ADDIS COLLEGE

FACTORS AFFECTING PROJECT SCHEDULING AND CONTROL: THE CASE OF FEDERAL HOUSING PROJECTS

By

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Thesis Submitted to

Addis College in Partial Fulfillment of the Requirements for the master's degree in Project management

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AUGEST 2022

Declaration

I declare that this thesis “Factors affecting project scheduling and control in case of federal housing projects” is entirely my own work conducted in partial fulfillment of the requirements for the masters of Arts in project management. The literatures used in the study of the research were appropriately cited and the author is acknowledged.

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Approval Page

As member of the examining board of the final Msc, open defense, we verify that we have read and evaluate the thesis prepared by kalkidan ayalew, entitled factors affecting project scheduling and control: the case of Federal Housing Corporation. The paper is recommended for acceptance as a partial fulfillment to the requirement for the Masters Degree of project management.

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ABSTRACT

The role the construction industry plays in socio-economic development is significant. It provides the basis upon which other sectors can grow by constructing the physical facilities required for the production and distribution of goods and services. The increasing complexity of infrastructure projects and the environment within which they are constructed place greater demand on construction managers to deliver projects on time, within the planned budget and with high quality. In many developing countries, major construction activities account for about 80 percent of the total capital assets, 10 percent of their Gross Domestic Product (GDP). The general objective of this study was to determine the factors affecting project scheduling and control during implementation of Housing Projects in Federal Housing Corporation. Quantitative data was collected, analyzed and interpreted to describe and determine the factors affecting project scheduling and control during project execution phase of Federal Housing Projects. Questionnaires were used to solicit information. This involved prepared questions which was structured questions issued to respondents to fill. Based on Slovin's formula, the sample of 171 respondents has drawn from target population of 300 employees. Descriptive research design is used and the data analysis was performed using descriptive and inferential statistics. SPSS statistics (statistical package for social science) software version 20 was used to process the data. From the above research fadings and answers to research questions, various conclusions were arrived at. It was concluded that FHCs hire competent managers to implement their projects. The project manager's expertise in project schedule control was not a factor that significantly caused variation to projects duration during project implementation. Government policies greatly impacted on project schedule and have been established to affect schedule control during project implementation. The project complexity and project risks respectively do not have a negative effect on project scheduling and control during implementation of housing projects on federal Housing Corporation. The study recommends that the government should formulate policies regarding particular projects in liaison with actual project stakeholders.

Key words: Project Manager's Expertise, Project Risk, Project Complexity, Government Policy, Project Scheduling and Control

Acknowledgement

In the beginning, glory is to God for he has given me this life with all the guidance and strength I need for all the ups and downs that this has been offering.

Next I would like to express my deepest gratitude and respect to my project advisor Dr. Yonas Mekonnen for his valuable advice and in providing relevant hint and his encouragement for the completion of this work from the bottom of my heart.

Finally I would like to dedicate this project to my families whose moral and material support kept me through the ups and downs of my academic life.

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CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Construction project is an issue of strategic importance for the development and growth of any nation especially in expanding economy. It also represents a significant proportion of the government budget spent in construction projects. For instance, more than 60 percent of the total value of procurement across Africa used in construction activities (Alshami, 2017; Aluonzi, Oluka, & Nduhura, 2016; Malala, Ndolo, & Njagi, 2015; Daudi, 2012; and Shirima, 2013). Because the government is spending much on construction projects a good management of public project is needed in order to ensure performance as well as national economic development (Bathale, 2017; Alukyode, Mathew, & Taiwo, 2015; Silver, Warnakulasuriya, & Arachchige, 2015).

Construction projects includes activities such as building works, civil works, road works and other activities related with constructions (Rida, 2015; Alukyode et al., 2015 and Silver et al., 2015). However, without proper planning and clear implementation of construction projects management the success in construction projects will not be attained. The level of success in execution of construction projects depends heavily on political stability, respect among the parties in the contract, proper use of bidding documents, technical and risk management (Amarri & Boussabine, 2017; Sarda & Dewalka, 2016).

The World Bank (2017) identified the constraints to the performance of construction projects which includes; poor drafted projects, poor projects supervision, and lack of technology, corruption and poor relationships management. Also, the PPRA (2015) added that many procuring entities they are not managing projects properly. Abiodun et al., (2017) and Alukyode et al., (2015) they also suggested that the success of construction projects in the developing countries and the world over are challenged with badly planned, unprofessionally executed, poor estimation, ambiguities in defining projects, poor management and extended schedules.

African countries have already identified several challenges on construction projects. For instance the government of Ghana in consultation with development partners has recognized that among the challenges affect the performance of works projects in developing countries

are cost overruns, payment to uncompleted projects and failure to adhere to PPA guidelines (Nsiah-Asare & Prempeh, 2016). In Uganda, incompetence of contractors, poor site management, poor supervision and cancelation of projects found it affect construction projects negatively (Basheka & Byaruhanga, 2017).

Ethiopia has a rich history of magnificent construction endeavors. The ruined palace of Queen Sheba at Yeha, the Obelisks of Axum, the rock-hewn churches of Lalibela, and the castles of Gondar are few examples of these expertises. With the advent of modern civilization, especially during the late 19th and early 20th century, there have been some significant developments in this regard. Even though, the development of the construction industry in Ethiopia is slow, it plays a key role in the development of the national economy.
The role the construction industry plays in socio-economic development is significant. It provides the basis upon which other sectors can grow by constructing the physical facilities required for the production and distribution of goods and services. The construction industry has a significant multiplier effect on the economy as a whole [MoWUD, 2006]. According to MoWUD, (2006), the interrelationship between the construction industry and the broader economy largely emanates from three of the industry's characteristics namely: The public sector is its major client; it's large size, ability to produce investment or capital goods which contribute significantly to national GDP; and it is a major source of employment, directly and indirectly by its multiplier effect.

Public construction projects in Ethiopia are parts of the country's development initiative. It shared considerable amount of the country's scarce financial resources. In Ethiopia, the construction industry is the highest recipient of government budget in terms of government development program. Consequently, public construction projects consume an average annual rate of nearly 60%, according to MoWUD, (2006), and 58.2% according to Wubishet, (2004), of the government's capital budget.

The increasing complexity of infrastructure projects and the environment within which they are constructed place greater demand on construction managers to deliver projects on time, within the planned budget and with high quality. In many developing countries, major construction activities account for about 80 percent of the total capital assets, 10 percent of their Gross Domestic Product (GDP), and more than 50 percent of the wealth invested in

fixed assets. In addition, the industry provides high employment opportunity, probably next after agriculture (Ofori, 2006).

However, the level of success in construction projects significantly depends on the procurement process (Ambili & Jose, 2017; Haruna & Revocatus, 2018). An organization that fail to plan it leads to poor performance, as it was suggested by Bathale (2017) and Kumar et al., (2018) that a project that spend more resources than what was budgeted leads to poor performance. For the success of public projects the schedule, cost and quality need to be planned accordingly, scholars viewed it as the iron triangle (Ambili & Jose, 2017). This is because construction projects involves different parties with different roles and responsibilities, with different capabilities of handling risks which may result to poor performance if not managed well (Shahid, Ahmad, Ahmad, Shafique, & Amjad, 2015).
Despite the efforts has been undertaken to improve performance in construction projects. However, proper management of works contracts still a challenge to many developing countries. For example, in recent years studies and audit reports from public construction, evidenced that several projects such as building projects, water projects and road constructions in Ethiopia public institutions are not performed to the satisfactorily level. Therefore, this study aimed to determine the factors that affect project scheduling and control in the case of federal housing projects.

1.2. Statement of the problem

The successful execution of construction projects, keeping them within estimated cost and the prescribed schedules primarily depends on the existence of an efficient construction sector capable of sustained growth and development. Consequently, the iron triangle (cost, time, and quality) is used to measure the project performance and success. Generally, the success measure for a project is defined by completing it within specified cost, time and quality. However, the construction industry is full of projects that were completed with significant cost deviation (Amhed, Zahara & Juma, 2010). Since independence, the imperative to scale up infrastructure and improve the competitiveness of the Kenyan economy has been constrained by construction cost and time overruns.

In general, most (if not all), construction projects experience time overrun and cost overruns during their execution phase. An examination of the records of more than four thousand construction projects by Morris et al, (1998), showed that projects were rarely finished on

time or within the allocated budget. In Save the Children the same is true that construction projects suffer mainly time overrun but also cost & quality performance issues (SCI Construction tracker reports, 2017 & 2018) and because of this the construction activities are always treated as highly risky activity during program development.

A number of studies have been carried out on construction time overrun. Kagiri (2005) in his study of time overrun in power projects in Kenya outlined underlying factors that contribute to time overrun. He identified eight underlying factors including; improper project planning, resource planning, interpretation of requirements, works definition, timeliness, government bureaucracy, and risk allocation as having significantly contributed to time overrun in the projects. While his study provided vital insights into the subject of time overrun, it was conducted in a different study context.

Mahamid (2011) investigated the statistical relationship between actual and estimated cost of road construction activities based on a sample of 100 road construction projects awarded in the West Bank in Palestine. The findings revealed that the average cost deviation in the investigated activities was as follows; earthworks -15.7 percent, base works 12.9 percent, asphalt works 18.5 percent and furniture works 36.4 percent. His findings , however fell short of investigating the cost drivers responsible for the deviation between actual and estimated cost.

Studying the significant factors that cause delay of construction projects in Malaysia, Alaghbari, Kadir, Salim & Ernawati (2007) used four categories for analysis, namely contractor, consultant, owner and external. As far as causes related to contractor actions were concerned; financial problems, shortage of materials and poor site management were ranked among the top three. Owner causes included delayed payments, slow decision-making and contract scope changes. The top three consultant causes were poor supervision, slowness to give instructions and lack of experience. Finally, external causes of delay included shortage of materials, poor site conditions and lack of equipment and tools in the market.

