



**ASSESSMENT ON THE IMPLEMENTATION OF QUALITY
MANAGEMENT PRACTICES IN REAL ESTATE CONSTRUCTION
IN ADDIS ABABA: THE CASE OF FLINTSTONE AND AFRO TSION
REAL ESTATE.**

BY

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(Id No:- GSD/0129/08)

A THESIS SUBMITTED TO SCHOOL OF GRADUATE STUDIES OF ADDIS
ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER IN PROJECT MANAGEMENT

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**ADDIS ABABA UNIVERSITY
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APPROVED BY BOARD OF EXAMINERS

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DECLARATION

I declare that this 'Thesis' entitled with “Quality Management Practices in Real Estate Construction in Addis Ababa: The Case of Flintstone and Afro Tsion Real Estate.”, is my original work, prepared under the guidance of my Advisor FISEHA AFEWORK. All necessary sources of materials used for the preparation of this 'thesis' have been appropriately acknowledged. Moreover, I want to 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.

Name

Signature & Date

ENDORSEMENT

This is to certify that this Thesis paper work, entitled “Quality Management Practices in Real Estate Construction in Addis Ababa: The Case of Flintstone and Afro Tsion Real Estate.”, which is undertaken by Fikreab Markos for the partial fulfillment for the requirements of the degree of Masters of Art in Project Management at Addis Ababa University, is an original work and not submitted earlier for any degree either at this University or any other University.

Research Advisor

Signature & Date

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LIST OF ACRONYMS

AACG,	Addis Ababa Grand Housing Development Program
AAHDPO	Addis Ababa Housing Development Project Office
CSFs	Critical Success Factors
EFQM	European Foundation in Quality Management
EQA	Ethiopian Quality Award
IPP	Investors in People
ISO	International Organization for Standardization
TQM	Total Quality Management
QMS	Quality Management System
PMI	Project Management Institute

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ABSTRACT

In today's competitive and challenging construction project environment, implementing the quality management system helps to bring organizational excellence in their overall activities. However, there are very few construction companies in Ethiopia that can able to implement quality management in their operational systems. This study intends to evaluate the practice and implementation of quality management system at Flintstone and Afro Tsion real estate projects, which are among a very few construction company certified for ISO-9001-2000 Quality management system. Concerns regarding to understanding the extent of management responsibility, resource management and extent of realization of products in projects activities are the basic question and issues raised in this study according to the frame work of ISO 10006:2017 (E) Quality Management in Project. To achieve the objectives of the research, data were collected using quantitative and qualitative methods from concerned personnel's and experts in the project environment. The data were collected with a response rate of 75% from the distributed sixty six(66) questionnaires and analyzed using descriptive statistics focusing on the mean, standard deviation and percentages, which is calculated using statistical package for the social sciences (SPSS) version 20. For analyzing the qualitative data content analysis were conducted and it is triangulated with the quantitative data to summarize the findings, conclusion and recommendations. The validity of the instrument was checked and internal consistency of the instrument was measured using Cronbach Alpha and the result was greater than 70%, which can signifies that reliability of data was good. Results of the findings were presented both in qualitative and quantitative manner. The finding of the study reveals that the performance regarding to risk management, communication system, procurement procedures and follow up in the sub contractor performance were found to be performed under poor performance. On the contrary the management responsibility in understanding the customer needs and commitment of the top management, empowering people, companies decision making strategy, managing cost and optimization of project resources is carried out in a very good manner. It is therefore recommended that for a quality management system to be practiced and implemented effectively it is important for both the real estate construction company to establish the appropriate degree of flexibility within the key and supporting processes and to have a continued right level of leadership commitment, resource utilization and implementing the right project management methodology in their system.

Key Words: Practice, Implementation, Quality management system, Project

CHAPTER ONE: INTRODUCTION

This chapter presents the background of the research, back ground of the real estate of housing construction, statement of the problem, research objectives, research questions, significance of the study, scope and organization of the study.

1.1 Back Ground of the Study

Real estate housing development is one of the basis of our urban activities to satisfy the need of residential housing in the towns. With no doubt this activities is need to be managed in a proper quality management system to satisfy their clients. Implementing Quality Management System (QMS) based on (ISO 10006, 2017) are important in helping construction projects to become more competitive in the construction industry. (Mane, 2015), stated that the quality in the housing construction industry is linked with client's satisfaction, and the implementation of a quality management is a key tool in consistently and reliably managing the construction activities. For improving the level of performance in the housing construction company, QMS plays a great and important role. It helps the construction firms to seek and to sustain itself in the existing construction market which is highly challenging and competitive. From the perspective of a real estate housing construction company, quality management mean maintaining the quality of housing construction works at the required standard so as to obtain customer's satisfaction that would bring long term competitiveness and business survival for the companies and to guarantee that the project outputs are delivered fit-for-purpose. The process of implementing a QMS is a important opportunity to reorganize and modernize an organization. It is an external, widely accepted motive to change functions, procedures, and old habitudes in the organization. This effort would otherwise be considered an unnecessary and unjustified extra effort. It is also an excellent opportunity to introduce new tools and work techniques, thus restructuring the organization not only to achieve the certification but also to make it more effective and rational.

According to (ISO 8402, 1994) QMS is described as a system as the organizational structure, process, resources and procedure needed to implement quality management and that it involves the activities of the overall management function that determines the quality policy, objectives and responsibilities, and implement them by means such as quality planning, quality control, quality assurance and quality improvement. For

ensuring effectiveness, flexibility and competitiveness in their construction activities the real estate residential builders need to adopt QMS in their system of a business as a whole. (Griffith & Watson, 2004) described that there are different QMS that construction companies use including Investors in People (IIP), ISO 9000, EFQM, custom designed systems and or third party certifications. Secondary data from different study have showed that the practice and implementation of QMS in construction company is found at its rudimentary level and not a well understood subjects in Ethiopian construction industry. Therefore this study was focused on the implementation of QMS in construction activities and try to reveal the existing situation regarding to its the practice and implementation in real estate housing construction project.

Thus, this study predominantly uses the principles enumerated in the (ISO 10006, 2017) quality management in project which includes: Management responsibility in project, resource management in project, product/ service realization in project; and measurement, analysis and improvement in projects. These principles helps for assessing the practice of quality management in the real estate housing construction project. These principles together with their attribute is included in the questionnaire to survey the practice and implementation of QMS in the selected real estate projects that are working in Addis Ababa.

1.2 Back Ground of the Real Estate Housing Construction

As a demographic phenomenon in the twenty first century, urbanization become developed as more and more people are changing their residence from rural to urban settlement. This has created potential pressure on the urban settlers and lead for huge demand for more residential housing in the urban. According to the (World population prospects, 2015) the demand for housing indicate, the need for residential real estate development and the expansion of infrastructures in the city is increasing in alarming rate. A recent announcement by the Addis Ababa city government of Ethiopia shows that there is un meet demand for residential housing in the city. According to (AAHDPO, 2007) there is an increment of 10,000 demand of the dwellers for residential houses annually in Addis Ababa and it is thought that housing needed by the residential or a backlogs of about 230,000 housing units in 2002 according to (Alemayehu, 2008). As a mitigation measure to solve the ever increasing housing problem in Addis Ababa, the city government has launched an extensive program entitled with “Addis Ababa Grand

Housing Development Program” (condominium housing) with the objective to construct up to 65,000 condominium (50,000 (10/90 and 20/80), and 15,000(40/60)) housing units per year according to (AACG, 2012). The aim of this program is to provide low and middle income urban dwellers with decent shelter for the inhabitants of the city administration. Apart from this government intervention, to mitigate this problem, the real estate developer which focused on residential construction is playing an indispensable role in the construction sector. They are booming in Ethiopia in recent years, particularly in Addis Ababa to provide houses that can be affordable and accessible to all income groups. Their contribution in alleviating housing problem in Addis Ababa is one of their supporting activities in housing construction in the city. There are a dozen of registered real estate focusing on residential housing construction companies in Ethiopia. Construction firm that function in Ethiopia Real Estate housing market are trying to progress in the design and development phase in their projects to satisfy the needs of customer and users, especially for house building. Many companies, which are devoted only for multiple family constructions, agree that the most important aspect in the real estate market is the value that they can provide to their customers. Despite their motives for provisions of housing, the sector is struggling with quality construction management system within their construction activities.

This study focused on two real estate companies, Flintstone and Afro Tsion, which have implemented QMS. Both real estate company have a primary concern to satisfy the pressing demands for high quality residential buildings on a timely basis, for which their specific activities are to build villa houses, townhouses and apartment houses for their clients by providing quality housing and creating safe, favorable and attractive environments. As one of the parameter for project implementation, the quality management practice would be assessed in these real estate housing construction in Addis Ababa by analyzing the tools and techniques of quality management.

1.3 Statement of the Problem

Currently the real estate housing construction industry is widely denounced for the low quality of delivery of construction projects both the finished product quality and for the processes used during the project design and construction stages. The research conducted by (Abreham, 2004), indicates that the performances of construction projects exhibited low accomplishment rates and this impacted negatively on the completion time, cost

overruns and strongly associated with quality related issues contributed to low performances. This can be associated with lack of knowledge or implementation of QMS in their activities. Secondary data showed that a considerable time and cost is spent in correcting problems during construction activities, and the majority of projects suffer from time overrun and cost overrun. Some real estate resident suggest that lack of care and a poor attitude towards quality on behalf of the contractor is leading to the existence of problem in real estate housing construction. The real estate construction firms in the country have been struggling with quality issues for many years; while they have been wasting resources as a result of faulty construction. According to (Birhanu & Daniel, 2013), EQA self-assessment report evaluation, generally, quality management practices in Ethiopia was found to be low in all the tenets including leadership, policy and strategy, resources management, process management, customer satisfaction, business performance and impact on society. Among these factors, policy and strategy is the most critical problem area despite the least weight given by the EQA. Moreover, secondary data showed that there is some levels of problem in practice of QMS in both Afro TSION and Fintstone housing construction company. These two real estate company have implemented QMS in their overall construction activities. The limitation of full practice regarding to QMS is resulted the housing projects to become more and more technically complex and logistically challenging. This could definitely lead their construction activities to operate under some level of uncertainty and make the projects implementation liable to all sorts of external influence and unexpected events.

This research is important to both companies to know the level of their implementation of QMS, to identify their gap and to understand what they have to do in the future. If this research would have not be conducted and shows the existing gaps, the problem in the area would be left unanswered for a while and they could not be able to identify the root cause of the ineffectiveness in their implementation of the QMS. The findings of this study are also expected to guide them and show proper direction on how they can effectively practice the implemented QMS in their overall activities. Therefore, this study examined to what extent that the quality management practices is conducted by the two real estate company and thereby to recommend a solution to the construction impediments and uncertainty in project activities.

1.4 Basic Research Questions

The reviewed literature showed that QMS implementation and practice in the selected real estate company was found on a rudimentary level. To address the above stated problems, the following research questions is developed to guide the research process.

- I. How the management responsibility is practiced in Flintstone and Afro Tsion real estate company?
- II. How efficient are Afro Tsion and Flintstone real estate in their resource management?
- III. What level do product or service is realized in projects activities?
- IV. What are the challenges faced to practice the QMS in Flintstone and Afro Tsion real estate Company?

1.5 Objective of the Study

1.5.1 General Objective

The general objective of the research is to assess the practice and implementation of quality management system in Flintstone and Afro Tsion real estate company.

1.5.2 Specific Objectives

The specific objectives of the research are:

- I. To understand the level of management responsibilities within Flintstone and Afro Tsion real estate construction projects.
- II. To know how resources are managed in Flintstone and Afro Tsion real estate construction projects.
- III. To evaluate the realization of products or services within the project activities of Flintstone and Afro Tsion real estate construction projects.
- IV. To identify the major challenges faced by Flintstone and Afro Tsion real estate company in the implementation of QMS.

1.6 Significance of the Study

The study findings are a relevant input to the management of real estate developers projects, where they can use the result of the work to improve the quality related problems in housing construction projects. The study also serve as a starting point towards further studies in the area of quality management practice in project performance. Moreover, the study contribute to the development of the disciple and

adds to the project management body of knowledge by providing additional experiences in Ethiopian real estate construction context.

1.7 Scope/ Delimitation of the Study

The study is delimited itself to quality management practice on Flintstone and Afro Tsion real estate construction projects, which works in Addis Ababa. The study focused on the modality and principles stated on (ISO 10006, 2017) QMS in project. The participants in this study were construction project manager, site supervisors, project consultant and project expert, quality manager and construction Forman. These participants are selected as they are the one who are responsible for managing, monitoring and controlling the project activities. The time scope of this research work had been focused from 2010 till 2017.

