ST. MARY'S UNIVERSTY

SCHOOL OF GRADUATE STUDIES

SCHOOL OF BUSINESS

ASSESMENT ON DELAY AND CONSQUENCE OF DELAY OF HOUSING CONSTRUCTION IN ADDIS ABABA: THE CASE OF 20/80 CONDOMINIUMS PROJECT KOYE FECHE SITE

BY

LIDIYA TIBEBU

MAY, 2022

Addis Ababa, Ethiopia

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

Advisor: Misganaw Solomon (Ph.D.)

MAY, 2022

ADDIS ABEBA, ETHIOPIA

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APPROVED BY BOARD OF EXAMINERS

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Internal Examiner	Signature

DECLARATION

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

Lidiya Tibebu _____

Name Signature

St. Mary's University, Addis Ababa **MAY, 2022**

ENDORSEMENT

This thesis has been submitted to St. Mary‘s university, school of graduate studies for Examination with my approval as a university advisor.

Misganaw Solomon (Ph.D.) _____

Advisor Signature

St. Mary’s University, Addis Ababa **MAY, 2022**

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LIST OF ACRONYMS

AAHCPO- Addis Ababa Housing Construction Project Office

GTP II -Growth and Transformation Plan II

MOFED - Ministry of Finance and Economic

MWUD - Ministry of Works and Urban Development

PMBOOK - Project Management Book

UN –HABITAT- United Nation Human Settlements Programme

UNICEF - United Nation International Children's Emergency Fund

SPSS - Statistical Package for social Science

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ABSTRACT

Many projects around the world continue to fail, resulting in the loss of millions of dollars for the organization due to delaying projects. Construction project completion delay can be defined as late completion of work compared to the planned schedule. Construction project completion delay can be improved by schedule practice assessment. This study was conducted with an objective of examining schedule practice of 20/80 condominiums housing construction project at Koye Feche site in Addis Ababa that are under construction. Descriptive research design was adopted to identify these schedule practice and its consequences by using both quantitative and qualitative approaches. The target populations of the study are all contractors, consultants, clients, and small enterprise of the 20/80 condominium housing construction project. The selection of respondents was made by stratified random sampling techniques, 187 questionnaires were distributed to stakeholders and make key informant interviews of clients and consultants for balance. Descriptive analysis such as mean, frequencies, and factors analysis were used to analyse the data and the analysis was conducted by using SPSS version 26. Based on the findings the following schedule practice were identified: financial problems, highly bureaucratic organization, delay in raw material supply to site, delay in payment, absence of consultant's site staff, poor inspection, low productivity, planning and scheduling project work, rework due to quality, and lack of strong organizational structure. The rest schedule practice that relate with micro small enterprise and external schedule practices are indicated. It is recommending that all parties in the project need to coordinate and communicate all their efforts for the construction of quality and timely on its time frame house for the better and developed housing delivery.

Key words: client, consultant, contractor, micro and small enterprise

CHAPTER ONE

INTRODUACTION

1.1. Background of the Study

Constructions basically commenced to fulfil the human needs of shelter. Population growth and urbanization led to growing need for housing and attention to the importance of local building materials and techniques. Consequently, the construction industry and many parts of the world began to grow with increasing demand. The growth and growing demand of the construction sector has followed a pattern that is similar to the trend of the world (Tecle Hagos and Mahelet, 2012)

The construction industry has a critical role in the development of each nation. It has link for both direct and indirect development and national economy growth by contributing to the national output, and stimulates the growth of other sectors through a complex system of linkages by facilitating basic infrastructure, and reducing the unemployment by hiring large number of both skilled and unskilled labours. The industry has a significant contribution to sustainable economy development and satisfying the physical and social needs, including the needs of shelter, infrastructure of production and customer goods (Durdyev ,2012).

As per UNICEF (2017), 2.3 billion people and 850 million people around the world lack access to basic sanitation service and basic drinking water service. Therefore, the construction industry needs to improve the capacity and effectiveness of the industry to meet the demand and to support the national economy. The industry, by nature has many problems and requirements' number of countries has initiated ministerial level office to improve the capacity of industry and identify both internal and external future challenges which includes culture of the nation, market strategy and environment (Ofori 2000, 2018). The causes and consequences of delay factors in construction depend on ecological, topographic and technological limitations of the countries. Pending the effects of globalization and technological difference between developing and developed countries, it is necessary reasons for delay to reduce the impact of delay on a construction project (Shebob et al., 2012).

The Ethiopian industrial sector, largely stimulated by the expansion of the industry, is expected to make a significant contribution to growth and structural changes during the GTP II period. Construction, electricity and mining are also expected to contribute significantly to growth. As a result, industrial GDP is expected to grow by an average of 19.8% per year during the GTP II period. The GDP of the processing subsector is expected to grow by an average of 23.9% per year over the same period. As a result, industry participation is expected to fall from 14.6% in 2014/15 to 22.8% by the end of 2019/20.

UN-HABITAT (2015), stated the office of the Addis Ababa housing project participates in the new program on 10^{th} and 11^{th} round by constructing low cost house for the middle and low income of the city dwellers. Since 2005-2017 the project office constructed and transferred more than 200,000 condominium houses to the resident of Addis Ababa. However, a series of unforeseen challenges facing the construction project. The most critical problem is the untimely completion of houses due to continued escalation of costs in the price of condominium homes that are no longer an option for many low-income households. In addition, the inability to pay the monthly mortgage and the payment of the service forces many households to move out of their unit and rent it instead of risking losing it through a bank foreclosure. The quality and design of condominium blocks and post- occupation management are also critical factors that must be addressed to improve the sustainability of program (UN-HABITAT, 2011). The construction sector has experienced remarkable growth and is receiving a lot of attention. However, several shortcomings have been identified in the sector and need to be corrected immediately. This study intends to identify the schedule practices that influenced the delay in construction projects and consequence of delay in 20/80 condominium housing construction project.

1.2. Statement of Problem

Construction delay is general known as the most common, costly, complex and risky problem. Many projects around the world continue to fail, resulting in the loss of millions of dollars for the organization. The on-going challenge has led many project management professionals to try to identify the critical schedule practices that need to be addressed head-on to produce a successful project management result.

Alaghabari et al., (2007) studied the factors that delay construction projects in Malaysia. The results of the analysis subdivided into four categories by responsibility, the main delay factors in construction are factors due to the contractor, followed by factors due to the consultant, factors due to the owner, and finally external factors. The most important conclusion of the study is that financial factors are behind the biggest delays in construction projects. Coordination problems are considered the most important factors behind delays in construction project, followed by material problems.

Despite of Ethiopian construction sector high importance, several defects like infrastructure and construction projects delay are often see them in the sector, which can hold back or impair planned economic development if immediate actions are not taken (Nega, 2008). According to the AAHCPO at the time, the project office started its activities at June 2014 to complete and transfer in 2017 by constructing 54,000 houses at Koye Feche site However, until 2019, the project office only built and transferred 26,000 houses and 28,000 houses are under construction. In addition those transferred houses are not finished this shows that the project office cannot build the condos on time, according to the planning office of the planning and budget department. Generally construction of the Koye Feche site project took more than 6 years to complete the houses and transfer them to residents. But, the plan of the project has been to complete within 3 years, this shows that there is a big gap between the planned time and the Completion of the constriction project at the AAHCPO.

Dawit ,(2018) stated that the 20/80 condominium housing project in Addis Ababa have been delay because of low quality of materials, poor pre-planning of condominium housing, and ineffective monitoring activities by using descriptive and inferential statistics research methodology.

However; late delivery of construction materials, shortage of construction materials, low skill of labours on construction site, late procurement of resources, late in revising and approving design documents, poor communication and coordination of project parties, poor qualification of contractor's and technical staff, luck of effective planning and scheduling of project, clear and inadequate drawing by consultant or inadequate experience of consultant and political influence related to master plan are obstacles for the successes of project at koye Feche site. Moreover, Addis Ababa housing project has experienced condominium

housing project delay in 20/80 condominium housing project at Koye Feche site. The project is beyond their schedule and that requires further investigation of factors influence to delay in condominium construction project. Therefore, by capturing internal and external factors influencing timely completion of 20/80 condominiums housing construction project being implemented. And what measurements are taken for this delay of the project at "Koye Feche" sites.

1.3. Research Questions

In the process of achieving the research objectives the researcher answers the following research questions:

1) What are the internal consider assessment of schedule practice of construction projects?
2) What are the external consider assessment of schedule practice of construction projects?
3) What are the consequences of delay in 20/80 condominium housing construction project at Koye Feche site?

1.4. Objective of the Study

1.4.1. General Objective

The general objective of the research is to assess the schedule delay and it is consequence of 20/80 condominiums housing construction project at "Koye Feche" sites.

1.4.2. Specific Objectives

Beyond the General Objective, the study will also have the following specific objectives:

- To identify the internal consider schedule practice of 20/80 condominiums housing construction project at "Koye Feche" sites;
- To examine the external consider schedule practice of 20/80 condominiums housing construction project at "Koye Feche" sites;
- To determine the consequence of delay in 20/80 condominium housing construction project at Koye Feche" sites.

1.5. Significance of Study

This research will expected to help Addis Ababa housing Development Cooperation top managers for making appropriate decision regarding the project time management and it will helps them to decrease and avoid schedule delay in construction condominium housing project which is underway and future of the construction of condominium housing projects in Addis Ababa. The government officials may use it for policy formulation and to pass appropriate guideline in the future. The applicability of the outcome of this study will be used as reference for future researchers to conduct further researches any of related topics. Additionally, the result of the study will be important to create awareness on the issue to construction project stakeholders: client, contractors, consultants, and small enterprise and to achieve projects objectives.

1.6. The Scope and Limitation of Study

The research conducted with an objective of finding the schedule delay practice of 20/80 condominiums housing construction project at Koye Feche site in Addis Ababa and to identify consequences of schedule delay. Specifically, a research was examining the internal and external schedule delay practices as the main problem that influencing timely completion of construction of condominium houses projects. This research focused on only construction condominium housing projects that are currently under-construction. In terms of geographical coverage this study was dedicated to cover Koye Feche site with reference to five branches of AAHCPO including Lideta, Kirkos, Yeka, Bole and Project 13 braches specially the 20/80 condominium houses construction stakeholders such as client or owner, consultants, contractors and micro and small enterprises, were directly involved in the project work.

