.

The organization under study is engaged in the management and consultancy of various public projects, specifically, construction project which require adequate management of resources so as to meet project requirements. The result obtained from the analysis of gathered data suggest that project planning and management knowledge is not sufficient enough and construction project planning experience in the organization is not well developed and supposed to be improved in order to meet the requirements of managing successful projects.

5.2. Conclusion

The level of knowledge of project management tools and techniques applied for planning purpose is limited to LFA and WBS. Other project management tools are not well known by the surveyed professionals and not utilized by the institution for the planning purpose as well. Lack sufficient trainings in the area of project planning and management, lack of well qualified project managers /team leaders is also reported.

With regards to the practice of project management knowledge areas in the planning phase, the assessment result show that the organization is limited to the development of the broader /generic/ project management plan which takes in to account the strategic direction of the government and the project /activity requirements of all departments /processes/ which intern aligned with the interest of the sector, regional urban centers.

There is lack of understanding and/ adequate attention given to each knowledge area. Results of the survey suggest that, there is no practice of developing project quality management plan, risk management plan, procurement management plan; etc with respect to construction activities managed and/ consulted by the study organization. Most projects are awarded to contractors during the last two quarters of the fiscal year. Projects often phase design changes /i.e. scope changes/ during project execution phase activities. So much so, project officers are not interested to participate during the project planning phase, and project team is not acquired /allocated early in the planning phase.

Generally, it is possible to conclude that, from the nine planning knowledge areas considered in the study, project time and cost planning, project risk management plans, project procurement planning, project quality planning practices require careful attention. This is partly, because of the fact that, they are not adequately exercised /considered during the planning process according to the survey result, but also because of the magnitude of their effect on the success of construction projects on the other hand.

5.3. Recommendation

Owing to the broader responsibility of the organization not only in managing and consulting number of construction projects every year, because of its role in directing the regional urban development activity; and the construction industry which require significant investment, it is recommended that the process based arrangement of the organization, should be modified to a form of separate metrics based arrangement so that it will be possible to install proper project management system that enable the study organization addresses consultancy needs the regional level public organization.

Since lack of project management knowledge, tools and techniques is identified in the assessment, it is recommended that the organization should equip project officers with the concept and application of project management knowledge through trainings.

It is recommended that an independent project risk management team /focal person is established/assigned so that it will be possible to effectively deal with construction project related risks are identified earlier and risk response planning system is adopted.

The contract administration department is further restructured to accommodate the responsibility of procurement planning and management of all construction projects that are under the management and consultancy of the study organization. This will help the organization in order to schedule and proactively work on how the procurement and solicitation processes for internal projects as well as external projects owned by other public bodies in the region whose procurement process is endorsed by the organization under the study.

It is also strongly recommended that further research is conducted on; 1) how the pre-project implementation phase activities (project initiation and planning phases) affect the performance of construction projects, the relationship between the procurement and risk management practice of construction projects and the overall success /performance of projects in the organization in particular, and at country level in general.

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ANNEXES
SAINT MARY’S YUIVERSITY
GRADUATE PROGRAM
PROJECT MANAGEMENT DEPARTMENT

An Assessment on “Project Planning and Its Practice in the Construction Industry”

A case of Oromia Urban Development and Housing Bureau

Questionnaire

This questionnaire is prepared to gather the necessary information for a study aimed to assess project planning practices in the construction industry considering the experience of Oromia Urban Development and Housing Bureau. The information you provide will be used only for academic purpose (only for the study under consideration) and will be kept confidential; hence; you are kindly requested to provide only thoughtful and honest responses that will give the most valuable information for the assessment.

I gratefully thank you for your invaluable time you take to answer the question included in this data collection instruments. (For further questions pertaining to this project, please contact me on +251-931 526832 or yilma33@yahoo.com)

With Best Regards!

PART ONE: GENERAL QUESTIONS

☞ Please Mark By “√”

1. What is Your Position in the Organization?

Project Manager Team Leader Technical Expert Support staff

2. Number of years you have been working in the organization

<2 years 2-5 years More than 5 years

3. The highest level of education you have accomplished

Diploma BA/BSc MA/MSc HD

4. Your educational Background /Field of study -----

5. Total number of projects you have been involved in your Organization during the past three years?

<3 3-5 5-7 >7

6. Which role do you have in your organization with respect to construction projects?

Design development/Preparation

Project Monitoring /Controlling supervision/

Project Cost planning/budgeting Management

Procurement planning, bid evaluation

Other please specify-----

7. Did you take project management related trainings?

Yes No

8. If your answer for question No. 9 is yes specify the type of training-----

9. Which of the following tools for project planning are you familiar with?

Work Breakdown Structure (WBS)

Gantt chart

CPM

MS PM Software

Logical Framework Approach

PART TWO: Questions specific to the project planning practice at Oromia Housing and Urban Development Bureau

Please indicate your level of agreement with the following statements by ticking (√) the answer that best corresponds to your feeling.

Key variables		Description	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Project Integration Management Knowledge area	10	Project Management Plan (for construction projects) is developed during the planning phase					
	11	key stakeholders actively involved in planning stage					
	12	Roles of stakeholders is identified during the planning stage					
	13	There is strong integration between project planning department and construction supervision unite					
Project scope Management Knowledge area	14	Top level management actively involved during project planning					
	15	The project scope is well defined in the planning phase					
Project Time Management Knowledge area	16	Sufficient time is given for project design and quantity preparation/ development					
	17	Project activity schedule is determined in the planning phase					
	18	Project planning activities are completed prior to project execution					
Project cost Management Knowledge area	19	Projects face site related problems /site change, right off way problems, soil taste etc/					
	20	Project cost is well estimated in the planning phase					
	21	Projects face additional cost /variations/ due to change in scope, design					
	22	There is significant difference between estimated cost and contract amount /winning price					

Project Quality Management	23	Project quality plan is prepared					
	24	Construction projects face design changes during execution phase					
Project Human Resource Management Knowledge area	25	Project team is planned /allocated early in the planning stage					
	26	Team members/officers are motivated and committed to participate in the planning process					
	27	Project Managers/Team leaders are often capable of managing projects					
Project Communication Management Knowledge area	28	Project Human Resource Management Plan is prepared during the planning phase					
	29	Communication plans and strategies are established during project planning process					
	30	Communication channels of projects are determined during project planning process					
	31	On-going communication with project stakeholders are maintained					
Project Risk Management Knowledge area	32	Project Risk is identified during the planning stage					
	33	Project risk analysis is conducted during the planning stage					
	34	There is a separate unit/person responsible for project risk management planning					
	35	Risk response planning prepared in the planning stage					
Project Procurement Planning and solicitation	36	Project procurement plan is prepared early in the planning stage					
	37	Bid evaluation process is completed early in the first two quarters /i.e. before Month of January/					

	38	Most of projects are awarded to contractors in the third and fourth quarters					
Project Management tools and techniques	39	Work break down structure (WBS) is used for defining and planning project scope					
	40	Project Scheduling tools /such us; <i>Gantt chart, Network Scheduling / are effectively</i> utilized					
	41	Logical Framework approach is used for planning					
	42	Project Management Software is used					
	43	Project Cost Estimation techniques /Analogy estimate, Parametric estimates, expert opinion, Contingency amount,/ is effect used					