ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES

ASSESSEMENT OF THE RELATIVE IMPORTANCE OF DELAY FACTORS: THE CASE OF PROJECTS FINANCED BY DEVELOPMENT BANK OF ETHIOPIA

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SECTION A

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ASSESSEMENT OF THE RELATIVE IMPORTANCE OF DELAY FACTORS: THE CASE OF PROJECTS FINANCED BY DEVELOPMENT BANK OF ETHIOPIA

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Declaration

I hereby declare that the study which is being presented in this thesis entitled **"Major causes of project implementation delay: The case of Development Bank of Ethiopia financed project**." It is conducted by SOLOMON MINDA for the partial fulfillment of the requirements for the award of master's degree in Project Management. To the best of my knowledge it is original work carried by him, it had not been presented for a partial fulfillment for any educational qualification at this university or any other and in any projects by any means.

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ACRONYMS

DBE - Development Bank of Ethiopia

RII – Relative importance index

EPC - Engineering, Procurement, and Construction

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Abstracts

Delay can be defined as a condition the actual work does not complete in an estimated time period. Delay can be minimized or eliminated if the causes are identified. Therefore the purpose of this study is to assess the major causes for DBE financed projects. Fourth two (42) causes of project delay are identified from the literature reviews. The questionnaire survey was distributed to 128 participants (clients, and bank employee). Relative Importance Index (RII) was calculated and accordingly the major causes of DBE financed project implementation delay have been identified analyzed. From the overall relative importance index analysis, most critical factors of DBE financed project delay have been identified as (1) Shortage of foreign currency;;(2)Failure to contribute equity contribution in time;(3)Plan (scope) change by clients or client initiated variations;(4)Governments failure to avail the required infrastructures like road, water, power on time;(5)Lack of cooperation and insufficient communication among different stakeholder government organizations like the DBE, Investment Office, Different Ministerial Offices, Regional Governments, EEPCO and ERCA etc.;(6)Fluctuation in foreign currency;(7)Fluctuation of prices of materials and increase in total cost of projects;(8)Diversion of funds for unintended purpose by promoters;(9)Existence of missed items & long time taken to incorporate them through additional loan;(10)Underestimation of complexity of projects by promoters.

Key words: - DBE financed projects, Project Delay, Causes of project delay

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

The Development Bank of Ethiopia (DBE) is a state owned bank. The bank underwent various transformations in the past five decades to finally take its present form. In 1945, the Agriculture Bank of Ethiopia was established and renamed in 1949 as Agriculture and Commercial Bank of Ethiopia. It was then restructured and became the Development Bank of Ethiopia (DBE) in 1951. The restructuring continued and in 1970 a merger between the Development Bank of Ethiopia and the Ethiopian Investment Corporation (established in1963) resulted in the formation of the Agriculture and Industrial Development Bank (AID Bank.) It is this bank that became the present DBE following the 1994 Regulation of the Council of Ministers providing for the bank's establishment and the transfer of all rights and obligation of the AIDB (Mengstu, 1999).

Although different in name, the predecessors of DBE were engaged in providing similar banking service including extending agriculture, industrial, agro-progressing or all types of loans. The DBE extends medium term and long term loans mainly in agriculture, agro-processing and industrial projects (manufacturing firms). Due to the political influence during the former regime, the bank gave more attention to loan disbursement than loan collection as most of its clients were either state owned enterprises or co-operatives organized in line with socialist principle. Loan recovery rate during this time did not matter much because loan granting was not based on project financial or economic viability for many of the clients with the exception of private sector borrowers.

In the wake of the reforms following the downfall of the Derg regime, however, the bank had to work in a condition where the role of market forces and the private sector gained more attention and thereby made efficient loan recovery a 00decisive instrument for staying in business.

Besides, in an attempt to improve the bank's financial position and credibility in the eyes of the international lending agencies, the government assumed the responsibility of collecting huge amount of loans that has remained uncollected during the previous regime. Although the government is making a structural change and responsibility of uncollected loans in the previous regime, currently the Development Bank of Ethiopia is also facing a serious problem of delay in implementation of projects for timely commencement of operations.

If Projects have not completed within the specified time period, then they are considered as delayed project. The inability to complete projects on time and within budget continues to be a chronic problem worldwide and is worsening (Ahmed et al, 2002). According to Ashley et al (2008) the trend of cost overrun is common worldwide and that it is more severe in developing countries.

Project implementation delay is therefore a critical issue over the world that affects all parties. Therefore it is the concern of project management to identify and analyze the major causes for project implementation delay. In addition to this it is also an interest of the project management as an emerged professional to recommend the possible way to eradicate or minimize them according to the analyzed causes.