The performance of construction projects largely depends on the strategy adopted by the respective organization for its implementation and execution. A construction projects is generally recognized as successful when it is completed on time, within a budget and in accordance with specifications (Morakinyo & Afolabi, 2017). The execution of construction

projects globally still face the same challenges, even if several efforts has been undertaken to improve construction project performance. A number of studies have been conducted to examine the factors impacting on project performance in developing countries (Abiodun et al., 2017; Malala et al., 2015; Shahid et al., 2015). In Ethiopia construction projects is facing with several problems which impact the achievements of. Therefore, the study examines the factors influencing project scheduling in Federal Housing Projects.

How well a federal housing corporation's housing projects fare is primarily determined by the organization's strategy for carrying it out. When the three criteria (Time, Cost, Quality) are met, people consider a housing project to have been successful. Despite several attempts to enhance the performance of building projects, the same difficulties persist in their implementation across the world. Project scheduling and control in developing nations has been the subject of several studies. There are a number of obstacles in Ethiopia that make it difficult to complete building projects. As a result, this research looks at what variables affect project scheduling and control in Federal Housing Projects.

1.3. Research Objective

1.3.1. General Research Objective

The general objective of this study was to determine the factors affecting project schedule control during implementation of Housing Projects in Federal Housing Corporation.

1.3.2. Specific Research Objectives

The specific objectives of this study are;

1. To determine the effect of project managers' expertise on project schedule control during implementation of Housing Projects in Federal Housing Corporation.
2. To determine the effect of government policies on project schedule control during implementation of Housing Projects in Federal Housing Corporation.
3. To determine the effect of project complexity on project schedule control during implementation of Housing Projects in Federal Housing Corporation.
4. To determine the effect of project risks on project schedule control during implementation of Housing Projects in Federal Housing Corporation

1.4. Research Question

1. What is the effect of a project manager's expertise on project schedule control during implementation of Housing Projects in Federal Housing Corporation?
2. How do the project government policies affect project schedule control during Implementation of Housing Projects in Federal Housing Corporation?
3. How does the project complexity affect project schedule control during implementation of Housing Projects in Federal Housing Corporation?
4. How do project risks affect project schedule control during implementation of Housing Projects in Federal Housing Corporation?

1.5. Scope of the study

Geographical

For the purposes of this study an experiment took place in Addis Ababa, Federal Housing Corporation. The head quarter is around Senga Tera, in front of Addis Ababa University School of Commerce because the location is near to the researcher and the corporation has many government projects on hand.

Theoretical

The variables under this study were limited to construction schedule control and its factors of the Federal Housing Corporation housing projects.

Methodological scope

The approach used in this study was quantitative approach. In order to achieve the objective of the study a well-designed structured questionnaire was distributed among the study departments and respondents selected on purposive sampling basis.

Time line scope

The study focused on the projects completed between the years 2010-2014 E.C for the sake of getting relevant information.

1.6. Significance of the Study

Academic contribution: Being a descriptive study, the main academic contribution of the study emanates from pointing the Project scheduling and control. This study may have contributions to the area of project completion strategy research related to construction sector

of Ethiopia in posing numerous pertinent questions to guide future research. Meanwhile, it may add new knowledge to the existing literature and it may be a stepping stone for academicians to carry out further studies on the issue. Furthermore, this study may yield valuable methodological importance to both practitioners and academicians because it applied quantitative data integration on the issue of investigation.

Significance to Federal Housing Corporation: The study outputs may benefit Federal Housing Corporation to craft their Project scheduling and control based on the identified challenges and enhances their competitive position in the target markets in particular and potential international markets in general. It may also encourage other companies to engage themselves in the betterment of their employees.

The study may ultimately magnify the contribution of standardizing and practicing Project scheduling and control to Federal Housing Corporation as specifically related to the international project completion concepts by showing ways that may enhance the effectiveness of projects to companies. As a result, the findings of this study may help Federal Housing Corporation to improve its strategies and better meet the needs of its customers.

Significance to institutional supporters and policy makers: Institutional supports can have deeper understanding and recognition on the intensity of the problem contractors are facing so that they can devise ways based on comprehension of the situations. The researcher also hopes that stakeholders and institutions which give support services on construction would take some lessons from the research in question. The key recommendations are vital inputs for policy makers so that they assess policies and regulations so that they can make workable policies and suitable regulations which can enhance the performance of the contractors. In relation to this, the study may be taken as policy inputs for designing and promoting project development and in improving construction project performance of firms in this sector.

1.7 Limitation of the study

Every work is done with limitation. This study is also done with limitation as other researches. To address the objective of the research the researcher tries to assess only the four factors affecting project scheduling and control process of the organization. There are so many factors that affect project scheduling and control of housing projects during project

implementation. Even in the specified study there may be other untouched parts by the researcher. So the researcher suggests for further study on the area.

1.8 Definition of Terms

Definition of Terms Key performance indicator (KPI): is a type of performance measurement which evaluates the success of an organization or of a particular activity in which it engages.

Time overruns: is defined as the extension of time beyond planned completion dates.

Project: Construction projects being constructed Federal Housing Corporation.

Construction: Construction of housing projects undertaken by Federal Housing Corporation.

Owner: Organization for whom the construction project is being undertakes.

Contractor: A natural or juridical person under contract with an owner to construct the construction projects.

Performance: The accomplishment of a given construction projects against the contractual cost, time and quality standards.

1.9 Organization of the Study

The first chapter presents an overview of the study. It consists of background of the study, statement of the problem, objective of the study, research question, Definition of terms, significance of the study, scope of the study and organization of the study. Chapter two presents literature review, concepts, definitions and conceptual framework. Chapter three provides an in-depth discussion of the research methodology used to investigate the research problem. The design for the sample selection and size, research instruments used, and the statistical techniques used to analyze the data is highlighted. Chapter four provides presentation of findings and the last chapter five contains conclusion and recommendation of the thesis.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Theoretical Review

2.1.1. Project Control Process

Project control is the last element in the implementation cycle of planning-monitoring-controlling process. Except for accounting control, according to Gray and Larson, (2,000) other project controls are not performed in most organizations. However, for project success, control should be focused on three elements of the project i.e. time, cost and performance. The focus of this research is project schedule control during implementation execution phase of projects. According to Klastorin (2004), once project implementation starts, project managers must monitor every aspect of ongoing project in order to concentrate their efforts on identifying those tasks that are "out-of-control" and require corrective actions.

There are several things that can cause a project schedule to require control, namely; initial project time estimation was based on optimistic time values, the task sequencing was initially incorrect, technical difficulties set in that take long to resolve than planned, required inputs of materials, personnel and equipment were unavailable when needed, necessary preceding tasks were incomplete, requested /generated change order requires rework, altered governmental regulations among others.

The above can according to Ford, Lyeis and Taylor (2006) be generally classified as risk factors, donor factors, project complexity and human resource factors that affect project schedule control during project execution.

2.1.2. Monitoring and Control of Time Performance

This is a relatively easy process so long as project managers are actively conversant and involved with/in schedule development process. This is the schedule planning process consisting of: activity definition, activity sequencing, activity resource estimating, activity duration estimation, schedule development and finally schedule control. The output of these processes includes activity list, activity attributes, project baseline schedule, schedule model updates,

schedule baseline updates, performance measurement, requested changes, approved changes and recommended corrective actions.

With an effective baseline schedule, schedule controls during project implementation enable the manager to verify the status of project, influence proposed changes to the schedule, identify changes to the schedule and manage changes to the schedule. The tools and techniques used in schedule control include progress reporting, performance measurement, schedule change control system, variance analysis, schedule comparison bar charts, control charts and earned value analysis.

2.1.3. Earned Value Analysis (EVA)

According to Verzuh, this analysis method is appropriate for all projects and can be used to measure cost performance, schedule performance or both at the same time. However EVA requires a valid baseline to work, otherwise the variances calculated through EVA are meaningless. EVA uses costs and task completion data to create a complete picture of a projects' performance against the plan. For example, projects can be ahead of schedule (good) and over budget (bad). Or they can be ahead of schedule and under budget (really good). Project managers should always track both schedule and cost to get a complete picture. At the centre of EVA is a concept called earned value, the monetary value of work performed at a given point, according to the baseline plan. EVA relies on the \\113Swith clearly defined tasks, each of which has been assigned a cost.

With EVA, a project manager compares the amount of work that has been done to the amount of work that was supposed to be done in a given time to compute schedule variance. With EVA formulas, a clearly defined baseline and accurate task status, one can confidently report overall progress in precise and objective terms. However even with EVA, we can fall into the trap of subjective assessment as we report partial progress on detailed tasks. One alternative for reporting partial completion on a task is to apply the 0-50-100 rule of progress i.e. 0 percent complete :(The task has not begun), 50 percent complete :(The task has started but not complete) and 100 percent complete.

In EVA, the actual work packages on the project must be broken down into small units. The planning guideline that is the corollary to this monitoring guide is to breakdown tasks until they are not longer that one reporting period.

2.1.4. Corrective Actions

For experienced managers, developing valid baselines and tracking cost and schedule variance is easy. The difficulty is determining when to take corrective action and selecting an action to take when correction is necessary. Main corrective actions used in schedule control are:

2.1.4.1. Re-Baseline with Better Estimates

Shortly after the project begins, the project managers realizes that even with hard teamwork and best use of time, it was short against time and cost goals. This may occur as a result of poor estimating. Re-evaluating the baseline to improve the estimates within it is the best cause of action. It involves checking original assumptions in the statement of work (SOW) and work package estimates. The trade-offs in this case involve developing a more accurate baseline meaning extension of project duration or adding more resources that increase cost. This reduces risks of missing on cost and schedule goals. However this option of delayed finish date or increase budget threatens overall project goals.

