ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF PROJECT MANAGEMENT

ASSESSMENT ON PROJECT MANAGEMENT PRACTICES OF SELECTED PRIVATE PLASTIC INDUSTRIES IN SEBETA TOWN

BY

EYOEL ABERA

JUNE, 2021

ADDIS ABABA, ETHIOPIA

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A THESIS SUBMITTED TO SAINT MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS MASTER OF ART IN PROJECT MANAGEMENT

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of **MULUADAM ALEMU (PhD)**. All sources of material used for the 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 institution for the purpose of earning any degree.

EYOEL ABERA   _____

      Name   **Signature**

St. Mary's University, Addis Ababa   **June, 2021**

ENDORSEMENT

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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St. Mary's University, Addis Ababa   June, 2021

LIST OF ABBREVIATIONS OR ACRONYMS

PM - Project Management

PMBOK - Project Management Body of Knowledge

PMI - Project Management Institute

CSA - Central Statistical Agency

SPSS - Statistical package for social science

GTP - Growth and Transformation Plan

HRM - Human Resource Management

COVID - Coronavirus disease of 2019

SD - Standard deviation

MA - Master of art

MSC - Master of Science

BA - Bachelor of art

BSC - Bachelor of Science

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ABSTRACT

The general objective of the study was to assess project management practices of private plastic industries in Sebeta. The study adopted a descriptive research design. There are 158 private plastic industries in Sebeta town that are registered by Sebeta investment office. Due to the current pandemic covid 19 most of the industries were temporarily closed and others that were not closed were reluctant to cooperate because of this five private plastic industries were selected based on their willingness, accessibility, project type and some criteria's. The study used a purposive sampling technique in order to get the right respondents who are capable of giving the relevant and accurate information based on the practical experience they have regarding the industry projects. The sample size was 50 respondents, 10 respondents in each selected industries. Data was collected using questionnaire, observations and interviews and they were analyzed using both descriptive statistics and reliability analysis. Based on the findings the study established that the selected industries have issues that need attention in project management practices which indicates a poor practice in project cost, time and risk management. The study concludes the selected industries practices project management to some degree though there are project management knowledge areas that are not practiced well enough which needs a high consideration. The study recommends that since project risk management, project time management, and project cost management are a core and vital project management practices they should be given the highest consideration and suggests ways how to improve these practices.

Keywords: *Project Management Practices, Private Plastic Industries, Plastic Industries, Sebeta*

CHAPTER ONE
INTRODUCTION

This chapter is introductory part of the entire study. It provides some insights about the ground and assumptions where the study is conducted. It states background, statement of the problem, objectives, significance, scope, limitation, and organization of the study. Accordingly, it begins with background of the study.

1.1. Background of the Study

Plastic industries are categorized in the manufacturing sector which produces plastic products. There are different ways of producing plastic products. In the past few decades, plastics became the most dominant engineering material for human being. In daily life, many plastic products were used by people (Kumar & Nagaraja, 2014). The most common methods of processing plastics to manufacture plastic parts include Extrusion, Injection molding, plastic injection molding process, Blow molding, Casting, etc. Among these, the study focuses on plastic industries that use plastic injection molding process since it is the most significant for local industry and most of the industries in Sebeta use this method. Almost all manufacturing companies use parts that are injection molded, whether they make toys, home-appliances, electronics or electrical parts, watches, computers, etc. (Sridhar & Kumar, 2013).

There is an increasing demand in plastic products. In 2015, the plastic consumption volume in Ethiopia reached around 172,000 tons. This is expected to increase to some 308,000 tons of plastic by 2020 (Ian Tiseo, 2021). There are not many literatures done on project management practices of private plastic product manufacturing industries, most studies have not covered this topic. In Sebeta most of the private plastic owners believes once the manufacturing industry has been established the rest is mostly considered a routine work, where there are not much of projects to be done. In investment project cycle there is pre-investment phase, investment phase and operating phase. The study focuses on industries that are currently in the operating phase, which means industries that are already started manufacturing products with Expansion, Innovation, Replacement, Rehabilitation, Commissioning and start-up projects.

From self-investigation and on site observations there is a gap on practicing project management in the private plastic industries of Sebeta, there are problems on the industries managements side like unplanned construction costs, products not meeting customers' expectations, lack of skilled man power, expansion of plant without planning, and procuring machineries, developing new product and molds without assessing the market demand, and so on. So this study focuses on assessing project management practices on private plastic industries. In spite of all the best practices, predictability of project outcomes is still an issue of concern. Failure to achieve targeted time, budgeted cost and specified quality result in various unexpected negative effects on the projects. According to CSA (2014) one of the negative effects on the Plastic Industries Sector is not functioning at their full capacity, because there is a lack of sufficient imported raw materials.

Plastic manufacturing process is labour intensive, it requires good management style. Organizations are increasingly using project management practices to plan and organize resources to achieve a specified outcome within a given timeframe and a constrained budget (Singh, 2019). They also try to manage and anticipate risks in a structured manner.

McNamara (2002: 1) stated that project management is a carefully planned and organized effort to accomplish a specific (and usually) one-time effort, for example, construct a building or implement a new computer system. Project management includes developing a project plan, which includes defining project goals and objectives, specifying tasks or how goals will be achieved, what resources are need, and associating budgets and timelines for completion. It also includes implementing the project plan, along with careful controls to stay on the "critical path", that is, to ensure the plan is being managed according to plan. Project management usually follows major phases (with various titles for these phases), including feasibility study, project planning, implementation, evaluation and support/maintenance.

Organizations using project management have shown better utilization of resources, shorter development times, reduced costs, interdepartmental cooperation that builds synergies across the organization, and a better focus on results and quality (Singh, 2019). Effective project management can give a strong competitive advantage in project delivery, provide quality services, and reduce project costs. Excellence in effective project management can also guarantee measurable and tangible results based on scope, time, and cost, which are the cornerstone to project success (Kerzner, 2017).

1.2. Statement of the Problem

Projects, be it a government project, private project or NGO project, usually encounter many problems in developing countries in general and Ethiopia in particular. Since projects are mostly initiated to increase organizational capabilities, meeting new demands, realizing new opportunities or to overcome the challenges faced due to very frequent change of organization's environment then it is more likely that problems could occur during execution of the project.

Plastic industries manufacture plastic products. So, plastic industry projects are classified as a manufacturing project.

Blevins (1999) introduced the topic of project manufacturing in a very nice and simple way. He stated that the project manufacturing business has a set of islands and urged that they need to be integrated for a better planning and controls. Fox et al (2009) introduced a comprehensive list of challenges and sources of complexity that face project manufacturing. Some of these challenges are:

- Giving an authority to the customer. That is typical in project environments but not very helpful in scheduling project manufacturing.
- Change of priorities of individual customers makes the project manufacturing schedule to stop and resume several times during the lifecycle of the project.
- High number of components that are needed for the assembly of a single sub-product. For example, a side wall of a boiler may need more than 100 tubes in different shapes and sizes.
- Components for the same sub-assembly may have a high variation in delivery times.

In Ethiopia, CSA's 2014 medium and large-scale manufacturing survey estimated the total number of workers employed by the plastic industry sector is 10,984. Furthermore, the mean percentage distribution of managers, technicians, skilled production workers, unskilled production workers and non-production workers in the subsector according to the survey result were 6.94%, 10.49%, 27.16%, 31.37% and 15.45%, respectively. It also mentions the domestic market challenges which are lack of access to market, high cost of production compared to imported goods, in surge of illegal goods, and low tariff protection. Since then, the subsector has increased its number of

workers mean while its distribution of managers, technicians, skilled man power has not change that much.

According to Sebeta Oromia region investment office employee Mulunesh kebe most of the industries in this zone want to acquire a land in the name of investment, out of these Private Plastic Industries are one of them. These Private Plastic Industries overestimate their project return and capital in order to acquire a land. After acquiring the land, they try to implement their projects in a traditional way without setting a project management plan. So, these leads those in to a debt while trying to expand their industries without proper planning.

According to self-investigation in the private plastic industries, most of the expansion projects in Sebeta private plastic industries has been initiated without proper planning which resulted in cancellation of projects, implementation delay, not meeting project's goal with in the expected quality, time and cost. This also created a gap in monitoring of quality of products, orders of customers, procurement of raw materials, and usage of raw materials and so on. The other issue that this research addresses is the private plastic industries owners' knowledge gap which are most of them does not hire a project manager (they don't consider it as a basic), focus on producing the same product (like home appliances as most industries do), depend on other industries studies (they don't study the market gap and, they are resistant in developing new product.), focus on cheap labor rather than skilled man power. Because of these most of the funds, the requirements and plans that need to be addressed in a plastic industry expansion projects are not addressed.

Project management is very crucial for proper planning, implementing and controlling of projects which can satisfy the required project performance in terms of time, cost, and technical performance requirements. Due to the nature of the business, companies that are engaged in Plastic industry are not that much fond to apply project management practices widely once it has been established. Several product demands are covered by the involvement of these Plastic manufacturers. On the contrary, different problems are observed in Plastic industry projects. Of the common problems, delay of projects, nonperformance of projects, not meeting of required specifications, and dissatisfaction of customers can be raised.

From the information's gathered from the survey and on site observations, there are no evidences or previous studies which show Ethiopian plastic industry development project practices are effective. Rather several evidences from ongoing projects and review of documents from the

investment office cast doubt on the effectiveness of project management practice in Ethiopian plastic industries. There has been an extended delay in some projects and there were some unattended goals of the project. These problems are believed to be among other factors due to lack of efficient project management practices and certain barriers. Previous literatures related to manufacturing industry projects do not cover all aspects of challenges of project management practices in one study. Most of them focus on single aspect project management issues such as Stakeholder management, Engineering design and planning and monitoring and evaluation. But a challenging factor in one area will have a significant ripple effect on all other related areas. The plastic industry sector also has not conducted assessment on challenges of project management practices. Thus, comprehensive view of all project management practices is necessary in order to effectively manage projects being implemented. In line with this, the study intends to fill this research gap by assessing project management practices of private plastic industries to identify and evaluate major challenges of infrastructure development project in private plastic industries in all project management knowledge areas.

1.3. Research questions

This study aims to fill the gap by answering the following research questions: -

1. To what extent the project management practice in private plastic industries are effective?

2. Which knowledge areas need to be considered to improve project management practices in private plastic Industries?

3. How project scope management is practiced in private plastic industries projects?

4. How project time management is practiced in private plastic industries projects?

5. How project quality management is practiced in private plastic industries projects?

6. How project cost management is practiced in private plastic industries projects?

7. How project communication management is practiced in private plastic industries projects?

8. How project human resource management is practiced in private plastic industries projects?

9. How project integration management is practiced in private plastic industries projects?

10. How project procurement management is practiced in private plastic industries projects?

11. How project risk management is practiced in private plastic industries projects?

1.4. Objective of the study

1.4.1. General objective

The main purpose of the study is "to assess Project Management Practices of selected Private Plastic Industries in Sebeta".

1.4.2. Specific objectives

Specifically, this study aims: -

1. To assess the effectiveness of the practice of project management in private plastic industries in terms of project management knowledge areas;
2. To identify the knowledge areas that needs highest attention and forward recommendation for further improvement;
3. To assess how well project scope management is practiced in private plastic industries projects?
4. To assess how well project time management is practiced in private plastic industries projects?
5. To assess how well project quality management is practiced in private plastic industries projects?
6. To assess how well project cost management is practiced in private plastic industries projects?
7. To assess how well project communication management is practiced in private plastic industries projects?