There were some limitations in preparation of this study firstly, the research population was too large to cover in the limited time given this sampling is required which have its own impact on general output of study. Secondly information handling and giving was the other problem to get data specifically in AAHA, there were difficult to get documented data that narrate the past history about Koye Feche 20/80 project

1.7. Organization of the study

The research is organized in to five chapters. The first chapter starts with a general introduction of Study, that includes background of the study, statement of the problem, research questions, objectives of the study, scope of the study and significance of the study; the second chapter focused on review of related literature in which earlier studies on the area highlighted and presented. Theoretical Review of the literature and empirical evidences of factors affection project success of construction projects are discuss in detail. The Third chapter discuss the design of the research and the methodologies of the research, source of data, sampling techniques, instrument of data collection; Methods of data analysis and ethical research consideration are considered. The forth chapter is devoted to data presentation, analysis and interpretation in which the collected primary and secondary data analysed and organized in a manner the meets the objectives of the study. Finally, in the last chapter of the study the key findings were summary and the conclusion as well as recommendations of the research based on the finding.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 INTRODUACTION

The goal of this chapter is to discover the schedule practices of construction project and identify the consequence of schedule delay by reviewing past research on the subject. This inquiry is significant since it supply a significant portion of the input for the research's list of practices to consider. And the chapter contains some definitions of terms and discusses the literature review of contingency theory, general system theory, ADKAR model and utility theory; that has been publicized by different researchers and authors. Further Empirical review and conceptual Frame work are outlined.

2.1.1 DEFINITIONS

Construction Delay

Construction delays can be described as the late completion of work relative to the scheduled or contract schedule (Kang sikwei (2010). Pickavance Keith (2005) describes the term _delay_ as anything occurring at a later time than anticipated, intended, defined in a contract or beyond the deadline that the parties decided upon for the completion of a project. Construction delay is defined as the times overrun either ahead of end date specific in a contract. If a project takes longer than intended and falls behind schedule, it is said to be delayed. the owner will lose money due to poor efficiency, a rentable void, or reliance on existing facilities as a result of the construction delay. Construction delay are caused by extended work periods, which affect contractors by rising overhead expenses material costs, and labour costs as a result of price rises. Delay is described as causing things to happen later than planned or failing to act in a timely manner (Assaf and Al-hejii, 2006). In another report, Mohammed (2012) described construction project delay as the difference between the baseline construction plan or contract schedule and the actual progress or completion of work.

Project: is a temporary unique and dynamic endeavour or endeavour made to create a few kind of tangible and intangible result, it more often than not incorporates an arrangement of

interrelated assignments that are arranged for execution over a settled period of time and inside certain necessities and impediments such as taken a cost, quality, performance, others. (PMBOOK)

Condominium: condos are usually found high rise building which is individually preserved unit in a multi- unit building. Condo proprietors together possess shared common sections, such as pool, carports, elevators…etc (Condominium Proclamation No.370/2003).

Condominium Housing: Could be a title given to the frame of lodging residence where each inhabitant family claims their person unit, but similarly offers possession and obligation for the communal regions and offices of the building, such as corridors, warming frameworks, and lifts. There's o person proprietorship over plots of arrive. All of the arrive on a condominium location is possessed by all mortgage holders (UNHABITAT, 2011).

Household: those who live under the same roof or who build a separate house, directly outside (or in public place) or who have a kitchen. When family members respect the law of blood, the become a family (MOFED, 2008).

Schedule: is the method of organizing, controlling and optimizing work and workloads. It is a fundamental time management apparatus, comprises of a list of times at which conceivable assignments, occasions, or activities are aiming to require put, or of an arrangement of occasions in the chronological arrange in which such things are intended to require put. The method of making a schedule, choosing how to arrange these assignments and how to commit assets between the varieties of conceivable errands is called planning and a person responsible for making a specific schedule has called a scheduler (Dunne, 1998).

Schedule Delay: may well be characterized as the time overrun either past completion date indicated in a contract, or past the date that the parties agreed upon for conveyance of extend. It may be a venture slipping over its arranged plan and is considered as common issue in development ventures. In a few cases, to the temporary worker, delay means higher overhead costs since of longer work period, higher fabric costs through expansion, and due to work fetched increases (Sadi A. Assaf et al 1995).

Contract: is defined as a legal assertion made by two or more people inside the boundaries of their legally binding capacity with the deliberate of creation a legitimate commitment,

communication such purposeful without unclearness, each to the opposite party and also the parties being of the identical intellect on the topic touch perform positive of negative act which are conceivable of performance (Gibson ,1997).

Contractor: a person or a company that agree to perform a certain number of goods and services that meets or exceed requirement or specification, at mutual benefit upon price and specified timeframe on contract basis. (PM book)

Consultant: a person or a company that is a professional who provide expert advice in different areas such as business, education, law, human resource, marketing, engineering, health care, or any of.(PM BOOK 2013)

Client: a person or a company that who engage the professional advice, service or goods in return of payment. It called also costumer.

Construction: it's a process or technique constricting and building infrastructures such as road, house, dams, bridges … etc.(PM book)

Project Management: the application of knowledge, skills, tools and techniques to manage project activities such as initiating, planning, exciting, controlling and closing to meet the project requirement. (PMBOOK 2013)

Construction Time over runs: the gap between the agreed completion date and the actual date of completion. (PMBOOK 2013)

Construction cost over runs: the difference in the final contract amount to its initial contract amount divided by the initial contract amount (Jackson, 1990).

2.2. Review of Theoretical Literature

Now a day's delay in construction projects all round the world is a common phenomenon. It is been observed by various researchers that construction projects include various schedule practices and its consequence on both time and cost over runs on project delivery. This observation however relates to the peculiarities of every of the varied projects in terms of magnitude, location, period of execution, sort of procurement and sort of client. A construction

project is therefore termed successful when it is completed on time, within budget in accordance with the specifications and to client's satisfactions. Therefore imperative that general management keep track of the progress of the project to minimize any occurrence of delay. Management theories are general rule that guide the project

This study will be guided by four management theories namely;

- Contingency theory
- General system theory
- Utility theory
- ADKAR Model

2.2.1. Contingency theory

Theory by Fred Edward Fiedler, (2010) attests that when administrators settle on a choice, they should consider all parts of the present circumstance and follow up on those viewpoints key to the current circumstance. Every development venture is novel and with its own complexities and in this way ought to be overseen as indicated by its particular qualities and condition in that specific time frame (Sawega, 2015). The possibility hypothesis perceives this viewpoint and endeavours to recognize rehearses that best suit the exceptional requests of various undertakings. This hypothesis dismisses the possibility of one most ideal approach to oversee ventures in light of the changing administration circumstances. As indicated by Mutema, (2013) possibility hypothesis considers the communication and interrelation between the association and the earth.

This theory perceives that there is a scope of logical factors additionally alluded to as hazard factors which impact the venture destinations in an unexpected way. Instances of these factors are: outer condition, innovation, hierarchical structure and size, cost, culture, individuals included and technique. Possibilities for the two financial plans and calendars furnish the task supervisor with the assessing alert they have to shield their undertakings from cost and time invades (PMI, 2006). Successfully distributing these possibilities can help venture chiefs control a great part of the tasks vulnerabilities.

2.2.2 General systems theory

Theory by Bertalanffy Ludwig Von, (1968) attests that a framework is an assortment of parts bound together to achieve a general objective. On the off chance that one piece of the framework is expelled, the nature of the framework is changed also. For instance, a working vehicle is a framework on the off chance that you evacuate the carburettor you no longer have a working vehicle. A venture can likewise be seen as a framework with sources of info, procedures and yields. Any venture achievement is subject to the agreeable communication of its parts and along these lines the undertaking group must have the option to place this into point of view. Improvement strategies by Memon et al., (2013) show that disappointment of various gatherings to a venture to work consistently prompts infighting that in the end crash the consummation of a task.

System approach in management is based on general system theory (Certo and Certo; 2012) this approach assists the leader manager in translating his awareness of the organizations complexity and the intensity of it is interaction with the environment in to a guide for successful leadership in terms of long term change requirement versus resistance to change and attempting to influence the environment that influences the organization.

2.2.3. The Utility Theory

Utility is a proportion of attractive quality or fulfilment; a level of fulfilment or government assistance originating from a financial action. Estimation of a task relies upon its utility while utility relies upon the particular conditions of the partners. The measures of undertakings achievement ought to incorporate longer term parts of the venture result, for example, its effect. Utility hypothesis ought to along these lines be considered as a significant component in the meaning of task lead time (Al-Carlos, 2014). As indicated by PMI, (2006) the task chief can utilize a utility-based way to deal with build up a long-go possibility allotment plan, a methodology educated by the connection between expected utility and the difficulties in distributing a project’s cost and time possibilities. This relates utility hypothesis to possibility designation to improve execution. Deferral in venture finishing impacts adversely to the normal clients in that it denies them the utility they would have had from the undertaking were it finished on schedule.

2.2.4. The ADKAR model

ADKAR is an acronym for: A – Awareness of the requirement for change, D – Desire to help and partake in the change, K – Knowledge of how to change, A – Ability to actualize the necessary aptitudes and practices, R – Reinforcement to continue change. All the five components of the ADKAR model are consecutive. When realizing change, it is significant that everybody comprehends the requirement for change in light of the fact that the characteristic response of workers or undertaking group to change is to stand up to. The precondition for actualizing change is sound and broad information, learning new abilities and controlling towards an alternate conduct. After change has been executed it is significant that this change is continued so as to forestall a slip by into the previous conduct. Undertaking the board establishment PMI, (2012) states that 73% of the associations utilizing venture the board use changes the executives. Fruitful task the board to a great extent relies upon the capacity of the undertaking group to oversee change (Hornstein, 2010). Tasks do not just create change yet in addition can be utilized to officially oversee change (Fieldler 2010, Lundy and Morin 2013). Hiatt, (2006) built up the ADKAR model for change the executives' dependent on his experience as an architect and a venture head. The model depended on many change the board methods however introduced in one clear model with a key hidden message that the way to fruitful change is in seeing how to encourage change with one individual.

Summary of management theory

Successful construction project is measured by it is completion time with budget and with satisfaction of client, for this successes general management is very essential therefore this study will be guided by management theory's such as contingency theory, general system theory utility theory and ADKAR model. Contingency theory, Theory by Fred Edward Fiedler, (2010) according to this idea, there are variety of logical consideration, also known as risk factors that have a predicated impact on the venture destination. General system theory, Theory by Bertalanffy Ludwig Von, (1968) this approach aids the leader manager in translating his understanding of the organizations complexity and the intensity of its interactions with the environment in to a guide for effective leadership in terms of long term change requirements versus resistance to change and attempting to influence the environment that influences the organization. In utility theory a portion of appealing quality of fulfilment, a level of fulfilment,

or government assistance resulting from financial action is referred to as utility. Task estimation is based on its utility, which is based on the partner's specific circumstances. The last one is the ADKAR model; Hiatt, (2006) built up the ADKAR model for change the executives' dependent on his experience as an architect and a venture head. The model depended on many change the board methods however introduced in one clear model with a key hidden message that the way to fruitful change is in seeing how to encourage change with one individual.