Delays are insidious often resulting in time overrun, cost overrun, disputes, litigation, and complete abandonment of projects (Sambasivan and Soon, 2007). Many projects are of such a nature that the client will suffer hardship, expense, or loss of revenue if the work is delayed beyond the time specified in the contract (Clough, 1986). Then again, delay has cost consequences for the contractor: standby costs of non-productive workers, supervisors, and equipment, expense caused by disrupted construction and material delivery schedules and additional overhead costs (Clough, 1986).

Currently DBE financed projects are facing implementation delaying problem. The economic and social impact of project implementation delay has been discussed. However, the findings could not be found in the form of published literatures though they are commonly mentioned in the respective project implementation follow ups and inspections. There for, investigating the real root cause for the project implementation delay in the projects financed by DBE has an advantage of challenging the problems with respect to their degree of severity.

Project implementation of DBE has affected by various factors which result delay and again this delay has a negative impact on the timely collection of loans and its loan status for the bank. Based on this reality, it is the interest of this study to investigate the major causes of project implementation delay on DBE financed projects.

1.2 Statement of the problem

The most important challenge for one country development is the limited financial resources. Usually government has made an effort to develop financial institutions and those institutions then crates loan access for development projects.

It is clear that project implementation of most DBE financed projects is behind its schedule resulting frequent requests for additional loan for missed items and incomplete works. And loan repayment rescheduling request by most huge and large sized projects due to delayed of implementation schedule derived mainly from external and internal causes (Development Bank of Ethiopia, 2008).

The success of development projects ultimately depends on credit that is offered by the financial institutions .Here in Ethiopia those engaged in agriculture, industrial and agro-processing sectors are benefited by the sustainable credit facility provided by DBE. The main objectives of DBE are to support sectors that can generate foreign currency and reduce unemployement.it is clear that

the above objectives will be achieved, if the liquidity positions of the bank are strong. The liquidity position of the bank again depends on its loan recovery. So DBE needs enhancing its loan recovery and make its liquidity position safe. The economic development of the country depends on not only by the provisions of credit; it is also by the existence of factors necessary for efficient utilization of the fund. Despite this fact, project implementation delay which result in time and cost overrun (which in turn will result in poor loan recovery performance of the bank) is a bottle neck for the DBE financed project. Project implementation delay has many negative effects for instance, increased costs, contract termination , loss of productivity and revenue etc. as a result of the above adverse negative effects of delay, collecting its loan on time is difficult to the bank. This may lead the bank to be out of operation .thus , delay is a serious problem for not only the bank but also for the country .So it is important to identify and analyze the major factors that Couse project implementation delay in DBE financed projects including knowing clearly and acknowledging the negative outcomes of implementation delay . Keeping in mind those things, this paper will address the following questions.

1.3 Research Questions

1. What does the existing project schedule management practice of Development Bank of Ethiopia
2. What are the major correlates which contribute for Develeopment Bank of Ethiopia financed projects implementation delay?

1.4 Research objectives

The General objective of study

The overall objective of this study is to assess DBE financed project implementation delay causes.

Specific objectives of the study

From the overall objectives of this study, the following specific objectives are sorted out. Therefore, the study was guided by the following specific objectives

1. To identify the major factors causing delay on DBE financed project that could help as experience for improvement of project management
2. To Identify the delay factors from the bank and its customer(client)perspective
3. To rank the overall and stakeholders factors according to their contribution to project delays based on stakeholders opinion.

1.5 Significant of the study

The researcher hopes that in view of this study:

- The basis and findings of this research will be useful by future researchers, students and academicians digesting the major causes of project implementation delay.
- Once the major causes of project implementation delay for DBE financed project has determined, then the bank will be in better position to use the findings of this research to develop possible ways that will eliminate or minimize those possible causes for effective management and organizational performance.
- This study's findings will assist different project managers in identifying the best and the most appropriate project management techniques.
- Additionally, the result of this study will be used as the source of information for the upcoming researchers those who will be interested to conduct research in the area.
- It will also make contributions for policy makers, project designers, Project implementers and Project evaluators.

1.6 Scope of the study

The study was focused on assessing causes of project implementation delay. With regard to the scope of the research is mainly focus on literature review and questionnaire survey. Geographically, this study was delimited to DBE Head office in Addis Ababa Ethiopia financed in the interval from January 2014 to December 2017 for consecutive of three years in the core process of the Bank at Corporate level. According to the Development Bank of Ethiopia annual report shows the approved projects in January, 2014-December 2017 for consecutive of three years are 222. Therefore, the questionnaire was designed based on the cause of project delay.

1.7 Definition of terms

Project- an overall task which has a definable beginning and definable end, it consists of a number of related and dependent activities, all of which utilize resources and upon which there are imposed internal and external conditions.

Project financing- this refers to the ways that a client provides the funds that cater for the cost of design, planning, labor and approvals required to ensure the project is successfully carried out.

Project performance- This is an aspect of project accomplishment in regard to the subjective matter of the client and the public at large.