8. To assess how well project human resource management is practiced in private plastic industries projects?

9. To assess how well project integration management is practiced in private plastic industries projects?

10. To assess how well project procurement management is practiced in private plastic industries projects?

11. To assess how well project risk management is practiced in private plastic industries projects?

1.5. Significance of the study

The findings of this study can benefit plastic industries, industries that are related to this study that are looking for to expand their plant and increase their factory production capacity, and also industries that are in desperate in need of a good management structure who are managing their factory in a traditional way. This study impacts the Plastic Industry owners and their employees, other related manufacturing industries and also startup plastic industries. The owners of the industries will realize the value of using project management practices and have their wishes in expansion of their industries and production capacity in a successfully planned fashion way and their employees will have a good management system that respects their rights, motivates them, trains them and give them the opportunity to upgrade their knowledge and economy status all the while helping those who also are depending on them. This study can contribute to future researchers and private plastic industry owners who are looking for to expand their factory and for investors who are planning to build a new factory and also act as a reference for other plastic industries. This study researches how well project management practices are practiced in manufacturing projects from order confirmation to delivery of products with the desired quality, on time, and with the specified budget. The impact and result of this study can be tested and seen in the working process of the selected industries. So, this study will create an insight for project managers that are working on the area of plastic industries to learn from this and contribute to the area of this sector. It can also create awareness for academic researchers on how operational process industries also perform project based works and what kind of projects they are and how these projects are managed.

1.6. Scope of the Study

This study is conducted on manufacturing projects which is specifically concerned in private plastic industries a case study on 5 selected industries. This research will cover the role of project management in managing plastic industry projects and how it contributes to improve project management practices. It also focuses on determining the practices that were used by the industries.

The study focuses on the project management practices in private plastic industries in terms of project management knowledge areas based on manager's, team leaders, technical experts, and support staff participated in the projects perceived assessment of the internal and external practices achieved by the projects. Currently, there are 158 registered private plastic industries functioning in Sebeta. Most of the plastic industries in Sebeta are using a plastic injection molding process to manufacture plastic products. Hence, this study focused on five (5) selected Private Plastic Industries that apply this method which are located in Sebeta. The study has excluded Private Plastic Industries that use other methods of manufacturing mentioned above in the background section of the study. These Private Plastic Industries were selected from the target population based on accessibility, willingness to participate, project type, i.e., those working on product development projects and expansion projects, and industries that are in the operating phase. However as much as possible industries with different experiences and capital were included to better understand the level of utilization of project management practices in different level of the sector. In this research, the finding depends on the response of the respondents of the 5 private plastic industries. Subsequently a result of the study is heavily dependent on the quality of the respondent's response. Thus, in order to control the extent of common methodology bias, mixed quantitative and qualitative approach was applied in order to improve the reliability of the results. Finally, the result of the study is only indicative to initiate further controlled and representative study in the future. Therefore, it is not meant to be generalized for the whole Private Plastic Industries sector.

1.7. Limitation of the Study

There are some limitations to this study against achieving its objectives effectively. It was impossible to access many of the industries because of the current global pandemic COVID 19,

most of the industries were temporarily closed, and those whom currently operating were hesitant to participate and will not allow access to outsiders. Because of this I could not get to work on as many industries as much as I want to. Out of the 158 registered private plastic industries in Sebeta I ended up working on 5 private plastic industries that were accessible and willing to participate. Accordingly, questionnaire and interviewed based data were obtained from these industries. To improve its validity, cross checking was made by obtaining information from managers, and from consultants, using different data gathering techniques. It was also challenging to communicate with some of the respondents because of the language barrier such as the interviewee in the Sebeta investment office speak oromifa , and it was overcome by using language translator.

1.8. Organization of the paper

This research paper is composed of five chapters. The first chapter is an introductory chapter. It includes background of the study which gives insight on plastic industry, project management and base for the study. Statement of the problem answers why this research was conducted. General and specific objectives of the study are also included in this chapter based on the research questions given in the statement of the problem. Significance of the study which is about who will benefit from the fruits of this research is also part of this chapter. Scope and limitations of the study talks about areas to be included and areas not to be included as well as the reason for not having comprehensive research in the whole areas of project management. The second chapter is all about review of related literature. It contains theoretical, empirical and, conceptual parts that are used as frame work and supportive information for the study. It explains about Project management and other related issues. Research methodology which is the third chapter emphasis on: which data source are used, what technique of sampling are the most appropriate and how the gathered data are presented and analyzed. Chapter four contains the major parts of this research paper which are results and discussion, and data presentation and data analysis. Data presentation has the collected data in an organized way. The data analysis is a bridge between the data presentation and the next chapter (chapter four). It gives meaning for the data gathered and presented. Chapter five is the last and the most important chapter. All findings of the study are included followed by conclusions and the recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1. Theoretical framework of the study

Professionals and experts have stated that project management is a crucial strategic view. Project management provides entities with influential set of tools that develop their ability to apply managerial functions to accomplish specific organizational objectives. But project management is more than just a set of tools; it is a results-oriented management style that places a premium on building collaborative relationships among diverse cast of characters. Exciting opportunities await people skilled in project management (Larson & Gray, 2011: 3). In this section, issues related with project management, such as project, types of projects, project management processes, project management knowledge areas, and others are discussed.

2.2.1. Project

Many definitions had been given to project by different authors, due to the fact that project is a multidisciplinary word that has different meaning from different perspective and orientations. Engineers, Architects, Managers and so on, have their definitions coined out from their experiences as far as their professions are concerned. Their definition depends on their areas of studies and the point of view that each scholars used. But to have comprehensive understanding of a project, it is better to refer different definitions. Eric Verzuh (2005:1 cited in Modesto &Tichapondwa, 2009:19) stated "we live in a world where change and the rate of change is constantly increasing. In order to survive and prosper, organizations need to continually modify their products and services. Projects are the means by which these innovations are affected. Greater change = more innovations = more projects." In this context, Verzuh see project as a means to cop up with changes. Accordingly, Modesto &Tichapondwa (2009:20) define project as initiative to bring about change in order to achieve specific objectives, within a timescale, in a given context with allocated budget. The Project Management Institute (2013: 3) define project as a temporary endeavor undertaken to create a unique product, service, or result. In this study, the PMI's definition of project is used as an operational meaning. Larson and Gray (2011: 5) stated, "Like most organizational effort, the major goal of a project is to satisfy a customer's need. Beyond this

fundamental similarity, the characteristics of a project help differentiate it from other endeavors of the organization". The definition is given based on two key characteristics of project. All projects are temporary and undertaken to create a product, service, or result that is unique. These two simple concepts create a work environment that mandates different management approach from that used by an operations manager, whose work is oriented toward continuous improvement of existing processes over longer periods of time. Many other scholars and books prefer to define and explain project by describing the common characteristics of projects instead of giving a direct definition so that anyone can define project by integrating these features of projects. Different scholars provide the unique features of projects. Nicholas and Steyn (2008) provide comprehensive characteristics of projects. The following section is the discussion on these characteristics. 2.2.2. Characteristics of a project

Regardless of specific features of particular projects, below are some common characteristics forwarded by Nicholas and Steyn (2008) for all projects:

1. A project involves a single, definable purpose and well-defined end-items, deliverables, or results, usually specified in terms of cost, schedule, and performance requirements. Larson and Gray (2011: 6) stated that this singular purpose is often missing in daily organizational life where employees carry out repetitive operations daily.

2. Every project is unique in that it requires doing something different than was done previously. A project is a one-time activity, never to be exactly repeated again. Lock (2001:2) discussed about the uniqueness of a project that "The principal identifying characteristic of any project is its novelty. It is a step into the unknown, fraught with risk and uncertainty. No two projects are ever exactly alike, and even a repeated project will differ from its predecessor in one or more commercial, administrative or physical aspects." In a "routine" project such as home construction, variables such as terrain, access, zoning laws, labor market, public services, and local utilities make it unique.

3. Projects are temporary activities. Each is an ad hoc organization of personnel, material, and facilities assembled to accomplish a goal within a scheduled time frame; once the goal is achieved, the ad hoc organization is disbanded.

4. Projects cut across organizational and functional lines because they need skills and talents from multiple functions, professions, and organizations. Larson and Grey (2011: 6) stated that instead of working in separate offices under separate managers, project participants, whether they be engineers, financial analysts, marketing professionals, or quality control specialists, work closely together under the guidance of a project manager to complete a project.

5. Given that each project is unique, it also involves unfamiliarity and risk. It may encompass new technology or processes and, for the organization undertaking it, possess significant elements of uncertainty and risk.

6. The organization usually has something at stake when doing a project. The work calls for special scrutiny or effort because failure would jeopardize the organization or its goals.

7. A project is the process of working to achieve a goal; during the process, projects pass through several distinct phases called the project life cycle. The tasks, people, organizations, and other resources involved in the project change as the project moves from one phase to the next.

2.2.3. Classification of a project

Projects can be classified in different bases such as based on type of works that projects involve, based on size (duration) of projects, and so on. Lock (2001:2-3) classify projects under four main headings based on type of works that projects involve as the following:

a. Civil engineering, construction, petrochemical, mining and quarrying projects. These projects are characterized by on site activities, remote from the contractors' head office which incur special risks, and involves massive capital investment. They deserve rigorous management of time, cost, and quality. If the projects are extra-large, they will involve several contractors working together as joint venture or in a form of other means, which makes the projects more complicated.

b. Manufacturing projects. Up on establishment of factories for producing goods, projects are often conducted. Different additional projects will also be executed after the establishment of a factory for different purposes such as new product development. These post-establishment projects are called manufacturing projects.

c. Management projects. Regardless of the size of a company, it will run at least few projects throughout its lifespan. These projects are required by a company in different situations such as:

on plant/ service center relocation, on restructuring of a system and organization, in research & development, for feasibility studies, for executing special trainings, to plan & conduct celebrations, etc.

d. Research projects. These projects are independent research projects which consume huge amount of money and lasts for many years. They assume high level of risks so that it becomes difficult or impossible to define end results. These projects require effective time and cost management.

Plastic industries produces plastic goods and conduct different additional projects after the establishment of the industries. These projects are executed for different purposes such as new product development, the construction of warehouses for inventory purpose and storage, expansion of plant to increase production capacity and variety of product for the purpose of fulfilling customers need and also to increase return value. Accordingly, they are under the Second category of projects that are mentioned above.

2.2.4. Project Management

Project Management Institute, (2013: 5) defines Project management as an application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. Similarly, Chandra (1995) defines Project management as an organized venture for managing projects, involves scientific application of modern tools and techniques in planning, financing, implementing, monitoring, controlling and coordinating unique activities or task produce desirable outputs in accordance with the determined objectives within the constraints of time and cost. Chandra's definition of project management is used as operational meaning in this study. Project management is accomplished through the appropriate application and integration of the different logically grouped project management processes, which are categorized into five Process Groups. According to PMI (2013: 5), these five Process Groups are: Initiating, Planning, Executing, Monitoring and Controlling, and Closing. These Project management processes will be discussed below as an independent topic. McNamara (2002: 1) stated that project management is a carefully planned and organized effort to accomplish a specific (and usually) one-time effort, for example, construct a building or implement a new computer system. Project management includes developing a project plan, which includes defining project goals and objectives, specifying tasks or how goals will be achieved, what resources are need, and associating budgets and timelines for

completion. It also includes implementing the project plan, along with careful controls to stay on the "critical path", that is, to ensure the plan is being managed according to plan. Project management usually follows major phases (with various titles for these phases), including feasibility study, project planning, implementation, evaluation and support/maintenance. Heerkens (2012: 11) Stated "The project management process calls for the creation of a small organizational structure (the project team), which is often a microcosm of the larger organization. Once the team has produced the desired outcome, the process then calls for the decommissioning of that small organizational structure."