2.3. Empirical Review

Construction delay means the specific time of completion of the project extended beyond its expected and scheduled time due to some different reasons. Delays can lead to social instability and loss of income for the client. This can lead to faster productivity loss. Therefore, construction delays and profits are important practices in the construction of public projects. Ensure good management of constructions projects main results for the development of the countries (AL-Momani, 2000). Construction delay caused by the contractual parties or phenomena's that cannot be controls of parties or force majeure. The contractual parties are client consultant and contractors (Alhajie &Danladi, 2012).

According to Peter F. et al., (1997) In Indonesian construction industry influenced the country economy development. Therefore, improving construction efficiency by means of cost effectiveness and timeliness would certainly contribute the country economic development. The country suffers from construction time and cost overruns. So, the researchers identify the factors of cost and time delay by using questionnaires' and referring different books. The major factors influencing time overruns are design changes, poor labour productivity, inadequate planning and resource shortages, material cost increases due k8to inflation, inaccuracy of estimates and lack of experience of project type.

Enshassi et al., (2014) studied 110 factors for time delay and 42 factors for cost overruns was developed to examine significant factors causing time and cost overruns in construction projects in the GAZA STRIP: contractors' perspective. They were distributed 80 questionnaires to contractors and 66 were completed. According to contractors' response the most significant causes of time delay are strikes, increase in material prices due to continuous border closures, lack of materials in markets, shortage of construction materials at site, delay of material delivery to site, cash-flow problems during construction, project materials monopoly by supplier's

instability of the local currency in relation to dollar value and poor site management. The researcher recommended that better project management procedures and the inclusion of an appropriate contingency allowance in the pro-contract estimate as a means of minimizing the adverse effect of construction delays.

Alaghbari et al., (2003) found that the most common factors that cause delay in construction projects in Malaysia. The study examined 31 variables from a total, parted in to four by their duty, the main factors causing delay in construction projects are factors due to contractor, consultant, owner and external factors respectively. The finding of the study stated by degree of important that cause of the most delays in construction projects in Malaysia are financial factors, coordination problems and materials problems.

(Sweis,2013) , identify factors affecting time overruns in public constructions project: The case of Jordan, through examining the perception of 30 engineers with different work experience level working at the Ministry of Public Works and Housing and the Association of Construction contractors. The result indicates that top ten factors affecting time overruns were identified. These factors are namely, poor qualification of consultants, engineers and staff assigned to the project; poor planning and scheduling of the project by the contractor and severe weather condition on the job site. The other three factors are responsible is the ministry of housing and publics works, factors are government delay, design changes, and weather conditions.

Frimpongs et al., (2003) examined the factors that cause delay in construction of ground water projects in Ghana. The results of the analysis show that 26 factors in to four categories by responsibility and they sent 55 questionnaires to owners, 40 to contractors and 30 to consultants. As the contractors and consultants reply, monthly payments difficulties from agencies was the most important cost overruns factor, although owners ranked poor contractor management as the most important factor. The overall ranking results indicates that the predominant factors that cause excessive ground water project overruns in developing countries are poor contractor management, monthly payment difficulties from agencies, material procurement, poor technical performance, escalation of material prices according to their degree of influence.

Nikitare, (2016) investigated that the factors influencing completion of construction secondary school projects funded by constituency development fund in Kenya. The study was adopted a

descriptive research design, purposive sampling technique was used to sample the project implementers and 24 implementers and 120 beneficiaries engaged in questionnaires'' using simple random technique and analysed by both quantitative and inferential statistics. The result of the study reviewed in two categories which is availability of funds and technical competence had a positively influenced timely completion of the school construction project and economic risk had a negative impact.

Kikwasi, (2012) examine that cause and effects of delays and disruptions in construction projects in Tanzania. the study was adopted descriptive research design to obtain views from clients, consulting firms, regulatory boards and construction firms, were use purposive and random sampling to select respondent and literature review, questionnaires and interviews techniques were used to collect data for the study. The finding indicated that main cause of delay and disruptions are; design change, delays in payment to contractors, information delays, funding problems, poor project management, compensation issues and disagreement on the valuation of work done.

Kariungi, (2014) investigated on determinants of timely completion of projects in Kenya: a case of Kenya power and lighting company, Thika. The study was conducted to determine the factors influence timely completion of power projects within Thika region, factors were assessed from various project levels; ranging from formulation project plans, execution, monitoring and evaluation and closure by using descriptive and exploratory research design, simple random to select the respondent, questionnaires, interviews and observation check lists were used to collect data and analysed using SPSS. The finding show that procurement activities were poorly coordinated and lacked of transparency, project planning tools and techniques: collection of baseline data, need assessment, implementation and evaluation were not undertaken all together and climatic factors that affected the projects.

Table 2.1 illustrates the factors that influence time over runs which were collected from a review of previous literatures. The factors are categorized into four groups.

Table 2. 1 schedule practices

Country were survey conduct	Indonesia	Palestine	Jordan	Malaysia	Ghana	Kenya	Nigeria	Kenya	Tanzania
Factors influencing project delay	Peter F. et. al, 1997	Enshassi et al., 2014	Sweis,2013	Alghbari et al., 2007	Frimpongs et al., 2003	Nikitare, 2016	Elinwa et al., 2001	Kariungi, 2014	Kikwasi, 2012
External Related									
Poor economic conditions (Currency inflation Rate...etc.)			*	*					*
Changes in laws and regulations	*			*	*	*	*		
Transportation delays				*		*			
Weather condition on construction		*							
Obtaining permits from municipality	*	*					*		
Political Situations									
Poor site conditions									
Civil commotions or strikes		*							
Material market instability								*	
land authority's management		*							
Outbreak of Pandemic (COVID-19)									
Internal Factors Depend of responsibility									
Client related									
Inadequate managerial skills for all Project Mangers	*			*		*	*	*	

Low speed of decision making within each project team	*			*	*				
Contract modifications (replacement and addition of -new work to the project and change in specifications)		*		*	*	*	*		*
Unclear specification			*			*			
Revising and approving design documents	*	*			*			*	
Inadequate construction planning		*							
Inappropriate construction methods			*						
Delay of raw material supply to site							*		
lack of tracking schedule					*			*	
Poor quality site documentation	*								*
Financial problems (delayed payment financial-difficulties and economic problems)		*				*			
Highly bureaucratic organization			*				*		
Mistakes and discrepancies in contract documents					*				
Major disputes and negotiations	*								*
Inappropriate type of contract			*						
Poor procurement programming of material								*	
Consultant related									
Lack of experience on the part of the consultant		*		*					*

Lack of experience on the part of the consultant's site staff (managerial and supervisory personnel)	*			*			*		
Absence of consultant's site staff				*		*			
Too few Supervisors/skill	*			*	*				*
Quality assurance/control	*	*	*	*			*	*	
Preparations an approvals of tests and inspection	*		*	*	*				
Poor inspection		*							*
Waiting time for approval of tests and inspections			*			*			
Delay in payment								*	
Conflict in amount of payment		*							
Contractor related									
Lack of experience on the part of contractor	*				*	*	*		
Lack of experience on the part of contractor's site staff		*			*			*	
Insufficient number of staffs			*		*	*	*		
Poor distribution of labour	*	*		*					
Lack of equipment				*	*		*		*
Spend some time to find sub-contractors company		*				*		*	
Unskilled operators	*	*			*				
Lack of a strong organizational structure				*		*	*		
Equipment availability and failure								*	
Low productivity		*							

Communication and Coordination			*			*			*
Rework due to quality	*						*		
Planning and scheduling project work					*				

Source: Literature review

Table 2.2 Summarized factor of delay

No	**Related to**	**Schedule practice**
1	External	Poor economic conditions (Currency inflation Rate...etc.) Changes in laws and regulations Transportation delays Weather condition on construction Obtaining permits from municipality Political Situations Poor site conditions Civil commotions or strikes Material market instability land authority's management Outbreak of Pandemic (COVID-19)
2	Client	Inadequate managerial skills for all Project Low speed of decision making within each project team Mangers Contract modifications (replacement and addition of - new work to the project and change in specifications) Unclear specification Revising and approving design documents Inadequate construction planning Inappropriate construction methods Delay of raw material supply to site Financial problems (delayed payment financial-difficulties and economic problems Highly bureaucratic organization Poor procurement programming of material

3	Consultant	Lack of experience on the part of the consultant Lack of experience on the part of the consultant's site staff (managerial and supervisory personnel) Absence of consultant's site staff Quality assurance/control Preparations and approvals of tests and inspection Poor inspection Waiting time for approval of tests and inspections Delay in payment
4	Contractor	Lack of experience on the part of contractor Lack of experience on the part of contractor's site staff Poor distribution of labour Unskilled operators Low productivity Communication and Coordination Rework due to quality Planning and scheduling project work

2.4. Consequence of delay

A study by Salf ul & Shakeel, (2014) state about four major consequence of construction delay; cost overrun, time overrun, litigation and abandonment.

1. ***Time overrun*** one of the most important issues in the construction industry. it can happen on any construction project, and the extent of the delay varies greatly from one project to the next .Saif ul & Shakeel, (2014) describe in their study "when construction project are delayed, more time is needed to complete the completion of project."

2. ***Cost overrun*** According to Memon, (2013) "Cost escalation," "cost increase," and "budget overrun" are all terms used to describe cost overrun. in the same vein, a research in Malaysia revealed that cost overrun is the extra expense incurred by a company in order to complete work that has been delayed (Saif ul & Shakeel,2014).

3. ***Litigation*** consequence of litigation was caused by client, consultant, contractor and external related factors Ashraf & Ghanim, (2016). Construction delay has its own considerable positive force on number of litigation issue (Saif ul & Shakeel, 2014).

4. ***Abandonment*** the term abandonment refers to when projects resources are cut off or stopped. it died of starvation before finishing all of the requirements, leaving the project

stakeholders with an unfinished project. Project Management Fundamental, (2009) According to Salful & Shakeel, (2014) the last major consequence of delay was abandonment.