1.8 Limitation of the Study

There was some forms of lack of cooperation from employees, and respondents was also not much dedicated enough to respond the questionnaires, and there was a fear that respondents might not convey their idea freely, on what they really believe in. Moreover, there was also some sort of difficulty in collecting questioners on time.

1.9 Organization of the Research Work

This study is structured into five chapters. The first chapter is an introduction which includes background of the study and real estate construction, problem statement, research questions, objective of the study, significance of the study, scope and limitation of the study and organization of the proposal. The second chapter is review of related literatures which consists theoretical background and important findings from different literatures. The third chapter involves the research methodologies applied in the study. Chapter four is dedicated to discuss the results and the findings obtained from the study. Finally, the summary of major findings, conclusions and recommendations are explained in chapter five.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

This section covered review of literature from different scholars and authors that have been examined in the area of project management with special focus on project quality management. The theoretical and practical findings of various studies related to projects, project management, project quality management process, project quality management tools and techniques, quality management implementation and management challenges were described. A reviewed literature from secondary sources such as published books, articles and related websites also be presented to reveal points, targeting at the attainment of the research objectives.

2.1. Theoretical Literature Review

2.1.1. Overview of Construction Firm

This days there is an intensive construction taken place in Ethiopia, particularly in Addis Ababa. The ongoing construction is becoming more multifaceted in nature and the demand for housing and project management services is becoming more and more. During the housing construction the application of project management in analyzing the project against time, cost and quality against specifications are some among many factors that can be demanding for all involved parties in the construction process. The construction industry in Ethiopia has been developing tremendously since 2001. This can be a clear indication to the growth of the GDP contribution to the overall country's economy through creating a significant contribution to the success and competitiveness of country's economy in the past few years. The reviewed literature showed that the construction industry is an important segment of the economy and plays a key role in socio political and economical development. In this regard, the construction industry need to be understood if it is to be able to perform effectively and efficiently to produce the desired result with quality. According to (Lund, 2011), the construction industry is typified by a uniqueness in every construction project, they are single order, single production products. Unlike other industries, which usually have a fixed site with similar conditions for production, each construction production site always displays different conditions.

2.1.2. Back ground of the Studied Construction Companies

2.1.2.1. Overview of Flintstone Real Estate

The company web site shows that Flintstone home is a real estate business launched in 2008 by Flintstone Engineering, a construction firm founded in 1991. They are constructing an apartment at Lidetta, Aware and Bole sub city. Flintstone Engineering is one of the most distinguished construction contractors in the country, recognized for its rare combination of low price and quality. Since its establishment Flintstone Engineering's robust quality management system was ISO-9001-2000 certified in 2007 on that year, a year pegged with shortage of power, cement and finance, Flintstone's construction revenue has crossed the hundred million mark. This was over 20 % of their total portfolio, much higher than the local industry average of about 10%, proving their commitment to deliver to the customer. Currently they are working 24hours in three shifts on the African union peace saving buildings project /PSB/, a state of the art building financed by the government of Germany and scheduled for completion by December 2012. They claim the three key success factors enable them to keep their promise to customers are; value analysis, long sighted marketing and operational excellence. As a value analysis, the research and insightful value engineering enable them to understand what the customer needs and come up with a design fit for purpose. Secondly as, long sighted marketing, they aim to attain zero buyers' regret . A properly informed buyer, by a sales person who has a deep understanding of the customer needs, rarely regrets the decision to buy. Finally as, an operational excellence they are working to maintain a competitive position in the marketplace, a company must have a long-range plan. This plan needs to include the company's long-term goals, an understanding of the marketplace, and a way to differentiate itself from its competitors. All other decisions made by the company must support this long range plan.

2.1.2.2. Overview of Afro Tsion Real Estate

The official web site of Afro Tsion construction described that it is founded in 1998 G.C by Engineer Sisay Desta at an initial capital of 50,000.00 Birr as Grade 7 Contractor, Afro-Tsion Construction PLC is one of the largest and leading general contractors in Ethiopia. Afro Tsion is stationed in its own newly built head quarter in Addis Ababa in a way from 22 Mazoriya to Bole Medhanialem nearby St. Gebreal Hospital. An ISO 9001:2000 certified company, Afro-Tsion construction PLC, has been involved in the construction of most of the nation's largest university complex Buildings and roads,

bridges various government office complexes, huge industrial projects, Hospitals, stadiums and different private commercial projects throughout the country. Besides, through its sister companies, Afro-Tsion Construction PLC is engaged in real estate, manufacturing of construction Materials and in import businesses. The management of Afro-Tsion Construction PLC is known for its commitment in financing short term and long term trainings for its employees and in acquiring value adding technology with the objective of continuously improving its processes and systems. Other than the various donations, the number of fully equipped schools it has constructed and handed over to the society in remote areas of Ethiopia speaks about its contribution towards fulfilling social responsibilities. In general, by providing quality service with integrity and fairness, Afro-Tsion construction PLC strives to make a difference in the construction sector of its home market and beyond. The company with its rich experience and qualified manpower aims to become the customer's first choice in Africa and in the international market in general for its quality service and on time delivery and at an affordable price. As a mission of the company Afro Tsion construction has declared that the management of Afro-Tsion Construction PLC is dedicated to providing quality construction service using competent and motivated employees, ensuring occupational safety, by adopting new technology, investing in appropriate machineries and equipment, by expanding the existing manufacturing activities of construction materials and by executing projects to the level of customer's expectation or beyond thereby fulfilling the satisfaction of our customers.

2.1.3. Project Management

According to (Lund, 2011) project is defined as a task that is performed by a temporary organization in order to achieve a predetermined result. Projects are not limited in size or in persons involved but are always temporal and have a clear start and end. Accordingly, the task undertaken by the real estate housing construction development is also performed for a defined period with predetermined output by delivering the house to the owner with prefixed requirement. This is also supported by (Harri & McCaffer, 2013) for which they explain that construction management is referred to the overall planning, coordination and control of construction management aiming at meeting clients requirements as to produce a financially viable and functional project. For the construction industry to remain productive and successful there is a need for proper construction quality management system in place.

In project management plan there are different branches, such as project overview, organization and staffing, project management and controls, conceptual design phase, final design phase, construction phase, closeout phase, quality and risk management, procurement and contract administration should be planned and managed properly. The objectives of project management are to execute a project so that deliverables can meet scope requirements on budget and schedule, and at acceptable risk, quality, safety, and security level.

According to (PMBOK, 2013), proper management of project as stated in PMOBK includes the requirement identification, addressing stakeholders concerns, needs and expectations in planning and implementation of projects, maintain internal and external stakeholders' management and communication. Moreover, balancing of project competing constraints mainly scope, quality, schedule, budget, resources and risks which are the most common factors. To this end there is strong relationship among each factor since there is interdependence to influence each other, for example if there is time or cost overrun on the projects it has direct impact on targeted quality (Nader, 2011). According to (ISO 10006, 2017) QMS in project includes: project characteristics, quality management principles in project; project quality management process, and a quality plan for the project

2.1.4. Quality Management System

Implementing a QMS for real estate construction projects does not guarantee perfect projects, but provides a framework for consistently maximizing the quality of the overall project activities. This framework should include provisions for training and qualification of specific construction procedures, audits and corrective actions. Incorporating these elements at an early stage of these processes will help to ensure project quality objectives are consistently met.

According to (ISO 9001, 2015) the implementation of a QMS implies planning, defining, verifying, and updating processes and procedures. This is defined in the (ISO 9001, 2015) norm as the “*plan-do-check-act cycle*.” It encourages a change of attitude from a reactive to a proactive attitude. Planning and prevention gain ground to replace the daily solving of unexpected urgent problems. (Griffith & Watson, 2004), described that, there are different QMS that construction companies use including Investors in People (IIP), ISO 9000, EFQM, custom designed systems and or third party

certifications. According to (Hakim et al., 2006) Quality management system is defined as “all activities of the overall management function that determine the quality policy, objectives and responsibilities, and implement them by means such as quality planning, quality control, quality assurance and quality improvement within the quality system”. To ensure the continually improvement of QMS, it is essential that the top management to give their full support and commitment especially to the development and implementation of construction project/s. This indicates that quality should be managed in ways that which are clearly identified, well documented and efficiently planned, implemented and controlled. A project quality plan (PQP) is prepared to establish project level quality procedures bringing together the project information and the companies’ policies, procedures and inspection routines’ (Griffith & Watson, 2004). This concept is practically and theoretically related to all the appropriate parts of the participants in the project activities to quality systems together around the needs of the project activities.

ISO 9001:2015 is the standard that provides a set of standardized requirements for a quality management system, regardless of what the user organization does, its size, or whether it is in the private, or public sector. It is the only standard in the family against which organizations can be certified, although certification is not a compulsory requirement of the standard. Without satisfied customers, an organization is in threat. To keep customers satisfied, the organization needs to meet their requirements. The ISO 9001:2015 standard provides a tried and tested framework for taking a systematic approach to managing the organization's processes so that they consistently turn out product that satisfies customers' expectations. The international standard for quality management (ISO 9001, 2015) adopts a number of management principles that can be used by top management to guide their organizations towards improved performance such as: customer focus, leadership, engagement of people, process approach, improvement, evidence-based decision making and relationship management. Since any construction firm and its suppliers are mutually supporting, therefore a mutually beneficial relationship between them increases the ability of both to add value and these seven principles form the basis for the quality management system standard (ISO 9001, 2015).

The internal and external customer to the construction project can be both the employees and the society at large, which can represent important stakeholders for the construction

firm. Therefore, the project achievement depends on the knowledge, skills, creativity, and motivation of its employees and partners. Thus, construction firms should demonstrate commitment to the employees, provide opportunities for development and growth. Construction quality depends on the availability of skilled personnel, construction material including raw material, finished products, semi-finished products, components' and parts. Moreover the technology and innovation in the construction machinery and equipment are essential for the modern construction, reflecting the construction capabilities of the firm, which have a direct and a significant impact on the project progress and quality. The concept of continuous improvement can be achieved through enhancing values to the customer by the deployment of modern, new and innovative products and services, through minimizing wastes and their related costs, through effective utilization of resources for boosting productivities and finally through improving responsiveness and minimizing customer complaints and poor quality of inputs to the construction activities. According to (Crawford, 2002) the overall aim of quality management is to satisfy the customer, conform to requirements, ensure fitness for purpose, and to ensure the product for use. Project model looks at quality management as set of activities or tasks that are required to ensure the project satisfies all the needs for which it was undertaken based on documented in the state of work and includes a focus on quality management from the perspective of product, processes, and the people needed to make quality an effective and efficient aspect of successful project completion.

2.1.5. Quality Management System in Project as per ISO 10006:2017

(ISO 10006, 2017) gives guidelines for the application of quality management in projects. It is applicable to organizations working on projects of varying complexity, small or large, of short or long duration, being an individual project to being part of a programme or portfolio of projects, in different environments, and irrespective of the kind of product/service or process involved, with the intention of satisfying project interested parties by introducing quality management in projects. This can dictate some tailoring of the guidance to suit a particular project. (ISO 10006, 2017) is not a guide to project management itself. Guidance on quality in project management processes is presented in it. Guidance on project management and related processes is covered in ISO 21500. (ISO 10006, 2017) addresses the concepts of both "quality management in projects" and quality management systems in projects". These are distinguished by being

addressed separately by the following topics and clauses: - Quality management in projects includes: quality management systems in projects (Clause 4); management responsibility in projects (Clause 5); resource management in projects (Clause 6); product/service realization in projects (Clause 7); and measurement, analysis and improvement in projects (Clause 8); Moreover, Quality management systems in projects includes: project characteristics (4.1); quality management principles in projects (4.2); project quality management processes (4.3); and a quality plan for the project (4.4). The explicit explanation of the (ISO 10006, 2017) is described on Table 2.1.5.1.

Table 2.1.5.1 — Overview of Processes for Quality Management in Projects as Per ISO 10006;2017(E)

Clause	Sub clause	Sub clause	Process	Process Description
<u>Clause 5</u> Management responsibility in projects	<u>5.2</u> Strategic process	—	Strategic	A direction-setting process which includes planning the establishment and implementation of the quality management system based on the application of the quality management principles.
<u>Clause 6</u> Resource management in projects	<u>6.1</u> Resource-related processes	6.1.2	Resource planning	Identifying, estimating, scheduling and allocating all relevant resources.
		6.1.3	Resource control	Comparing actual usage against resource plans and taking action if needed.
	<u>6.2</u> Personnel-related processes	6.2.2	Establishment of the project organizational structure	Defining a project organizational structure tailored to suit the project needs, including identifying roles in the project and defining authority and responsibility.
		6.2.3	Allocation of personnel	Selecting and assigning sufficient personnel with the appropriate competence to suit the project needs.
		6.2.4	Team development	Developing individual and team skills and the ability to enhance project performance.
<u>Clause 7</u> Product/service realization in projects	<u>7.2</u> Interdependent processes	7.2.2	Project initiation and project management plan development	Evaluating customer's and other interested parties' requirements, preparing a project management plan and initiating other processes.
		7.2.3	Interaction management	Managing interactions during the project.
		7.2.4	Change management	Anticipating change and managing it across all processes.
		7.2.5	Process and project closure	Closing processes and obtaining feedback.
	<u>7.3</u> Scope-related processes	7.3.2	Concept development	Defining the broad outlines of what the project product will do.