2.2.5. Project Management Processes
Project management processes can be described in terms of the integration between the processes, their interactions, and the purposes they serve. As mentioned above, project management processes are grouped into five categories known as Project Management Process Groups (or Process Groups) (PMI, 2013: 3):

a. **Initiating Process Group.** The processes in this group are used to define a new project or a new phase for ongoing project by having authorization for starting the project/phase.

b. **Planning Process Group.** The processes in this group are used to set scope and objectives for a project as well as to list down course of actions used to achieve those objectives.

c. **Executing Process Group.** The processes in this group are used to perform works of the project that are defined in the project management plan to achieve project requirements.

d. **Monitoring and Controlling Process Group.** The processes in this group are used to follow, review, and facilitate the flow and performance of a project. The processes are also used to identify the need for changes and execute them.

e. **Closing Process Group.** The processes in this group are used to finalize activities of a project or phase in a formal way. These project management process groups describe project in terms of phases. They involve several areas of project management applications. These areas refer to as 'project management knowledge areas.

2.2.6. Knowledge areas of Project Management
Projects are divided into components, and a project manager must be knowledgeable in each area. A Knowledge area stand for a complete set of concepts, terms, and activities that create a specialized professional field known as project management. Project teams should use these

Knowledge areas and other extension Knowledge areas for specific project types, as appropriate. There are ten general project management knowledge areas which are: project integration management, project scope management, project time management, project cost management, project quality management, project human resource management, project communications management, project risk management, project procurement management and project stakeholder management PMI (2013).

2.2.6.1. Project Integration Management

Project integration management includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the project management process groups. In the project management context, integration includes characteristics of unification, consolidation, communication, and integrative actions that are crucial to controlled project execution through completion, successfully managing stakeholder expectations, and meeting requirements (PMI,2013:63).

According to Saylor.org (2009: 25) Flowcharts, diagrams, and responsibility matrices are tools to capture the work processes associated with executing the project plan. The first draft of the project procedures manual captures the historic and intuitional knowledge that team members bring to the project. The development and review of these procedures and work processes contribute to the development of the organizational structure of the project. Project integration management incorporates allocation of resources, prioritizing among objectives and alternatives, managing the interactions among the rest of project management Knowledge Areas and creating an environment that encourages team members to fully engage in the project and encourages innovative approaches to developing the project plan. Project integration management processes include the following (PMI, 2013: 63):

- Develop project charter
- Develop project management plan
- Direct and manage project work
- Monitor and control project work
- Perform integrated change control
- Close project or phase

2.2.6.2. Project Scope Management

According to PMI (2013: 106), project scope management comprises the processes required to make sure that the project is armed with all the appropriate efforts to accomplish the project as need. Project scope management includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully (PMI, 2017). Mirza, Pourzolfagha and Shahnazari (2013), a major contribution to unsuccessful projects is the lack of understanding or defining project and product scope at the start of the project. A properly defined and managed scope leads to delivering a quality product, in agreed cost and within specified schedules to the stake-holders. PMI (2013: 106) listed the following specific efforts as part of project scope management:

- Plan scope management
- Collect requirements
- Define scope
- Create WBS
- Validate scope
- Control scope

2.2.6.3. Project Time Management

Project time management includes the processes required to manage the timely completion of the project (PMI, 2017). The importance of ensuring work proceeds efficiently within individual tasks, along with the interfacing of related tasks, is a key message in project time management (Hameri & Heikkila, 2002: 143, cited in Pasian, 2011: 19). The ultimate measure being project success, based on effective control of time management processes, tools and practices. The development and management of realistic project schedule and project plan is a primary responsibility of the project manager to complete the project on time. Accordingly, project time management includes the processes required to manage the timely completion of the project such as the following (PMI, 2013: 141):

- Plan schedule management
- Define activities
- Sequence activities
- Estimate activity resources

- Estimate activity durations
- Develop schedule
- Control schedule

2.2.6.4. Project Cost Management

The definition of project success often includes not only completing the project on time, but also completing the project within budget. Developing and controlling a project budget that will accomplish the project objectives is a vital project management skill. Project cost management includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget. Project cost management processes include the following (PMI, 2013: 193):

- Plan cost management
- Estimate costs
- Determine budget
- Control costs

2.2.6.5. Project Quality Management

Hoyer and Hoyer (2001:55-59, Cited in Oschman, et al., 2006) defined quality as "the total composite product and service characteristics of marketing, engineering, manufacturing and maintenance through which the product and service in use will meet the expectations of the customer." Project quality management includes the processes and activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken. Project quality management uses policies and procedures to implement, within the project's context, the organization's quality management system and, as appropriate, it supports continuous process improvement activities as undertaken on behalf of the performing organization. Project quality management works to ensure that the project requirements, including product requirements, are met and validated (PMI, 2013: 227).

Project quality focuses on the end outputs that reflect the purpose of the project. The project manager is accountable for developing a project implementation mechanism that gives a clear understanding of the expected project outputs and the quality specifications. In order to do so, (PMI, 2013:227) listed the following project quality management processes:

- Plan quality management
- Perform quality assurance
- Control quality

2.2.6.6. Project Human Resource Management

Human resource management is a branch of management which deals with people at work in an organization. Armstrong (2006: 1) defined HRM as a strategic and coherent approach to the management of an organization's most valued assets – the people working there who individually and collectively contribute to the achievement of its objectives. Storey (1989, cited in Armstrong, 2006: 1) believed that HRM can be regarded as a 'set of interrelated policies with an ideological and philosophical underpinning'. Mathis and Jackson (2006:11-13) stated human resource management involves several activities such as HR Planning and Analysis, equal Employment Opportunity, staffing, HR Development, compensation and benefits, health, safety, and security, employee and labor/management relations. As one wing of human resource management, project human resource management includes the organizing, managing, and leading the project team. The project team consists of the people with assigned roles and responsibilities for implementation of the project. Staffing the project with the right skills, at the right place, and at the right time is an important responsibility of the project management team. Although, roles and responsibilities are assigned for project team members, it is important to involve all of them in the process of project planning to add their experience to the process as well as to motivate them so that their commitment will be stronger.

PMI (2013: 266) stated project human resource management processes as the following:

- Plan human resource management
- Acquire project team
- Develop project team
- Manage project team

2.2.6.7. Project Communications Management

Completing a complex project successfully requires teamwork, and teamwork requires good communication among team members. The processes of project communications management are required to ensure timely and appropriate planning, collection, organization, storage, retrieval, and management of project information. Project managers devote most of their time to communicate with team members and other involved bodies, whether they are insiders or outsiders of the organization. Effective communication creates a hinge between the different involved bodies having different background, different experience, and different viewpoints which has significant impact on the bottom line of a project. Project communications management processes include the following (PMI, 2013: 287):

- Plan communications management
- Manage communications
- Control communications

2.2.6.8. Project Risk Management

Risk is the probability of deviation of an out come from expectation. Risk exists on all projects. The role of the project management team is to understand the types and levels of risks on the project so that they can develop and implement plans to diminish these risks. The type and amount of risk varies by industry type, complexity, and phase of the project. The project risk plan will also reflect the risk profile of the project manager and key stakeholders. People have different position on facing risks which place on a continuum from risk averse to risk taker. The key discipline of project risk management lacks the optimality that is assumed in best practice standards. Renn (1998: 64, cited in Kutsch, 2008: 2) argued in this context that the set of assumptions of a mainly objective analysis of risk "is a virtue as much as it is a shortcoming". The highest ranked factor for project failure (Whittaker, 1999, cited in Kutsch, 2008: 2) is project risk management, the systematic process of identifying, analyzing, and responding to risks as project-related events or conditions which are not definitely known and which have the potential of adverse consequences on a project objective (PMI, 2013: 310). So, care has to be taken on the proper management of risk management. The objectives of project risk management are to increase the likelihood and impact of positive events, and decrease the likelihood and impact of negative events in the project. Project risk management involves processes such as the following (PMI, 2013: 309):

- Plan risk management
- Identify risks
- Perform qualitative risk analysis
- Perform quantitative risk analysis
- Plan risk responses
- Control risks

2.2.6.9. Project Procurement Management

PMI (2013: 366) stated that Project Procurement Management includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team. The organization can be either the buyer or seller of the products, services, or results of a project. But, as Saylor.org (2009: 37) explained, the procurement effort on projects varies widely and depends on the type of project. So that, Project Procurement Management includes the contract management and change control processes required to develop and administer contracts or purchase orders with variety of efforts. For a successful accomplishment of Procurement, Project Procurement Management processes includes the following (PMI, 2013: 366):

- Plan procurement management
- Conduct procurements
- Control procurements
- Close procurements

Nasir (2011: 42) stated that there are six types of procurement and contract delivery systems. These are:

- Force Account
- Design-Bid-Build (DBB)
- Design-Build (DB) or Turnkey
- Finance/ Build Operate System (BOT)
- Construction/Facility Management Consultancy, &
- Alliances and Outsourcing

Selection of the type of procurement and contract management delivery system is affected by size of a project, financial capability of the client, experience, previous performance of the contractor, and other factors.

2.2.6.10. Project Stakeholder Management

Stakeholder management has been one of the core soft skills areas that have been highlighted as being necessary for PM to advance (Crawford, 2005; Morris, *et al.*, 2006; Winter *et al.*, 2006, cited in Bourne & Walker, 2007: 129). The processes of project stakeholder management necessary to identify entities those could impact or be impacted by the project, to assess expectations of stakeholders, and to develop suitable managerial strategies to be well benefited from the involvement of stakeholders. Legris and Collerette (2006, cited in Pasian, 2011: 21) emphasize stakeholder management as a contribution that can improve the implementation process. Field *et al*. (2006, cited in Pasian, 2011: 21) echo this view when they argue that effective stakeholder management (possibly through a Strategic Management Framework) can minimize changes in project planning and increase quality specifications (as opposed to quantity specifications). It is implied in researches that strategic management can impact cost control during project implementation. Stakeholder management also gives attention on smooth communication with stakeholders to recognize their expectations, deal with issues resolution of conflict of interests. Stakeholder satisfaction should be considered as the heart of any project. A well-structured project management involves the following processes (PMI, 2013: 391):

- Identify stakeholders
- Plan stakeholder management
- Manage stakeholder engagement
- Control stakeholder engagement

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2.2.7. Manufacturing sector in Ethiopia

Over the last decades the Ethiopian manufacturing sector has experienced rapid expansion in terms of the number of firms, sales, and employment.

CSA (2009 E.C), the number of persons engaged in manufacturing industries between 2005 and 2009 E.C was over 298,510. In Ethiopia the manufacturing sector is divided in to sub-sectors: -

- Food and beverage products industry,
- Textiles and Apparel products industry,
- Leather and Leather products industry,
- Wood, Paper and Pulp products Industry,
- Chemical and Chemical products industry,
- Rubber and Plastic Products industry,
- Other non-metallic mineral products industry,
- Metal and Engineering products industry

The plastic industry is categorized in the Rubber and Plastic Products industry sub-sector. Over the last three years it shows a steady increase of persons working in the manufacturing sector more than 14% in the rubber and plastic industry in 2016/17. The total number of large and medium scale manufacturing industries reported in 2016/17 was 3627. About 39% of the manufacturing industries were located in Addis Ababa followed by Oromia with more than 29% and Amhara with about 14% of the industries (CSA, 2016/17). Over the period of 2005-2009 the total gross value of production of manufacturing industries has displayed an appreciable increasing. The total gross value of production in 2016/17 was about 167 billion Birr. The food and beverages, non – metallic mineral, rubber and plastic, and basic iron & steel industries have also shown an exceptionally increasing trend over the same period of performance. The same industries contributed more than 32%, 16%, 7% and 6% of the gross value of production to the total in 2016/17, respectively, in the same order.

The manufacturing landscape of Ethiopia is somewhat unusual, compared to most other African countries. The business environment is reasonably favorable, but the sector is extremely small and, in relation to other sectors of the economy, not growing. For over 20 years, the share of manufacturing value added in total value added in Ethiopia has varied between 4-5%. Manufacturers are expected to play a central role in the Growth and Transformation Plan of the

Ethiopian government that aims, among other things, to make Ethiopia a lower middle-income country by 2025. There is considerable potential for growth and development of the sector, and it's my hope that this chapter has identified some areas in which obstacles need to be better understood and subsequently removed in order for the sector to take off.