2.5. Conceptual Framework

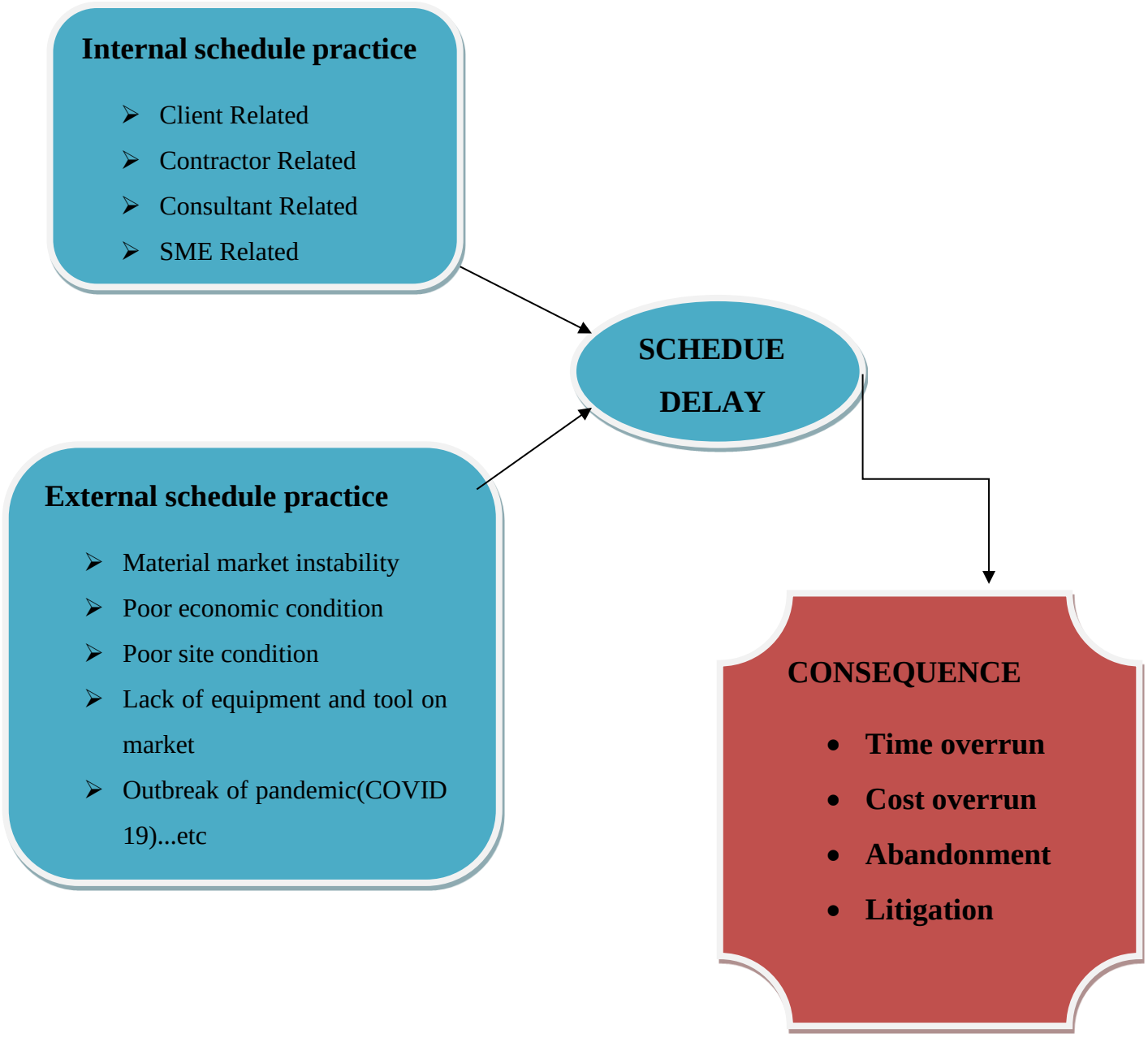

Figure2.1 Conceptual framework

SUMMERY

This chapter reviewed various literatures from various countries perspectives. For this reason, various research projects have been undertaken all over the world in order to determine the delay of schedule in construction project and it is consequence. This is because, in order to keep the project on track .Moreover, AAHDO have the obligation to minimize or avoid schedule delay of construction and consequence of this delay, also delay needs solution by consider assessment of schedule practice. From each of literature review on construction delay different gaps were identified. The significance schedule practices identification of construction delay in order to minimize delay of construction. On the other hand, minimizing or avoiding of construction delay needs serious consideration and attention. Therefore these researches are necessary by identifying the contributing schedule practices for construction delay and develop an appropriate time management. Moreover, theoretical literature review organized with different management theory's this are General management theory, utility theory, and contingency theory and ADKAR model. Further empirical review was done through presenting different countries and experiences including Ethiopia by showing the similarities, differences and contradiction among findings. Conceptual framework is designed to show internal and external schedule practices and its consequences relation to schedule delay.

CHAPTER THREE
RESEARCH METHODOLOGY

INTRODUACTION

The previous chapter has presented the literature reviews that have existed so far in the areas of the subject matter. This chapter shows the type of the research and the designs to be applied for the accomplishment of the objective of the study alongside the methodology ought to be employed in carrying out the research. Thus, research design, research approach, target population, sampling, methodology for data collection, data analysis techniques are presented in detail

3.1. Research Design

According to Thomas (2010), a research design is the overall plan of how to go about answering research questions. He also stated that it is a blueprint for data collection, measurement and analysis. In this study descriptive research is adopted.

Descriptive research, according to Naoum, (2007) is used to describe a certain population or phenomenon and to answer the "what" question. The Objective of this study is to asses schedule practice of housing construction and its consequence in Koye Feche site. So, the reason behind using descriptive design is because the research questions were geared at answering what and are explaining or describing the schedule practice assessment of housing construction phenomenon.

3.2. Research approach

In this study, mixed method research approach was used to capture both qualitative and quantitative data. The qualitative method was used to support the quantitative data. This method was used for triangulation of qualitative with quantitative methods and to increase the perceived quality of the research.

Quantitative approach, according to Creswell (2003), count things, analyzing data statistically, and report out comes in numeric forms. This method is used to discover facts using evidence or records. As a result, a quantitative research approach is used to rank the element that factor of delay in housing construction and to identify the primary factors of delays.

Moreover, Mark et al., (2016) stated that a survey strategy is usually used and allows the researcher to collect quantitative data. To address the study questions, a survey was employed as a research approach.

As to statement of Saunders et al. (2007), qualitative research approaches take the form that non-numeric data that have been clearly identified. In such approaches, researcher was only the data gathered from or reported from respondents and transform them in to the required outputs.

3.3. Population and Sampling technique

According to Hair et al. (2010) target population is to be a specified group of people or object for which questions can be asked or observed made to develop required data structures and information.

Population of this study was direct participants in the project and who have good experience about the study area. The researcher wear used stratified random sampling technique to select respondents from targeted population. Sampling involves the selection of a number of study units from a defined study population. The population is too large for us to consider collecting information from all its members. Instead we select a sample of individuals hoping that the sample is representative of the population.

According to Diamantopoulos (2004), a population is a group of items that a sample will draw. A sample, on the other hand, refers to a set of individuals selected from an identified population with the intent of generalizing the findings to the entire population. A sample is drawn as a result of constraints that make it difficult to cover the entire research population (Leedy et al., 2005).

Based on this concept, in this study we use stratified random sampling strategies to include for qualitative studies to get the particular target population. Thus, for this study, the eligible target population of the study were all clients, consultants, contractors, and micro and small enterprise of the 20/80 condominium housing project that are currently under construction at Koye Feche site.

The sample size of the study was use a simplified formula provided by Yemane, (1967) as cited by (sing & Masuku 2014). As shown below.

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

When:

n= Sample size N=Population size

e=Level of precision

A 95% confidence level and e =5%, is assumed for the purpose of determining sample size for this research.

This research wear select sample as the following

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

$19/[1+19(0.05)^2] =18$

$43/ [1+43(0.05)^2] =38$

$22/ [1+22(0.05)^2] =21$

$86/ [1+86(0.05)^2] =71$

Table 3.1 Sample Size

Category	Number of Population	Number of Sample Targeted
Client	45	40
Small Enterprise	43	38
Consultant	42	38
Contractor	86	71
Total	211	187

Within the focused-on locales the respondents were stratified in contractors, consultant, client and small enterprise. Within the case of project managers, temporary workers, venture supervisors were purposelessly chosen since they have way better information almost the variables that impact opportune completion of the venture and they specifically include within the extend. After deciding the test estimate, respondents were arbitrarily chosen in

each location. In this manner purposive and straightforward arbitrary testing strategy or multi arrange inspecting strategy to choose respondents from the chosen companies. Then the respondents are proportionally computed from each category. Accordingly, 38 consultants, 71 contractors, 40 client, and 38 small enterprises are sampled. Therefore, 187 respondents were targeted.

3.4. Data Sources and Data collection tools

According to Kothari, (2004) data collection is quite popular, particularly in case of big enquiries. This research's data were collected using primary as well as secondary sources of data. Primary data are the data gathered directly from first-hand experience. This means through questionnaires and interview.

Whereas, secondary data were gathered from published and unpublished documents, different research, internets, articles, journals, books, report and from Addis Ababa Housing Development Cooperation Office and Consultants' office.

In Data collection tools A questionnaire is the most often utilized approach in survey strategy, according to Mark et al., (2016). It is because the respondents were asked to respond to the same questions, as indicated by the authors, which provides an effective technique to collect responses from a large sample before conducting quantitative analysis due to the small sample size and quantitative methodology of the study, a questionnaire was employed to collect the needed data.

The questionnaire was both close ended and open ended questions. Close ended questions are appropriate to analyze the research questions. Whereas open ended questions are appropriate for respondents to forward additional thoughts since uncontrolled thoughts are so essential to collect data to study capacity assessment of the subject in study. The surveys were 5 Point Likert-Scale approaches (i.e., from "Strongly disagree this idea to Emphatically Agree"). For the 5-point like scale the respondents were inquired to demonstrate their level of understanding with the appraisals of Emphatically Oppose this idea (1), Disagree this idea (2), impartial (3), Concur (4) and Unequivocally Concur (5). The surveys were outlined in English as respondents might studied and get it the questions. Hence, there was no significance to decipher into Amharic or any other dialect.

The researcher has made an important interview with the highest experienced members of the construction of condominium housing project officials and those officials was taken from different departments such as head of communications AHDC, construction management head coordinators, purchasing and supply management, senior experts, project manager in consultant side, contractors and micro and small enterprise (engineers) were interviewed.

3.5. Validity and Reliability

Preparing the questionnaire was the first step in gathering the required data. Construction delay factors were determined based on the researched literature. The content validity and Reliability of the questionnaires were tasted using the two tests below.