2.1.4.2. Crash the Schedule

This is a time-cost trade-off in project control. Crashing refers to shortening of the project time by reducing the time of one or more activities in the project. To determine where and how much to crash activity times, the management needs to understand information on: normal cost, normal time, crash time, crash cost and activity cost slope.

$$\text{Activity cost slope} = \frac{\text{Crash Cost} - \text{Normal Cost}}{\text{Normal time} - \text{Crash Time}}$$

2.1.4.3. Fixed-phase Scheduling

During the early stage of a product development life cycle, it is difficult to pin down the cost, schedule or product quality. Some projects however for very specific reasons need to complete by a specific date. When fixed-phase scheduling is employed, the project phases are apportioned from the top-down and scheduled according to the completion date. At the end of each phase, the scope of the project is evaluated to fit the remaining schedule. Software is probably the best candidate for fixed-phase estimating because most software designs are modular. In addition, it's

critical that these products meet delivery dates because their markets success depends on beating a competitor in time.

2.1.4.4. Outsourcing

This can be done either for entire project or a portion of it. It involves carving out a portion of the project and handing over to an external firm to manage and complete. This is especially so if this portion of the project requires specialized skills not possessed by internal workers. This results in greater productivity and a shortened schedule.

2.2. Empirical Review

According to Burns, 2017 most projects are over schedule by over 10%. Gray and Larson also noted that 60-80% of non-governmental projects are over schedule. Various factors according to the above authors contribute to lack of schedule control during project implementation and include; the expertise of the project manager, donor policies, project complexity and risk factors. Mohan, Wang and Zhao (2020) define project complexity as that which reflects the amount, difficulty and diversity of the characteristics of the product development objectives. It refers to the degree of technology or engineering intensity and sophistication of the project function (Mohan et al).Project complexity is evaluated in addition to project size. Most managers define a project's size based on; total financial resources available, number of team members involved, complexities of deliverables to be produced and timeframes involved in delivery. However as the project size increases, the project complexity will often increase as well (Method 123 PMM Ltd). Project complexity is in two dimensions i.e. technical and management complexities.

In the context of projects, risk is the chance that an undesirable event will occur and the consequences of all its possible outcomes. They refer to events that if they materialize, can kill or delay a project. Every project manager understands risks are inherent in project; all risks cannot be eliminated (Gray and Larson, 2020).Though and rarely, the project risks can be positive, project risk events typically have a negative effect on the project objectives of schedule, cost and specification. Risk management identifies as many risk events as possible, minimizes their impact, manages responses to those events that do materialize and provides contingency funds to cover risk events that actually materialize. The probability of a risk event occurring are greatest in the conception, planning and start up phases of the project. However the cost impact of a risk event is less if the event occurs earlier. This is because the early stages represent the

period when the opportunities for minimizing the impact or working around a potential risk exists (Gray and Larson). Clearly identifying project risk events and deciding a response before the project begins is a more prudent approach than not attempting to manage a risk.

Chris (2021) indicated that over 85% of projects go over schedule. However he argued that there is never a one concrete answer to the question why project schedules delay. Chris cited four major triggers of project schedule delays namely; inaccurate estimates, lack of real time visibility and control, poor methods to determine project progress and insufficient historical information.

A research by Michael (2021) titled "Stop Runaway Software Development Projects" observed that software projects have a long history of running over schedule and over budget. This research estimated that 49% of such projects run over schedule, It also noted how companies have tried mitigation strategies- adding more developers to each project, inflating the time line and including a substantial buffer to handle cost overruns. However, the study population and sample, research methodology and data analysis methods are not provided,

Perry (2021) in a research sponsored by Harvard Business Review sampled 1,471 projects in different countries, The objective was to compare project budgets and performance benefits with the actual loss and results The samples were taken from private companies, government agencies and European organizations, It was found that one in six of the projects was a "black swan" with a cost overrun of 200% on average and a schedule overrun of almost 70%, Flawed technologies and limited understanding by engineers and managers were cited as causes of cost and schedule overruns.

In 2012, Allen and Juan carried out a research to establish the "effect of capital project delays and budget overruns on cost of oil and gas and utility industries", The International Energy Agency had prior to this research forecast that the energy industry will spend nearly US $138 trillion globally on investments through 2035 chiefly to maintain existing assets such as pipelines, electric grids and to build new assets, The authors carried out a research to understand how much oil and gas companies and utilities worldwide might spend if they didn't improve the implementation in terms of delivering on time and on budget of these large capital projects, They surveyed 61 energy executives from 21 countries who have capital responsibility for capital

projects of at least US$ l Billion, This research was carried out between November, 2017 and February, 2021 through telephone interviews, Using conservative assumptions based on its research, they estimated that the potential overspend across the whole capital budget of the energy industries could be approximately 13% of the International Energy Agency estimates, Only 34% of all respondents said they had delivered to within 25% of their approved budget for all projects and 32% said they had delivered to the approved schedule,

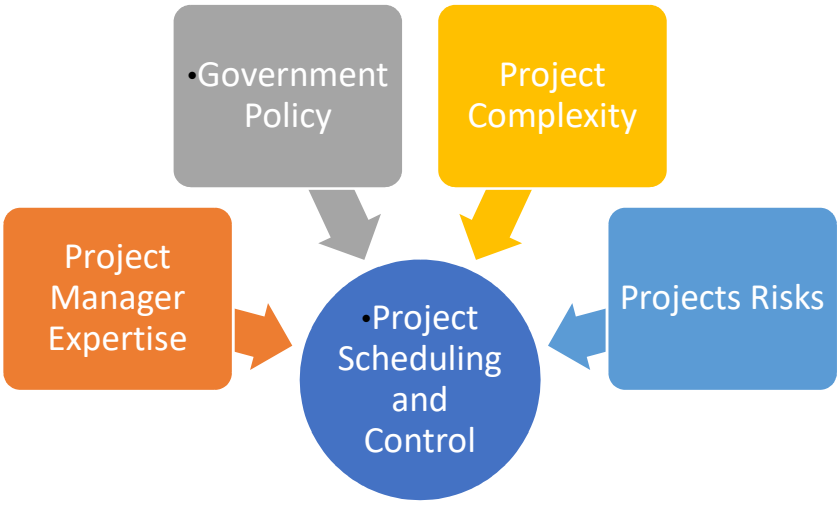
The respondents cited regulatory requirements (49%) and workforce/skills availability (25%) as challenges to getting projects launched on time. The increasing size and complexity of major projects also has added to the scale of the challenges for energy companies globally, This research however advises companies to improve their focus of project management beyond engineering and procurement to include human capital strategy, stakeholder and supplier relations and defining and measuring success.

From analysis of this research, it was observed that project complexity and size, workforce/skills availability, regulatory requirements (by financiers) and human capital determine implementation of capital projects. The short comings in this research include that the sample was biased in that only company executives were interviewed. Other stakeholders in oil and gas industries should have been included. Also interviews through telephone as methodology for this research was limiting. Other methods such as email would have been more exhaustive.

Cecilia (2017) carried out a comparative study to establish cost overruns and schedule delays in metal and mining projects respectively. The research was based on 31 interviews with mining and metal executives responsible for capital projects. When asked what typically causes delays in project schedules, survey respondents cited availability of talent (57%), new or unconsidered regulatory requirements (45%) and insufficient detail during the planning phase. It was concluded that the tremendous scale of mining industries compared to metal industries mean that budget overruns and delays in completion are not unusual.

2.3. Conceptual Framework

Figure 1: Conceptual Framework



Source: Josphat Njeru Nthiga (2013)

2.4. Research Hypothesis

H_o1: project managers' expertise has statistically significant negative effect on completion of housing projects of Federal Housing Corporation

-The success and failure of any project depends up on many factors. The project manager is considered to be the key contributor to the success and failure of any project, as well as a guide to the team members to achieve the client satisfaction (Mahdi M abdulsamad, Nicolas Chileshe)

H_o2: government policies have statistically significant negative effect on completion of housing projects of Federal Housing Corporation

-Policy impact on housing sector (Esayas Ayele urban planner)

H_o3: project complexity has statistically significant negative effect on completion of housing projects of Federal Housing Corporation

-Although widely recognized both in literature and among practitioners, project complexity may cause poor project success, with little empirical evidence supporting this contention. There for this study analyzed, for the first time, the relationship between project complexity and success in construction projects and investigated how project complexity affects project success. (Journal of management in engineering, Lan Luo, Qinghua He, Jianxun xie, Delei yang)

H_o4: project risks have statistically significant negative effect on completion of housing projects of Federal Housing Corporation

- To accomplish a construction project successfully, it is important to manage the risk in terms of cost time and quality. Risks always exist in construction projects and often cause schedule delay or cost overrun. (Aksana Jihad mohammed)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Research Design

A research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). According to Mugenda and Mugenda (1999), a research design is the program that guides the investigator in the process of collecting, analyzing and interpreting observations. To undertake this research, a descriptive research design was applied. These are studies concerned with describing the characteristics concerning individual, group or situation (Kothari, 2004; Cooper, 2006). In this research, a cross-sectional survey was undertaken. Quantitative data was collected, analyzed and interpreted to describe and determine the factors affecting project schedule control during project execution phase of Federal Housing Projects.

3.2. Research Approach

There are specific questions that the researcher wants to address which include predictions about possible relationships between the factors affecting project scheduling control. As objectivity is reflected here, quantitative research approach was employed. It involves collecting and converting data into numerical form so that statistical calculations can be made, and conclusions drawn.

Data is collected by various means following a strict procedure and prepared for statistical Analysis. Quantitative approach is a means for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures (Creswell, 2008). Collecting and analyzing of data using quantitative approach requires an understanding of the relationships among factors affecting project scheduling using inferential statistical approach, the assumptions that generalize to the population from a selected sample. (Trochim, 2006)

3.3. Data Sources and Method of Collection

3.3.1. Data Types

Primary data

Questionnaires are used to solicit information**.** This involved prepared questions which was structured questions issued to respondents to fill. This questionnaire gave advantage of collecting data quickly and gave more freedom to respondents.

Secondary data

Typically comes from other studies done by institutions or organizations before. The research used secondary sources of data from different research articles, reports, books and other official publications to develop conceptual framework and review literatures in the area of project scheduling.