2.2.7.1. Plastic industry in Ethiopia

The plastic product industries were among the major targeted manufacturing industries for first round GTP (Growth and Transformation Plan) in Ethiopia. The government of Ethiopia planned to enhance the capacity of the subsector to substitute imported goods of plastic products. In the production of plastic, the GTP put to increase total production of plastic produced domestically to reach 37,000 tons per year to meet about 30% of the domestic demand (GTP policy matrix, 2010, Volume II). The number of establishments under this subcategory according to the data obtained from CSA (2014) indicated that there were 154 establishments under this subcategory and only 7 of them were under the management of the public. Most of them were owned by private management. Plastic dishes, plastic crates etc. were the major products produced in the manufacturing of plastic subsector. But now a days the sector is getting wider and the number has grown exponentially. Currently, there are 158 private plastic industry establishments that are owned by private management which are located in Sebeta town.

According to (Gessesse, 2017, Ethiopia eyes shifting from importing to exporting plastic products section)

The history of plastic products manufacturing in Ethiopia has a 50 years long history, but the country still import plastic products such as, laminated PP bags used for packaging by cement and sugar manufacturers are being imported. Currently there are a total of 350 plastic manufacturing companies in Ethiopia producing 12 categories of products ranging from automotive tire to the latest wood and plastic blend home partitions and PVC made tiles and small household furniture. The factories employ a total of 19,000 people while there are also hundreds of small plastic product manufacturers at small scale in different parts of the country. The number of both foreign and local investors in the plastic manufacturing has been increasing every day. It is gradually meeting the local demand and moving towards export soon. The investment growth of the sub sector [plastic and rubber] is in line with the Institute's target of an average 20% annual growth. The total volume of plastic products produced by the factories in 2016 was worth 12 billion birr (over half a billion

dollars). Meanwhile still 90% of the inputs of the products are still imported. Annually the country imports a total of 170,000 tons of raw materials such as PVC and polypropylene, among others.

The material used in the plastic industry includes polyvinylchloride granules nylon, polytetra, flonoroethylen granules, polyurethane granules, dyes, antioxidants, fillers, polypropylene granules. The plastic products manufacturing establishments largely depend on imported raw materials as mentioned above.

Plastic industry is vulnerable to volatility in the global price of oil and gas feed stocks, used by the chemical industry to produce its raw and semi-finished materials, according to November 2014 research paper on Ethiopian plastic industry by Alemayehu Tesfaye who asserted that the leading markets for plastics in Ethiopia are in packaging, building and construction and the automotive/transport industries.

In Ethiopia it is by law forbidden to produce plastics with thickness of less than 0.3 mm, which cannot be reused. The plastic industries focus on plastic pollution they use recycled waste products including byproducts of petroleum. Eng. Yonas Abate (Plastic and Rubber Industries Development Director at the state-owned Ethiopian Chemical and Construction input Industries Development Institute) suggests the best solution is teaching and changing the attitude of the public towards waste management.

2.2.7.2. Manufacturing plastic products in Ethiopia

The most common methods of processing plastics to manufacture plastic parts include Extrusion, Injection molding, plastic injection molding process, Blow molding, Casting, etc. Among these, the study focuses on plastic industries that use plastic injection molding process since it is the most significant for local industry and most of the industries in Sebeta use this method. Almost all manufacturing companies use parts that are injection molded, whether they make toys, home-appliances, electronics or electrical parts, watches, computers, etc. (Sridhar & Kumar, 2013).

In Plastic Injection molding process, plastic products are produced by forcing the resins made of plastic materials by application of high pressure into a mold where it is cooled, allowed to solidify and after that taken out from the mold by opening cop and drag part of the mold. Articles having complicated shapes and geometries with great dimensional accuracy can be easily produced by the plastic injection molding process (Vikas & Kumar, 2013). Plastic injection molding machine consist of three units namely Clamping Unit, the Injection Unit, and the Drive Unit. The functions

of the clamping unit are to hold the mold, close and open during the operation. The fixed and moving plates, the tie bars and the mechanism for opening, closing and clamping are the parts of the clamping unit. The injection unit or plasticizing unit melts the polymer resins and injects it into the mold. The drive unit provides power to the plasticizing unit and clamping unit. The Basic requirement to produce article by plastic injection molding process is the preparation of mold, runner system, gate location and sprue design and selection cooling channels and location of the cooling channels (Ľudmila and František, 2012). Injection molding process can be performed in four steps: -

Step-1: The process starts with selection of the product which is going to be produced and selection of suitable of plastic resin which fits in characteristics of the product such as tensile strength, compressive strength, stiffness etc.

Step-2: Preparation of mold, runner, gate and process parameters.

Step-3: Injecting the melt resin into the cavity and allowing it to solidify.

Step-4: Taking out the final product from the mold.

2.2.7.3. Plastic industry projects

Lock (2001:2-3), classifies projects under four main headings based on type of works that projects involve. Out of the four main headings manufacturing projects is one of them.

Manufacturing Projects

Manufacturing projects result in a piece of mechanical or electronic equipment, a machine, ship, aircraft, land vehicle, or some other product or item of specially designed hardware. The finished product might be purpose-built for a single customer but internal research and development projects for products to be sold in all market sectors also fall into this manufacturing category. Manufacturing projects are usually conducted in a laboratory, factory, shipyard, hangar, or other home-based environment, where the company should be able to exercise on-the-spot management and provide an optimum environment in which to do and manage the work.

Up on establishment of factories for producing goods, projects are often conducted. Different additional projects will also be executed after the establishment of a factory for different purposes such as new product development. These post-establishment projects are called manufacturing projects. Plastic industry projects are categorized in this section, it might be new product

development project, plastic industry establishment project, plant expansion project, etc. Most of the plastic industries in Ethiopia are managed by private owners. The plastic industries developments opportunities were created by government investment policy. The investment policy offers investors land to establish an industry with a pre request of Pre-feasibility/Feasibility study of a project. This study addresses private plastic industries that are in an operating phase. The figure below shows the investment project cycle and the projects in an operating phase.
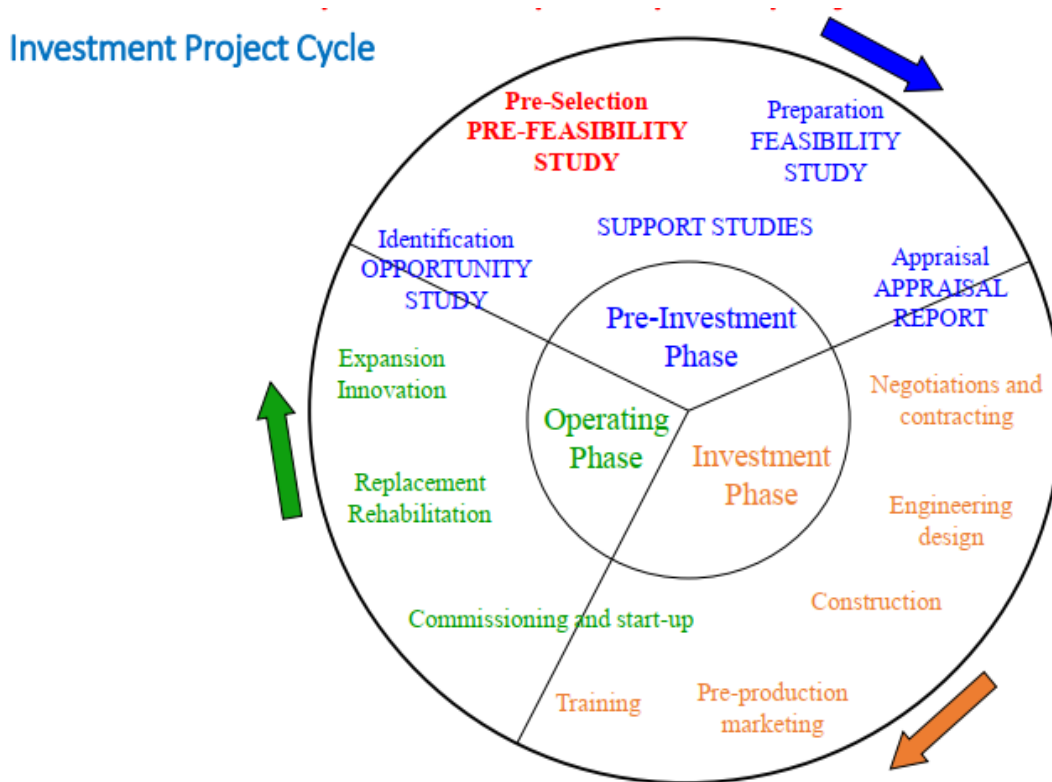
Source: PMBOK

Figure 2. 1 Investment project cycle

2.2. Empirical literature

As it is waved throughout the theoretical review part, effective project management is essential for accomplishing projects with achieving the requirements. Unfortunately, different problems are seen by scholars and researchers that projects encountered. There are not many studies that were conducted in this area; as a result the study reviewed studies that were similar to this area. Among the researches some studies with critical issues in the area of Project Management are reviewed in this section.

STEPHEN GITONGA NJIRU (2018) has tried to investigate the influence of project management practices on the implementation of projects in manufacturing companies in Nairobi City County, Kenya. The study adopted a descriptive research design. The target population was 49 manufacturing companies from the industrial area of Nairobi City County. The targeted respondents were 294 comprising of 49 project managers and 245 project team members. The study used stratified sampling method to ensure that all cases are well represented and use simple random sampling method to select the respondents. The sample size was 169 respondents. Data was collected using questionnaires and analyzed using both descriptive statistics and regression analysis.

The study established a positive and significant relationship between stakeholder participation, leadership support, communication and resource allocation and project implementation.

The study concludes that community participation during implementation of projects in manufacturing companies is vital as it leads to better outcomes for all stakeholders, stakeholder ownership and lower project costs. Leadership support is considered one of the critical success factors in project implementation, effective executive involvement can significantly improve project success. Maintaining open, regular and accurate channels of communication with all levels of project staff and stakeholders is vital to ensuring the effective implementation of capital expenditure projects. Allocation of resources helps managers to bring together more productive and effective project teams and workgroups and enables them to appraise their schedules and easily estimate resource availability in real-time.

BEFKADU W/KIDAN (2017) examined the application of the project management practice in public sector in Ethiopia. The study assesses project management practices according to project management knowledge areas and project management process groups.

To determine sample size of the study, the researcher use a method developed by Carvalho (1984, cited in Kelil, 2010: 8). Major data for the assessment are obtained from 24 Real Estate companies through questionnaire and data are also gathered using interviews from consultants, instructors, and Real Estate house owners for cross checking the information found from the Real Estate companies. Mean, standard deviation, correlation, regression, and other quantitative and qualitative analysis tools are used.

The findings reveal that Project integration, scope, time, HR, procurement, and claim are well managed in the Industry. In addition to this, Project initiation process groups and project closing

process group are practiced well and consistently. On the contrary, the other knowledge areas and process groups are either poorly practiced or inconsistently applied or both throughout the Industry. It is also found that the practice of project management has significant contribution to success of Ethiopian Real Estate projects.

The study forwarded a recommendations for Real Estate companies to maintain their good project management practices that are mentioned above, to improve the other knowledge area and process group practices, to consider causes of delay, cost escalation, and poor quality while making project decisions, to continuously conduct customer satisfaction survey to cop up with the new dimension of project success, and to have project management Information Systems. The study advised to establish Real Estate Association at industry level and to set project management standards by government at national level.

Misgana Aragaw Mekuria (2019) aimed to identify and evaluate the challenges encountered through project management practices in Ethiopian Airports Infrastructure development projects. A descriptive research method was used in order to achieve the intended purpose of the study. Questionnaire, interview and review were used for the purpose of collecting required data for the study. Purposive sampling technique was employed in selecting the samples. The data were analyzed using software Statistical Package for Social Science (SPSS V.20) to generate mean, frequencies, standard deviation and percentages of the statics.