Validity

The suitability of the measure used, the correctness of the analysis of the data, and the generalisability of the conclusion are all aspects of validity.(Mark et.al. 2016)

According to the authors, questionnaire validity refers to the instrument capacity to measure what it was designed to measure. Content validity is one of the sorts of validity that determines whether or not the researched questions are covered by the instrument.

As stated by Kothari (2004), validity is a criterion that indicates the extent to which an instrument measures what it is supposed to measure. It can also be understood as the degree to which results obtained from the analysis of data actually represents the understanding from it initially.

Reliability

Reliability, according to Mark Saunders et al., (2016) relates to “replication and consistency” .That is, if a study can be duplicated using an older design and the same results can be obtained, the study can be considered as reliable. According to the authors, Cronbaches alpha is a number that goes from 0 to 1and is used to determine if the items in a data collection instrument measure the same things or not. This coefficient was used to assess the questionnaire’s reliability in this study.

Table 3.2 Summary of cronbach’s alpha result

Factors	Cronbach's coefficient
Owner related factor	0.803
Contractor related factors	0.830
Consultant related factors	0.825
MSE related factors	0.836
Project related factor	0.744
External related factor	0.622
ALL	0.702
Consequences	0.722

3.6. Data Analysis

The collected data were analyzed and interpreted both qualitatively and quantitatively. To achieve the above objectives of assessing schedule delay practice of condominium houses descriptive statistics, simple quantitative techniques like percentage were used. The qualitative data from different sources were analyzed contextually and gives detailed description about the problem of housing delay. or descriptive statistics that involve both measures of central tendency (mean, median, and mode) and measures of dispersion (standard deviation) were used to analyze the ordinal data using SPSS software. At last, the collected data were presented in tables.

Relative Importance Index (RII)

The RII method was implemented to determine the ranks of all factors that listed in the questionnaire. The score for each factor was calculated by summing up the scores given to it by the respondents. After calculating the RII value, the factors were ranked based on their respective values. The relative importance index (RII) can be calculated using the following formula (Sambasivan and Soon, 2007).

$$RII = \frac{\sum PiUi}{N\,(n)}$$

$(0 \leq RII \leq 1)$ Where,

RII = Relative Importance Index

Pi = respondent's rating of cause construction material waste (From 1 to 5)

Ui = number of respondents placing identical weighting/rating on cause construction material waste

N = sample size

n = the highest attainable score on cause construction material waste (i.e. 5 in this case)

3.7. Ethical Consideration

The researcher considered the following ethical considerations. First and foremost, the research participants were given the full authority either to participate in the research or not. In relation, they were also be given full autonomy to give their utmost opinion regarding the subject in study. Secondly, the responses from the participants were mysterious and were be kept confidential. In this the researcher were not require the respondents give their names, addresses, phone numbers or what so ever personal information of them. Thirdly, the researcher were ask the full approval from all the respondents for collecting the information required the AAHPO for acquiring with authorization before collecting the information from different data sources.

CHAPTER FOUR

RESULTS AND DISSCUTION

INTRODUACTION

Project's delay is a common problem in the modern construction industry in developing countries. So, an investigation is important in order to improve the construction industry performance. In light of this, the research examined schedule practice of delay and the consequence of schedule delay on 20/80 condominiums housing construction project at Koye Feche site in Addis Ababa and to describe measure taken to avoid delay. The study formulated research questions and analysed them for validity in the study area. Thus, this chapter presents the analysis and discussions made on the data collected from study respondents and available literature. The data were gathered through questionnaire, key informant interview, document analysis and review of related literature.

4.1. Response Rate

The result showed that 187 questionnaires were distributed to 71 Contractor, 38 Consultant, 40 Owner and 38 micro and small enterprises. But 142 (75.9%) questionnaires were returned the rest of 45 were not included in analysis process because 15 of them were not received and the rest of 30 responses were incomplete.

The response rate was appropriate according to Nulty, (2008) argue that any response rate above 75% is classified as appropriate. The rate of return of questionnaire was calculated as follows.

Equation 2: Rate of Return

$$\text{Rate of return} = \frac{(R)}{S - ND} X100$$

Where; R= number of questionnaires that were returned=142

S= total number of questionnaires sent out=187

ND= number of questionnaires unable to be delivered=0

$$\frac{(142)}{187 - 0} X100 = 75.9\%$$

Therefore 75.9% were appropriate according to Nulty, (2008) that any response rate above 75% is classified as appropriate.

Table 4. 1 Demographic information of Respondent

Characteristics of Respondent	Frequency	Percent
Respondent type of Organization		
Client	37	20.4
Contractor	39	25.4
Consultant	36	26.8
Micro and Small Enterprise	30	27.5
Respondent's Gender		
Female	60	42.3
Male	82	57.7
Respondent's educational Background		
Diploma	25	17.6
BSc/BA Degree	76	53.5
Master	41	28.9
Work experience of respondents in construction		
<5	66	46.5
6-10	76	53.5
Work experience of respondents on this project		
<3	80	56.3
4-8	62	43.7
Respondent job title in the company		
project manager	29	20.4

site engineer	36	25.4
office engineer	38	26.8
site supervisor	39	27.5

Source: Own Survey, 2022

According to the above Table 4.1, Information relation to the type of organization attained by the respondents was analyzed. The information would enable the researcher to determine the stakeholders were participating in the questionnaire. Therefore, 26.1% (37) of respondent were client, 27.5 % (39) of respondent were contractors, 25.4 %(36) of respondent were consultant and the remaining 21.1 %(30) of respondent were small enterprises. And 60 (42.3%) of respondents were Female and the remaining 82 (57.7%) of the respondents are Male suggesting the majority of the owner, consultant, contractor and small enterprise at Koye Feche site in Addis Ababa condominium construction projects are male. The high representation of male could be for the reason that male gender is perceived to be able to perform hard jobs which require masculine engagement, essential in the Constructions projects which the researcher believe is subject to further study. According to collected data the education background of the respondent 25(17.6%) holds a Diploma certificates, 76 (53.5%) of the respondents has a Bachelor's degree and remaining 41(28.9%) of respondents holds a master's degree. Work Experience in the construction industry shows that 66 (46.5%) of the respondents have an experience of less than 5 years, and 76 (53.5%) of the respondents have an experience of 6-10 years. in general >50% were above 6 years experienced so that they are enough to understand the questions.

Work Experience in this project shows that 80 (56.3%) of the respondents have an experience of less than 3 years, and 6 2(43.7%) of the respondents have an experience of 4-8 yeas. The result indicates that the condominium construction project at Koye Feche site in A The information present that out of 142 respondents 29 (20.4%) respondents were project managers 36 (25.4%) of respondents were site Engineers, 38 (26.8%) of respondent were Office engineers and 39(27.5) are site supervisor which has direct participation on construction of condominium housing project. Addis Ababa is managed by very low experienced manpower.

4.2. Schedule Delays of 20/80 Condominium Construction Project

The first objective of study related to assessment on schedule delay practice from fifty-six sets of questionnaire had been identified and grouped into five major groups. These practices were ranked in each group based on their mean score and RII value from the viewpoint of owner, consultant, contractor and small enterprise. Depend on the 142 respondent response both groups were agreed with there is delay on the project. The below parts consists of result and discussion of schedule delay practice of condominium housing construction project. These practices include: client's responsibilities, consultant's responsibilities, contractor's responsibilities, small enterprise responsibilities and external responsibility. The below is a brief description of these practice in each group.

Table 4. 2 Demographic Information of schedule delay in this project

Schedule Delay in this project	Frequency	Percent	Valid percent	Cumulative Percent
Yes	142	100.0	100.0	100.0

Source: Own Survey, 2022

4.2.1. Owner Related schedule delay practice of Construction Project

Table 4.2 1 schedule Delay related to Client Descriptive Statistics

Indicators	Mean	SD	RII	Rank	Overall Rank
Financial problems (delayed payment financial difficulties and economic problems)	4.47	.542	0.719	1	6
Interference of owner(high bureaucratic organization)	4.47	.542	0.719	1	6
Inadequate managerial skills for all Project Mangers	4.44	.540	0.700	2	9
Poor decision making process	4.43	.538	0.658	3	10
Poor procurement of material	4.40	.533	0.642	4	12
delay of raw material supply	4.40	.533	0.640	4	12

Lack of communication and coordination	4.39	.532	0.550	5	13
Less follow up of progress	4.30	.505	0.549	6	15
Poor monitoring and evaluation	4.30	.516	0.549	6	15
Repeated Design Change	3.16	.950	0.522	7	21
Disagreement with contractor	4.11	.760	0.500	8	18

Source: Own Survey, 2022

From the descriptive statistics revealed that majority of the respondents were in agreement that financial problems (delayed payment financial-difficulties and economic problems),highly bureaucratic organization, inadequate managerial skills for all project manager, poor decision making within each project team, delay of raw material supply to site, poor procurement programming of material, inappropriate construction methods and poor quality site documentation are practice of schedule delay of construction of condominium housing related at Koye Feche site to client.

The finding indicated that "*financial problems"* are the first ranked schedule delay practices of condominium housing construction project at Koye Feche with averages mean variance of 4.47 and RII vale 0.719. These finding concurred with the finding of Enshassi el al. (2014), and Nikitare (2016), who established that the financial problem is a major factor negatively influencing timely completion of construction project. But the finding of Ogunlana et al. (1996) in Thailand seems contrary of this result.

The finding indicated that "*high bureaucratic of organizations"* or interference of owners are the other practices of schedule delay of condominium housing construction project at Koye Feche site with averages mean variance of 4.44 and RII value 0.719. These findings are in line with the findings of Sweis (2013) and Elinwa et al. (2001) that discover that unnecessary and excessive bureaucratic procedure in the client organization has a major impact on delay of construction.

"inadequate managerial skills of project manager" are schedule delay practice of condominium housing construction project at Koye Feche with averages mean variance of4.44 and RII value 0.700.The finding coincided with the Peter at.al (1997), Alghabri et al. (2007), and Frimpongs et al. (2003) who argue that sometimes project is affected by low project manager's skill that have direct effect on timely completion of construction project. Further, these findings supported theories of contingency and utility that the project times overrun cause lack of a long-range

contingency allocation plan and poor decision making skill without taking into account the interaction and interrelation between the organization and the environment.