		7.3.3	Scope development and control	Documenting the characteristics of the project product in measurable terms and controlling them.
		7.3.4	Definition of activities	Identifying and documenting activities and steps required to achieve the project objectives.
		7.3.5	Control of activities	Controlling the actual work carried out in the project.
	7.4 Time-related processes	7.4.2	Planning of activity dependencies	Identifying interrelationships and the logical interactions and dependencies among project activities.
		7.4.3	Estimation of duration	Estimating the duration of each activity in connection with the specific conditions and the resources required.
		7.4.4	Schedule development	Interrelating the project time objectives, activity dependencies and their durations as the framework for developing general and detailed schedules.
		7.4.5	Schedule control	Controlling the realization of the project activities, for confirming the proposed schedule or for taking adequate actions for recovering from delays.
	7.5 Cost-related processes	7.5.2	Cost estimation	Developing cost estimates for the project.
		7.5.3	Budgeting	Using results from cost estimation to produce the project budget.
		7.5.4	Cost control	Controlling costs and deviations from the project budget.
	7.6 Communication-related processes	7.6.2	Communication planning	Planning the information and communication systems of the project.
		7.6.3	Information management	Making necessary information available to project organization members and other interested parties.
		7.6.4	Communication control	Controlling communication in accordance with the planned communication system.
	7.7 Risk-related processes	7.7.2	Risk identification	Determining risks in the project.
		7.7.3	Risk assessment	Evaluating the probability of occurrence of risk events and the impact of risk events on the project.

		7.7.4	Risk treatment	Developing plans for responding to risks.
		7.7.5	Risk control	Implementing and updating the risk plans.
	<u>7.8</u> Procurement processes	7.8.2	Procurement planning and control	Identifying and controlling what is to be purchased and when.
		7.8.3	Documentation of procurement requirements	Compiling commercial conditions and technical requirements.
		7.8.4	External provider management and development	Evaluating and determining which external providers and subcontractors should be invited to supply products.
		7.8.5	Contracting	Issuing invitations to tender, tender evaluation, negotiation, preparation and placing of the subcontract.
		7.8.6	Contract control	Ensuring that subcontractors' performance meets contractual requirements.
<u>Clause 8</u> Measurement, analysis and improvement in projects	<u>8.1</u> General	—	Improvement	Gives guidance on how both the originating and project organizations should learn from projects.
	<u>8.2</u> Measurement and analysis	—	Measurement and analysis	Gives guidance on the measurement, collection and validation of data for continual improvement.
	<u>8.3</u> Improvement	8.3.1	Improvement by the originating organization	The steps the originating organization should take for continual improvement of the project process.
		8.3.2	Improvement by the project organization	The information that the project organization should supply to the originating organization to enable continual improvement.

Source: ISO 10006;2017(E) Quality Management in Project

2.1.6. Quality Management in Construction

Implementing a Quality Management System has been an endeavor for many construction companies in the last two decades. While the concept is receiving the utmost attention from large construction companies that seek a competitive edge (Bubshait & Al-Atiq, 1999) small- and medium-sized construction companies have tended to hesitate and postpone this step. Although they recognize the advantages of implementing an ISO 9001 compliant Quality Management System, the difficulty in fully perceiving what is involved has kept many companies from moving ahead. The comparison of literature with practice proves that there are recurrent issues that come up in implementations in different industries, company sizes, and geographic locations. Quality Management Systems can provide a solution for several ancient issues in construction companies. It can also constitute a good opportunity for restructuring and modernization, as well as changes in traditional ways that have been accepted without in-depth analysis.

Basically, the QMS in the construction housing industry refers to quality planning, quality assurance and quality control. For the implementation of quality management in construction housing projects, the concepts of quality planning (identification of quality standards), quality assurance (evaluation of overall project performance) and quality control (monitoring of specific project results) in the quality management processes were defined by (PMI, 2000). As a construction firm, the real estate developers need to emphasis on continuous improvement through quality management process to achieve the customer needs. This is an important proper solution for the housing construction developers to solve problems like workmanship defects, time, and cost overrun. According to (Rumane, 2011), construction project quality management is defined as the fulfillment of owner's needs per defined scope of works within a budget and specified schedule to satisfy the owner's requirements. The phenomenon of these three components can be the construction project trilogy. Construction projects are custom oriented and custom designed, having specific requirements set by the customer to be completed within a finite duration and assigned budget. Every project has elements that are unique that means no two projects are identical. It is always the owner's desire that his project be unique and better. To a great extent, each project has to be designed and built to serve a specified

need. Construction projects are more customized than a routine and repetitive business (Rumane, 2011). This shows that a comprehensive and proper quality management system that encompass all the components and participants in the construction activities need to be addressed for successful implementation of a practical plan to ensure that the required standards of quality construction will be achieved. The process of implementation always means an extra effort to all in the organization. A well-implemented QMS will impact all sectors in the company. For the head of the company there is often the belief that this process can be achieved without impacting its own functions. According to (Fixsen et al., 2001), implementation is defined as a specified set of activities designed to put into practice an activity or program of known dimensions. According to this definition, implementation processes are purposeful and are described in sufficient detail such that independent observers can detect the presence and strength of the "specific set of activities" related to implementation. In addition, the activity or program being implemented is described in sufficient detail so that independent observers can detect its presence and strength.

2.2. Empirical Literature Review

The empirical literature provides pragmatic support of quality management practices in construction projects. Nowadays for solving quality problems and to meet the needs of the customer, construction companies have adopted QMS in their activities. Hence, this section is concerned with other studies conducted on in similar discipline.

One of the earlier empirical studies conducted in the QM area by (Saraph et al., 1989) have used data obtained from 162 managers of 20 manufacturing and service industries collected in the region of USA to identify the CSFs of TQM. They identified eight factors: top management leadership, role of quality department, training, product design, supplier quality management, process management, quality data reposting, and employee relations.

For empirical review purpose this study selected the study conducted by (Agbenyega, 2014), which focuses on quality management practices of construction firms in Ghana. The study emphasis on solving the potential barriers, which are to be the main measures to be taken, namely: management commitment, communication between

managers and employees, employee involvement, detailed and logical work program, regular inspection, quality audit report, lack of training and education of team members and review and analysis. The other study conducted by Birhanu, who identified that lack of effective supervision, communication, management of commitment, proper equipments and materials available for use, inefficient resource management and problems with contractors are some of the challenges to the attainment of project quality (Birhanu, 2014).

The research conducted on “Quality Management in Construction Projects” in Malaysia, is also be considered for empirical review of this study. This Malaysian researcher explores preliminarily the practices of quality management, management commitment in quality management, and quality management implementation problems in construction projects in the context of Malaysian construction industry. The findings of the study indicate that the state of quality management in construction projects in Malaysia needs to be strengthened and there are problems in relation to quality management implementation that require attention.

The identified problems by the scholars are more or less similar even though there is variation due to their practical context of the projects. Hence, these variables are also considered in my study to consider in the context of the housing construction projects.

2.3. Conceptual Frame Work

This section showed the distinct dimensions related to QMS as presented in literature dealing with the topic. This has formed the basis for a comprehensive framework that encompasses the different features of QMS. The key dimensions of QMS as per (ISO 10006, 2017) have been identified with emphasis on their critical value in the framework. The dimensions of QMS described in this section have all been thoroughly documented by many authors and experts on the subject. This is also captured in the conceptual framework which shows a relationship between the independent variables and dependent variable. The three important scope in the model are management responsibility in project, resource management in project, product realization in project. These scope have further divided into factor describing them such as customer focus, leadership capabilities, factual based decision, improvement, process approach , peoples engagement and relationship management which an

potentially explain the implementation and practice of QMS as per (ISO 10006, 2017). These elements in conceptual model show the relationship among the variables to describe the practice and the extent of implementation of QMS in the real estate housing construction project. The study was guided by the formulated conceptual framework as described on figure 2.3.1.

Independent Variable

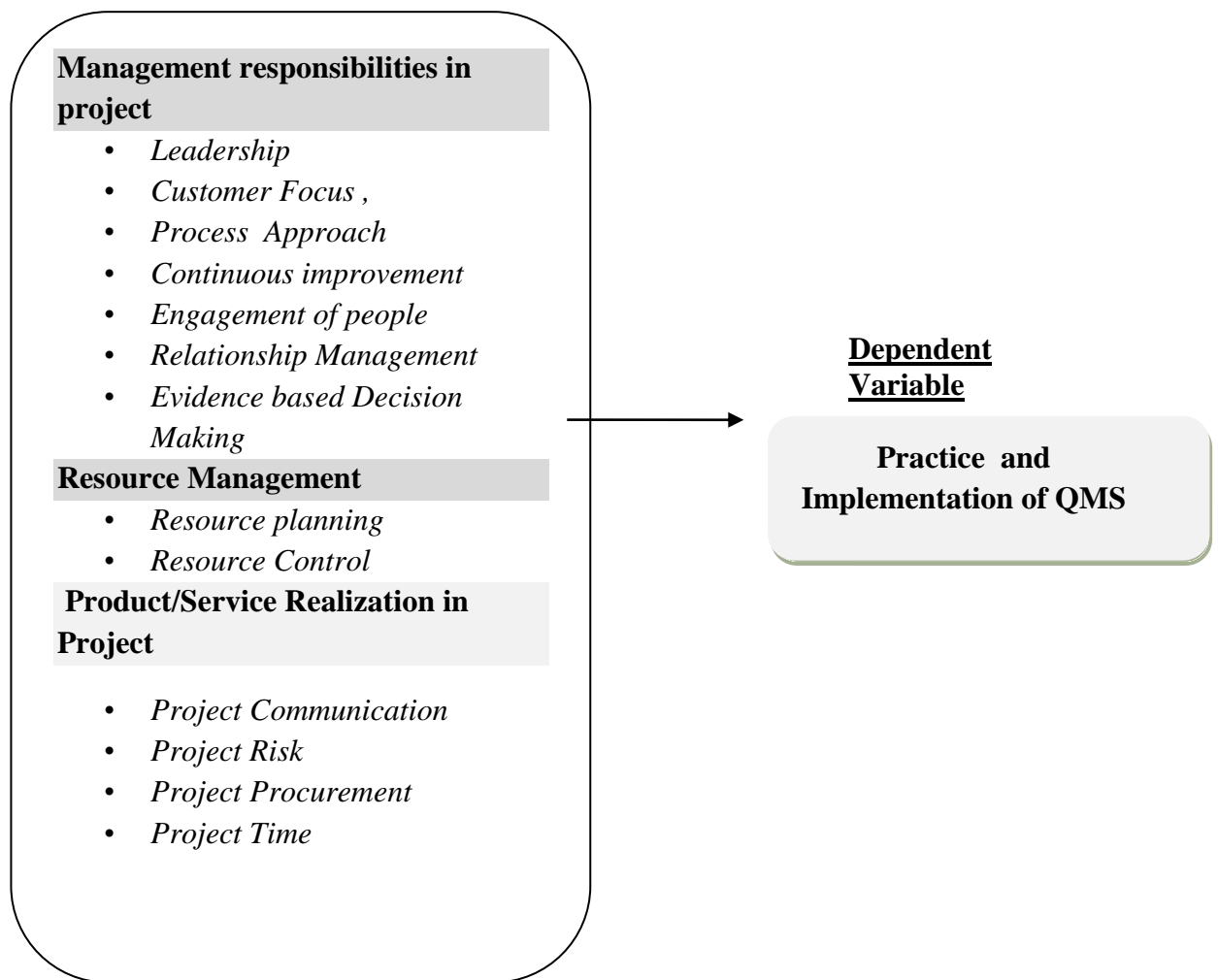


Figure 2.3.1. Conceptual Frame Work to analyze the Practice and Implementation of QMS in Real estate Housing Construction firms (researcher own source)

CHAPTER THREE: RESEARCH METHODOLOGY

According to (Kumar, 1999) a research design is a procedural plan that is adopted by researchers to answer questions objectively, accurately, economically and with validity. Moreover, (Bryman & Bell, 2007) stressed that research design should provide the overall structure and orientation of an investigation as well as a framework within which data can be collected and analyzed. Therefore in this study a detailed descriptions of the essential considerations in designing the research project which encompass the research design, population and sample design, sampling techniques, instruments of data gathering, validity and reliability of data, methods of data analysis and ethical considerations.