The study found out that among 45 challenging factors identified in the literature participants are agreed on 18 factors as a significant challenge in projects they have been involved recently. Again ten of the identified factors are the major significant challenging factors these are; These are Lack of Project Management Skills and training in project management; Unexpected events with no effective response possible; Project schedule delays; Changing requirements late in the project and continuing change requests; Low commitment of Stakeholders towards planned projects; Failure to manage expectations; Poor risk management; Not obtaining stakeholder approval; Low commitment of Stakeholders towards planned projects; Lack of clearly defined Rules and procedures for project management. Furthermore, the study revealed that factors within four knowledge areas including Enterprise Environmental factors are significantly challenged; these are Project Risk Management, Project Schedule Management, Project Stakeholder management and Project Scope Management.

Based on the findings, the researcher suggested that stronger emphasis should be given on the major challenges identified in the study, appropriate project management methodology should be adopted and all factors should be studied carefully.

2.3. Research Gap

An in depth review of theoretical and empirical review literatures have been done which provided the different project management practices conducted in the previous studies. This research is categorized in the manufacturing sector, the similarities from the above literatures is that it focuses on the assessment of project management practices in industries. The researcher has reviewed and reached in to conclusion to assess project management practices in private plastic industries in terms of project management knowledge areas. What makes this study differ is that there are not a lot of literatures available and studies conducted on the area particularly in Ethiopia. Therefore, to fill this gap this study aims to assess project management practices of plastic industries with respect to project management knowledge areas. The study focuses on private plastic industries located in the Oromia special-zone, Sebeta town. Sebeta being the nearest suburb of the capital city Addis Ababa, is among the fastest growing town where a number of investors host their manufacturing plants. There are 158 plastic industries in this town. Out of these industries the study focuses on selected industries. The case studies are selected based on the criteria of their willingness to participate, accessibility, project type, i.e. those working on product development projects and expansion projects. This research allows the plastic industries to have a well tight management system and well-organized project management plan which will ultimately allow them to be dominant in the plastic business and also acts as a benchmark for future endeavors.

2.4. Conceptual framework of the study

This sub-section includes explanation of various concepts that were raised in this study.

In this study the PMI's definition of project is used; project is a temporary endeavor under taken to create a unique product, service, or result. In this study, the temporary endeavors are the different plastic industry development projects carried out by the selected plastic industries. The unique product/services are the expansion of the industries in production, construction, performance and development of new product and also the plastic products quality to be rendered to the customers. To perform the plastic industries projects effectively, there must be managerial efforts in the day-to-day activities. Project Management Institute, (2013: 5) defines Project management as an application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. This is also chosen by this study among the different project management definitions. This project Management practice can be described in several points of views. In this research, project management is viewed using project management knowledge areas. The project management knowledge areas that are used in the study are obtained from PMI (2013). These project management knowledge areas together are project integration management, project scope management, project time management, project cost management, project quality management, project human resource management, project communications management, project risk management, and project procurement management.

CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.1. Research Design and Approach

The main objective of the study is to assess project management practices that were practiced by the selected private plastic industries to navigate their projects.

This research has used a mixed research approach, both qualitative and quantitative research. Mixed methods research were used because the research involves collecting, analyzing and integrating quantitative (e.g., observations, surveys) and qualitative (e.g. interviews) research. This research approach were used to provide a better understanding of the research problem than either of each alone, by mixing both quantitative and qualitative research and data, the researcher used qualitative method to triangulate the responses obtained from the close ended questionnaires. The research uses both quantifiable and unquantifiable data. It is quantitative since it uses quantifiable data in a closed ended questionnaire which helps respondents to be within the scope. It is qualitative research since it describes the actual condition of project management practice in the private plastic industry in a non-numerical ways aided by the quantitative approaches.

According to Meenu Mishra Pandey (2015: 84), the term descriptive is used for the techniques of investigation by a direct observation of a phenomenon or a systematic gathering of data from population by applying personal contact and interviews when adequate information about certain problem is not available in records, files and other sources. This research uses a descriptive research design. It assesses the selected private plastic industries project management practices using questionnaires, on site observations and interviews. Main source of data are selected private plastic industries. Accordingly, responses gathered through questionnaires from these selected private plastic industries are used as a main ingredient for the analysis. Data obtained from consultants, instructors/researchers, and plastic industry owners is used for cross checking purpose.

3.2. Population and Sampling Technique

The study is conducted on private plastic industries in Sebeta. To determine the sample size of the study, the study first defined the target population. According to Hair, *et al*. (2010), target population is said to be a specified group of people or object for which questions can be asked or observed made to develop required data structures and information. In Sebeta there are 158 Private Plastic Industries registered by Sebeta Investment Office. Accordingly, 158 is the total population size. From these industries most of them were temporarily closed and the ones' who do manufacture were reluctant to participate because of the global pandemic covid 19. This makes the study to select industries that are willing and currently performing projects. Therefore, based on accessibility, willingness to participate, and project type: those working on new product development, and expansion projects, and plastic industries that are in the operating phase (currently producing plastic products) five (5) Private Plastic Industries were taken from the total population. Secondly, purposive sampling technique was used to select study participants in order to get the right respondents who are capable of giving the relevant and accurate information based on the practical experience they have regarding the issues under study. Purposive or judgmental sampling enables you to use your judgment to select cases that will best enable you to answer your research question(s) and to meet your objectives (Sanders, *et al*., 2009).

Each selected Private Plastic Industries has a large number of employees. Since the size of target population under study is large and difficult to manage the researcher decided to focus on selected employees from the selected private plastic industries like employees with a lot of experience who have been working in the industry projects, Project managers, Team leaders, Team members, Managers of each department in the industry, Owners of the industry, Consultants who has relation to the sector, Technicians, Engineers, and others technical experts who are related to plastic industry projects. So, the researcher selected ten (10) employees (Project managers, Directors and Project coordinators, etc.) from each selected Private Plastic Industries, 10 respondents were chosen based on the job positions available in the plastic industry projects like Project manager, Director, Team leader, Technical team member, Project coordinator, and Support staffs (individuals who participated in the projects in small level like:- in the industry expansion constructions,…) and to fulfill this 10 questionnaire for each 5 industries were distributed where the 6 questionnaires distributed considering the employees working on the 6 positions mentioned

above where the other 4 questionnaire were distributed to consider those employees who works on the same job positons such as:- there might be many support staffs/technical team members in the project that might be working. Information is also collected from 2 consultants that have been working in the Plastic industry sector for many years. This information is used to cross check responses forwarded from plastic companies. Snowball sampling technique is used. This means, the researcher contacts few of the consultants and these selected consultants are the one inviting other consultants to fill the questionnaire. Interview session was also held with five (5) management level members from the managers of each of the selected plastic industries in order to get further information regarding the practices of project management on the Private Plastic Industries infrastructure development projects in addition to the information gathered through questionnaire.

Table 3. 1 Selection criteria

No.	Selected plastic industries	Experience	Capital	Investment Project Cycle	Projects
1	Sintayehu Tesfaye plastic industry	3 years	69,000,000	Operating phase	Expansion and New product development projects
2	Natran plastic industry	28 years	212,843,000	Operating phase	Expansion and New product development projects
3	Muluken Weynu plastic industry	13 years	75,000,000	Operating phase	Expansion and New product development projects
4	Birhan cosmetic's plastic industry	8 years	85,000,000	Operating phase	Expansion and New product development projects
5	Bekalu plastic industry	10 years	10,300,000	Operating phase	Expansion and New product development projects

Source: survey data (2021)

For this study selection criteria were developed for the purpose of selecting from the industries that were willing to participate and currently performing projects to address industries with different experiences and capital to better understand the level of utilization of project management practices in different level of the sector. Accordingly, for selecting 5 private plastic industries, the above criteria in table 3.1 were used.

3.3. Data type and sources

The study used both primary and secondary types of data. The primary data for this research is acquired from sample respondents who are selected from selected private plastic industries. The secondary data was referred from Sebeta Investment Office, different published books, internet web sites, journals, and previous research papers.

3.4. Methods of Data Collection

To collect all the useful information and data necessary for the study, the following data collection methods were used: questionnaire, direct interview, direct observation during on-site visit, and document review. The questionnaire were used to gather data from Private Plastic Industries about their projects, this questionnaire is a hybrid of open-ended and close-ended questions and a questionnaire were also used to gather data from consultants about their observation toward Plastic Industry projects and project management practices, this questionnaire is composed of fully open-ended questions. The interviews were conducted with managers and sebeta investment office employees concerned in this sector to acquire their opinion in Plastic industry project management practices. The direct observation on Plastic industry sites were visited for understanding the actual experience about their projects and practices.

Secondary sources of the study are different published books, internet web sites, journals, and previous research papers. Published books were used to review related theoretical literatures, to set background for the study, also for interpretation of research findings. Journals and research papers were used as bases for conducting this study to attempt adding some new findings on the existing knowledge. Internet web sites were the sources of unpublished as well as published books, journals, and research papers. They were also used as mediums for acquiring posted scholars' and individuals' opinion on the area of project management.

3.5. Data Analysis Methods

After the data were collected from different sources, it was organized and presented in different forms. In this study both qualitative and quantitative methods of data analysis were employed. Analysis of data in this research was done by using statistical tools like frequencies, mean, and standard deviation. Descriptive analyses were used for demographic factors such as gender, age, educational level, Job position and work experience.

Data that were used for qualitative analysis are presented in statement forms as part of the interpretation. Qualitative models are applied for describing and interpreting responses from different respondents.

Quantitative analysis is also used in this study. For instance, frequencies, means and standard deviation were applied to measure central tendency so as to have representative values for responses of questionnaires. For the quantitative analysis SPSS V.25 (Statistical package for social science) was used to simplify cumbersome mathematical efforts.

3.6. Reliability and Validity

Validity test involves checking whether the data collection instrument will give data regarding the intended objective of the study (Orodho, 2005). The researcher used content validity test to ensure that the questionnaires are put in simple language that the respondents could easily understand and check for clarity of questions. This was achieved by consulting the supervisor as the expert and also peer review in which they evaluated whether the questions included in the questionnaires and interviews enable to collect the necessary data or not. Content validity were also be traced to check the questions in the questionnaires are fairly distributed among the different knowledge areas of the study, particularly on project management.

Reliability as described by Cooper and Schindler (2011) is carried out to test the internal consistency of the questionnaire. Cronbach's alpha coefficient was utilized to obtain a correlation coefficient of the test scores. Mugenda and Mugenda (2003) indicates that test scores ranges between 0 to 1 and the instruments is considered reliable if the test score is closer to 1. Different authors accept different values of this test in order to achieve internal reliability,

but, satisfactory value is required to be more than 0.6 for the scale to be reliable (Sekaran, 2003 as cited by Sirbel, 2012).

Table 3. 2: Reliability of each project management knowledge areas

No	Project management knowledge area	Cronbach Alpha	Number of items
1	Project integration management	0.858	6
2	Project scope management	0.791	5
3	Project time management	0.969	4
4	Project cost management	0.955	4
5	Project quality management	0.937	3
6	Project human resource management	0.934	3
7	Project communication management	0.973	5
8	Project risk management	0.974	6
9	Project procurement management	0.899	6

Source: survey data (2021)

Table 3. 3: Reliability of the study

Reliability Statistics		Result
Cronbach's Alpha	N of Items	
.799	42	Reliable

Source: survey data (2021)

For the sake of increasing both the reliability and validity of data, triangular method was used. Accordingly, data were collected from different stake holders to cross check among the responses from different sources. Different data collection techniques were also used such as questionnaire, interview, and observation to fill the weakness of one technique by the strength of the other. For instance, interviews were used to check the questionnaires' responses by having a face-to-face communication. In addition to this, facts on sites were observed.