Regarding client related factor majority respondent agreed that "*poor decision making* "within each project team and "*Poor procurement of material"* are additional schedule practice of delay condominium housing construction project. These findings were further supported by descriptive statistic in this study that established that their averages mean variance of 4.43 and RII value 0.658 and average mean variance of 4.40 and RII value of 0.642 respectively. This indicated that there was late procurement of construction material in the client side. It is other schedule practice for delaying the construction schedule and to enhance project performance. This result confirms with the finding of Chala (2017). If projects are not able to procure materials according to work breakdown the construction schedule significantly affected and it leads to late completion. *"Delay of raw material supply"* to site was classified as a practice of schedule delay that related to client and the respondents were indicated that a practice of schedule delay of condominiums housing construction project at Koye Feche site with averages mean variance of 4.40 and RII value 0.640. The research finding of Alaghbari et al. (2007) coincided with this result that the delay of raw material supply to site is the other practice of schedule delay. Any delay in the supply of material to the site implies mismanagement by contractors. The let-down to supply material on time mean that contractors will lose due to idling human resource and also allotted time for execution, therefore delays.

4.2.2. Contractor Related Schedule delay Practice of Construction Project

Table 4.2 2 Schedule Delay Related to Consultant Descriptive Statistics

Indicators	Mean	SD	RII	Rank	Over all Rank
Low productivity	4.44	.498	0.880	1	9
Equipment availability and failure	4.42	.496	0.860	2	11
Rework due to quality	4.42	.495	0.860	2	11
Poor planning and scheduling	4.42	.496	0.860	2	11
Delay in sub-contractor's	4.42	.496	0.860	2	11
Lack of communication and misunderstanding	4.40	.492	0.743	3	12
Less responsibility for the work	4.40	.492	0.741	3	12

Unskilled operators	4.37	.485	0.720	4	14
Poor distribution of labor	4.15	.697	0.690	5	17
Fluctuations of material price	4.05	.698	0.678	6	19

Source: Own Survey, 2022

The descriptive statistics revealed that majority of respondents were in agreement that low productivity of contractors, rework due to quality, planning and scheduling project work, delay in sub-contractor's work, and equipment availability and failure, are contractor related schedule delay practice of 20/80 condominium housing construction project at Koye Feche site.

The finding was supported by results of descriptive statistics in this study established that "*low productivity of contractors"* is a main schedule practices of delay condominiums housing construction project at Koye Feche site with averages mean variance of 4.44 with RII value of 0.880. This indicated that unavailability skilled labour and advance technology might decrease productivity. If the project has skilled personnel in the construction it can manage properly, make a decision on time and able to do project activity according to the schedule and increase productivity. Further, these findings are in line with Enshassi et al. (2014), who establish that the contractor needs to improve their capacity of productivity to keep the project on track of schedule.

The respondents were agreed that "*rework due to quality"* major schedule practice of condominium housing construction project delay at Koye Feche site with averages mean variance of 4.42 with RII value of 0.860. Rework may occur due to various reasons and significantly affect the completion of the project and it leads to delay of project. The result of Peter et.al (1997), and Elinwa et.al (2001) coincided with this result that rework due to errors during construction is important schedule practice of delay of construction project.

"Poor Planning and scheduling" project work was classified as a schedule practice related to contractors and the respondents were indicated that a major schedule practice of delay of condominiums housing construction project at Koye Feche site with averages mean variance of 4.42 of RII value 0.860. Effective project planning and scheduling system is important factor to manage properly and direct the project, allocate resource, to identify number of labours and equipment and follow up the project progress. Additionally, this result confirms with the finding of Frimpongs et al. (2003) and Chala (2017). If the project is planed properly it can be easy to minimize wastage in terms of cost and time of contractor.

"Delay in sub-contractor's work" was classified as a schedule practice related to contractors and the respondents were indicated that a major schedule practice of condominiums housing construction project at Koye Feche averages mean variance of 4.42 of RII value 0.860. Contractors currently 30-40 percent of works are done by sub-contractors such as concert casting, painting, plastering and the like. Due to their late performance the contractors were unable to complete the construction of the main building. Furthermore, this result confirms with the finding of Enshassi et al. (2014), Nikitare (2016), kariungi (2014), and Chala (2017).

Regarding contractor related schedule practice majority respondent were agreed that "*equipment availability and failure "*as other schedule practice condominium housing construction project at Koye Feche with averages mean variance of 4.42 and RII value of 0.860. Contractor should have sufficient equipment in the project site done properly construction work and it is important to complete construction work accurately. And also contractor need to take action when the equipment's need maintenance. Therefore, the equipment unavailability and failure at project site lead to delay of contractors' performance and the major problem in time performance. The finding of kariungi (2014) and Ariditi et al. (1985), coincided with the result of this research but chala (2017) seems contrary of this result.

4.2.3. Consultant Related Schedule delay Practice of Construction Project

Table 4.2 3 schedule Delay Related to Consultant Descriptive Statistics

Indicators	Mean	SD	RII	Rank	overall Rank
Delay in payment	4.55	.499	0.570	1	1
Absence of consultant's site staff	4.54	.501	0.556	2	2
Poor inspection	4.51	.502	0.542	3	3
Waiting time for approval of tests and inspections	4.49	.502	0.500	4	4
Inadequate project time and cost estimation	4.49	.502	0.500	4	4
Less performance	4.49	.502	0.500	4	4
Lack of experience on the part of the consultant	4.48	.501	0.480	5	5
Low communication	4.45	.499	0.471	6	8
Poor design	4.18	.747	0.460	7	16

Source: Own Survey, 2022

In this regard, the descriptive statistics revealed that the respondent agreed with delay in payment, poor inspection, absence of consultant site staff and waiting time for approval of test and inspections are schedule practices related to consultant.

The finding was further supported by results of descriptive statistic in this study that established "*delay in payment"* is a main schedule practice of condominiums housing construction project at Koye Feche site with averages mean variance of 4.55 and with RII value of 0.570.if the consultant was unable to approve to progress payments according to their contract to contractors, the contractors might be unable to engage daily labourers and rent material and equipment. Therefore, it poses significant effect on the construction schedule. Further, these findings concurred with the finding of kariungi (2014), Elinawa et al. (2001) and Abudul-Rahman et al. (2006) who established that delay in payment impairs the contractor's ability to finance the work so that it affects completion time of construction project. *"Absence of consultant site staff"* was classified as a second schedule practice that related to consultant and the respondents were indicated that a major that influence timely completion of condominiums housing construction project at Koye Feche site with averages mean variance of 4.54 and with standard RII value of 0.556. These findings were concurred with an argument by Alghbari et al. (2007) and Nikitare (2016) that the absences of consultant's staff have major impact on day to day activities of project that lead to project delay.

Regarding consultant related practice majority respondent were agreed that "*poor inspection and waiting time for approval of test and inspections* "as the third and the forth schedule practice of condominium housing construction project delay at Koye Feche with averages mean variance of 4.51 and RII value 0.542 and with average mean value of 4.49 and with RII value of 0.500 respectively. These findings are in line with Enshassi et al. (2014), and Kikwasi (2012) who determine that the consultant not carry out their duties to assure quality construction and it affects the schedule of construction project. Similarly, Sweis, (2013) established that poor inspection and take long time to approve construction work may affect the completion time of construction work.

4.2.4. Micro and Small Enterprise Related Schedule delay Practice of Construction Project

Table 4.2 4 Schedule Delay Related to Micro and Small Enterprise Descriptive Statistics

Indicators	Mean	SD	RII	Rank	Over all Rank
Lack of experience on the part of enterprise	4.46	.579	0.650	1	7
Lack of experience on the part of enterprise's site staff	4.44	.589	0.601	2	9
Poor equipment choice	4.44	.578	0.601	2	9

Source: Own Survey, 2022

In this regard, descriptive statistics revealed that majority of respondent were in agreement that lack of experience on the part of enterprise, lack of experience on the part of enterprise's staff and poor equipment choice are small enterprise related Schedule practice 20/80 condominium housing construction project at Koye Feche site.

Regarding MSE related practice majority respondent agreed that "*lack of experience on the part of enterprise"* schedule practice of condominium housing construction project at Koye Feche with averages mean variance of 4.46 and with RII value of 0.650. In Addis Ababa, housing construction more than 30 percent of supplying the project material such as pre-cast beam, HCB for slab and wall by MSE's and 35-40 percent of the finishing work are done by MSE's such as sanitary, electrical, metal work, etc. If the project is constructed by inexperienced MSE's the project quality may face problems and leading to rework. Hence delays. Further, this result confirms with the finding of Chala (2017).

"Lack of experience on the part of enterprise's staff" was classified as a schedule practice related to MSE and the respondents were indicated that as other major schedule practices of condominiums housing construction project at Koye Feche with averages mean variance of 4.44 of RII value 0.601. If there is low technical skill of personnel it will significantly affect the construction performance and incapable to perform according to the schedule and manage the project. Furthermore, the finding of Ogunlana et al, (1996) and Chua et al, (1999) were the construction industry performance in developing countries extremely affected by inadequacies and low skilled personnel in stakeholders.

"Poor equipment choice" was classified as a schedule practice related to MSE and the respondents were indicated that a major schedule practice of condominiums housing construction project at Koye

Feche averages mean variance of 4.44 and RII values of 0.578. During field study, the researcher observed that MSE used poor equipment and inadequate material. If the projects are used poor equipment it might decrease productivity and take time to done the project work. Thus delay may have occurred.

4.2.5. External Environments Related Schedule delay Practice of Construction Project

Table 4.2 5 Schedule Delay Related to External Environments

Indicators	Mean	SD	RII	Rank	Over all Rank
Outbreak of Pandemic (COVID-19)	4.11	.840	0.675	1	18
Poor economic conditions (Currency inflation rate..Etc.)	3.19	.850	0.622	2	20
Material market instability	3.13	.852	0.540	3	22
Poor site conditions	3.11	.851	0.523	4	23

Source: Own Survey 2022

From descriptive statistics revealed that majority of respondent were in agreement that the outbreak of pandemic (COVID-19), poor economic conditions (currency inflation rate) material market instability, civil commotions or strikes, political situations, poor site conditions, transportation delays, land owners complain management, and weather condition on construction, are external environment related practice that lead to delay of 20/80 condominium housing construction project at Koye Feche site.

"The outbreak of pandemic (COVID-19)" was classified as a schedule practices related to external environment and the respondents were indicated that a major schedule practice of condominiums housing construction project at Koye Feche averages mean variance of 4.11 with RII value 0.675. The outbreak of pandemic is currently occurred in the world since 20 January 2020 in China. This kind of outbreaks happened once in hundreds years and it affects not only construction industry all global economy. During this time the cost of construction materials increase and according to state of emergency the people order to keep social distance so that the construction work is difficult to perform with social distance and also some project work is postponed it affects significantly the project schedule.