3.4. Sampling Design

3.6.1. Target Population

The target population in this study was comprised of all the housing projects undertaken in Federal Housing Corporation. For each project, classified stakeholders i.e., project beneficiaries, Project Management Committee (PMC) members, project manager, project execution team, and contractors amongst other stakeholders constituted the key informants from which the study sample was selected. Here the target population is 300.

3.6.2. Sampling Technique

The sample was drawn from the targeted population by using a non-probability sampling. This sampling method involves purposive or deliberate selection of particular units of the universe for constituting a sample which represented the universe (Kothari, 2004). In this research, Convenience sampling technique was used where the population elements are selected in the sample based on the ease of access or respondents was selected because they happened to be at the right place at the right time. The researcher contacted the target element in Addis Ababa who was willing to participate.

3.6.3. Sample Size

The sample size determination is based on Solvin's formula with confidence level 95% and confidence interval (error margin) 5%. The derivations above show that Slovin's formula is applicable only when estimating a population proportion using a confidence coefficient of 95%

(Tejada & Punzalan, 2012). To determine the sample size from the target stakeholders of Federal Housing Corporation, the following sampling formula was used;

Thus, $n = \frac{N}{1+Ne^2}$.

Where, n = is the sample size

N = is the population size (300)

e = error tolerance (0.05)

$$n = \frac{300}{1+300(0.05)^2} = 171.43 \approx 171$$

Based on Slovin's formula, the sample of 171 respondents has drawn from target population of the employees.

3.7. Methods of Data Analysis

The data was collected, verification was conducted and complete questionnaires are identified. Then the data is coded in to SPSS (statistical package for social science) according to the variables selected and the questions asked. The data analysis was performed using descriptive and inferential statistics. SPSS statistics (statistical Package for social science) software version 20 was used to process the data.

3.7.1. Descriptive statistical Analysis

The final report of the relevant demographic variables was produced through central tendency measurements (frequency and frequency distribution, valid & cumulative percentage and comparison of mean). In addition, tabular explanations are used to present the result with the help of SPSS.

3.7.2. Inferential statistical Analysis

In inferential statistical analysis, correlation and multiple linear regression methods was utilized using statistical package for social sciences (SPSS) software. The use of these statistical tools and methods of presentation are described below

A. Correlation

Correlation (r) is used to describe the strength and direction of relationship between two variables. Since all variables are measured as an interval level, Pearson product moment correlation was used. Correlation "r" output always lies between -1.0 and +1.0 and if "r" is

positive, there exists a positive relationship between the variables. If it's negative, the relationship between the variables is negative. While computing a correlation, the significance level shall be set at 95% with alpha value of 0.05 or a chance of occurrence of odd correlation is 5 out of 100 observations.

B. Multiple Linear Regression Analysis

Multiple linear regression analysis is a major statistical tool for predicting the unknown value of a variable from the known value of variables. And it is about finding a relationship between variables and forming a model. The Model for this study was developed using two factors or predictors which have influences on employee commitment.

$Y= \quad \beta 0+\beta 1X1+\beta 2X2+\beta 3X3+\ldots+\beta nXn + \varepsilon$

Where Y is the dependent variable and the independent variables are those which explain the response ranges from X1 to X4.

Table 1: Model Specification of Variables.

No	Predictor Variable (X)	Beta Coefficient **(β)**	Predictor X-Value Assigned
1	Project Manager Expertise	β1	X1
2	Government Policy	β2	X2
3	Project Complexity	β3	X3
4	Projects Risks	β4	X4
5	Project Scheduling	Constant	Y

3.8. Validity and reliability

Validity Test

The scientific soundness of a research finding is determined by the validity of the instruments used. All possible efforts were exerted to make the data collection instruments easily understandable by the respondents so that the intended information can be collected thereby increasing trustworthiness of the ultimate findings. After the questionnaire was constructed, pretesting was done with individuals who have knowledge of the area by allowing them to read and comment on it. Constructive comments are collected from the individuals and the questionnaire was adjusted accordingly. Then, validation of the instrument was given by academic advisor prior to the data collection.

Reliability Test

Reliability is essentially the dependability of an instrument to test what it is designed to test. The appropriate test for reliability is inter-item consistency reliability which is popularly known as the Cronbach's coefficient alpha. According to Joseph and Rosemary (2003), Cronbach's alpha reliability coefficient (α) normally ranges between 0 and 1. According to these authors, there is a greater internal consistency of the items if the Cronbach's alpha coefficient closes to 1.0. Based on the following rule of thumb of (George and Mallery, 2003, p. 231), if "α > 0.9 – 'Excellent', α >0.8 – 'Good', α >0.7 – 'Acceptable', α >0.6 – 'Questionable', α >0.5 – 'Poor', and α <0.5 – 'Unacceptable'."

3.9. Measurement Instruments

To acquire the intended information the researcher used different data collection instruments like distributing questionnaire. The questionnaire both open-ended and close-ended In order to collect information regarding the relationships between factors affecting project scheduling of housing projects at Federal Housing Corporation up thus, the respondents answer the questions and filled questionnaires collected from each respondent according to the time line provided for data collection. The researcher personally gives out the questionnaires. The staffs of the purposely head office included in the survey A questionnaire was distributed to all 171 professional staffs. Questions presents in form of affirmative statements, relating to the concepts on factors affecting project scheduling of housing projects at Federal Housing Corporation, in such a way to enable measurement of the respondent's opinions.

The questionnaires was structured in close-ended type and responses to the questions was measured on a five Likert rating scale where: Strongly Agree (SA) = 1; Agree (A) = 2; Neutral (N) =3, Disagree (D) = 1; and Strongly Disagree (SD) = 5; the use of Likert scale is to make it easier for respondents to answer question in a simple way. In addition, this research instrument was permitted to an efficient use of statistics for the interpretation of data. Moreover, the central issue to argue that likert scales is that it produce ordinal data. Johns (2010) noted that in statistical terms the level of measurement of the likert response scale is ordinal rather than interval: that is, we can make assumptions about the order but not the spacing of the response

options. Thus, the permissible descriptive statistics that can perform on ordinal data is median (or average response) and mode (or more frequent responses) (Hole 2011).

The questionnaire is divided into two sections. Section I captured basic demographic information of the respondents such as gender, age, marital status, family status, educational level and income Section II captured information about factors affecting project scheduling of housing projects at Federal Housing Corporation.

3.10. Ethics of Research

The respondents was told the purpose of the study and asked their permission. The data collected only used for this study purpose and was not accessible for any other purposes. However, the study result was presented and be accessible both for the graduating school and the organization.

Reliability refers to the degree to which the data collection tools or analysis procedures yielded consistent findings. (Saunders, Lewis & Thorn hill, 2009) Reliability measures the internal consistency of a group of items which is used in questionnaire construction. Reliability analysis examines the homogeneity or cohesion of the items that comprise each scale.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Introduction

The chapter presents the study findings based on the information obtained from the field which regarded as the primary data. This data used to generate a new knowledge based on the factors influencing project scheduling control in Federal Housing Projects. The analysis was performed using descriptive analysis, factor analysis, regression analysis and correlation analysis with the help of Statistical for Social Sciences Package version 20.0.

The general objective of the study was to determine factors influencing project scheduling control in Federal Housing Projects. To accomplish this objective the following specific objectives was formulated, the first objective was stated as; to assess the effect of project managers expert's on the project schedule control on housing projects on the federal housing corporation, the second objective was stated as; how do the government policies affect the project schedule control of projects on the federal housing corporation, the 3rd objective was stated as; how does the project complexity affect project scheduling control on the implementation of housing projects on federal housing corporation and the last objective was stated as; to find out the how does project risk affect project schedule control on the implementation of housing projects of federal housing projects.

4.2 Respondents profile

The respondents profile describes the general characteristics of the respondents participated in the study which includes respondents' gender, age, educational level, experience, position and capacity of involvement in construction projects.

4.2.1Gender

The respondent's gender shows that 54.1% of the respondents were male and 45.9% of the respondents were female. The study includes all gender category however, there is a slight difference between the gender in both studied areas, this implies that in Housing Projects there is no gender deference in performing tasks rather than qualifications, these findings conform to (Kavura, 20

Table 2: Respondents Gender

Respondents	Frequency	Percentage
Male	85	54.14
Female	72	45.86
Total	157	100

Source: Researcher, (2022)

4.2.2Age

The information on age shows that among all respondents participated in this study 14.6% were below 30 years, and 36.9%, 34.4% and 14.% were aged between 31- 40, 41-50 and above 50 years respectively. The result implies that all age categories including youth, adult and elder were composed depending on the position and area or section of performance.

Table 3: Respondents Age

Respondents	Frequency	Percentage (%)
Bellow 30	23	14.65
31-40	58	36.94
41-50	54	34.39
Above 50	22	14.01
Total	157	100

Source: Researcher, (2022)

4.2.3Education level

The information on the respondent's education level indicated that the majority of the respondents participated in this study were those with Bachelor degree level of education 39.5%, followed with diploma, secondary/certificate and master degree with contribution of 32.5%, 16.6% and 11.5% respectively. This implies that Housing Projects constitute different levels of education. The results resemble those of Lawrence (2013) who argued that practitioners in Housing Projects constitutes people with different level of education and sometimes most of them have limited level of education especially in lower levels (wards and village level).

Table 4: Respondents Education Level

Respondents	Frequency	Percentage (%)
Secondary/certificate	26	16.56
Diploma	51	32.48
Bachelor degree	62	39.49
Master degree	18	11.46
Total	157	100

Source: Researcher, (2022)

4.2.4Experience

The result on respondents' profile shows that most of the respondents 29.8% have working experience between 11-15 years, followed by 24.6%, 19.35, 17.5% and 8.8% respectively. This implies that most of the respondents have enough experience so the information regarded to factors influencing construction projects in this study provided by experienced individuals who have been involved in implementing different projects.