3.7. Ethical Considerations

To maintain ethics during the data collection period, the researcher first obtained an introductory letter from the University in order to introduce himself to the relevant authorities concerned. The respondents were requested to participate in the study by first explaining to them the intended purpose of the study and assured them that none of the third party will access the information they disclose to the study. They were assured of confidentiality of the information they provided. They were not required to write their names in the questionnaires or interview schedules. The respondents were not forced to participate it was rather focused on participants who were voluntarily agreed to participate in the study. The researcher presented the questionnaire in easier form for the respondents. The researcher maintained humility and conducted the research with utmost honesty avoiding distortions and misleading data manipulation. The researcher also endeavored to arrive at conclusions based on objective inferences that are purely and blindly guided by the data collected. The analysis of data and interpretation of the results of data analysis were restricted to what the data actually tell.

CHAPTER FOUR
RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the data collected through primary tools. This was guided by the objectives to present empirical evidence to agree or controvert. The main objective of study was to assess Project Management practices in private plastic industries using project management knowledge areas as lenses. Descriptive statistics have been used to describe respondents' characteristics. Further mean and standard deviation analysis has been used to perform assessment on the practice of project management against the average practice of project management knowledge areas.

Return Rate of Response

The researcher issued 50 questionnaires and had a return rate of 50 or hundred percent (100%) response rate. Questionnaire Return rate= 50x100/100= 100%. The response rate as per the calculation is 100% and the data presentation, analysis and interpretation was done accordingly.

4.2. Description of respondents' characteristics

Here, a frequency analysis was conducted for the profiles related to the general information about the respondents. This information includes education level of the respondents, working experience of the respondents and job position of the respondents. The analysis of the collected data is presented in table followed by interpretations.

Table 4. 1 Description of respondents' characteristics

Characteristics	Frequency	Percent (%)
Job Position		
Director	5	10.0
Project Manager	5	10.0
Project Coordinator	3	6.0
Team Leader	5	10.0
Technical Team Member	10	20.0
Support Staff	22	44.0
Total	50	100.0
Educational Background Qualification		
High School completed	1	2.0
Diploma	1	2.0
BA/BSc	44	88.0
MA/MSc	4	8.0
PHD	0	0.0
Total	50	100.0
Experience in years		
Less than 5 years	10	20.0
5-9 years	21	42.0
10-15 years	15	30.0
Above 15 years	4	8.0

Source: survey data (2021)

4.2.1. Job Position

Table 4.1 shows that the majority (44.0%) of the respondents are support staff workers, 20.0% are technical team members, 10.0% are team leaders, 6.0% are project coordinators, 10.0% are project managers, and 10.0% are directors. This is an indication that the respondents are diverse in their level of jobs and will have a different perspective to contribute to the study effectively.

4.2.2. Work Experience
Table 4.1 shows that the majority (42.0%) of the respondents had worked for a period of between 5-9 years, 30.0% between 10 to 15 years, 20.0% for less than 5 years and 8.0% above 15 years. This is an indication that majority of the respondents had worked for a period long enough and had a wealth experience to contribute to the study effectively.

4.2.3. Educational Level
Table 4.1 shows that the majority (88.0%) of the respondents had attained bachelor's degree, 8.0% masters, 2.0% diploma and 2.0% high school completed. This shows that majority of the respondents had attained a degree level of education which helps the study in a way that the respondents are educated to answer the questionnaire and give a good information which would therefore contribute adequately to the study.

4.3 Project Management Practices in Terms of Project Management Knowledge Areas

According to Oxford & Burry-stock (1995) scales, a mean score 1.0-2.4 is low scores, a medium is between ranges 2.5-3.4 and high is between ranges 3.5-5.0. Different authors have their own way of saying low and high for mean scores. For this study the researcher used the average mean and mean score of each project management knowledge areas processes to assess whether the industries has/are practiced/practicing the knowledge areas.

4.3.1. Project Integration Management
Project Integration Management is the first knowledge area sought to establish the practice of project management on the private plastic industries projects in Sebeta.
The findings are shown in Table 4.2.

Table 4. 2 Means and standard deviation of the items in Project integration management

Project integration management	SDA		DA		UD		A		SA		Mean	SD
	F	%	F	%	F	%	F	%	F	%		
A project charter was developed	1	2.0	2	4.0	5	10.0	31	62.0	11	22.0	3.98	0.820
A project management plan was developed	1	2.0	5	10.0	5	10.0	33	66.0	6	12.0	3.76	0.870
The project execution was	0	0	1	2.0	5	10.0	34	68.0	10	20.0	4.06	0.620

directed and managed												
A project work is monitored and controlled	1	2.0	12	24.0	22	44.0	6	12.0	9	18.0	3.20	1.069
An integrated change control is performed	1	2.0	9	18.0	25	50.0	4	8.0	11	22.0	3.30	1.074
Every phase of a project is properly closed	0	0.0	2	4.0	25	50.0	17	34.0	6	12.0	3.54	0.762
Average Score											**3.64**	**0.869**

Source: survey data (2021)

The results in Table 4.2 show that the respondents agreed that project integration management is practiced in the selected private plastic industries projects in Sebeta as shown by the average mean score 3.64 with a variance of 0.869 which indicates the data points tend to be very close to the mean. The respondents agreed on the statement that a project charter was developed, a project management plan was developed, and the project execution was directed and managed as shown by mean score of 3.98, 3.76, and 4.06 respectively and with respective standard deviation of 0.820, 0.870, and 0.620 with higher consensus.

The respondents were moderate on the statement that a project work is monitored and controlled, and an integrated change control is performed as indicated by mean score of 3.20 and 3.30 respectively and with respective significance variance of 1.069 and 1.074 but not with higher consensus since standard deviation is more than one. This indicates that monitoring and controlling project work, and performing an integrated change control were moderately practiced in the selected industries but not with higher consensus.

4.3.2. Project Scope Management

Project Scope Management is the second knowledge area sought to establish the practice of project management on the private plastic industries projects in Sebeta.

The findings are shown in Table 4.3.

Table 4. 3 Means and standard deviation of the items in Project scope management

Project Scope management	SDA		DA		UD		A		SA		Mean	SD
	F	%	F	%	F	%	F	%	F	%		
Requirements for the project was collected form stakeholders	0	0.0	3	6.0	3	6.0	37	74.0	7	14.0	3.96	0.669
A project scope is defined	1	2.0	6	12.0	5	10.0	30	60.0	8	16.0	3.76	0.938
A work break down (WBS) structure is created	0	0.0	3	6.0	21	42.0	20	40.0	6	12.0	3.58	0.785
A project scope was verified	0	0.0	3	6.0	26	52.0	16	32.0	5	10.0	3.46	0.762
A project scope was controlled	0	0.0	1	2.0	1	2.0	11	38	76.0	10	4.14	0.535
Average Score											**3.78**	**0.737**

Source: survey data (2021)

The results in Table 4.3 show that the majority respondents strongly agreed that project scope management is practiced in the selected private plastic industries projects in Sebeta, as shown by the average mean score of 3.78 with a variance of 0.737. The respondents agreed on the statement that requirements for the project was collected form stakeholders, a project scope was controlled, and a work break down (WBS) structure is created as shown by mean score of 3.96, 4.14, and 3.58, respectively and with respective standard deviation of 0.669, 0.535, and 0.785

The respondents were moderate on the statement that a project scope was verified as indicated by a mean score of 3.46 and with respective standard deviation of 0.762.

The respondents also agreed on the statement that a project scope is defined as shown by mean score of 3.76 and with standard deviation of 0.938 but not with higher consensus since standard deviation is close to one.

4.3.3. Project Time Management

Project Time Management **is** the third knowledge area sought to establish the practice of project management on the private plastic industries projects in Sebeta.

The findings are shown in Table 4.4.

Table 4. 4 Means and standard deviation of the items in Project time management

Project Time management	SDA		DA		UD		A		SA		Mean	SD
	F	%	F	%	F	%	F	%	F	%		
Project activities were defined	0	0.0	19	38.0	6	12.0	25	50.0	0	0.0	3.12	0.940
Project activities were sequenced	8	16.0	22	44.0	11	22.0	9	18.0	0	0.0	2.42	0.971
A project activity duration was estimated	6	12.0	20	40.0	11	22.0	13	26.0	0	0.0	2.62	1.008
A Project schedule was controlled	1	2.0	33	66.0	3	6.0	13	26.0	0	0.0	2.56	0.907
Average Score											**2.68**	**0.956**

Source: survey data (2021)

The results in Table 4.4 show that the respondents were moderate that project time management is practiced in the selected private plastic industries projects in Sebeta, as shown by the average mean score of 2.68 with a variance of 0.956 but not with higher consensus.

The respondents were moderate on the statement that project activities were defined, project activity duration was estimated, and a project schedule was controlled as shown by mean score of 3.12, 2.62 and 2.56 respectively and with respective standard deviation of 0.940, 1.008 and 0.907. This indicates that project time management is moderately practiced in the selected industries but not with higher consensus since the standard deviation is close to one.

The respondents disagreed on the statement that project activities were sequenced as shown by mean score of 2.42 and standard deviation of 0.971 but not with higher consensus.

According on the information's from the interviews most of the plastic industries projects faces implementation delay because the industries runs different projects simultaneous without proper planning due to this there were shortage of resources, and shortage of budget which led to the delay of the project.

4.3.4. Project Cost Management

Project Cost Management **is** the fourth knowledge area sought to establish the practice of project management on the private plastic industries projects in Sebeta.

The findings are shown in Table 4.5.

Table 4. 5 Means and standard deviation of the items in Project cost management

Project Cost management	SDA		DA		UD		A		SA		Mean	SD
	F	%	F	%	F	%	F	%	F	%		
A project cost to complete activities was estimated	0	0.0	8	16.0	22	44.0	20	40.0	0	0.0	3.24	0.716
A budget to fulfill the estimated cost was determined	0	0.0	31	62.0	10	20.0	9	18.0	0	0.0	2.56	0.787
A project activity duration was estimated	0	0.0	28	56.0	9	18.0	13	26.0	0	0.0	2.70	0.863
A project cost was controlled	0	0.0	8	16.0	8	16.0	22	44.0	12	24.0	3.76	1.001
Average Score											**3.065**	**0.841**

 Source: survey data (2021)

The results in Table 4.5 show that the respondents were moderate that project cost management is practiced in the selected private plastic industries projects in Sebeta, as shown by the average mean score of 3.065 with a variance of 0.841. The respondents were moderate on the statement that a project cost to complete activities was estimated, a budget to fulfill the estimated cost was determined, and a project activity duration was estimated as shown by mean score of 3.24, 2.56 and 2.70 respectively and with respective standard deviation of 0.716, 0.787 and 0.863.This indicates that project cost management is moderately practiced in the selected industries.

The respondents agreed on the statement that a project cost was controlled with a mean of 3.76 and standard deviation of 1.001 but not with higher consensus since the standard deviation is more than one.

From the information's gathered from the managers of the five plastic industries most of the industries projects were not initially had an estimated project cost, and a determined budget because of this there were unplanned costs which led to pause of projects for a period of time.

4.3.5. Project Quality Management

Project Quality Management is the fifth knowledge area sought to establish the practice of project management on the private plastic industries projects in Sebeta.

The findings are shown in Table 4.6.