3.1. Research Design

This study used a mixed method of design. (Creswell, 2007) described that a strong mixed design study should start with a mixed methods research question, to shape the methods and the overall design of a study. Mixed type approach was used for both qualitative and quantitative methods. According to (Saunders et al., 2007), research design is defined as the general plan of how the research questions would be answered. It is the conceptual structure within which research is conducted. There for the research design for this study was the cross-sectional field survey method because data were collected at one point of time during a period of three weeks to assess the quality management practice in real estate housing construction. In this study a descriptive survey method was used to measure the characteristics described in the research question. In connection with the application of descriptive survey method, it was stated that this method is a method of investigation which attempts to describe and interpret what exists at present in the form of conditions, practice, process, trends, effects, attitudes, beliefs, etc (Crosswell & Plano Clark, 2011).

3.2. Population and Sample Design

3.2.1. Population

According to (Blumberg et al., 2005) population is considered as a total collection of elements about which we wish to make some inferences. Therefore, the target population for this study were composed of two real estate construction firms in found in Addis Ababa. These two real estate is selected using a random sampling techniques

from list of real estate company which had implemented QMS in their organizational system. This population helps to forms the basis from which the sample has drawn. The population size of the study is 80 personnel from both construction companies who is working directly on project managerial and project expert level.

3.2.2. Sample Size and Sampling Technique

During designing samples, (Copper & Schindler, 2008) suggested that the following should be clearly described: the target population, parameters of interest, sampling frame, appropriate sampling method and the required sample size from the target population that will be taken. The sampling size was determined by the equation, where (Yamane, 1967) cited on (Israel, 2013) provided a simplified formula to calculate a sample size as presented hereunder.

$$n=N/(1+N*e^2)$$

Where n stands for number of sample, N stands population size, and 'e' stands for margin of error. In this study the confidence interval used was a 95% and 'e' can be 0.05. Therefore the sample size obtained using this formula was 66 and this was equally divided into 33 participants to each of the selected real estate, which are under the study. As a sample, project manager, project supervisor, project consultancy, contract administration team, technical team member and project expert is taken using random sampling techniques. The researcher was used a purposive sampling technique from the population of interest. The reason for choosing this technique was that the selected participant is the focal and more responsible persons in the practice and implementation of QMS in their company. Moreover, these samples could help the researcher to understand the problem and the research question since they were assumed to be rich in information in QMS.

3.3. Instruments of Data Collection

Both primary and secondary data collection methods were used in this study. According to (Kothari, 1985) questionnaires, interviews and direct observations are the most important means of data collection tools. Therefore, in this study, both closed and open ended questionnaires and semi structured interviews were employed as a primary data collection. And the secondary data that is relevant to the study was collected through literature review, journals, and periodicals. A Likert Scale, which is a five point scale

was used to allow the individual to express how much they agree or disagree with a particular statement in the questionnaire. The questionnaire was developed by referring different literatures and modifying according to the objectives of this study. The questionnaire had five parts which enabled to collect information on quality management practice in real estate construction firms. The questionnaire had been developed in English and after conducting test for reliability and the pilot test, the data gathering instruments was edited. Then after, data was collected by the researcher.

3.4. Validity and Reliability of the Data Collection Instrument

3.4.1 Validity

The researcher had not have any connection with the research participant, which provided an unbiased perspective for the participants. Participants was encouraged to speak openly and honestly with the knowledge that the researcher, as stated in the confidentiality agreement, protect their identity in the published results. According to (Paul, 1998) validity is defined as how much any measuring instrument measures what it is intended to measure. Validity is the most critical criterion and indicates the degree to which an instrument measures what it is supposed to measure. There are three types of validity check for data according to (Kothari, 1985) (i) Content validity; (ii) Criterion-related validity and (iii) Construct validity. In this study content validity of the research was performed.

3.4.2 Reliability

The validity of the data gathering tools were checked by selecting ten respondents, who have high experience on the issue under the study. And then the reliability of the tools were checked using Cronbach's alpha values. The descriptive statistics helped to determine uni-dimensionality and construct validity of the measures, and the Cronbach's alpha values of the factors helped to show the reliability of data that would explain the practice of quality management with in the real estate housing construction activities. The Cronbach's alpha measures the internal consistency of a group of items by measuring the homogeneity of the group of items. "It is an indication of how well the different items complement each other in their measurement of different aspects of the same variable or quality" (Litwin, 2003).

The Cronbach alpha value for the test under Part II of the questionnaire, which focuses in identification of basic information regarding to QMS implementation, is calculated as 0.885. This indicates that there is a high internal consistency among the data.

Table 3.4.2.1: Case Processing Summary and Reliability Statistics for Pilot-Test for identification of basic information regarding to QMS implementation within the project area.

Case Processing Summary			
		N	%
Cases	Valid	10	100.0
	Excluded ^a	0	.0
	Total	10	100.0
a. Listwise deletion based on all variables in the procedure.			
Reliability Statistics			
Cronbach's Alpha	N of Items		
.885	5		

Source: Data collected by the researcher through Questionnaire, 2018

Secondly, the Cronbach alpha value for the test is under Part III of the questionnaire, which helps to know the level of the management responsibility in project activities, is calculated as 0.722. This also indicates that there is internal consistency among the data.

Table 3.4.2.2: Case Processing Summary and Reliability Statistics for Pilot-Test for understanding the level of the management responsibility of the project.

Case Processing Summary			
		N	%
Cases	Valid	10	100.0
	Excluded ^a	0	.0
	Total	10	100.0
a. Listwise deletion based on all variables in the procedure.			
Reliability Statistics			
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items	
.722	.750	19	

Source: Data collected by the researcher through Questionnaire, 2018

Thirdly, the Crobnach alpha value for the test under Part IV of the questionnaire which focused on resource management in projects activities, is calculated as 0.709. This also indicates that there is internal consistency among the data.

Table 3.4.2.3: Case Processing Summary and Reliability Statistics for Pilot-Test for understanding resource management in projects activities

Case Processing Summary			
		N	%
Cases	Valid	10	100.0
	Excluded ^a	0	.0
	Total	10	100.0
a. Listwise deletion based on all variables in the procedure.			
Reliability Statistics			
Cronbach's Alpha		N of Items	
.709		4	

Source: Data collected by the researcher through Questionnaire, 2018

Finally, the Crobnach alpha value for the test under Part V of the questionnaire, which focused on the realization of product or service in project activities, is calculated as 0.809. This indicates that there is a high internal consistency among the data.

Table 3.4.2.4: Case Processing Summary and Reliability Statistics for Pilot-Test for the realization of product or service in project activities .

Case Processing Summary			
		N	%
Cases	Valid	10	100.0
	Excluded ^a	0	.0
	Total	10	100.0
a. Listwise deletion based on all variables in the procedure.			
Reliability Statistics			
Cronbach's Alpha		N of Items	
.809		11	

Source: Data collected by the researcher through Questionnaire, 2018

3.5. Methods of Data Analysis

The quantitative data first was organized and put into tables to suit for analysis. Then after, these data were analyzed using descriptive statistical methods like mean, standard deviation and percentages and calculated using statistical package for the social sciences (SPSS) version 20. The statistical tools were align with the objectives of the research. Moreover, the qualitative data was transcribed and then coded and put into categories and discussed. As a system of analyzing qualitative data, the content analysis could be used as it had been focused on identifying text about the different theme. Idea were grouped together and gathering evidence about views on each theme. For easy understanding of the level of practice and implementation QMS of the two company, the researcher has formulated a rating system which encompasses an Excellent, Very Good, Moderate, and Unsatisfactory rating to summarize and conclude the practice and implementation of QMS based on the participants response.

- I). Excellent is rated to the activities that are very well known, very well done and very well implemented QMS which is equal and above 80% of the response.
- II). Very Good is rated for the activities that are well known, well practiced and well implemented QMS, which include from 65% to 80% of the response.
- III). Moderate is rated for the activities that are fairly know, practiced and implemented QMS but not in-depth, which include from 50% to 65% of the respondents.
- IV). Unsatisfactorily rated for the activities, which are practiced and implemented inadequately, which include less than 50% of the respondents.

Finally the qualitative and the quantitative data were be triangulated to forward summaries, conclusions and recommendations.

3.6. Research Ethics

Participation in the study was on the voluntary basis. Participants was asked for willingness before they were provided the questionnaire. The subjects were also be assured that their responses used only for the purpose of the study. An attempt was made first to explain the objectives and significance of the study to the respondents. Name and other identifying information were not be used in the study. The researcher was safeguarded all information related to the participants. Their privacy, identity and confidentiality was maintained by assigning them code numbers instead of names (anonymity).

CHAPTER FOUR: RESULTS AND DISCUSSION

In this study 50 respondents were participated from 66 distributed questionnaires. This shows that it was found 75% response rate to conduct the study. Results and discussions are devised in five parts in line with the objectives of the research. The first part tries to present the demographic characteristics of the respondents, then the second part shows the finding in regarding to basic information on QMS practice and implementation in Afro Tsion and Flintstone real estate project. The third part of the results and discussion contains the findings towards identifying and understanding the level of the management responsibility in their project's. The fourth part is focused to identify the resource management in projects activities. Finally, the fifth part identify product/service realization in project activities.

4.1. Demographic Characteristics of the Respondents

Table 4.1.1 Demographic Characteristics of the Respondents

Role of the Respondents	Company	Experience(Years)				Total
		<5	6 to 10	11 to 15	>16	
Office Engineer	Flintstone		x			2
	Afro Tsion		x			
Construction Forman	Flintstone	xx	x	x		8
	Afro Tsion	xxx	x			
Contract Administration Team	Flintstone	x	xx	x		8
	Afro Tsion	xx	xx			
Project Consultancy	Flintstone		x			2
	Afro Tsion		x			
Technical Team Member	Flintstone	xx	xx			10
	Afro Tsion	xxx	xx	x		
Project Manager	Flintstone	xx	xx	x		9
	Afro Tsion		xx	x	x	
Project Expert	Flintstone	xxxx	x	x		11
	Afro Tsion	xxxx	x			
Total No.		23	20	6	1	50
Percent		46%	40%	12%	2%	100%

Source: Data collected by the researcher through Questionnaire, 2018

Table 4.1 showed that the work experience of the participants from both company. Accordingly, 23(46%) of respondents have served from one up to five years, 20(40%) have an experience from six up to ten years, six (12%) have served from eleven to fifteen years and only one respondent (2%) have served above 15 years in their respective organizations.

4.2. Basic Information on Quality Management System

Table 4.2.1. Basic Information Regarding to (QMS) Implementation

Item	Statement	Response	Flintstone		Afro Tsion	
			Frequency	Percent	Frequency	Percent
I	Have you used any form of QMS in your current construction industry?	No	3	12.0	13	52.0
		Yes	22	88.0	12	48.0
		Total	25	100.0	25	100.0
II	Have you ever been communicated about QMS from Senior Management in your current project?		Frequency	Percent	Frequency	Percent
		No	5	20	19	76.0
		Yes	20	80.0	6	24.0
		Total	25	100.0	25	100.0
III	Do you think each site should have a Quality Manager responsible for implementing Quality Plans and Checklists?		Frequency	Percent	Frequency	Percent
		No	3	12.0	4	16.0
		Yes	22	88.0	21	84.0
		Total	25	100.0	25	100.0
IV	Do you agree QMS help reduce defective work and the number of problem corrections in your current project?		Frequency	Percent	Frequency	Percent
		No	2	8.0	4	16.0
		Yes	23	92.0	21	84.0
		Total	25	100.0	25	100.0
V	Have you ever received training in any form of QMS?		Frequency	Percent	Frequency	Percent
		No	11	44.0	21	84.0
		Yes	14	56.0	4	16.0
		Total	25	100.0	25	100.0

Source: Data collected by the researcher through Questionnaire, 2018

Result from Table 4.2.2 shows that more than 80% of Flintstone respondents, have positively responded to the given statements. This shows that the application and communication of QMS is performed well in their project activities, and they were also understand that quality manager is responsible for implementing quality plans and checklists. Moreover, the respondents were asserted that QMS could help them to reduce defective work and problems in their current project. This implied that they are well informed and practiced QMS in their company. But, the response dictates that the provision of training to them seems to be not adequate.

On the contrary, Afro Tsion respondents were declared positive response for the responsibility of the quality manager's in the implementation of QMS. This result could show that they are fully dependent and believed that practice and implementation of QMS is a responsibilities of the quality manager. Furthermore, the communication and

training about QMS found to be at its lowest level in Afro TSION project. In another development, the open ended questionnaire response of both companies have showed that majority of the respondents has replied that checklist as a quality control tools is practiced in their construction activities.