Regarding external environment related schedule practice majority respondents were agreed that "*poor economic conditions (currency inflation rate)"is other* practice of condominium housing construction project delay at Koye Feche with averages mean variance of 3.19 with RII value 0.622. The Ethiopian currency is Birr. However, some of construction material imported using United States dollar (USD$). Currently the exchange rate is 1$ USD = 51.3birr until this research was done. Any fluctuation in the exchange rate might affect the cost and time of project. Thus, Addis Ababa housing construction cannot supply material on time and it leads delay the project schedule. This finding was in line with Enshassi et al., (2014), results.

"Material market instability" is one of clearest schedule practices. These findings were supported descriptive statistic in this study that established that their averages mean variance of 3.13 and RII value 0.540. Materials are highly importance in any project. The political and economic situations lead to great difficulties in stability of material market. The result concurred with the finding of Ogunlana et al., (1996), Abudul-Rahman et al., (2006), kariungi, (2014), and Enshassi et al., (2014), in that the material market instability is major schedule practice. The result of Mezher et al., (1998), and Fong et al (2006) are contrary to this particular result. In Saudi Arabia and Lebanon there are not any problems with market instability.

Regarding external environment related schedule practice majority respondent were agreed that "*poor site conditions "is other critical* schedule practice condominium housing construction project at Koye Feche with averages mean variance of 3.11 and with RII value 0.523. Poor site condition causes many constraints on project, such as poor following up of progress, poor monitoring project, low productivity, and shortage of human resource. This finding result was in line with Enshassi et al., (2014), results. Better project management procedures and appropriate contingency allowance in the planning estimate were recommended as means of minimizing the adverse effect of construction.

4.3 CONSQUENCE OF DELAY

Table 4. 3 Consequence of Delay

Indicators	Mean	SD	RII	Rank
Time overrun	4.53	.501	0.761	1
Cost overrun	4.51	.502	0.720	2
Abandonment	4.50	.502	0.690	3
Litigation and court case	4.49	.516	0.672	4
Transferring unfinished houses	4.47	.501	0.600	5
Reduced profit	4.46	.500	0.574	6
Slowing down the growth of housing construction sector	4.42	.495	0.561	7
Bad relationship with owner of project	3.37	1.075	0.550	8

Source own 2022 survey

Based on responses *Time overrun* is one of the critical consequences of project delays, which ranks as the first consequence of delay with average mean variance of 4.53 and RII value of 0.761.Similarly, (Salf ul & Shakeel, 2014) ranked time overrun the major consequence of construction. Time overruns occur with any construction project, and the magnitude of these delays varies widely from one project to the other.

*Cost overrun*s were the second consequence of delay as the respondent responses with mean variance of 4.51 and RII value of 0.720.In the same vein, a research in Malaysia revealed that cost overrun is the extra expense incurred by a company in order to complete work that has been delayed (Saif ul & Shakeel, 2014).

The other consequences which were ranked as the third and the fourth place was *Abandonment* and *litigation* with mean variance of 4.50 and RII value of 0.690.And with mean variance of 4.49 and RII value of 0.672.In the same way salf ul & shakeel, (2014) states in their study litigation and abandonment were the other major consequence of delay.

Respondents ranked *transferring unfinished houses* as the fifth consequences with averages mean variance of 4.50 with RII value of 0.600.this consequence directly transfer with Political Factors; and it affects the success of housing construction project. Political Factors concern political stability and

Government intervention in providing both incentives and enabling environment for public housing development (Chen et al., 2012).Political factors Govern by Government, so Government has an important role to play in ensuring the success of public housing in terms of a favourable legal frame work, and Guarantees to developers.

Pugh (2001), argues that failure on the capability of government will affect the success of overall housing sector development.

4.3. Discussion of the Result

The 20/80 condominium housing construction project is unique and complex. Therefore, the project should be managing according to its specific characteristics and environment in that particular period of time. The finding shows that the project delay by various internal and external schedule practices. In order to attain more insight on the findings of the survey, a document and raw data review was made in time overruns of construction projects. Thus, the researcher analysed data and information obtained from different management theories and researches on causes of delay construction project related to client, consultant, contractors, micro and small enterprise and external environment as depicted in sub title below.

Regarding to schedule delay practice of construction of condominium housing key informants with position of head of communications AHDC, construction management head coordinators, project manager in consultant side, and owners of contractors and small enterprise (engineers) were interviewed. The critical question was *"How do you evaluate the construction status of 20/80 condominium housing project in Koye Feche site against the schedule?"*

As they mentioned the project 20/80 condominium housing project was not going as per its schedule. According to the AAHCPO at the time, the project office started its activities in June 2014 to complete and transfer them to citizens in 2017 by constructing 54,000 houses at Koye Feche site. However, until 2019, the project office only built and transferred 26,000 houses and 28,000 houses are under construction. In addition, those transferred houses were not finished. This shows that the project office cannot build the condos on time, according to the planning office of the planning and budget department. Initially, the project schedule plan was to finish the G+4 in 18 months which is 1year and half and G+7 in 24 months that means 2 years totally and transfer to winners. Now the project is almost 6 years but still it didn't complete and it shows that it is beyond intended planned schedule. The construction process as well as the transfer was too much

slower compared to the plan. Therefore, the beneficiaries are dissatisfied and they have given up hope. Even a number of them took out their money from the bank.

The client is a supplier for every material to the contractor and small enterprise but it could not provide those materials timely. The micro and small enterprises were participating in the construction in two ways. Thus, they assigned as a manufacturer of materials and also on the assembler to the finishing like sanitary work, electrical work, metal work and remaining construction around the building and they cannot deliver it because they are immature to attain the required capacity in terms of time, money and quality. In addition, the contract between client and micro and small enterprise is subcontract basis. This chain took many of the project time. The other reason was the process of procurement that takes minimum two months and sometimes it failed due to economic condition of the country. Hence the client went to looking international bidders. The major practice of schedule delay of 20/80 condominium housing project identified by the interviewees were: slow speed in decision making of critical issues of the project, shortage of electric and water supply around the project, poor labour productivity and lack of sufficient experience and competence, poor planning, scheduling, and handling of the time and material, design and specification changes in the meantime, lack of resource allocation and poor working culture.

Interviewees proposed that the private sector should participate and better to change the procedure and type of procurements, contracts, methods of work, etc in order to minimize the schedule delay problem.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATION

INTRODUACTION

The main objective of this study is to assess the schedule delay and its consequence of 20/80 condominium housing construction projects at Koye Feche site in Addis Ababa. This study is also enormously encouraging to examine the major schedule practices by dividing in two groups: internal practice related to the stakeholders which is related to client, consultant, contractors, and micro and small enterprises, and external practices to create awareness why the projects are delayed and to provide recommendation. This section forwards the conclusions of this research based on the major findings stated in the previous chapter, data analysis and discussion. Then, based on the summary of findings conclusions are inferred. Finally, recommendations are provided in client side, consultant side, contractor side, and micro and small enterprise side.

5.1. Summary of Findings

The summary of finding answers the research questions as specified under section 1.4 of chapter one on page 4 “What are the internal and external schedule practices and its consequence of delay condominiums housing project at Koye Feche Site in Addis Ababa?”Construction of the Koye Feche site project took more than 6 years to complete the houses and transfer them to residents. But, the plan of the project has been to complete within 3 years, this shows that there is a big gap between the planned time and the Completion of the constriction project at the AAHCPO.

Mixed Research Approach were used to confine qualitative and quantitative data, in this study questioner and interview were used to identify the practices and consequences of delay and descriptive statistics were used for analysis of data.

The analysis and discussion of data from various sources reveal the following important points that are specifically relevant in terms of effectively answering the research questions through questionnaire, interviews and secondary data under consideration. The internal schedule practices divided in to four categories according to responsibility in the project. The summary of findings is presented on these categories below.

According to findings, there are many schedule practices related to client such as financial problems (delayed payment financial-difficulties and economic problems), delay of raw material supply to site, highly bureaucratic organization, law speed of decision making within each project

team, lack of tracking schedule, inadequate managerial skills for all project manager, poor procurement programming of material, inappropriate construction methods and poor quality site documentation.

Regarding the consultant, major schedule practices are delay in payment, absence of consultant's site staff, poor inspection, waiting time for approval of test inspections, lack of experience on the part of the consultant's site staff (managerial and supervisory personnel) and, too few supervisors.

On the side of contractor the practises are indicated: low productivity, rework due to quality, planning and scheduling project work, delay in sub-contractors, equipment availability and failure, lack of equipment, lack of a strong organizational structure, poor distribution of labour, communication and coordination, lack of experience on the part of contractor's staff, unskilled operators, insufficient number of staffs, and lack of experience on the part of contractors.

Likewise, depending on the micro and small enterprises, the following practices are indicated. These are lack of experience on the part of enterprise and lack of experience on the part of enterprise's staff, poor equipment choice, poor material handling at site, low productivity and equipment availability and failure.

The other one is the external environment schedule practices are outbreak of pandemic (COVID-19), poor economic conditions (currency inflation rate), market instability, civil commotions or strikes, political situations, poor site conditions, transportation delays, land owners complain management, and weather condition.

Finally, the consequences of delay are time overrun, cost overrun, abandonment, litigation; transferring unfinished houses were discussed as major consequences.

5.2. Conclusion

When a construction project's budget is satisfied in terms of set goals, such as completing the project on schedule, on budget, and to the satisfaction of all stakeholders the project is called satisfactory. In Ethiopia the number of housing construction project is rapidly increasing completing projects within the allocated budget and time period, on the other hand, becomes tough.

The point of this study survey of contractors, owners, and consultants is on the construction of condominiums in Addis Ababa: Koye Feche site, the survey focused on identifying the key schedule practices and consequences, as well as rating these practices in order of relative importance.

In the previous chapter, major findings are listed. Therefore, the conclusions are inferred by the study. These are discussed below.

Financial problems (delayed payment financial-difficulties and economic problems, delay of raw material supply to site, highly bureaucratic organization, low speed of decision making within each project team, lack of tracking schedule, inadequate managerial skills for all project managers, poor procurement programming of material and poor site documentation were found as the main factors of delay related to clients of condominium housing project construction at Koye Feche site in Addis Ababa.

The consultant related schedule practice are delay in payment approving, absence of consultant's staff at site, poor inspection, waiting time for approval of tests and inspections, lack of experience on the part of the consultant's site staff (managerial and supervisory personnel), too few supervisors/skill, conflict in amount of payment, quality assurance/ control, and preparations and approvals of tests and inspection were supported by at least of 80% of the respondents as influencing factors.