1.8 Limitation of the study

There is unorganized system toward project management and the project management practice and the project information was not clearly documented. During the study process, most of the construction projects were completed. However, there was inadequate documented information on project undertaking. Therefore, questionnaire distribution to project stakeholder's, to clients, contractors and consultants were the main tools that was employed for the process of data collection**.**

1.9 Organization of the Study

This research paper was organized into four chapters. The first chapter discusses about the background of the study, statement of the problems and objectives. Chapter two deals with review of the related literature and chapter three are concerned with the methodology that was used in this specific study during conducted the research. Chapter four result and discussion and the last chapter is chapter five which deals with summary of major findings , conclusions and recommendation.

CHAPTER TWO: REVIEW OF LITERATURE

2.1 Introduction

A review of literatures related to the topic under the study is the main focus area of this chapter. Project management related literatures are reviewed and most importantly construction project management related literatures are selected and reviewed by the researcher. Reviewed literatures include books, International journals, articles, thesis papers, reports which are related to the study topic. Most of the literatures reviewed by the researcher are conducted on different countries, environment and time to ascertain the fact that causes of delay could be different in different countries.

2.2 Theoretical literatures

2.2.1 Project and Project Management

According to the Project Management Body of Knowledge (PMBOK), a project is a temporary endeavor undertaken to create a unique product, service, or result. As indicated the temporary nature of the project, a project has a definite beginning and end i.e. it is time bounded. The end of the project is reached when its objectives have been achieved or when it is terminated as a result of its objectives cannot be met. Projects can also have social, economic, and environmental impacts that far outlive the projects themselves (PMBOK 5th edition). Base on the International Project Management Association (IPMA) definition, a project is a time and cost constrained operation to realize a set of defined deliverables up to quality standards and requirements. On the other hand the Association of Project Managers (APM) defines a project as a unique, transient endeavor undertaken to achieve a desired outcome.

According to Robert K. Wysocki (2014) definition Project is a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and according to specification. A Business-focused definition of a Project by the

same author Robert K. Wysocki (2014) is a sequence of finite dependent activities whose successful completion results in the delivery of the expected business value that validated doing the project. Gary R. H. (2003) also defines a project as a temporary endeavor undertaken to achieve a particular aim. It is clear that project is the response to a need, the solution to a problem. Further, it‘s a solution that promises a benefit—typically a financial benefit. The fundamental purpose for most projects is to either make money or save money.

A project is temporary in nature; means it has a specific start and finish. It has a well-defined collection of tasks and ordinarily culminates in the creation of an end product or products (deliverables). There will be a preferred sequence of execution for the project‘s tasks (the schedule). A project is a unique, one-time undertaking; it will never again be done exactly the same way, by the same people, and within the same environment (Gary R. H., 2003).

Based on (Rory B. and Steve B., 2007), the followings are the special features of project

- A project has a clear start and finish.
- A project passes through a number of distinct phases (initiation, design, implementation and handover).
- Projects are often time-limited (they must finish by a certain date).
- Projects have a clear budget which is usually broken down to a budget per work package.
- Activities are essentially unique and non-repetitive - you only get one opportunity to get it right.
- Resources may be sourced from different functional departments and contractors, and need to be coordinated.
- The project manager as project leader is responsible for the successful completion of the whole project.

- Multi-disciplined project teams are formed to manage the project. In large companies the project team would probably work within a matrix organization structure.

2.2.1.1Project Classification

Basically, projects can be classified into three resolution types (Clancy T., 2008):

1. Resolution Type 1 (project success): The project is completed on-time, on-budget, fulfilled all functions and features as specified.
2. Resolution Type 2 (project challenged): The project is completed and operational but over-budget, over the time estimate, and offers fewer functions and features than originally specified.
3. Resolution Type 3 (project impaired): The project is cancelled at some point during the development cycle.

2.2.1.2The Project Cycle

The project cycle considers various stages in which each stage not only is grown out of the proceeding ones, but also leads into the subsequent ones. The planning process does not contain such a stringent sequence of events since all aspects of the project have to be considered simultaneously and, if necessary, adjusted to one another.

Therefore, projects cycle is a self – renewing cycle in that new projects may grow out of the old ones in a continuous process and self – sustaining cycle of activity.

As is in the case with aspects of project analysis, there are many equally valid ways in which the project cycle may be divided. There are various models that deal with the project cycle. However, here more emphasis is given to the Basic Models – The Baum's cycle.

The Baum Cycle (World Bank Procedures)

The first basic model of a project cycle is that of Baum (1970), which has been adopted by the World Bank and initially recognized four main stages, namely.

1. Identification
2. Preparation
3. Appraisal and Selection
4. Implementation

Identification

It is the first stage in project cycle. Its aims are to get potential projects. It could be resource based, market based, need-based, expansion of existing one or well-informed technical specialists and local leaders are also common sources of projects.