4.3. Status of Management Responsibility in the Selected Real Estate Company

Table 4.3.1 Customer Related Issues

Item I. The project understands the needs of existing and future customers					Item III. The project measure customer satisfaction.				
Response	Flintstone		Afro TSION		Response	Flintstone		Afro TSION	
	Frequency	Percent	Frequency	Percent		Frequency	Percent	Frequency	Percent
Very good	--	--	--	--	Very good	--	--	2	8
Poor	--	--	2	8	Poor	9	36	10	40
Average	10	40	11	44	Average	5	20	8	32
Good	7	28	10	40	Good	9	36	4	16
Very Good	8	32	2	8	Very Good	2	8	1	4
Mean	3.92		3.48		Mean	3.16		2.68	
Std. Deviation	0.862		0.77		Std. Deviation	1.028		0.988	
Item II. The project activities can meet customer requirements					Item IV. The project aims to exceed customer expectations.				
Response	Flintstone		Afro TSION		Response	Flintstone		Afro TSION	
	Frequency	Percent	Frequency	Percent		Frequency	Percent	Frequency	Percent
Very poor	--	--	1	4	Very poor	--	--	7	28
Poor	4	16	10	40	Poor	5	20	1	4
Average	11	44	6	24.0	Average	5	20	12	48
Good	8	32	7	28.0	Good	12	48	5	20
Very Good	2	8	1	4.0	Very Good	3	12	--	--
Mean	3.32		2.88		Mean	3.52		2.6	
Std. Deviation	0.852		1.013		Std. Deviation	0.963		1.118	

Source: Data collected by the researcher through Questionnaire, 2018

For item I response in Table 4.3.1. shows that 15(60%) of Flintstone and 12(48%) of Afro TSION respondents were thought good and very good that their project understands the needs of existing and future customers. Moreover the average mean value (3.92) and (3.48) shows that the Flintstone's project understands the needs of existing and future customers better than Afro TSION. This shows that Flintstone can able to create a

comprehensive understanding of their customers through applying an intelligent customer engagement, which is a key to achieving core business goals in their real estate construction.

Regarding to Item II in Table 4.3.1, 11(44%) of Afro Tsion respondents were replied that project activities to meet customer requirements is poor and very poor, and only eight (32%) of them have rated the statement good and very good. The average mean value (3.32) and (2.88) respectively showed that the project activities of both Flintstone and Afro Tsion meet the customer requirement in an average manner. This shows that there could be a challenge in tailoring their level of service to suit their customers' needs. The result indicates both companies are providing basic level of service while there is a need to go beyond customer expectations.

Regarding to item III in Table 4.3.1, nine respondents (36%) from Flintstone and 12(48%) from Afro Tsion were said that measuring customer satisfaction was poor and very poor. Moreover, the average mean value (3.16) of the Flintstone and (2.66) of the Afro Tsion showed that their project is not adequately measure the customer satisfaction. It is also learned that majority respondents on the open ended questionnaire indicates that they are rarely measure their customers satisfaction.

Regarding to item IV in Table 4.3.1, 15 (60%) of Flintstone respondents were confirmed that their project aims to exceed customer satisfaction in a good and very good way, whereas only five (20%) of Afro Tsion respondents replied it is good. Moreover, the average mean value (2.66) of the Afro Tsion showed that there was a tendency that the project was not sufficiently aim to exceed customer satisfaction. This might imply that Afro Tsion could nearly failed to meet customer expectations, which might create customers looking other real estate elsewhere in the long run. On the other hand, response on the open ended questionnaire and interview response dictates that Flintstone have tried to go beyond customer expectations as they were introducing initiatives like, customer focus groups, customer survey cards or a suggestion box. These initiatives send a clear message to customers that they are interested in their input.

Table 4.3.2 In Regard to Leadership Perspectives

Item I. There is top management support in the project activities				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Very poor	--	--	1	4.0
Poor	--	--	--	--
Average	1	4.0	8	32.0
Good	16	64.0	8	32.0
Very Good	8	32.0	8	32.0
Mean	4.28		3.88	
Std. Deviation	0.542		1.013	
Item II. The leadership establish a vision and direction for the organization				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Very poor	--	--	--	--
Poor	--	--	1	4.0
Average	4	16.0	10	40.0
Good	12	48.0	12	48.0
Very Good	9	36.0	2	8.0
Mean	4.20		3.60	
Std. Deviation	0.707		0.707	
Item III. The leadership can able to establish trust				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Very poor	--	--	1	4.0
Poor	2	8.0	6	24.0
Average	8	32.0	10	40.0
Good	10	40.0	7	28.0
Very Good	5	20.0	1	4.0
Mean	3.72		3.04	
Std. Deviation	0.891		0.935	

Source: Data collected by the researcher through Questionnaire, 2018

For item I in Table 4.3.2. result shows that 24(96%) of the Flintstone respondents and 16(64%) of Afro Tsion respondents asserted that their project activities were supported by the top management as good and very good. Moreover, the mean value (4.22) and (3.88) could explain that the top management support is good in both real estate company. This might imply that the top management of both company promote the importance of the project and its management for their organization, and also able to develop a vision, mission and strategy for the management of their projects. This could

help them to make resources available and balance the needs of the line and the project organization in view of the organization's strategic intentions.

For item II in Table 4.3.2. shows that 21(84%) respondents of the Flintstone explained that their leadership established a vision and direction for the organization was good and very good, for the same response 14(56%) of the Afro Tsion respondents replied it is good and very good. Moreover, the average mean value (4.2) and (3.6) showed that the leadership of their respective company established vision and direction for their organization.

The response from Afro Tsion respondents regarding to item III in Table 4.3.2 showed that seven (28%) of the respondents were rated establishment of trust by the leadership is poor and very poor, where as eight (32%) of the respondents were asserted that it is good and very good. The average mean value (3.04) can explain that the establishment of trust by the leadership is found to be an average level in Afro Tsion. On the contrary, 15(60%) of the Flintstone respondents emphasized that establishment of trust by their leadership is found to be good and very good. The average mean value (3.77) is also supported that the leadership can able to establish trust in a good way in this company. This shows that project leader able to build trust with their colleagues to gain legitimacy and to empower others.

Table 4.3.3. In relation to Engagement of People

Item I. The project ensures that people's abilities are used and valued				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Very poor	--	--	2	8.0
Poor	--	--	1	4.0
Average	8	32.0	14	56.0
Good	9	36.0	7	28.0
Very Good	8	32.0	1	4.0
Mean	4.00		3.16	
Std. Deviation	0.816		0.898	
Item II. There is evaluation of individual performance in the project activities				
Response	Flintstone		Afro Tsion	

	Frequency	Percent	Frequency	Percent
Very poor	--	--	--	--
Poor	--	--	3	12.0
Average	10	40.0	12	48.0
Good	11	44.0	9	36.0
Very Good	4	16.0	1	4.0
Mean	3.76		3.32	
Std. Deviation	0.723		0.748	
Item III. The project facilitates learning and knowledge sharing within the project activities.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Very poor	--	--	-	--
poor	--	--	1	4.0
Average	6	24.0	12	48.0
Good	15	60.0	8	32.0
Very Good	4	16.0	4	16.0
Mean	3.92		3.60	
Std. Deviation	0.640		0.816	

Source: Data collected by the researcher through Questionnaire, 2018

For item I on Table 4.3.3, 17(68%) of the Flintston respondents were said that their project ensures that people's abilities are used and valued at good and very good level. But from Afro Tsion respondents only eight (32%) were agreed for good and very good. The average mean value (4.00) and (3.16) also assures that usage and valuation of people's abilities are at good and average level respectively in Flintstone and Afro Tsion real estate projects. These findings could shows that the Flintstone leadership is being aware of and supporting personal perspectives, values, beliefs, and preferences incorporating the variety of characteristics that make individuals unique, including race, ethnicity, gender, sexual orientation, age and physical abilities much better than the Afro Tsion leadership.

For item II in Table 4.3.2 the result shows that 15(60%) of the Flintstone respondents were agreed good and very good for responding evaluation practice of individual performance in their respective project activities, where as 10(40%) respondents from Afro Tsion asserted good and very good for the same response. The average mean value (3.76) and (3.32) for respondents of Flintstone and Afro Tsion respectively shows that there is good and an average practice of evaluation of individual performance in their respective project activities.

The open ended questionnaire response also explicitly showed that the performance reports provide them a basis for managerial decisions on how to manage the project team. This employee performance could includes the employee’s work results such as: quality and quantity of outputs, work behavior (such as punctuality) and job-related attributes (such as cooperation and initiative).

As shown on Table 4.3.3 for item III, 19(76%) and 12 (48%) of respondents from the Flintstone and Afro Tsion respectively have responded that their project facilitates learning and knowledge sharing within the project activities are good and very good. Moreover, the average mean value (3.92) and (3.6) also indicates that there is good learning and knowledge sharing within the project activities. This could imply that they have good knowledge sharing systems that support the process through which explicit or tacit knowledge is communicated to other individuals. Therefore this result indicates that there is good understanding and coordination amongst the people in the project, also they might provide fast solution and improves response time, and have acceptance to new ideas.

Table 4.3.4. The Perspectives of Process Approach

Item I. The project manage activities as processes				
Response	Flintstone		Afro Tsion	
	Frequency	Frequency	Percent	Frequency
Very poor	--	--	--	---
poor	--	--	1	4.0
Average	9	36.0	11	44.0
Good	5	20.0	13	52.0
Very Good	11	44.0	--	--
Mean	4.08		3.48	
Std. Deviation	0.909		0.586	
Item II. Linkages between project activities are identified				

Response	Flintstone		Afro Tsion	
	Frequency	Percent		
Very poor	--	--	1	4.0
poor	1	4.0	2	8.0
Average	8	32.0	18	72.0
Good	7	28.0	3	12.0
Very Good	9	36.0	1	4.0
Mean	3.96		3.52	
Std. Deviation	0.935		0.653	
Item III. The project prioritize improvement opportunities				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Very poor	--	--	1	4.0
poor	--	--	2	8.0
Average	12	48.0	18	72.0
Good	11	44.0	3	12.0
Very Good	2	8.0	1	4.0
Mean	3.60		3.04	
Std. Deviation	0.645		0.735	

Source: Data collected by the researcher through Questionnaire, 2018

Table 4.3.4 for item I shows that 16(64%) of the respondents from Flintstone have agreed good and very good, while 13(52%) of respondents of Afro Tsion asserted that their project is good at managing their respective project activities as a process. Moreover, the average mean value (4.08) shows that project activities are managed in a very good manner as a process in Flintstone while the mean value (3.48) shows that Afro Tsion project activities are averagely managed. This might show that Flintstone can able to identify closely related and similar activities which are grouped into division and departments. This could helps its management process to designs and maintains an environment in which personnel's accomplish efficiently selected aims.

Regarding to identification of linkage in project activities, the response from table 4.3.4 for item II showed that 16(64%) and 4(16%) of the respondents from Flintstone and Afro Tsion respectively have replied good and very good. The average mean value (3.96) and (3.52) were also showed that identification of linkage between project is found to be good in Flintstone and average in Afro Tsion. This implies that their project's link any two tasks in a project to show their relationship, which drive the project schedule for which they link the tasks.

Table 4.3.4 for item III shows that 13(52%) Flintstone's respondents and only four (16%) of Afro TSION respondents were asserted that there is good and very good situation in prioritizing improvement opportunities in project activities. This could indicate us that they need to implement techniques that encompasses collection and identification of a list of all their tasks, in order to prioritize improvement opportunities in project activities.

Table 4.3.5 Improvement Aspect within the Project

Item I. Activities are performed to improve project performance and capabilities				
Response	Flintstone		Afro TSION	
	Frequency	Percent	Frequency	Percent
Very poor	--	--	--	--
poor	--	--	2	8.0
Average	8	32.0	15	60.0
Good	6	24.0	7	28.0
Very Good	11	44.0	1	4.0
Mean	4.12		3.56	
Std. Deviation	0.881		0.821	
Item II. The project empower people to make improvements				
Response	Flintstone		Afro TSION	
	Frequency	Percent	Frequency	Percent
Very poor	--	--	--	--
poor	1	4.0	2	8.0
Average	7	28.0	15	60.0
Good	10	40.0	7	28.0
Very Good	7	28.0	1	4.0
Mean	4.00		3.28	
Std. Deviation	1.080		0.678	

Source: Data collected by the researcher through Questionnaire, 2018

Table 4.3.5 for item I shows that 17(68%) of Flintstone respondents have assured that activities are performed good and very good to improve project performance and capabilities. But, in the case of Afro TSION responses only eight (32%) of respondents were said good and very good. The calculated average mean value (4.12) shows that activities are performed well to improve performance and capabilities in Flintstone. And that of Afro TSION which is calculated as (3.56) shows project activities are conducted in an average manner to improve project performance and capabilities. This

finding is also substantiated by a written response as the majority of the respondents were described that there is some sort of problems in prioritizing their tasks and reviewing their workload on a timely basis.