Table 4. 6 Means and standard deviation of the items in Project quality management

Project Quality management	SDA		DA		UD		A		SA		Mean	SD
	F	%	F	%	F	%	F	%	F	%		
A project quality requirement was planned	0	0.0	4	8.0	3	6.0	15	30.0	28	56.0	4.34	0.917
A quality assurance for the quality requirements were performed to ensure appropriate quality standards	0	0.0	4	8.0	1	2.0	45	90.0	0	0.0	3.82	0.560
A quality control is performed	0	0	0	0.0	6	12.0	40	80.0	4	8..0	3.96	0.450
Average Score											**4.04**	**0.642**

Source: survey data (2021)

The results in Table 4.6 show that the respondents strongly agreed that project quality management is practiced in the selected private plastic industries projects in Sebeta, as shown by the average mean score of 4.04 with a variance of 0.642. The respondents agreed on the statement that a project quality requirement was planned, a quality assurance for the quality requirements were performed to ensure appropriate quality standards, and a quality control is performed as shown by mean score of 4.34, 3.82, and 3.96 respectively and with respective standard deviation of 0.917, 0.560 and 0.450. This indicates that project quality management is practiced in terms of the three project quality management processes in the selected industries with higher consensus except the statement that project quality requirement was planned which indicates that the respondents agreed that it is practiced but not with higher consensus, since the standard deviation is close to one.

According to the managers and consultants quality management is considered the highest in this line of work every customer demands a quality product so most of the plastic industries when they develop a new product they took in consideration of the customer need and the quality of the product.

4.3.6. Project human resource management

Project human resource management is the sixth knowledge area sought to establish the practice of project management on the private plastic industries projects in Sebeta.

The findings are shown in Table 4.7.

Table 4. 7 Means and standard deviation of the items in Project human resource management

Project Human resource management	SDA		DA		UD		A		SA		Mean	SD
	F	%	F	%	F	%	F	%	F	%		
Human resource plan was developed	0	0.0	1	2.0	2	4.0	40	80.0	7	14.0	4.06	0.512
A proper project team is organized	0	0.0	4	8.0	29	58.0	17	34.0	0	0.0	3.26	0.600
The project team is well managed	0	0	8	16.0	4	8.0	32	64.0	6	12.0	3.72	0.882
Average Score											**3.68**	**0.6646**

Source: survey data (2021)

The results in Table 4.7 show that the respondents agreed that project human resource management is practiced in the selected private plastic industries projects in Sebeta, as shown by the average mean score of 3.68 with a variance of 0.6646. The respondents agreed on the statement that human resource plan was developed, and the project team is well managed as shown by mean score of 4.06, and 3.72 respectively and with respective standard deviation of 0.512, and 0.882. The respondents were moderate on the statement that proper project team is organized as shown by mean 3.26, and standard deviation of 0.600. This indicates that organizing a proper project team is moderately practiced in the selected industries with higher consensus.

From the interviews of the managers of the selected industries plastic industry is a labor intensive job it holds many employees within the company, there is employee mobility in this line of work employees tend to jump from one work to another. So, to handle this kind of issues the industries has a human resource plan. Whenever there is a certain project whether it is an expansion project or product development project a proper project team is not organized instead the industries tries to use their current employees for the project.

4.3.7. Project Communication Management

Project Communication Management is the seventh knowledge area sought to establish the practice of project management on the private plastic industries projects in Sebeta.

The findings are shown in Table 4.8.

Table 4. 8 Means and standard deviation of the items in Project communication management

Project Communication management	SDA		DA		UD		A		SA		Mean	SD
	F	%	F	%	F	%	F	%	F	%		
Stakeholders are identified	0	0.0	2	4.0	8	16.0	34	68.0	6	12.0	3.88	0.659
A project communication plan is developed to address all the stakeholders	0	0	0	0.0	3	6.0	20	40.0	27	54.0	4.48	0.614
Relevant information was distributed to the stakeholders	0	0	0	0.0	3	6.0	30	60.0	17	34.0	4.28	0.573
Stakeholders' expectations were managed	1	2.0	0	0.0	11	22.0	37	74.0	1	2.0	3.74	0.600
Performance report was presented to the stakeholders	0	0.0	0	0.0	22	44.0	28	56.0	0	0.0	3.56	0.501
Average Score											**3.988**	**0.589**

Source: survey data (2021)

The results in Table 4.8 show that the respondents agreed that project communication management is practiced in the selected private plastic industries projects in Sebeta, as shown by the average mean score of 3.988 with a variance of 0.589. The respondents agreed on the statement that stakeholders are identified, a project communication plan is developed to address all the stakeholders, relevant information was distributed to the stakeholders, stakeholders' expectations were managed, and performance report was presented to the stakeholders as shown by mean score of 3.88, 4.48, 4.28, 3.74 and 3.56 respectively and with respective standard deviation of 0.659, 0.614, 0.573, 0.600 and 0.501. This indicates that project communication management is practiced in the selected industries in terms of the five project communication management processes with a higher consensus, since the standard deviation is not close to one.

According to the response of the managers communication is mandatory in this line of work because in a plastic industry everything is connected from product development to product delivery to customers, so there needs to be a tight relationship for producing a quality product.

4.3.8. Project Risk Management

Project Risk Management is the eighth knowledge area sought to establish the practice of project management on the private plastic industries projects in Sebeta.

The findings are shown in Table 4.9.

Table 4. 9 Means and standard deviation of the items in Project risk management

Project Risk management	SDA		DA		UD		A		SA		Mean	SD
	F	%	F	%	F	%	F	%	F	%		
A project risk management plan was developed	0	0	37	74.0	13	26.0	0	0.0	0	0.0	2.26	0.443
A project risk was identified and its character was documented	11	22.0	32	64.0	7	14.0	0	0.0	0	0.0	1.92	0.601
Qualitative risk analysis was analyzed	8	16.0	34	68.0	8	16.0	0	0.0	0	0.0	2.00	0.571
Quantitative risk analysis was analyzed	14	28.0	26	52.0	10	20.0	0	0.0	0	0.0	1.92	0.695
A risk response plan was developed	10	20.0	32	64.0	8	16.0	0	0.0	0	0.0	1.96	0.605
A risk was monitored and controlled	7	14.0	38	76.0	4	8.0	1	2.0	0	0.0	1.98	0.553
Average Score											**2.006**	**0.477**

Source: survey data (2021)

The results in Table 4.9 show that the respondents strongly disagreed that project risk management is practiced in the selected private plastic industries projects in Sebeta, as shown by the average mean score of 2.006 with a variance of 0.477. The respondents disagreed on the statement that a project risk management plan was developed, a project risk was identified and its character was documented, qualitative risk analysis was analyzed, quantitative risk analysis was analyzed, a risk response plan was developed, and a risk was monitored and controlled as shown by mean score of 2.26, 1.92, 2.00, 1.92, 1.96 and 1.98 respectively and with respective standard deviation of 0.443, 0.601, 0.571, 0.695, 0.605 and 0.553. This indicates that project risk management is not practiced in the selected industries which is agreed with majority respondents with a higher consensus.

According to the managers and consultants interview most of the plastic industries practices a make to order method which is there needs to be an order of to make a product due to this reason the industries don't have stocks of products, and raw materials, if there is an increase in a raw material price, a decrease in a product price there is no such plan made by the industries to handle this kind of negative effects.

4.3.9. Project Procurement Management

Project Procurement Management is the ninth knowledge area sought to establish the practice of project management on the private plastic industries projects in Sebeta.

The findings are shown in Table 4.10.

Table 4. 10 Means and standard deviation of the items in Project procurement management

Project Procurement management	SDA		DA		UD		A		SA		Mean	SD
	F	%	F	%	F	%	F	%	F	%		
A project procurement plan was developed	0	0.0	1	2.0	6	12.0	42	84.0	1	2.0	3.86	0.452
Products, services or resources needed for outside the project were identified	0	0.0	0	0.0	1	2.0	25	50.0	24	48.0	4.46	0.542
The identified materials were registered on a document	0	0.0	1	2.0	2	4.0	42	84.0	5	10.0	4.02	0.473
Potential sources of the materials were identified as per the procurement plan	0	0.0	1	2.0	1	2.0	42	84.0	6	12.0	4.06	0.470
The materials were purchased properly as per the plan	0	0.0	1	2.0	1	2.0	23	46.0	25	50.0	4.44	0.644
The procurement process was completed and documented for a final report	0	0.0	0	0.0	1	2.0	24	48.0	25	50.0	4.48	0.544
Average Score											**4.22**	**0.515**

Source: survey data (2021)

The results in Table 4.10 show that the respondents strongly agreed that project procurement management is practiced in the selected private plastic industries projects in Sebeta, as shown by the

average mean score of 4.22 with a variance of 0.515. The respondents agreed on the statement that a project procurement plan was developed, products, services or resources needed for outside the project were identified, the identified materials were registered on a document, potential sources of the materials were identified as per the procurement plan, the materials were purchased properly as per the plan, and the procurement process was completed and documented for a final report as shown by mean score of 3.86, 4.46, 4.02, 4.06, 4.44 and 4.48 respectively and with respective standard deviation of 0.452, 0.542, 0.473, 0.470, 0.644 and 0.544. This indicates that project procurement management is practiced in the selected industries which is agreed up on majority of the respondents according to the mean score of the statements and with higher consensus according to the standard deviation.

According to the interview of the managers of the selected industries in a plastic industry procurement is given a highest consideration. The items or materials needed for the projects are firstly identified and documented and will be purchased properly.

4.4. Results of Interview Questions

Interviews were conducted with key persons of middle and top level managers of the selected industries and consultants who have direct relationship with projects undertaken by the selected plastic industries. There were 5 managers that were interviewed one manager each from the five plastic industries. These managers has a good educational background and a lot of working experience in the plastic industry. They explained that in a plastic industry the major miss consumption is that once an industry is established it is considered only a routine work there is no project to be done but there is indeed a post establishment project which is known as a manufacturing project. So, they explained most of the projects that are done in a plastic industries which are Expansion projects and new product development projects. They mentioned the challenges encountered in a plastic industry projects which is whenever there is an expansion project in an industry the project holds many projects within itself like construction, machine procurement, increasing production capacity and etc. projects. So, it is not just one thing it includes mini projects within. So the major challenges were delay of project construction and commissioning, lack of raw material, lack of resources and lack of foreign currency. Further they have mentioned the following factors as a major challenges of effective project management practices; Contractors' poor performance and lack of project management practice: cost variations projects are not completed in the contract price; work variation, discrepancy between design drawing and actual product condition; lack of standard rules and regulations; and poor quality of planning and design.

The lack of foreign currency has made it difficult for plastic industries to acquire a raw material which in turn the lack of raw material has made it difficult for plastic industries to produce at their full capacity. This resulted in late delivery of products. The impact of the above challenges were also indicated as completion of projects beyond the contractual period and above the allocated budget, no risk management plan which results not being ready for operation loss of income. These industries tries to use local raw materials and recycle materials to overcome the lack of raw material, owners and contractors communicate to jointly resolve issues; apply liquidated damage to compensate the losses; take contractual measures; tight follow up on the schedule on remaining tasks; conflict resolution measures; strategic planning and also pause the project until there is an income and resources and raw materials price is dialed down to handle the challenges.

The other project that is mostly done in plastic industries is new product development project. For the question how the industries plan to develop new products, most of the interviewed managers and consultants have responded that the plastic industry owners come with the plan for the new product based on other industries product development study they don't come up with a new design only a small change in the product features.

According to the interviewed managers and consultants project management is practiced in plastic industry projects but these does not mean it is practiced effectively. The practice needs to be developed and given more attention and awareness should be created about how to use project management practice for this line of work.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter summarizes the key findings of the study, and based on the findings conclusions are inferred and recommendations are provided for future studies.

5.1 Summary

The general objective of the study was to assess project management practices of private plastic industries in Sebeta city, Oromia special zone. The study's specific objectives were to assess the project management practices of private plastic industries in terms of project management knowledge areas, and to identify the areas that need to be considered to improve project management practices in private plastic industries.

The study adopted a descriptive research design and used a mixed research approach. The population was drawn from 158 private plastic industries from the industrial are of Sebeta city using a selection criteria and willingness of the industries. Data was collected using questionnaires and interviews and analyzed using descriptive statistics. The summary of the findings are shown below:

The first research objective sought to assess the practice of project management in private plastic industries in terms of project management knowledge areas and assessed the project management practice of the selected 5 private plastic industries in terms of project integration management, project scope management, project time management, project cost management, project quality management, project human resource management, project communication management, project risk management and project procurement management.