Table 5 : Respondent Experience

Respondents	Frequency	Percentage (%)
Below 5	27	17.20
6-10	39	24.84
11-15	47	29.94
16-20	30	19.11
Above 20	14	8.92
Total	157	100

Source: Researcher, (2022)

4.2.5Position

The information from respondent's profile indicates that there was equal distribution of respondents in different department depending on the nature and size of each department. The result show that heads of department were 12.1%, procurement officers 22.9%, human resource officers 18.4%, engineers 16.6%, accountants 8.9%, auditors 8.9%, supervisors 7% and line managers 5.1%.

Table 6: Position of Respondents

Respondents	Frequency	Percentage (%)
Head of department	19	12.10
Procurement officer	36	22.93
Human resource officers	29	18.47
Engineers	26	16.56
Accountant	14	8.92
Auditors	14	8.92
Supervisors	11	7.01
Line Managers	8	5.10
Total	157	100

Source: Researcher, (2022)

4.3 Descriptive Statistics for Dimensions

Descriptive statistics in the form of arithmetical means and standard deviation for the respondents were computed for the multiple dimensions of project schedule and control that have been examined through the questionnaires collected from employees in Federal Housing Corporation. Hence, this descriptive analysis is used to look at the data collected and to describe data captured through the questionnaire and it is also desired to determine the employee perception to project schedule and control. Four indicators of project schedule and control are considered for the study.

These four broad antecedents are project managers' expertise, government policies, project complexity, project risks. Each factor has incorporated their sub-statements. These statements have the ability to explain the broad dimension (project schedule and control), while making interpretation of the results of frequency.

4.3.1 Project Manager's Expertise

The study sought to establish the attitude of respondents with regards to project scheduling and control in federal Housing Corporation. This information also included their attitude towards different elements that determined the impact of project managers' expertise of project scheduling and control in FHC. 35% agreed that the project team leader work in relationship with others 12.7% disagreed that the project team Leader work in relationship with others. 5.1% of the respondents strongly disagreed, 34.4% strongly agreed while those who neither agreed nor disagreed represented 20 (12.7%). This showed a majority of the respondents had a positive attitude towards project managers' expertise of project scheduling and control in FHC which also supported earlier claims by Osewe (2013).

Table 7: Frequency Distribution of Respondents Attitude on project managers' expertise

		Frequency	Percent
The project team leader work in relationship with others	Strongly Disagree	8	5.1
	Disagree	20	12.7
	Neutral	20	12.7
	Agree	55	35.0
	Strongly Agree	54	34.4
	Total	157	100.0
The project manager motivates the skills of the project staffs	Disagree	12	7.6
	Neutral	38	24.2
	Agree	55	35.0
	Strongly Agree	52	33.1
	Total	157	100.0
Project team leader has enough experience	Disagree	7	4.5
	Neutral	13	8.3
	Agree	102	65.0
	Strongly Agree	35	22.3
	Total	157	100.0
Project leaders have early and continuous involvement in the project	Disagree	7	4.5
	Neutral	22	14.0
	Agree	75	47.8
	Strongly Agree	53	33.8
	Total	157	100.0
Project staff are committed to meet cost, time and quality	Strongly Disagree	4	2.5
	Disagree	13	8.3
	Neutral	16	10.2
	Agree	83	52.9
	Strongly Agree	41	26.1
	Total	157	100.0

35% agreed that the project manager motivates the skills of the project staffs. 7.6% disagreed that the project manager motivates the skills of the project staffs. None of the respondents strongly disagreed, 33.1% strongly agreed while those who neither agreed nor disagreed represented 24.2%. This showed a majority of the respondents noted that the project manager motivates the skills of the project staffs.

About 22.3% strongly agreed that project team leader has enough experience. 4.5% of the respondents disagreed that project team leader has enough experience. None of the respondents

strongly disagreed, 65% agreed while those who neither agreed nor disagreed represented 8.3%. This showed a majority of the respondent's support project team leader has enough experience. About 25% strongly agreed project leaders have early and continuous involvement in the project. None of the respondents disagreed or strongly disagreed that project leaders have early and continuous involvement in the project. 46.4% agreed while those who neither agreed nor disagreed represented 28.6%. This showed a majority of the respondents supported the continuous involvement of project leaders in the project. This indicates the respondents agreed with the activities of the process of working with project team leader to improve their performance for the benefit of the contracting company they observed in Federal Housing Corporation. The standard deviation for project managers' expertise is 0.64003. This standard deviation is low, meaning that there are no extremes in the positive and negative score and this implies that there was no big variation of response among the respondents and this variation is acceptable and the practice of project managers' expertise is good.

4.3.2 Project Risk

Table 8: Frequency Distribution of Respondents Attitude on Project Risk

		Frequency	Percent
Project Risk is identified during the planning stage	Disagree	2	1.3
	Neutral	11	7.0
	Agree	98	62.4
	Strongly Agree	46	29.3
	Total	157	100.0
Project risk analysis is conducted during the planning stage	Strongly Disagree	20	12.7
	Disagree	8	5.1
	Neutral	18	11.5
	Agree	71	45.2
	Strongly Agree	40	25.5
	Total	157	100.0
There is a separate unit/person responsible for project risk management planning	Disagree	2	1.3
	Neutral	29	18.5
	Agree	81	51.6
	Strongly Agree	45	28.7
	Total	157	100.0
Implementing an effective safety, quality assurance and environmental program	Disagree	4	2.5
	Neutral	28	17.8
	Agree	83	52.9
	Strongly Agree	42	26.8
	Total	157	100.0
Risk response planning prepared in the planning stage	Strongly Disagree	2	1.3
	Disagree	7	4.5
	Neutral	29	18.5
	Agree	82	52.2
	Strongly Agree	37	23.6
	Total	157	100.0

Table 8 shows the percentage and distribution of the respondents' reply for project risk. The subsequent analyses were conducted based on the table above.

About 1.3% of the respondents disagree that project risk is identified during the planning stage, 7% of the respondents neutral, 62.4% of the respondents agree and 29.3% of the respondent strongly agree. This shows that more than half of the respondents agreed that project risk is identified during the planning stage. This indicates that FHC adequately plan their risk assessment.

Also, about 12.7% of the respondents strongly disagree that project risk analysis is conducted during the planning stage s, 5.1% of the respondents disagree, 11.5% of the respondents neutral, and 45.2% and 25.5% of the respondent agree and strongly agree respectively. This indicates that more than half of the respondents felt agreeing that project risk analysis is conducted during the planning stage.

About none of the respondents strongly disagree that there is a separate unit/person responsible for project risk management planning, 1.3% of the respondents disagree, 18.5% of the respondents neutral, 51.6% of the respondents agree and 28.7% of the respondent strongly agree. This shows that more than half of the respondents agreed that there is a separate unit/person responsible for project risk management planning.

About 17.8% of the respondents are neutral that implementing an effective safety, quality assurance and environmental program, 52.9% of the respondents agree and 26.8% of the respondents strongly agree. This shows that more than half of the respondents agreed that implementing an effective safety, quality assurance and environmental program.

About 1.3% of the respondents strongly disagree that risk response planning prepared in the planning stage, 4.5% of the respondents disagree, 18.5% of the respondents neutral, 52.2% of the respondent agree and 23.6% of strongly agree. This shows that more than half of the respondents agreed that risk response planning prepared in the planning stage.

This indicates the respondents agreed on proactive assessment of risk with the fostering of virtues oriented towards future reward or the company is not only wasting to delay short-term material or social success or even short-term emotional gratification in order to prepare for the future they observed in Federal Housing Corporation. The standard deviation for long term orientation is 0.477, this standard deviation is low, meaning that there are no extremes in the positive and negative score which implies that there was consistency of response among the respondents and this variation is acceptable and practice of long-term orientation is good.

In general, from the analysis all of the respondents agreed that factors related with proactive assessment of risk having the greatest effects on project scheduling and control in FHC. This indicated that FHC provides clear directions for proactive risk assessment with FHC. Agreeably

Mamiro (2010) in his findings underscores these facts and concludes that one of the major setbacks in project scheduling and control is poor risk assessment which is not well articulated. The findings concluded with Thai (2004) that there cannot be a good project scheduling and control without strong risk assessment. Proactive risk assessment is a process that consists of many steps and the bottom line is that planning are not concerned with future decisions but rather with the future impact of decisions made today.

4.3.3 Project Complexity

Mohan, Wang and Zhao (2020) define project complexity as that which reflects the amount, difficulty and diversity of the characteristics of the product development objectives. It refers to the degree of technology or engineering intensity and sophistication of the project function (Mohan et al). Project complexity is evaluated in addition to project size. Most managers define a project's size based on; total financial resources available, number of team members involved, complexities of deliverables to be produced and timeframes involved in delivery. However, as the project size increases, the project complexity will often increase as well Thai, (2009).

Table 9: Frequency Distribution of Respondents Attitude on Project Complexity

		Frequency	Percent
Federal Housing Corporation projects are clearly defined and have realistic goals/objectives	Strongly Disagree	1	.6
	Disagree	7	4.5
	Neutral	26	16.6
	Agree	67	42.7
	Strongly Agree	56	35.7
	Total	157	100.0
The projects have detailed and up to date project plan	Disagree	10	6.4
	Neutral	20	12.7
	Agree	68	43.3
	Strongly Agree	59	37.6
	Total	157	100.0
Project management tools and methodology are adequately applied in the project management	Disagree	4	2.5
	Neutral	17	10.8
	Agree	89	56.7
	Strongly Agree	47	29.9
	Total	157	100.0
The designs and specifications are clear and adequate.	Disagree	26	16.6
	Neutral	27	17.2
	Agree	58	36.9
	Strongly Agree	46	29.3
	Total	157	100.0
There are sufficient/ well allocated resources throughout the project (e.g., vehicle, tools etc.).	Disagree	12	7.6
	Neutral	37	23.6
	Agree	83	52.9
	Strongly Agree	25	15.9
	Total	157	100.0
Shorter completion period given for the contract	Disagree	23	14.6
	Neutral	30	19.1
	Agree	65	41.4
	Strongly Agree	39	24.8
	Total	157	100.0
The project scope is well defined in the planning phase	Strongly Disagree	7	4.5
	Disagree	8	5.1
	Neutral	29	18.5
	Agree	69	43.9
	Strongly Agree	44	28.0
	Total	157	100.0
Sufficient time is given for project design and quantity preparation/ development	Strongly Disagree	1	.6
	Disagree	5	3.2
	Neutral	27	17.2
	Agree	92	58.6
	Strongly Agree	32	20.4
	Total	157	100.0

Table 9 shows the percentage and distribution of the respondents' reply for project complexity. About 4.5% of the respondents Disagree that federal housing corporation projects are clearly defined and have realistic goals/objectives. 16.6% of the respondents' neutral, 42.7% of the respondents agree and 35.7% of the respondent strongly agrees. This shows that more than half of the respondents agreed that federal housing corporation projects are clearly defined and have realistic goals/objectives.