For item II in table 4.3.5, it is showed that 17(68%) of the Flintstone respondents have said it is good and very good that their project empower people to make improvements, while eight (32%) of Afro Tsion respondents were saying the same. This could show that the project tried to motivate their employees to take more responsibility and create a more positive work environment for everyone involved. As it was observed from the written response empowerment was demonstrated and practiced through developing trust, through communicating a clear vision and give confidence for self-improvement within the project activities.

Table 4.3.6. Evidence-Based Decision-Making

Item I. The project ensure the accessibility of accurate and reliable data				
Response	Flintstone		Afro Tsion	
	Frequency	Frequency	Percent	Frequency
Very poor	--	--	4	16.0
Poor	1	4.0	7	28.0
Average	7	28.0	1	4.0
Good	10	40.0	11	44.0
Very Good	7	28.0	2	8.0
Mean	3.92		3.00	
Std. Deviation	0.862		1.323	
Item II. Decisions taken by the project are made based on analysis				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Very poor	--	--	--	--
poor	1	4.0	4	16.0
Average	2	8.0	10	40.0
Good	15	64.0	9	36.0
Very Good	6	24.0	2	8.0
Mean	4.08		3.36	
Std. Deviation	0.702		0.860	
Item III. The project balance data analysis with practical experience				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent

Very poor	1	4.0	--	--
poor	--	--	9	36.0
Average	4	16.0	8	32.0
Good	14	56.0	7	28.0
Very Good	6	24.0	1	4.0
Mean	3.96		3.00	
Std. Deviation	0.889		0.913	

Source: Data collected by the researcher through Questionnaire, 2018

Table 4.3.6 for Item I shows that 17(68%) and 13(52%) of the Flintstone and Afro Tsion respondents were respectively asserted that their project ensures the accessibility of accurate and reliable data in a good and very good manner. This could indicate that Flintstone is working on data integrity, which is maintaining and assuring the accuracy and consistency of data over its entire life cycle, better than Afro Tsion. This result can tell us that Flintstone is quite beneficial in measuring its business performance against company goals, beneficial in their resource deployment and allocation, for their understanding and managing customer and partner satisfaction.

For item II in table 4.3.6. result showed that 21(84%) and 11(44%) of Flintstone's respondents and Afro Tsion respondents respectively claimed that decisions taken by the project are made based on analysis is good and very good. This could indicate that in Flintstone there is a rational decision making procedures which is suitable to the existing goals within the given conditions and constraints.

For item III in table 4.3.6 result showed that 20(80%) of Flintstone respondents were asserted that the project balance data analysis with practical experience in a very good way. This might show that they are continuously use check list in every items of work, helps in collecting data and information for their decision making process.

Table 4.3.7 Relationship Management

Item I. Relationships considering both the short and long term is established within the project

Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Very poor	--	--	--	--
poor	--	--	2	80
Average	4	16.0	11	44.0
Good	21	84.0	12	48.0
Very Good	--	--	--	--
Mean	3.84		3.40	
Std. Deviation	0.374		0.645	
Item II. There is good share of expertise, resources, information, and plans with partners				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Very poor	1	4.0	--	--
poor	1	4.0	8	32.0
Average	5	20.0	9	36.0
Good	16	64.0	5	20.0
Very Good	2	8.0	3	12.0
Mean	3.68		3.12	
Std. Deviation	0.852		1.013	
Item III. The project can identify and select suppliers to manage costs, optimize resources, and create value.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Very poor	--	--	1	4.0
poor	--	--	4	16.0
Average	4	16.0	7	28.0
Good	13	52.0	6	24.0
Very Good	8	32.0	7	28.0
Mean	4.16		3.56	
Std. Deviation	0.688		1.193	

Source: Data collected by the researcher through Questionnaire, 2018

The result on Table 4.3.7 for item I indicates that 21(84%) of the Flintstone respondents were agreed that the relationships that is established within the project is found to be at good level. On the other hand, the average mean value (3.4) of the Afro Tsion respondents tell that relationship within the project is found on its average level. There might be lesser communication in Afro Tsion which could affect true coordination and relationship to deliver projects successfully.

The result in table 4.3.7 for item II result shows that 18(72%) and 13(42%) of the Flintstone and Afro Tsion respondents respectively saying that there is good and very

good share of expertise, resources, information, and plans with partners in the project activities.

The result in Table 4.3.7 for Item III, illustrates that 21(84%) and 13(52%) of the Flintstone and Afro Tsion respondents respectively responded good and very good. The average mean value of Flintstone (4.16) also shows that their project is good at identifying and selecting suppliers. This implied that there could be a good practice of choosing the right supplier selection, which depend on a wide range of factors such as value for money, quality, reliability and service.

4.4. Assessment of Resource Management in Projects Activities

Table 4.4.1 Identification of Project Resources

The project can identify, estimate, schedule and allocate all relevant resources.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Strongly Disagree	1	4.0	--	--
Slightly Disagree	3	12.0	5	20.0
Moderately Agree	13	52.0	7	28.0
Strongly Agree	5	20.0	11	44.0
Very strongly Agree	3	12.0	2	8.0
Mean	3.24		3.4	
Std. Deviation	0.970		0.913	

Source: Data collected by the researcher through Questionnaire, 2018

Result from Table 4.4.1 provides that eight (42%) of the Flintstone respondents were moderately agreed, while the majority of Afro Tsion respondents 12(52%) were strongly and very strongly agreed that the project can identify, estimate, schedule and allocate all relevant resources. Moreover, the average mean value for both company's respondents shows the response to this item is moderate. This could show that both company may moderately use the description of project scope for which they can determine key start and end dates, major assumptions behind the plan, and key constraints and restrictions.

Table 4.4.2 Comparison of Project Resources

The project can compare actual usage against resource plans and taking action if
--

needed.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Strongly disagree	--	--	--	--
Slightly Disagree	8	32.0	9	36.0
Moderately Agree	8	32.0	8	32.0
Strongly Agree	5	20.0	4	16.0
Very strongly agree	4	16.0	4	16.0
Mean	3.20		3.12	
Std. Deviation	1.080		1.092	

Source: Data collected by the researcher through Questionnaire, 2018

The average mean value (3.20) and (3.12) for Flintstone and Afro Tsion respectively represented in Table 4.4.2 shows that their projects might not frequently able to compare actual usage against resource plans. Moreover, majority of the written responses have reinforced this findings by asserting that they are moderately estimating the duration of an activity and fairly working with the project team to come up with an estimate.

Table 4.4.3 Assignment of Personnel to Project Needs

The project can select and assign sufficient personnel with the appropriate competence to suit the project needs.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Strongly disagree	1	4.0	--	--
Slightly Disagree	3	12.0	5	20.0
Moderately Agree	10	40.0	8	32.0
Strongly Agree	6	24.0	10	40.0
Very strongly agree	5	20.0	2	8.0
Mean	3.44		3.36	
Std. Deviation	1.083		0.907	

Source: Data collected by the researcher through Questionnaire, 2018

Results in Table 4.4.3 shows that the average mean value (3.44) and (3.36) respectively for Flintstone and Afro Tsion respondents were moderately agreed to the statement. This could show that the project can reasonably select personnel based on their competences, personal effectiveness and achievement.

Table 4.4.4 Development of Skills for Project Performance

The project develops individual and team skills to enhance project performance.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Strongly disagree	--	--	--	--
Slightly Disagree	12	48.0	6	24.0
Moderately Agree	8	32.0	10	40.0
Strongly Agree	5	20.0	7	28.0
Very strongly agree	--	--	2	8.0
Mean	2.72		3.20	
Std. Deviation	0.792		0.913	

Source: Data collected by the researcher through Questionnaire, 2018

Result from Table 4.4.4 demonstrates that 12(48%) of the Flintstone respondents were slightly disagreed to the statement. This could show that there is a need to develop good interpersonal skills to successful team development. In this regard the project manager and the team members need to work together to recognize each other's strengths and weaknesses.

4.5. Identification of Product/Service Realization in Project Activities.

Table 4.5.1 Prediction of Change and its Management

The project can predict change and manage it across all processes.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Strongly Disagree	--	--	15	60.0
Slightly Disagree	17	68.0	5	20.0
Moderately Agree	4	16.0	2	8.0
Strongly Agree	2	8.0	3	12.0
Very strongly agree	2	8.0	--	--
Mean	2.56		2.72	
Std. Deviation	0.961		1.061	

Source: Data collected by the researcher through Questionnaire, 2018

Result in Table 4.5.1 confirms that 17(68%) of Flintstone respondents were slightly disagreed that their project predict change and manage it across all processes. Likewise, the majority of the Afro Tsion respondents 20(80%) have slightly and strongly disagreed to the statement. This could show that both project can hardly predict change

and manage it. This finding is also supported by majority of the written response for which they claim that there is few practice in prediction in project activities.

Table 4.5.2 Project Closing and Feed Back.

The project conduct closing processes and obtaining feedback.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Strongly disagree	1	4.0	--	--
Slightly Disagree	17	68.0	8	32.0
Moderately Agree	2	8.0	13	52.0
Strongly Agree	5	20.0	3	12.0
Very strongly agree	--	--	1	4.0
Mean	2.44		2.88	
Std. Deviation	0.870		0.781	

Source: Data collected by the researcher through Questionnaire, 2018

Result in Table 4.5.2.revels that 18(72%) of the Flintstone respondents were asserted that they are slightly and strongly disagreed that their project conduct closing processes and obtaining feedback. The average mean value (2.44) also explain that the statement is disagreed by the respondents. This might show that they consider project closing as an overburden activity and of little significance. While 17(68%) of Afro Tsion respondents showed an agreement to the statement. Moreover, the majority of written response and interview discussion with Afro Tsion respondents also asserted that their project can successfully conduct project closing.

Table 4.5.3 Project Documentation

Characteristics of the project product is documented in measurable terms.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Strongly disagree	9	36.0	--	--
Slightly Disagree	7	28.0	6	24.0
Moderately Agree	5	20.0	13	52.0
Strongly Agree	4	16.0	2	8.0
Very strongly agree	--	--	4	16.0
Mean	2.16		3.16	
Std. Deviation	1.106		0.987	

Source: Data collected by the researcher through Questionnaire, 2018

As can be observed from Table 4.5.3, the average mean value (2.16) of the Flintstone response give you an idea about that their project product is not documented in a measurable terms. While, the average mean value (3.16) for Afro Tsion respondents asserted that characteristics of their project product is moderately documented in measurable terms. This could show that documentation of project product may not have the foundation for quality and traceability. Majority of the written response also claimed that tracking of records concerning the measurement and monitoring of processes are frequently forgotten activities in both company.

Table 4.5.4 Estimation of Duration in Project Activities.

The project estimates the duration of each activity in connection with the specific conditions and the resources required.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Strongly disagree	9	36.0	--	--
Slightly Disagree	--	--	4	16.0
Moderately Agree	9	36.0	16	64.0
Strongly Agree	6	24.0	2	8.0
Very strongly agree	1	4.0	3	12.0
Mean	2.60		3.16	
Std. Deviation	1.323		0.850	

Source: Data collected by the researcher through Questionnaire, 2018

Result in Table 4.5.4 demonstrates that seven (28%) of Flintstone respondents and five (20%) of Afro Tsion respondents were agreed that their project estimates the duration of each activities. But, generally the average mean value (2.6) for Flintstone and (3.16) for Afro Tsion indicates that there is a moderate agreement on the statement. This could imply that the two companies could have some forms of barrier in practicing work breakdown technique to reduce the activity to smaller tasks.

Table 4.5.5 Development of Cost Estimates for Project Activities

The project develops cost estimates for the project activities.				
Response	Flintstone		Afro TSION	
	Frequency	Percent	Frequency	Percent
Strongly disagree	2	8.0	--	--
Slightly Disagree	8	32.0	2	8.0
Moderately Agree	6	24.0	9	36.0
Strongly Agree	4	16.0	12	48.0
Very strongly agree	5	20.0	2	8.0
Mean	3.08		3.56	
Std. Deviation	1.288		0.768	

Source: Data collected by the researcher through Questionnaire, 2018

As it can be observed from the above Table 4.5.5, 15(60%) of Flintstone and almost all the respondents of Afro TSION 23(92%) admit that they were agreed to the statement that their project develops cost estimates for the project activities. Moreover, the majority of the respondents on the written response asserted that there is good cost estimation procedure in their project activities. Hence, according to the respondents this might show that there is a possibility for a problem associated with cost overrun, which is need to be avoided with a credible, reliable, and accurate cost estimate.