Low productivity, rework due to quality, planning and scheduling project work, Delay in subcontractors, equipment availability and failure, lack of equipment, lack of a strong organizational structure, poor distribution of labour, communication and coordination, lack of experience on the part of contractor's staff, unskilled operators, insufficient number of staffs, and lack of experience on the part of contractors were found as a factor of delay related to contractor. Micro and small enterprise related factor of delay are: lack of experience on the part of enterprise and lack of experience on the

part of enterprise's staff, poor equipment choice, poor material handling at site, low productivity and equipment availability and failure were found as a factor.

The outbreak of pandemic (COVID-19), poor economic conditions (currency inflation rate) material market instability, civil commotions or strikes, poor site conditions, transportation delays, land owners complain management, and weather condition on construction were identified as major external related schedule practices of condominiums construction project delay.

5.3. Recommendation

As concluded in the above section the 20/80 condominium housing project construction at Koye Feche site in Addis Ababa has so many weaknesses related to client, consultant, contractors, and micro and small enterprise. Therefore, based on the finding of the study the below recommendations are forwarded.

5.3.1. Recommendation for Client

- Clients should manage their cash flows effectively and monitoring financial spending of the project and payment to avoid the financial problems.
- Client should minimize red-tape: that is minimizing unnecessary and excessive bureaucratic procedure in the clients' organization.
- Clients are advised to make prior delivery agreements and keeping the minimum level of safety stock at the site. The use of multiple sourcing and identifying long lead construction items in the planning stage can be seen as other mechanisms to respond to uncertainties that arise due to late delivery of materials.
- They are advised to use the liquidity damages as a penalty to discourage project delays by contractors and rewarding those who completes their work on time.
- Client's advice to engage in successful Right of Way (ROW) valuation and negotiations before the contractor is awarded the contract.
- Improve skill of managers and employees on construction site by provided appropriate training for personnel which is fulfil their skill gap and improve their ability on making decision and should have made simple flexible systems by minimize strong bureaucratic challenges.

- The client should look each design in depth with the concerned bodies again and again and implement in order to minimize slow decision making problems and immediate response in revising and approving design documents.

5.3.2. Recommendation for Consultants

- The consultant should be adopting and strict in effective monitoring systems in controlling the timely and quality of projects and should supervise their staffs in appropriate way of effective work to ensure projects are successfully implemented.
- Consultants should prepare good quantity estimation; they should have also prepared the design ethically and professionally as per the design standard and manuals.
- As the consultant, they are responsible body for the supervision of quality work. Therefore, they need to carry out their duties by tested and approving the material delivered to the site and inspect and approve construction works continuously.
- Improve skill of managers and employees on construction site by provided appropriate training for personnel which is fulfil their skill gap and improve their ability on inspections.
- Consultant should produce clear and complete drawings and regularly revise the drawings before they implement it to avoid unclear and inadequate drawing during design and implementation phase.
- The consultant needs massive effort to maintain the corruption between consultant staff and contractors because it is the most dangerous threat that will worsen the area. Therefore, contractors always suffer in delay in payment; it is leads to disputes and claims between owner and contactor of project and affects the schedule of the project which has been implemented.

5.3.3.Recommendation for Contractors

- The contractors are recommended to monitor the quality of activities continuously and to set the required quality system in the different activities of the project so as to avoid any mistakes that may causes to rework of activities.

- They advise to have qualified and quantified technical staff with appropriate of the project in order to be able to follow the different technical and managerial aspects of the project.
- Improve skill of labours on construction site by provide appropriate training for the personnel to avoid rework on construction, to minimize low experience in planning and scheduling project work, to increase productivity and to create strong organizational

structure by provide the desire trainings which fulfil their skill gap and improve their work performance.

- Improve their qualification by adopting new technology related equipment, provide trainings to technical staff and create a discussion and knowledge sharing system in the construction to save their money and time and to complete their work in good performance.

5.3.4. Recommendation for Micro and Small Enterprises

- The micro and small enterprise should take responsible for their work instead of doing vain work to get extra money from beneficiary. Moreover, they need to be disciplined.
- Improve skill of labours on construction site by provide appropriate training for the personnel to avoid equipment failure, to increase productivity and to create strong ability material handling by provide the desire trainings which fulfil their skill gap and improve their work performance.
- Improve their qualification by adopting new technology related equipment, provide trainings to technical staff and create a discussion and knowledge sharing system in the construction to save their money and time and to complete their work in good performance.

5.4. Suggestion for Further Research

This study investigated the major causes of condominium housing construction project at Koye Feche site. So, further study may gear to study: -

- The impact of these variables using wider scope
- The cost overruns due to delay
- The performance of the 20/80 condominium housing at Koye Feche site.

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ST. MARY'S UNIVERSTY

SCHOOL OF GRADUATE STUDIES

School of Business

Assessment on Delay of Housing construction in Addis Ababa:

The case of 20/80 Condominiums Project at Koye Feche Site

APPINDEX A; Questionnaire

Dear Participants,

My name is Lidiya Tibebu, I am working on a research title of Assessment on delay and consequence of housing construction in Addis Ababa: The case of 20/80 Condominium project at Koye Feche Site. For The partial fulfilment of the requirements for the degree of Master of Arts in Project Management at St.Mary's University, Green Campus. The objective of this study to examine the internal and external schedule practices of condominium construction project and to assess the Consequence of delay of condominiums project at Koye Fech site. In order to meet the stated objectives, it needs gathering relevant information from the stakeholders currently working on the project. I chose you to participate in this research by believing you are one of the stakeholders and you are able to give me a response with honestly and responsibly. I guarantee you all response will use for academic purpose, voluntary based, confidential and also no need to mention your name or personal related issue. Finally, I would like to thank you for your kind cooperation.

Sincerely,

Lidiya Tibebu

Section A; General information

1. Company name**…….....**

2. What is your work experience (in years) in Building Construction? **Please answer the following question by using (X)**

<5 ☐ 6_10 ☐ 11_15 ☐ >15 ☐

3. What is your work experience (in year) in this project?

<3 ☐ 4_8 ☐ >8 ☐

3. Which organization do you represent?

Client ☐ contractor ☐ consultant ☐

5. Respondent‘s Gender; Male ☐ Female ☐

6. Respondent‘s educational level

Diploma ☐ BSC ☐ MSC ☐ PhD ☐

7. Respondent‘s title in the company

Project manager ☐ site engineer ☐ Office Engineer ☐

Forman ☐ site supervisor ☐

8. Does the construction project of 20/80 housing condominium in your site delay which means the project is beyond the timeframe or its schedule?

Yes ☐ No ☐

SECTION B: SCHEDULE DELAY

Please see the below listed a number of factors of delay of condominium construction project. As per your experience kindly request you to express your opinion on the importance of the following factors. Please remark (X) in the appropriate column.

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

No	Schedule delay practices	S.A (5)	A (4)	N (3)	D (2)	S.D (1)
	Owners Related					
1	Interference of owner					
2	Repeated Design Change					
3	Delay of raw material supply					
4	Inadequate managerial skills for all Project Mangers					
5	Financial problems (delayed payment financial difficulties and economic problems)					
6	Poor decision making process					
7	Poor procurement of material					
8	Poor monitoring and evaluation					
9	Less follow up of progress					
10	Lack of communication and coordination					
11	Disagreement with contractor					
	Contractor related					
1	Rework due to quality					
2	Equipment availability and failure					
3	Low productivity					
4	Poor distribution of labour					
5	Lack of communication and misunderstanding					
6	Unskilled operator					
7	Fluctuations of material price					
8	Poor planning and scheduling					

9	Delay in sub-contractor’s					
10	Less responsibility for the work					
	Consultant Related					
1	Less performance					
2	Delay in payment					
3	Poor design					
4	Lack of experience on the part of the consultant					
5	Absence of consultant's site staff					
6	Poor inspection					
7	Inadequate project time and cost estimation					
8	Low communication					
9	Waiting time for approval of tests and inspections					
Micro and Small enterprises Related						
1	Lack of experience on the part of enterprise's site staff					
2	Poor equipment choice					
3	Lack of experience on the part of enterprise					
Project Related						
1	Scarcity of Manpower and equipment					
2	Project boundary definition					
3	Project place					
External environment Related						
1	poor site conditions (location, soil, etc.)					
2	Poor economic conditions (Currency inflation rate..etc.)					
3	Lack of Government control Outbreak of Pandemic (COVID-19)					
4	poor site conditions (location, soil, etc.)					

For additional comments**…….**

……..

SECTION C: CONSEQUENCE OF DELAY IN 20/80 CONDOMINIUMS

Please remark (X) in the appropriate column

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

No	consequence of delay	S.A (5)	A (4)	N (3)	D (2)	S.D (1)
1	Litigation and court case					
2	Abandonment					
3	Transferring unfinished houses					
4	Bad relationship with owner of project					
5	Cost overrun					
6	Slowing down the growth of housing construction sector					
7	Time overrun					
8	Reduced profit					

For additional comments…….

…….

…….

APPINDEXB

SECTION D: INTERVIEW

Dear interviewee

Currently, I am working on a research titled assessment on delay of housing construction in Addis Ababa and its consequence; the case 20/80 condominiums project at Koye Fech site. For the partial fulfilment of the requirements for the Degree of Master of Art (MA) in St. Mary University School of Business. The main objective of this project is to asses practices of schedule delay and to determine consequence of delay in construction of Condominium Houses in Addis Ababa: To meet the requirement of this research objective, it is necessary to have the response of contractors, client and consultants at this time working on this project and since you are one of the members engaged to respond this interview. In fact I conducted questionnaire on this project and came up with findings. Now I need to collect detailed information about delay construction to enhance the research finding through interview. I confirm that your response will be kept confidential and will be used only to this research.

With best regards,

Lidiya Tibebu

Advisor Dr. Mesganaw Solomon (PhD)

Thank you very much for your cooperation!

Interview guidelines to collect data from construction of condominium houses at Koye Feche site Addis Ababa;

1. What is your educational level?

2. What is your position in the organization?

3. Are there delays in condominium housing construction at Koye Feche site?

Yes ☐ No ☐

4. If yes, please answer the following questions.

5. What is the reason for occurrence of delay in this project?

6. How do you evaluate the construction status of 20/80 condominium housing project in Koye Feche site?

7. What are the external schedule practices in condominium housing construction?

8. What are the major consequences of delay in this construction project?

9. What are the major factors contributing for delay in this project?

10. What measurements are taken to avoid this delay of condominiums housing construction?