Also, about 6.4% of the respondents disagree the projects have detailed and up to date project plan, 12.7% of the respondents neutral, and 80% of the respondent agree. This indicates that more than half of the respondents felt the projects have detailed and up to date project plan. This implies that in FHC project complexity is an integral part of the organization's strategic planning.

About 10.8% of the respondents are neutral that project management tools and methodology are adequately applied in the project management, 56.7% of the respondents agree and 29.9% of the respondents strongly agree. This shows that more than half of the respondents agreed that project management tools and methodology are adequately applied in the project management. FHC provides clear specification for the project completion. This indicates that project complexity is a smooth exercise in FHC.

About 16.6% of the respondents disagree that the designs and specifications are clear and adequate. 17.2% of the respondents are neutral, 36.9% of the respondents agree and 29.3% of the respondent strongly agree. This shows that more than half of the respondents agreed that the designs and specifications are clear and adequate. This indicates that design and specifications and programmed.

About 3.6% of the respondents disagree that in FHC there are sufficient/ well allocated resources throughout the project (e.g., vehicle, tools etc.)., 39.3% of the respondents neutral, 21.4% of the respondent agree and 35.7% of respondents strongly agree. This shows that more than half of the respondents agreed that in FHC there are sufficient/ well allocated resources throughout the project. This indicates the respondents had moderately agreed on project complexity in Federal Housing Corporation in which an effective plan saves time and money, serves as a conduit to

achieving entity's objectives, ensures compliance with regulatory policies, provides a framework to guide officers in the achievement of their tasks and duties. The standard deviation for project complexity is 0.572, which is low, meaning that there are no extremes in the positive and negative score and this implies that there was no as such a big variation of response among the respondents and this variation is acceptable and practice of project complexity is moderately good.

In general, from the analysis all of the respondents agreed that factors related with project complexity having the greatest effects on procurement in FHC. Agreeably Mamiro (2010) in his findings underscores these facts and concludes that one of the major setbacks in project scheduling and control is poor project complexity and management of the procurement process which include needs that are not well identified and estimated, unrealistic budgets and inadequacy of skills requesting units responsible for the project.

Basheka, (2008) agreeably concludes that planning is a process that consists of many steps and the bottom line is that planning is not concerned with future decisions but rather with the future impact of decisions made today. The results further revealed that the departments prepared annual project plans and that the procurement plans were prepared and the goals set participatory. project plans therefore influence project scheduling and control in the sense that they provide focused and efficient utilization of available resources, help in budgeting and planning and therefore with adequate provision of funds due to project plans, performance is assured.

4.3.4 Government Policy

Table 10 shows the percentage and distribution of the respondents' reply for government policy. The subsequent analyses were conducted based on table below. About 46.5% of the respondents disagree that political affiliation does not determine the type and size of housing projects in certain locations, 6.4% of the respondents agree, 21.7% of the respondents neutral, 1.3% of the respondents strongly agree. This shows that more than half of the respondents disagreed that political affiliation does not determine the type and size of housing projects in certain locations.

Table 10: Frequency Distribution of Respondents Attitude on Government Policy

		Frequency	Percent
Political affiliation does not determine the type and size of housing projects in certain locations	Strongly Agree	2	1.3
	Agree	10	6.4
	Neutral	34	21.7
	Disagree	73	46.5
	Strongly Disagree	38	24.2
	Total	157	100.0
Political interest does not affect development projects	Strongly Agree	1	.6
	Agree	5	3.2
	Neutral	18	11.5
	Disagree	89	56.7
	Strongly Disagree	44	28.0
	Total	157	100.0
Delays in establishment of infrastructure that was support housing projects are not a result of politics	Agree	15	9.6
	Neutral	27	17.2
	Disagree	81	51.6
	Strongly Disagree	34	21.7
	Total	157	100.0
Political groups have not affected housing projects failures to introduce policies	Agree	12	7.6
	Neutral	38	24.2
	Disagree	55	35.0
	Strongly Disagree	52	33.1
	Total	157	100.0
Leaders of political parties don't get involved with the running of the housing projects causing lack of continuity of such projects	Strongly Agree	4	2.5
	Agree	13	8.3
	Neutral	16	10.2
	Disagree	83	52.9
	Strongly Disagree	41	26.1
	Total	157	100.0
Political leaders/groups influence the acceptance of housing projects	Strongly Agree	20	12.7
	Agree	8	5.1
	Neutral	18	11.5
	Disagree	71	45.2
	Strongly Disagree	40	25.5
	Total	157	100.0

About 46.5% of the respondents disagree that political interest does not affect development projects, 11.5% of the respondents neutral and 3.2% and 0.6% of the respondent agree and strongly agree. Therefore, this indicates that political interest affects development projects.

About none of the respondents strongly disagree that delays in establishment of infrastructure that was support housing projects are not a result of politics, 21.7% of the respondents disagree

51.6% of the respondents are neutral, 17.2% of the respondents agree and 9.6% of the respondent strongly agree. This shows that more than half of the respondents are neutral that delays in establishment of infrastructure that was support housing projects are as a result of politics.

About 24.2% of the respondents are neutral that Political groups have not affected housing projects failures to introduce policies in FHC, 7.6% of the respondents agree and 33.1% of the respondents strongly disagree. This shows that more than half of the respondents agreed that Political groups have affected housing projects failures to introduce policies in FHC.

Various government policies were cited as affecting project schedule control during project implementation. The Government fix the timeframe of the project even without understanding each project's unique characteristics. These timeframes turn unachievable to the implementation team. In some cases, it was observed that government required project beneficiaries to finance certain components of the project. In this case government required beneficiaries to offer free manual labor while the Government Finance training, staff allowances and other technical aspects of the project. Beneficiaries take time to buy in the idea and this delay the project. Government also releases funds in phases implying that project must be implemented in those phases. Government then has to be satisfied that, a project phase has been well completed before they release the funds for the next phase which affects implementation timeframe. This is uncertainty on the part of the project manager as such time cannot be accurately estimated. Hence here the government schedule conflicts that of the implementer. It was established that government control the request for schedule changes and approval of the same. If the implementation team notices an opportunity to compress the schedule that wasn't initially in the project plan such opportunity must be granted by the government; this delays the project government also determine the project reporting period, reporting formats and kind of project documentation to be applied in projects. This limits the flexibility of the project manager including in schedule control.

4.3.5 Project Scheduling and Control

The performance of the procurement function in any organization requires that the individuals handling the procurement activity should have the necessary professional qualifications and employee level of skill influences the procurement performance (Samuel &Njeru, 2014).

Table 11: Frequency Distribution of Respondents Attitude on Project Scheduling and Control

		Frequency	Percent
It is easy to complete projects within the contract time.	Disagree	2	1.3
	Neutral	28	17.8
	Agree	97	61.8
	Strongly Agree	30	19.1
	Total	157	100.0
The contractors find it easy to complete projects as per the contract cost	Disagree	2	1.3
	Neutral	23	14.6
	Agree	114	72.6
	Strongly Agree	18	11.5
	Total	157	100.0
There is client and user satisfaction with construction product	Disagree	2	1.3
	Neutral	29	18.5
	Agree	86	54.8
	Strongly Agree	40	25.5
	Total	157	100.0
Projects are completed and transferred to client without defects.	Disagree	1	.6
	Neutral	27	17.2
	Agree	107	68.2
	Strongly Agree	22	14.0
	Total	157	100.0

Table 11 shows the percentage and distribution of the respondents' reply for Project Scheduling and Control. The subsequent analyses were conducted based on table above.

About none of the respondents strongly disagree that in FHC It is easy to complete projects within the contract time, 17.8% of the respondents neutral, 61.8% of the respondents agree and 19.1% of the respondents strongly agree. This shows that more than half of the respondents agreed that In FHC It is easy to complete projects within the contract time.

Also, about 14.6% of the respondents are neutral that the contractors find it easy to complete projects as per the contract cost, % of the respondents agree, 25% of the respondents strongly

agree. This shows that more than half of the respondents agreed that the contractors find it easy to complete projects as per the contract cost.

Also, about 28% of the respondents are neutral that there is client and user satisfaction with construction product, 53.60% of the respondents agree, 25% of the respondents strongly agree. This shows that more than half of the respondents agreed that there is client and user satisfaction with construction product.

Also, about 21.4% of the respondents are neutral that projects are completed and transferred to client without defects. 39.3% of the respondents agree, 39.3% of the respondents strongly agree. This shows that more than half of the respondents agreed that projects are completed and transferred to client without defects.

Inferential Statistics

Correlation analysis

In this study Pearson's correlation coefficient was used to determine whether there is significant relationship between project managers' expertise, government policies, project complexity, project risks with project scheduling and control. Pearson's coefficient of correlation is the most widely used method of measuring the degree of relationship between the variables. This coefficient assumes there is linear relationship between the two variables; that the two variables are casually related (Kothari, 2004).

The following section presents the results of correlation on the relationship between independent variables and dependent variable. Table 12 indicates that the correlation coefficients for the relationships between independent variables (and its dependent variable are linear and positive ranging from moderate to strong correlation coefficients.