Table 4.5.6 Information and Communication Systems of the Project

The project plans the information and communication systems of the project.				
Response	Flintstone		Afro TSION	
	Frequency	Percent	Frequency	Percent
Strongly disagree	1	4.0	--	--
Slightly Disagree	8	32.0	3	12.0
Moderately Agree	7	28.0	9	36.0
Strongly Agree	5	20.0	8	32.0
Very strongly agree	4	16.0	5	20.0
Mean	3.12		3.60	
Std. Deviation	1.166		0.957	

Source: Data collected by the researcher through Questionnaire, 2018

Result from table 4.5.6 elucidates that 16(64%) of the Flintstone respondents and 22(88%) of Afro TSION respondents have shown an agreement that their project have good information and communication systems. This could show that they are keeping everybody in the loop, which concerns defining the types of information.

Table 4.5.7 Development of Plans for Risk Response.

The project develops plans for responding to risks.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Strongly disagree	11	44.0	2	8.0
Slightly Disagree	--	--	8	32.0
Moderately Agree	8	32.0	10	40.0
Strongly Agree	2	8.0	4	16.0
Very strongly agree	4	16.0	1	4.0
Mean	2.96		2.76	
Std. Deviation	1.098		0.970	

Source: Data collected by the researcher through Questionnaire, 2018

The average mean value (2.96) and (2.76) shown on table 4.5.8 reveals that both respondents were asserted that their company project are moderately agreed that their project develops plan for responding risk. This might show that they could moderately reduce any threats to the project. This implied that planning of risk responses is found at its rudimentary level in both company.

Table 4.5.8 The Project Identification for Procurement

The project identify and control what is to be purchased and when.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Strongly disagree	7	28.0	--	--
Slightly Disagree	2	8.0	5	20.0
Moderately Agree	1	4.0	14	56.0
Strongly Agree	11	44.0	2	8.0
Very strongly agree	4	4.0	4	16.0
Mean	3.12		3.20	
Std. Deviation	1.536		0.957	

Source: Data collected by the researcher through Questionnaire, 2018

Result on Table 4.5.8 exhibits that the average mean value (3.12) and (3.20) for Flintstone and Afro Tsion respectively reveals that they are moderately agree that their project identify and control what is to be purchased and when. This might indicate that their procurement statement of work is not very clear, complete and as concise as possible.

Table 4.5.9 Compilation of Commercial Conditions and Technical Requirements

The project can compile commercial conditions and technical requirements.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Strongly disagree	--	--	2	8.0
Slightly Disagree	7	28.0	15	60.0
Moderately Agree	9	36.0	2	8.0
Strongly Agree	7	28.0	6	24.0
Very strongly agree	2	8.0	---	--
Mean	3.16		2.48	
Std. Deviation	0.943		0.963	

Source: Data collected by the researcher through Questionnaire, 2018

The average mean value (3.16) in Table 4.5.9 illustrates that Flintstone is in a better position to compile commercial condition and technical requirements than Afro Tsion's project. This could indicate that the Afro Tsion project need to establish an understanding with management regarding the services to be performed for compilation of document. The significant decrease of positive response may signifies that technical requirements like verification, calibration of equipments, and their maintenance of equipment seems at vulnerable in Afro Tsion project to some extent.

Table 4.5.10 Issuing of Invitations to Tender and Tender Evaluation

The project perform invitations to tender, tender evaluation, negotiation, preparation and placing of the subcontract.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Strongly disagree	8	32.0	--	--
Slightly Disagree	10	40.0	1	4.0
Moderately Agree	1	4.0	10	40.0
Strongly Agree	3	1.0	13	52.0
Very strongly agree	3	12.0	1	4.0
Mean	2.32		3.56	
Std. Deviation	1.376		0.651	

Source: Data collected by the researcher through Questionnaire, 2018

Table 4.5.10 shows that the calculated average mean value (2.32) for Flintstone's respondents demonstrated a disagreement to the statement. On the other hand the

average mean value (3.56) for Afro Tsion respondents were a clear indication that they were moderately agreed to the statement. This could imply that Flintstone could need to properly examine the tenders from the perspectives of price, relevant experience, understanding of the requirements, technical skills, and management skills.

Table 4.5.11 Project Assurance of Contractual Requirements

The project ensures that subcontractors' performance meets contractual requirements.				
Response	Flintstone		Afro Tsion	
	Frequency	Percent	Frequency	Percent
Strongly disagree	8	32.0	10	40.0
Slightly Disagree	2	8.0	5	20.0
Moderately Agree	9	36.0	5	20.0
Strongly Agree	4	16.0	4	16.0
Very strongly agree	2	8.0	1	4.0
Mean	2.60		2.24	
Std. Deviation	1.323		1.268	

Source: Data collected by the researcher through Questionnaire, 2018

Result of table 4.5.11 shows that 10(40%) of Flintstone and 15(60%) of Afro Tsion respondents were disagree the statement that their project ensures that sub contractor's performance meets contractual requirements. In addition, the average mean value (2.60) and (2.24) also shows that the two company's project activities may hardly ensures the sub contractors performance. This finding could indicate that their project's current commercial models and contracts are weakly supported by a clear performance measurement model. This might lead them for ineffective contract management and assurance in infrastructure projects which can prevents corporate objectives from being met.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

In this section the summary, conclusions and recommendation were derived from the research findings. The main purpose of this study is to investigate the practice and implementation of quality management system in Flintstone and Afro Tsion real estate company. The results of the questionnaire survey and discussion of the findings in line with the literature review were presented in section four of this paper.

5.1. Summary of Major Findings

Before going to the main analysis of the study, a reliability test was administered to check whether the questionnaire is reliable or not. In this regard, all four parts of the questionnaires were reliable and acceptable with Cronbach's Alpha result greater than 0.70.

Related to the demographic characteristics, it could be inferred that the composition of younger staff and senior management experts from both company have an adequate experiences in their assigned position to practice and implement QMS, which could further helps them to transform their institutional activities in a better way and to a higher level of achievements.

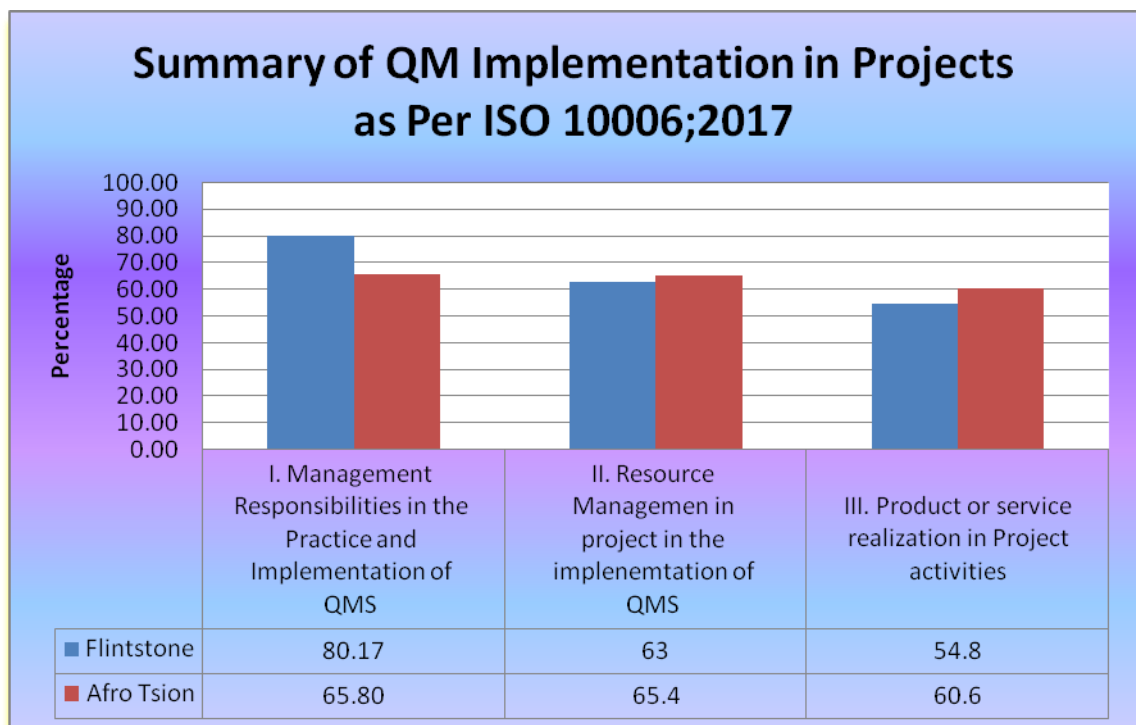


Figure 5.1.1. Summary of Major Findings.

I. Major findings regarding to the first objectives, which focused on the understanding of management responsibilities within Flintstone and Afro Tsion real estate construction projects, are listed below.

- a) From customer perspective, Flintstone have demonstrated a very good practice and implementation regarding to understanding the need of customer and exceeding their expectation, whereas in Afro Tsion real estate, it is found to be at a moderate level.
- b) From leadership point of view, Flintstone has exhibited an outstanding practice and implementation of QMS in comparison with Afro Tsion. The empirical finding also reflect that those construction company who implement QMS has a good management commitment.
- c) Regarding to engagement of people practice were found to be a very good achievement for both real estate company. Moreover, it can be learnt that there is qualified and experienced people in both project to support the QMS and the key processes within the project activities.
- d) In relation to improvement within the project, the result showed that Flintstone is better able to determine activities, which are performed to improve project performance and capabilities for further improvement opportunities. This also proves that the company established management of change to incorporate improvements with processes and procedures.
- e) Concerning to practice in related within relation management both real estate have a very good performance in identification and selection of suppliers to manage costs, optimize resources and create value in the project environment.

In general, the management responsibilities in the practice and implementation of QMS in Flintstone is found at 80.17% , which signifies it is found at the excellent level, whereas in Afro Tsion it is found at 65.80%, which shows us it is on a very good level.

II. Major findings regarding to management of resources in Flintstone and Afro Tsion real estate construction projects.

- a) It can be seen that there is qualified and experienced people in both project to support the QMS and the key processes within the project activities.

- b) It is also observed that in both project selection of personnel are based on their competences, personal effectiveness and achievement are found on a moderate level.

III. Major findings in regard to the realization of products or services within the project activities of Flintstone and Afro Tsion real estate construction projects.

- a) Flintstone projects' have showed an unsatisfactory practice and implementation regarding to prediction of change in project activities and documenting the characteristics of the project product in measurable terms.
- b) Afro Tsion project's also exhibit an unsatisfactory practice and implementation related with subcontractors' performance and satisfying technical requirements in the project life time.

Generally, the product or service realization in both project activities is found to be on a moderate level.

Major Challenges Faced by Afro Tsion Real Estate

- a. Poor documentation from previous project and unable to trace information and some project activities, and there is no clear responsible person for updating and monitoring the system;
- b. Lack of creativities and innovation
- c. The QMS might not be compatible with companies strategy and operation
- d. Lack of employees' commitment

Major Challenges Faced by Flintstone Real Estate

- I. More difficult application of documentation
- II. Lack of constant follow up and continuous improvement
- III. Client and supervisor understanding is limited to QMS
- IV. Lack of continuous QMS training
- V. High turnover of qualified personnel.

The reviewed empirical literature also showed that some of the above listed barriers are also prevail in some of the construction company while they are practicing and implementing QMS. The identified problems and the findings of this research are more or less similar even if there is variation due to their practical context of the projects.

5.2. Conclusion

- I). *The following conclusion, which is made from the research findings, could help to give insight to both companies in their management responsibility.*
 - a. This finding is self assertive to conclude that the leadership support to the mission and vision of the QMS provides a quality culture that could motivate the project team in overall project environment in both company.
 - b. It can be concluded that the good engagement of people helps both the real estate company to be competent in the construction market. It is also concluded that both project have established learning and knowledge sharing program including core and job specific requirements.
 - c. Regarding to practice related with process approach, it can be concluded that both companies are able to recognize the processes needed for the QMS and their application throughout the project activities by identifying and realizing the processes and establish the interaction between them.
 - d. It can be concluded that Afro Tsion project explicitly showed underperformance regarding with gathering, monitoring, measuring, and analyzing reliable data for its further decision making.
- II). *Regarding to implementing efficient resource management in Flintstone and Afro Tsion real estate construction projects*
 - a) it can be concluded that both project has lagging in creating successful teams, which could lead them to lesser effectiveness to coordinate individual effort, to tackle complex tasks and to utilize the expertise knowledge.
- III). *The followings are a conclusion made on product realization in the Practice of QMS.*
 - a. It can be concluded that there is a modest product and service realization in both project activities. This can be explained as Flintstone projects' have showed unsatisfactory practice and implementation regarding the prediction of change in project activities, documenting the characteristics of the project product in measurable terms, and issue related to tender and tender evaluation.