Project management practice was assessed using the six processes of the project integration management. The majority of the respondents agreed that project integration management is practiced in the selected private plastic industries as shown by the average mean score of 3.64 with a significance variance of 0.869.

Project management practice was assessed using the five processes of the project scope management. The majority of the respondents agreed that project scope management is practiced in the selected private plastic industries as shown by the average mean score of 3.78 with a significance variance of 0.737.

Project management practice was assessed using the four processes of the project time management. The respondents were neutral that project time management is practiced in the selected private plastic industries as shown by the average mean score of 2.68 with a significance variance of 0.956.

Project management practice was assessed using the four processes of the project cost management. The respondents were neutral that project cost management is practiced in the selected private plastic industries as shown by the average mean score of 3.065 with a significance variance of 0.841.

Project management practice was assessed using the three processes of the project quality management. The respondents strongly agreed that project quality management is practiced in the selected private plastic industries as shown by the average mean score of 4.04 with a significance variance of 0.642.

Project management practice was assessed using the three processes of the project human resource management. The respondents agreed that project human resource management is practiced in the selected private plastic industries as shown by the average mean score of 3.68 with a significance variance of 0.6646.

Project management practice was assessed using the five processes of the project communication management. The respondents agreed that project communication management is practiced in the selected private plastic industries as shown by the average mean score of 3.988 with a significance variance of 0.589.

Project management practice was assessed using the six processes of the project risk management. The respondents strongly disagreed that project risk management is practiced in the selected private plastic industries as shown by the average mean score of 2.006 with a significance variance of 0.477.

Project management practice was assessed using the six processes of the project procurement management. The respondents strongly agreed that project procurement management is practiced in the selected private plastic industries as shown by the average mean score of 4.22 with a significance variance of 0.515.

The second research objective sought to identify the knowledge areas that need highest attention and forward recommendation for further improvement. The data collected and analyzed from the respondents indicates that project cost management, project time management, and project risk management needs the highest attention in the selected private plastic industries, which suggests focusing on these knowledge areas.

5.2. Conclusion

This study aims to fill the gap by answering the following research questions how effective is the project management practice in private plastic industries, and which knowledge areas need to be considered to improve project management practices in private plastic industries. The researcher selected 5 private plastic industries that are located in Sebeta by considering the following criteria's: capital level, experience, plastic industries that are in operating phase and industries that are performing projects and assessed the practice of project management in this plastic industries in terms of the project management knowledge areas using questionnaire and interview as a data collection method.

The research findings indicates that the selected private plastic industries practices project integration management, project scope management, project quality management, project human resource management, project communication management and project procurement management well and for all the selected industries project quality management is significant and has the highest consideration.

The other finding is that the selected industries has a low regard when it comes to project risk management it is not practiced well enough and also project time management and project cost management are practiced moderately.

In order to survive and thrive in the private plastic industry market project management practice is mandatory. So, the issues discovered needs to be addressed and practiced.

5.3. Recommendations

The main purpose of the study was to assess the project management practice of selected private plastic industries in Sebeta. This study findings doesn't represent the whole Ethiopian private plastic industries. Therefore, the researcher suggests that further study should be carried out focusing on a wider range on the Ethiopian plastic industry sector there are not a lot of studies in this sector.

Based on the above conclusion, as the finding shows there is a poor practice on the project risk management, since project risk management objectives are to increase the probability and impact of positive events and decrease the probability and impact of negative effects it should be given the highest consideration specially today where economy is increasing constantly, an increase in raw materials cost, foreign currency problem in the country for this and other issues risk management practice is vital. It should be well thought and managed effectively because the project risk management is one of the core knowledge areas. Therefore, to do so the researcher suggests to the industries to develop risk management plan, identify risks and document their characteristics, perform qualitative risk analysis, perform quantitative risk analysis, develop risk response plan, and monitor and control risks.

Based on the above conclusion, as the finding shows there is a moderate practice on the project time management and project cost management. This two practices are vital to manage completion of a project in time and within the approved budget. They should be given a high consideration. The researcher suggests to the industries to estimate project cost, determine budget and control cost and they should also define activities, sequence activities, estimate activity duration, and control schedule in order to improve project cost and time management practice.

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Appendix 1: Questionnaire

ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF PROJECT MANAGEMENT

Questionnaire

Name: Eyoel Abera

Tel: +251921773925

Email: Dearmama.eyu@gmail.com

Dear Respected Respondents:

I am a post graduate student in project management at Saint Mary's university. As part of my course work for the partial fulfillment of the requirement for the award of degree of master of art in project management, I am conducting a research on: Assessment on project management practices of selected private plastic industries in Sebeta.

This questionnaire is prepared for the fulfillment of conducting a thesis paper on 'Assessment on Project Management Practices of Private Plastic Industries in Sebeta'. The information acquired through this questionnaire will be kept confidential and it is purely for academic purpose. There is no right or wrong answer here. Rather, your genuine, honest and timely response is vital for the accomplishment of this study. Therefore, you are kindly requested to give your response to each items/questions carefully. The researcher sincerely expresses his thanks in advance for devoting your time and energy to complete this questionnaire. Please note that you are not required to give your name in this questionnaire and if you face any doubts and need additional information don't hesitate to use the contact addresses mentioned above.

With best regards.

Eyoel Abera

St. Mary's University

General Direction

- Mentioning your name is not mandatory
- In the multiple-choice questions please use a tick mark (√) in the appropriate box.
- If your response is not mentioned on the given alternatives, you can write your answer, in the space provided for the option;
- For the open-ended questions, give brief answer in the space provided.

Part I: Background Information

1. Indicate your gender:

    Male ☐   Female ☐

2. Age:

    20-30 ☐   41-50 ☐

    31-40 ☐   >50 ☐

3. Indicate your highest level of educational:

    High school completed ☐   Diploma ☐

    BA/BSC ☐   MA/MSC ☐

    PHD ☐   Others ☐

4. Job position: Director   ☐

                          Project manager   ☐

                          Project coordination   ☐

                          Team leader   ☐

                          Technical team member ☐

                          Support stuff   ☐

                          Other   ☐

5. How long have you been working with the group: ----------------------

Less than 5years ☐   5-9 years ☐

10- 15 years ☐   above 15 years ☐

Part II: Close ended questions

Instruction: For the closed ended questions in table forms, please use the following keywords to answer. And put a tick mark (√) on the space provided:

> SDA = Strongly Disagree
>
> DA = Disagree
>
> UD= Undecided
>
> A = Agree
>
> SA = Strongly Agree

Section: A Project integration management

No.	Project Integration Management	SD	DA	UD	A	SA
1	A project charter was developed					
2	A project management plan was developed					
3	The project execution was directed and managed					
4	A Project work is monitored and controlled					
5	An integrated change control is performed					
6	Every phase of a project is properly closed					

Section: B Project Scope management

No.	Project Scope Management	SD	DA	UD	A	SA
1	Requirements for the project was collected form stakeholders					
2	A project scope is defined					
3	A work break down (WBS) structure is created					
4	A project scope was verified					
5	A project scope was controlled					

Section: C Project Time management

No.	Project Time Management	SD	DA	UD	A	SA
1	Project activities were defined					
2	Project activities were sequenced					
3	A project activity duration was estimated					
4	A Project schedule was controlled					

Section: D Project Cost management

No.	Project Cost Management	SD	DA	UD	A	SA
1	A project cost to complete activities was estimated					
2	A budget to fulfill the estimated cost was determined					
3	A project activity duration was estimated					
4	A project cost was controlled					

Section: E Project Quality management

No.	Project Quality Management	SD	DA	UD	A	SA
1	A project quality requirement was planned					
2	A quality assurance for the quality requirements were performed to ensure appropriate quality standards					
3	A quality control is performed					

Section: F Project Human resource management

No.	Project Human Resource Management	SD	DA	UD	A	SA
1	Human resource plan was developed					
2	A proper project team is organized					
3	The project team is well managed					

Section: G Project Communication management

No.	Project Communication Management	SD	DA	UD	A	SA
1	Stakeholders are identified					
2	A project communication plan is developed to address all the stakeholders					
3	Relevant information was distributed to the stakeholders					
4	Stakeholders' expectations were managed					
5	Performance report was presented to the stakeholders					

Section: H Project risk management

No.	Project Risk Management	SD	DA	UD	A	SA
1	A project risk management plan was developed					
2	A project risk was identified and its character was documented					
3	Qualitative risk analysis was analyzed					
4	Quantitative risk analysis was analyzed					
5	A risk response plan was developed					
6	A risk was monitored and controlled					

Section: I Project procurement management

No.	Project Procurement Management	SD	DA	UD	A	SA
1	A project procurement plan was developed					
2	Products, services or resources needed for outside the project were identified					
3	The identified materials were registered on a document					
4	Potential sources of the materials were identified as per the procurement plan					
5	The materials were purchased properly as per the plan					
6	The procurement process was completed and documented for a final report					

Part III: General open-ended questions.

3.1 Is there a separate project management department in your organization?

_____

3.2 Is there a project management training access in the organization?

_____

3.3 Do you use any project management guidelines or tools? (If any, please try mention it)

_____

_____

3.4 Does your company have a project charter for all its projects? How is the project charters prepared and does your company make the charter official to the stakeholders?

_____

_____

_____

3.5 Is there a failed project in your organization? If there is any please state the reason?

_____

_____

_____

3.6 What are the major challenges of projects in your organization (you can consider past projects and ongoing projects).

Internal [   ]   External [   ]

(For this question brief your answer in the space provided below)

_____

_____

_____

_____

3.7 Is there any mitigation techniques used by your organization to mitigate these challenges?

_____

_____

3.8 Is there any cost over run on the projects?

_____

3.9 Is there any mitigation techniques used by your organization to overcome this cost overrun?

_____

_____

_____

3.10 Is there any time delay or a project termination in your organization?

_____

3.11 Is there any mitigation techniques used by your organization to mitigate this time delay?

_____

_____

_____

3.12 Have you ever faced a quality problem on projects done by your company? If your answer is yes, please try to mention the problem in detail?

_____

_____

_____

3.13 Is there any solution taken by your company to overcome this problem?

_____

_____

_____

3.14 Is there any challenge that you face from the stakeholders in doing projects, if so please try to mention one?

_____

_____

_____

3.15 Is there any solution taken by your organization to overcome this stakeholder challenge?

_____

_____

_____

3.16. Is there a project risk management plan your company?

_____

_____

_____

3.17 Have you ever face a risk which is not out of the project's risk management plan? If your answer is yes, try to mention some?

_____

_____

_____

3.18 Is there any action taken by your organization to overcome the risk?

_____

_____

_____

3.19 What are the tools you use to check the performance of projects in your organization?

_____

_____

_____

3.20 What are the procedure/ method in your organization for purchasing and contract administration?

_____

_____

_____

Thank you very much!!!

Appendix II
Interview Questions
1. Tell me about your educational background, specialization, and experience?

   …………………………………………………………………………………………

2. How do you observe the practice of project management in private plastic industry?

   …………………………………………………………………………………………

3. What are the projects that you have been involved with plastic industry product

   development projects?

   …………………………………………………………………………………………

   …………………………………………………………………………………………

4. What was your role?

   …………………………………………………………………………………………

   …………………………………………………………………………………………

5. What are the major challenge/s related to project management practice in plastic industry

   development projects that you have been involved?

   …………………………………………………………………………………………

   …………………………………………………………………………………………

6. What is the impact/s of the mentioned challenges in the project you have been involved

   with?

   …………………………………………………………………………………………

   …………………………………………………………………………………………

7. How does the industry deal with those challenges?

   …………………………………………………………………………………………

   …………………………………………………………………………………………

8. Please mention three of most significant challenging factors among listed in the

   questionnaire in plastic industry development projects

   …………………………………………………………………………………………

   …………………………………………………………………………………………