Table 12: Correlation Analysis

		Schedule and Control
Expertise	Pearson Correlation	.782**
	Sig. (2-tailed)	.000
	N	157
Risk	Pearson Correlation	.785**
	Sig. (2-tailed)	.000
	N	157
Complexity	Pearson Correlation	.778**
	Sig. (2-tailed)	.000
	N	157
Policy	Pearson Correlation	-.558**
	Sig. (2-tailed)	.000
	N	157
**. Correlation is significant at the 0.01 level (2-tailed).		
*. Correlation is significant at the 0.05 level (2-tailed).		

Source: Survey Result 2022

The output obtained from the SPSS indicates that, project managers' expertise has significance and positively associated with the dependent variable (project scheduling and control) which have value ($r = 0.782$, $p<0.01$). Government Policy has significant and strong negative relationship with project scheduling and control with the value of ($r = -0.558$), $p<0.01$). Project Risk like other dimensions has significant positive relationship with project scheduling and control having a value ($r = 0.785$, $P<0.01$). Project Complexity has positive and significant relationship with project scheduling and control which has a value of $r = 0.778$, $p<0.01$).

In conclusion, the findings indicate that at Federal Housing Corporation, each of the three components has a direct and positive relationship to the amount of project scheduling and control (at the 0.01 level). According to Roberts (2005), Project Complexity, and project scheduling and control all have a positive and significant influence on one's level of interest and enthusiasm for their work. This is in line with what was found in other studies. Puwanenthiren (2011) came to very similar conclusions; he discovered that monetary and non-monetary incentives both had a substantial influence on the level of project scheduling and control that had towards their work. According to the findings of this research, variations in the way factors are managed may have an effect on levels of project scheduling and control (the better those components are the higher the project scheduling and control or vice versa).

Multiple linear regression analysis

Assumptions Testing in Multiple Regression

The basic assumptions should be satisfied in order to maintain data validity and robustness of the regressed result of the research under the multiple regression models. Hence, this study has conducted the assumption tests such as, multi-Co linearity, outliners, autocorrelation, linearity, and normality.

Sample size

Different authors tend to give different guidelines concerning the number of cases required for multiple regressions. Tabachnick and Fidell (2001) give a formula for calculating sample size requirements, taking into account the number of independent variables to use: $N > 50 + 8m$ (where m = number of independent variables). In this study four independent variables had existed and cases were 157. Therefore, the study satisfied sample size assumption.

Multi Co linearity

Multi Co linearity is checked using correlations between the variables in the model. Independent variables show at least some relationship with dependent variable (above 0.3 preferably). In this case all of the scales (independent variables) correlate substantially with Project scheduling and control (r = .782, r = -.558, r =.785, r =.778,). Co linearity diagnostics on the variables as part of the multiple regression procedure is done using Tolerance and Variance Inflation Factor (VIF). Tolerance is an indicator of how much of the variability of the specified independent is not explained by the other independent variables in the model. If this value is very small (less than 0.10), it indicates that the multiple correlation with other variables is high, suggesting the possibility of multi-Co linearity (Pallant, 2010). Variance Inflation Factor (VIF) is just the inverse of the tolerance value (1 divided by tolerance). According to Pallant, (2010), VIF values above 10 would be a concern, indicating multi-Co linearity. The result shows that the tolerance value for each independent variable is.531, .713, .516 and .475) respectively Therefore, multi-Co linearity assumption is not violated. This is also supported by the VIF value, which is 1.882, 1.403, 1.939 and 2.106 which is well below the cut-off value of 10.

Table 13: Multi Co linearity Test

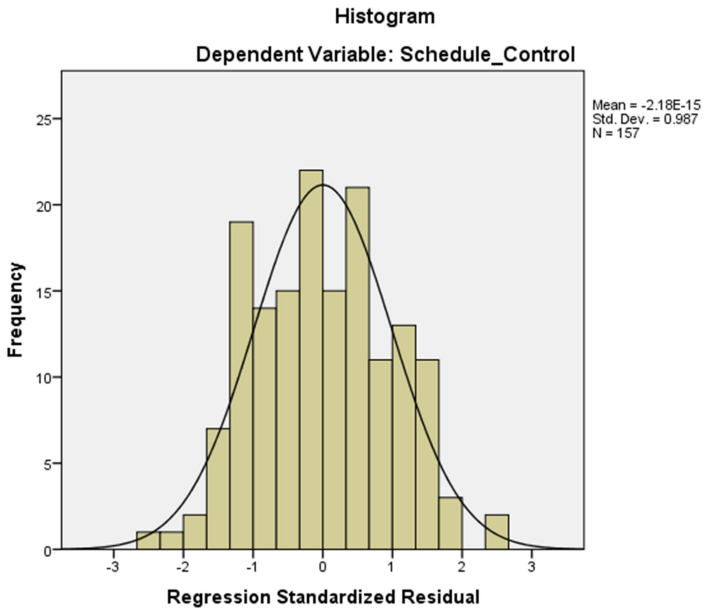
	Sig.	Co linearity Statistics	
		Tolerance	VIF
Expertise	.000	.531	1.882
Risk	.000	.713	1.403
Complexity	.000	.516	1.939
Policy	.000	.475	2.106

Source: Survey Result 2022

Normality and Linearity

One of the ways that these assumptions can be checked is by inspecting the residuals scatter plot and the normal probability plots of the regression standardized residuals that were requested as part of the analysis. These are presented in normal P-P Plots of regression standardized residuals graph. In normal probability plots the points will lie in reasonably straight diagonal line from bottom left to top right. This would suggest no major deviations from normality. The finding from normal P=P Plot reveals no violation of normality assumptions.

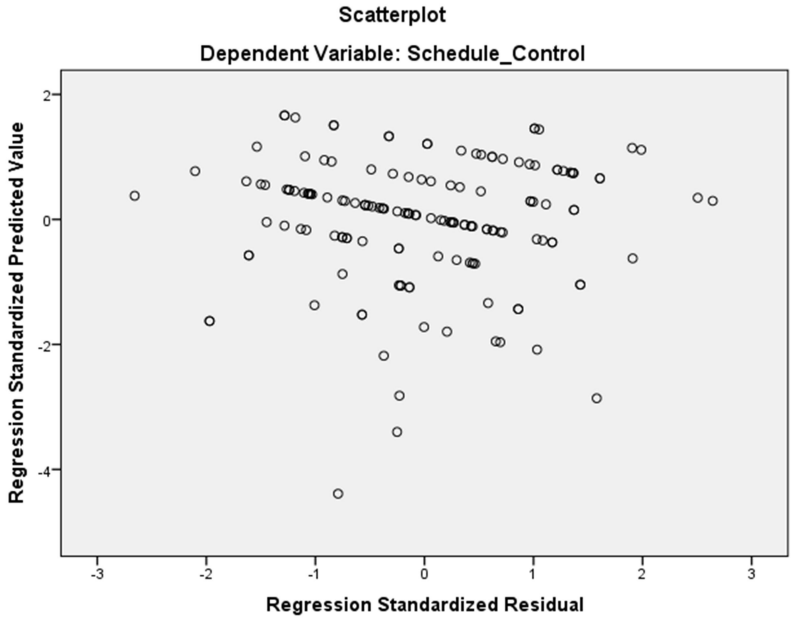
Figure 2: Histogram of Regression Standardized Residual



Source: Survey Result 2022

The study used both methods of assessing normality; graphically using Normal Probability Plot (P-P) graph and numerically using Skewness and Kurtosis. Figure 4.1, depicted that the scores are normally distributed.

Figure 3: Linearity scatter plot of regression standardized residual



Source: Survey Result 2022

The Skewness value provides an indication of the symmetry of the distribution while kurtosis provides information about the sharpness of the peak of a frequency-distribution curve. For variables with normal distribution the values of Skewness and kurtosis are zero, and any value other than zero indicated deviation from normality (Hair, 2010). According to Hair (2010), the most commonly acceptable value for (kurtosis/skewness) distribution is ±2.58. Therefore; as it can be seen in the following table, the kurtosis and skewness values of the variables fall within the range.

Table 14: Skewness and Kurtosis

	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Expertise	-.496	.194	.021	.385
Risk	-.610	.194	.579	.385
Complexity	-.623	.194	.239	.385
Policy	-.561	.194	.505	.385

Source: Survey Result 2022

Model Summary

Multiple regression analysis was employed to examine the influence of consultative selling (Government Policy, Project Risk, Project managers' expertise, Project Complexity) on respondents' Project scheduling and control.

Table 15: Model Summary

Model Summary [b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.946[a]	.894	.892	.14795
a. Predictors: (Constant), Policy, Risk, Expertise, Complexity				
b. Dependent Variable: Schedule Control				

Source: Survey Result 2022

The regression model presents how much of the variance in the measure of Project scheduling and control is explained by the diversification elements. The predictor variables i.e., project managers' expertise, government policies, project complexity, project risks 0.892 of adjusted R square which indicates 89.2% of Project scheduling and control was explained by the variation of the four predictor variables.