- b. It can be concluded that Afro Tsion projects are able to develop cost estimates for project activities, which helps the company to minimize failures/rework, improve conformance to project specifications and to maintain compliance with regulations. Moreover, issue of invitation for tender and its evaluation in Afro Tsion project is practiced in a very good manner compared to Flintstone project's. This shows that the potential benefit of a structured QMS in Afro Tsion project is achieved.
- c. It has been seen that both studied company don't use risk management techniques in their projects that could be associated with lack of awareness about its significance and fearing they need to hire additional staff and acquire more resources. Poor contract management were identified to be the most important causes of risk with a very high level of occurrence and a high level of impact on project objectives.

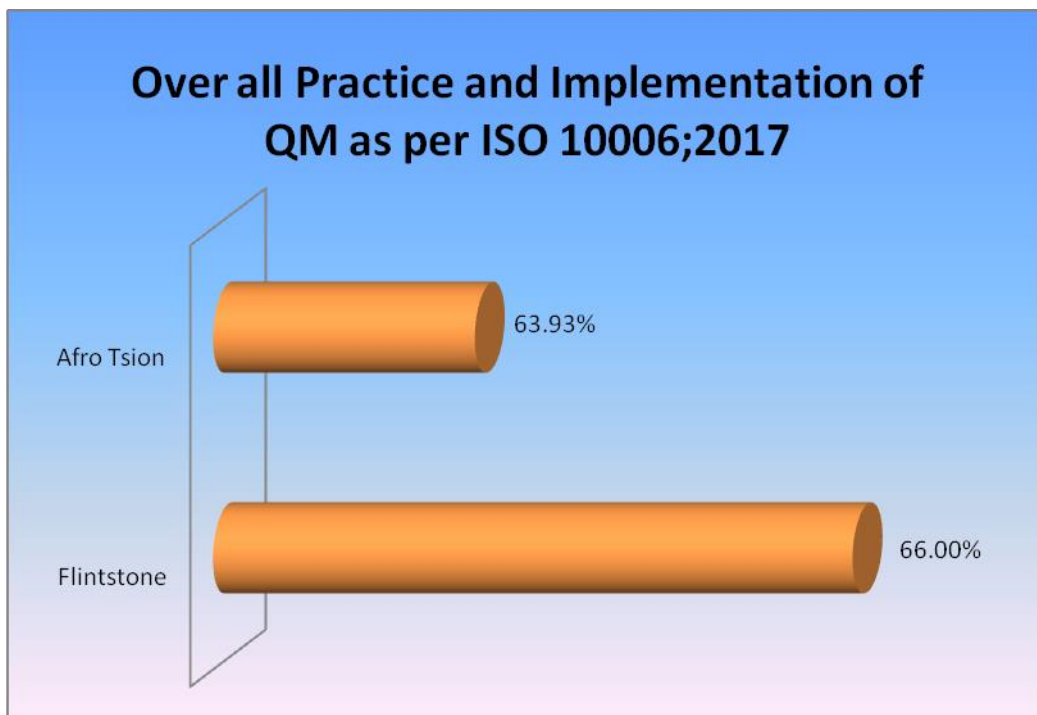


Figure 5.2.1 The Overall Practice and Implementation of QM as Per ISO 10006:2017

Generally, it can be concluded that at Afro Tsion real estate the practice and implementation QMS found to be at the moderate level while at Flintstone real estate it has been found at very good practice level.

5.3. Recommendations

I. The following recommendation is given to enhance the level of management responsibilities within Flintstone and Afro Tsion real estate construction projects.

- a) It is recommended that dependable actions need to be taken to improve its customer service, like: investigate the areas of issue, train staff in customer service and customer relation management, introduce system related to rotation of staff so they can increase their knowledge of other areas and encourage and support teamwork.
- b) It is recommended that people operating within the QMS need to be evaluated for performance and continued competency.
- c) It should be encourage to continually utilizing a process approach, focusing efforts on planning, procedure, provision for effective documentation, document control, effective corrective actions.
- d) For improving the accessibility of accurate and reliable data both company need to understand what data is and why its reliability is important and therefore they need to work on effective collection and management of data. It is recommended that these company need to collect data through various methods such as implementing Customer Relationship Management (CRM) System and Enterprise Resource Planning (ERP) System, which are a business process management software that integrates several facets of a company activities.
- e) To improve relationship and coordination in the project scenario both company need to determine proper communication flows for project members and develop a way to inform what information needs to be informed to project members.

II. The following recommendation is given to assist how resources are managed in Flintstone and Afro Tsion real estate construction projects.

- a) It is recommended that both company need to establish team building by improving and maintain motivation and confidence to make team members consider that they are supported and involved, and encourage synergy of ideas to solve problems.
- b) Both company need to conduct an assessments periodically to ensure the integrity, reliable and continual improvement of work processes and to ensure the practice of QMS within their project activities.

III. The following recommendation is forwarded for ensuring an effective realization of products or services within the project activities of Flintstone and Afro Tsion real estate construction projects.

- a) It is recommended to introduce a comprehensive and holistic document control system which may includes records of QMS, especially noncomplying issues, preventive and corrective actions, verification or calibration of measurement and monitoring devices. This could ensure characteristics of the project product is documented in measurable terms.
- b) Cost estimates need to be an accurate enough in both real estate company to make their comparisons meaningful and to confirm the amount of time and resources used to make the estimates should be appropriate to the size and complexity of the project.
- c) Establishing a risk management team is highly recommended in both real estate projects. This team need to design a risk responses planning process, which uses information gathered and obtained during risk estimation.
- d) It is advisable that the project to define its scope for assuring the stakeholder requirements, define its scope boundaries and know its key boundaries in the contract management. This could ensure well designed and effectively operated contract that can be accommodated within the budget, schedule and risk profile.

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QUESTIONNAIRE
ADDIS ABABA UNIVERSITY
SCHOOL OF COMMERCE

DEPARTMENT OF PROJECT MANAGEMENT

This questionnaire is filled by groups of selected respondents from the selected real estate housing developers in Addis Ababa.

Dear Respondents:

This questionnaire is designed to collect information regarding to know the implementation of Quality Management system in your respected housing construction companies. Moreover, the study will contribute towards the fulfillment of the researcher's Degree of Master's of Art Degree in Project Management.

I kindly ask you in all regard to fill the questionnaire carefully at your best knowledge. The accuracy of information you provide determines the ultimate reliability of the study.

Note: Your answers will be strictly confidential and will only be used for academic purposes.

Contact Address: Fikreab Markos Tel:- +251 913 473791 or E-mail;- fikreab2004@yhao.com

Thank you in advance for your cooperation and timely response!

Part One: Demographical Information - Please put 'X' in the box

<p>1. What is your role in the construction firm you are employed?</p> <p><input type="checkbox"/> Project Manager, <input type="checkbox"/> Contract administration team , <input type="checkbox"/> Project Consultancy,</p> <p><input type="checkbox"/> Resident engineer , <input type="checkbox"/> Technical Team member <input type="checkbox"/> Project supervisor , <input type="checkbox"/> Project</p>
<p>2. Your total work experience in housing construction activities</p> <p><input type="checkbox"/> Less than 5 years , <input type="checkbox"/> 6-10years , <input type="checkbox"/> 11-15 years , <input type="checkbox"/> 16 and above</p>

Part Two. Questions to be responded Yes or No, and with Comments

This part helps the researcher to identify basic information regarding to quality management system (QMS) implementation in your respected construction activities. Please respond to each of the listed statement by saying yes or no and put you comment on it.

No	Statement	Yes	No	Comment
1	Have you used any form of QMS in your current construction industry?			
2	Have you ever been communicated about QMS from Senior Management in your current project?			
3	Do you think each site should have a Quality Manager responsible for implementing Quality Plans and Checklists?			
4	Do you agree QMS help reduce defective work and the number of problem corrections in your current project?			
5	Have you ever received training in any form of QMS?			

Part Three

This part of the questionnaire was developed based ISO 10006:2017(E) standard, which focuses on seven quality management principles that senior management can apply for organizational improvement: Therefore, the following questions are helpful to the researcher **to know the level of the management responsibility in your project's**. Can you please show your response to the statements by circling the numbers in the column using the following rating scale (Likert Scale). Where: 1 = Very Poor 2 = Poor 3 = Average 4 = Good 5 = Very Good.

Item	Statement	Rating				
<i>With respect to customer focus</i>						
1	The project understands the needs of existing and future customers	1	2	3	4	5
2	The project activities can meet customer requirements	1	2	3	4	5
3	The project measures customer satisfaction.	1	2	3	4	5
4	The project aims to exceed customer expectations.	1	2	3	4	5
<i>In regard to Leadership</i>						
5	There is top management support in the project activities	1	2	3	4	5
6	The leadership establish a vision and direction for the organization	1	2	3	4	5
7	The leadership can able to establish trust	1	2	3	4	5
<i>In relation to engagement of people</i>						
8	The project ensures that people's abilities are used and valued	1	2	3	4	5
9	There is evaluation of individual performance in the project activities.	1	2	3	4	5
10	The project facilitates learning and knowledge sharing within the project activities.	1	2	3	4	5
<i>With a view of process approach</i>						
11	The project manages activities as processes	1	2	3	4	5
12	Linkages between project activities are identified.	1	2	3	4	5
13	The project prioritize improvement opportunities	1	2	3	4	5
<i>With respect to improvement within the project</i>						
14	Activities are performed to improve project performance and capabilities	1	2	3	4	5
15	The project empower people to make improvements	1	2	3	4	5
<i>In regard to Evidence-based decision-making</i>						
16	The project ensures the accessibility of accurate and reliable data	1	2	3	4	5
17	Decisions taken by the project are made based on analysis of data	1	2	3	4	5
18	The project balance data analysis with practical experience	1	2	3	4	5
<i>Regarding to Relationship Management</i>						
19	The project can identify and select suppliers to manage costs, optimize resources, and create value.	1	2	3	4	5

20	Relationships considering both the short and long term is established within the project	1	2	3	4	5
21	There is good share of expertise, resources, information, and plans with partners	1	2	3	4	5

Part Four.

This part of the questionnaire helps the researcher to identify the **resource management in projects** activities. The following scale rating description: 5 = Very Strongly Agree, 4= Strongly agree, 3= Moderately agree, 2= Slightly Disagree, 1= Strongly Disagree

Item	Statement	Rating				
		1	2	3	4	5
22	The project can identify, estimate, schedule and allocate all relevant resources.	1	2	3	4	5
23	The project can compare actual usage against resource plans and taking action if needed.	1	2	3	4	5
24	The project can select and assign sufficient personnel with the appropriate competence to suit the project needs.	1	2	3	4	5
25	The project develops individual and team skills and the ability to enhance project performance.	1	2	3	4	5

Part Five.

This part of the questionnaire helps the researcher to identify **product/service realization in project activities.** The following scale rating description: 5 = Very Strongly Agree, 4= Strongly Agree, 3= Moderately Agree, 2= Slightly Disagree, 1= Strongly Disagree

Item	Statement	Rating				
		1	2	3	4	5
26	The project can predict change and manage it across all processes.	1	2	3	4	5
27	The project conduct closing processes and obtaining feedback.	1	2	3	4	5
28	Characteristics of the project product is documented in measurable terms.	1	2	3	4	5
29	The project estimates the duration of each activity in connection with the specific conditions and the resources required.	1	2	3	4	5
30	The project develops cost estimates for the project activities.	1	2	3	4	5
31	The project plans the information and communication systems of the project.	1	2	3	4	5
32	The project develops plans for responding to risks.	1	2	3	4	5
33	The project identify and control what is to be purchased and when.	1	2	3	4	5
34	The project can compile commercial conditions and technical requirements.	1	2	3	4	5
35	The project perform invitations to tender, tender	1	2	3	4	5

	evaluation, negotiation, preparation and placing of the subcontract.					
36	The project ensures that subcontractors' performance meets contractual requirements.	1	2	3	4	5

Part Six. Open ended questions

1. What kinds of activities do you use in order to ensure quality in your current project?

2. What is the importance of quality management in your construction project?-

3. What kind of quality tools used in your organization and to what extent it is successful in the project implementation? -----

4. How do you express your project activities from cost, schedule and quality performance? -----

5. What are the major challenges faced by your construction firms in practicing quality management system?

6. What is your overall suggestion to bring quality management system in your project activities? -----

Thank you!