Standardized coefficients

Table 16: Beta Coefficients

Coefficients [a]						
Model		Un standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.577	.123		-.975	.331
	Expertise	.266	.029	.326	9.028	.000
	Risk	.257	.030	.265	8.485	.000
	Complexity	.294	.029	.377	10.267	.000
	Policy	.225	.034	-.252	6.598	.000
a. Dependent Variable: Schedule and Control						

Source: Survey Result 2022

The significance levels for all independent variables are less than 0.05. This indicates that there is a strong positive and significant relationship between the independent variables (project managers' expertise, government policies, project complexity, project risks) and dependent variable (Project scheduling and control). The standardized beta value for Project scheduling and

control is 0.577. This indicates that time has relatively strong degree of importance for customer overall satisfaction.

$$PSC=\alpha + \beta 1\ (PME) + \beta 2\ (PR) + \beta 3\ (PC) + \beta 4\ (GP) + e$$

$$PSC = 0.577 + 0.326PME + 0.265PR + 0.377PC - 0.252GP + e$$

Where;

PSC = Project scheduling and control

PME = Project managers' expertise

PR = Project Risk

PC = Project Complexity

GP = Government Policy

Table 17: ANOVA

ANOVA [a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.187	4	7.047	321.924	.000[b]
	Residual	3.327	152	.022		
	Total	31.514	156			
a. Dependent Variable: Schedule Control						
b. Predictors: (Constant), Policy, Risk, Expertise, Complexity						

Source: Survey Result 2022

(F) Value is (321.924) at 0.000 which states that there is statistically significant effect of variables on overall Project scheduling and control

4.1. Hypothesis Testing

According to the research method, the regression Coefficient is used to test the hypotheses. Four hypotheses aim to see if there is a relationship between the four independent variables of diversification (project managers' expertise, government policies, project complexity, project risks) and project scheduling and control. The Sig result of each hypothesis test is less than 0.01. The tests are summarized as follows:

Table 18: Hypothesis testing

Hypothesis	Result
project managers' expertise has statistically significant negative effect on completion of housing projects of Federal Housing Corporation	***Rejected*** (the outcome of the coefficient of regression does not supports the hypothesis: β=.326, p < .01).
government policies have statistically significant negative effect on completion of housing projects of Federal Housing Corporation	***Accepted*** (the outcome of the coefficient of regression support the hypothesis; β = -.-0.252 p < .01).
project complexity has statistically significant negative effect on completion of housing projects of Federal Housing Corporation	***Rejected*** (the outcome of the coefficient of regression does not supports the hypothesis; β = .377, p < 0.01).
Project risks have statistically significant negative effect on completion of housing projects of federal housing corporation	***Rejected*** (the outcome of the coefficient of regression does not supports the hypothesis; β = .265, p < .01).

Source: Survey Result, 2022

As it is clearly indicated in Table 16, a moderate to strong and positive relationship was found between project managers' expertise and project scheduling and control (β =.326, p < .01), Project Complexity and project scheduling and control (β = .377 p < .01) Government Policy and project scheduling and control (β = -.252, p < 0.01) and Project Risk and project scheduling and control (β = .265, p < .01) which are statistically significant at 99% confidence level.

CHAPTER FIVE

SUMMARY, CONCLUSSION AND POLICY IMPLICATIONS

5.1 Introduction

The chapter presents the summary of the study findings, conclusion and recommendations based on the research objectives, hypotheses of the study in connection with the literature review and the study findings. The chapter entails the following;

5.2 Summary of Findings

The research problem that necessitated the undertaking of this research was based on the hypothesis that most federal housing corporation project get over schedule during project implementation. Statistics showed that 60-80% of FHC projects after implementations were over schedule (Chris, 2011; Gray, 2000). The general objective of the study was therefore to determine the factors affecting project schedule control during implementation of FHCs' projects. Four specific objectives were formulated to determine the effect of independent variable on the dependent variable (project schedule control). The specific objectives were to determine the effect of project manager's expertise, government policies, project complexities and project risks on project schedule control during implementation of FHCs projects. After the data collection, data analysis and presentation of results, the findings presented hereafter were obtained. The response rates were 91.8% for questionnaires. It was also observed that 85% of projects were over schedule in case of questionnaires.

On the effect of project manager's expertise on project schedule control during project implementation, the respondents agreed with the activities of the process of working with project team leader to improve their performance for the benefit of the contracting company they observed in Federal Housing Corporation. The standard deviation for project managers' expertise is 0.64003. This standard deviation is low, meaning that there are no extremes in the positive and negative score and this implies that there was no big variation of response among the respondents and this variation is acceptable and the practice of project managers' expertise is good.

About 46.5% of the respondents disagree that political interest does not affect development projects, 11.5% of the respondents neutral and 3.2% and 0.6% of the respondent agree and strongly agree. Therefore, this indicates that political interest affects development projects.

About none of the respondents strongly disagree that delays in establishment of infrastructure that was support housing projects are not a result of politics, 21.7% of the respondents disagree 51.6% of the respondents are neutral, 17.2% of the respondents agree and 9.6% of the respondent strongly agree. This shows that more than half of the respondents are neutral that delays in establishment of infrastructure that was support housing projects are as a result of politics. About 24.2% of the respondents are neutral that Political groups have not affected housing projects failures to introduce policies in FHC, 7.6% of the respondents agree and 33.1% of the respondents strongly disagree. This shows that more than half of the respondents agreed that Political groups have affected housing projects failures to introduce policies in FHC.

From the analysis all of the respondents agreed that factors related with project complexity having the greatest effects on project scheduling and control in FHC. Agreeably Mahiro (2010) in his findings underscores these facts and concludes that one of the major setbacks in project scheduling and control is poor project complexity of the procurement process which include needs that are not well identified and estimated, unrealistic budgets and inadequacy of skills requesting units responsible for the project.

From the analysis all of the respondents agreed that factors related with proactive assessment of risk having the greatest effects on project scheduling and control in FHC. This indicated that FHC provides clear directions for proactive risk assessment with FHC. Agreeably Mahiro (2010) in his findings underscores these facts and concludes that one of the major setbacks in project scheduling and control is poor risk assessment which is not well articulated.
The findings concluded with Thai (2004) that there cannot be a good project scheduling and control without strong risk assessment. Proactive risk assessment is a process that consists of many steps and the bottom line is that planning is not concerned with future decisions but rather with the future impact of decisions made today.

5.3 Conclusions

From the above research findings and answers to research questions, various conclusions were arrived at. It was concluded that federal housing corporation hire competent managers to implement their projects. The project manager's expertise in project schedule control was not a factor that significantly caused variation to projects duration during project implementation.

Government policies greatly impacted on project schedule and have been established to affect schedule control during project implementation. Also, complexities associated with the particular project mainly; technical, facial, managerial and economic contribute to schedule slippage during project implementation. It was also established in this study that project risks that occur during project implementation are a major cause of project schedule slippage. Following the statistics, it can be concluded that most federal housing corporation projects overrun schedule and this is attributed to cropping up of risk factors during project implementation, project complexities and government policies that are detrimental to implementation of the project within expected time frame.

5.4 Recommendations

Recommendation for Policy Purposes

For policy purposes the following recommendations are made based on conclusions arrived at above. Risk management plan should be a component of every FHC project. Such plan should be formulated with the involvement of all project stakeholders so that they can own the plan and cascade it down all the project levels. Risk management plan must include contingency reserve. On effect of project complexity on schedule control, it is recommended that in addition to recruiting a good manager for the project, other required specific skills should be employed in the project. These include financial specialists, field technicians, environmentalists, sociologists, M&E specialists among others to reduce project complexity. Governments should formulate policies regarding particular projects in liaison with actual project stakeholders. Most government policies are blanket and fail to focus on unique characteristics of the project.

Recommendation for Further Research

For further research, it's recommended that that a study should be carried to determine the actual losses incurred by project stakeholders when projects delay. The findings will enable project stakeholders to come up with serious project implementation policies that further strengthen the policy recommendations of this research.

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Annex

Questionnaire

Prepared by: Kalkedan ayalew

Dear Sir/ Madam

This questionnaire was used for conducting research for the Partial fulfillment of master's degree in project management

I, Kalkedan ayalew, with the guidance and support of my advisor Dr. yonas mekonnen I am here to conduct a research survey on the Topic: "Project Scheduling and Control the Case of Federal Housing Projects"

This Questionnaire is designed in two parts. Part one is designed to collect general information and Part two is designed to find out "Project Scheduling and Control". I kindly request you to respond to all questions and be assured that there is no right or wrong answer. Your honest and full response is invaluable for the success and accuracy of this Study. I am very grateful for taking your time and I like to assure you that your response was kept confidential and will only be used for this Research purpose. You can contact me through

Thank you in advance,

Part I: General Information

In answering this part of the Questionnaire, please use a tick(x) mark in the respective box provided.

Gender	Male	
	Female	
Age Group	18-29	
	30-39	
	40-49	
	50 and above	
Academic Qualification	Certificate and below	
	Diploma	
	Bachelor degree	
	Masters and above	
Job Description	Managing director	
	Head of department	
	Procurement officer	
	Human resource officer	
	Engineer	
	Accountant	
	Auditor	
Service Year	1-5 Years	
	6-10 Years	
	11-15 Years	
	15+ Years	
Who describes the quality standard of projects	Contractor	
	PMU	
	Municipal Engineer	
	Consultants	
	No standard established	
In what capacity have you been involved in construction projects?	Project manager	
	Project team member	
	Member of evaluation committee	
	Consultants	

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The project team leader work in relationship with others					
The project manager motivates the skills of the project staffs					
Project team leader has enough experience					
Project leaders have early and continuous involvement in the project					
Project staff are committed to meet cost, time and quality					

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Project risk is identified during the planning stage					
Project risk analysis is conducted during the planning stage					
There is a separate unit/person responsible for project risk management planning					
Implementing an effective safety, quality assurance and environmental program					
Risk response planning prepared in the planning stage					

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Federal Housing Corporation projects are clearly defined and have realistic goals/objectives					
The projects have detailed and up to date project plan					
Project management tools and methodology are adequately applied in the project management					
The designs and specifications are clear and adequate.					
There are sufficient/ well allocated resources throughout the project (e.g., vehicle, tools etc.).					

Shorter completion period given for the contract					
The project scope is well defined in the planning phase					
Sufficient time is given for project design and quantity preparation/ development					

	Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
Political affiliation determines the type and size of housing projects in certain locations					
Political interest affects development projects					
Delays in establishment of infrastructure that was support housing projects are as a result of politics					
Political groups have affected housing projects failures to introduce policies					
Leaders of political parties get involved with the running of the housing projects causing lack of continuity of such projects					
Political leaders/groups influence the acceptance of housing projects					

	Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
It is difficult to complete projects within the contract time.					
The contractors struggle to complete projects as per the contract cost					
There is no client and user satisfaction with construction product					
Projects are not completed and transferred to client without defects.					