Preparation (pre-feasibility or feasibility studies)

After the projects have been identified in the project identification cycle, process of progressively more detailed preparation and analysis of project plans wll began. .

Project preparation involves the establishment of technical, economic and financial feasibility. Decisions have to be made on the scope of the project, location and site, soil and hydrological requirements, project size (farm or factory size) etc

The outcomes of this stage are complete technical specifications of distinct proposals accompanied by full details of financial and economic costs and benefits

Appraisal

It is the process of a critical; review or an independent appraisal conducted after the project preparation cycle. Under this stage , every aspects of the project plan will reexamine to assess whether the proposal is appropriate and sound before large sums are committed.

It should cover at least seven aspects of a project, each of which must have been given special consideration during the project preparation phase. These are technical, financial, commercial, incentive, economic, managerial and organizational appraisals.

These issues are the subjects of specialized appraisal report. And on the basis of this report, financial decisions are made – whether to go ahead with the project or not. In practice, there can be quite a sequence of project selection decisions. Following appraisal, some projects may be discarded.

Implementation

The objective of any effort in project planning and analysis clearly is to have a project that can be implemented to the benefit of the society. Thus, implementation is perhaps the most important part of the project cycle.

Each project implementing entity has its own internal project cycle with different definitions for various milestones, including project start dates. Some may consider project start to be the date an implementing entity's board approves a project, others the date of first disbursement, still others the date of the signed agreement between the entity and government. In case of the Development Bank of Ethiopia, however, projects are assumed to start implementation immediately after the signing of the loan contract. The Bank, in its project feasibility appraisal format sets out project implementation schedule from loan approval up to commencement of operation. Hence, 'projects implementation' in this study focuses on the period from loan contract signing up to the project commences operation and/or production of the specified products.

In project implementation stage, funds are actually disbursed to get the project started and keep running. A major priority during this stage is to ensure that the project is carried out in the way and within the period that was planned. Problems frequently occur when the economic and financial environment at implementation differs from the situation expected during appraisal.

Frequently original proposals are modified, though usually only with difficulty, because of the need to get agreement between the parties involved. It is during implementation that many of the real problems of projects are first identified. Because of this, the feedback effect on the discovery and design of new projects and the deficiencies in the capabilities of the project actor can be revealed.

Therefore, to allow the parties involved in the project to become aware of the difficulties that might arise, recording, monitoring and progress reporting are important activities during the implementation stage. There are some aspects of implementation that are of particular relevance to project planning and analysis.

- The first is that the better and more realistic a project plan is, the more likely it is that the plan can be carried out and the expected benefit realized. This emphasizes once again the need for careful attention to each aspect of project planning and analysis.
- The second is that project implementation must be flexible. Circumstances will change and project managers must be able to respond intelligently to these changes.

2.2.2 Project Integration Management

Project integration management consists of all processes and activities which identify and define as well as combining other activities related to project management. In more detail, in the context of project management, project integration management consists of the main characteristics of all consolidation, unification, communication and integrative actions related to the implementation of projects, managing stakeholders in successful ways and meeting the

requirements of the project (Kerzner, 2017). Project Integration Management is specific to project managers. Whereas other knowledge areas may be managed by specialists (e.g., cost analysis, scheduling specialists, risk management experts), the accountability of project integration management cannot be delegated or transferred. "The project manager is the one who combines the results in all the other Knowledge Areas and has the overall view of the project. The project manager is ultimately responsible for the project as a whole" (PMBOK, 2017). Project integration management processes includes developing project charter, developing project management plan, direct and manage project work, manage project knowledge, monitor and control project work, perform integrated change control and close project phase (PMBOK, 2017).

Project Scope Management

Project Scope Management includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. It includes scope planning, scope definition, scope verification, create WBS and scope control of a project.

Project schedule Management

Project schedule management is critical in project management and consists of all processes and activities required to complete the project within the time frame (PMBOK, 2017). Project schedule management process include planning schedules and processes for establishing policies, procedures and documenting planning, developing, implementing and controlling the time schedule of the project. Schedule management identifies and documents specific actions which must be accomplished to produce deliverables in the project. It also estimates the duration and periods needed to complete the project as well as developing schedules for analyzing the sequence of activities, duration, resources requirements and scheduling constraints that help in creating a schedule model for the project. It also includes define activities, sequence activities, estimate activity durations, develop schedule control schedule.

Project Cost Management

Project Cost Management includes the processes involved in cost planning, cost estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget.

Project Quality Management

Project Quality Management includes the processes and activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken.

Project Human Resource Management

Project Human Resource Management includes the processes that organize, manage, and lead the project team and all other work forces of a project. It consists of human resource planning, acquire project team, develop project team and manage project teams.

Project Communication Management

Project Communications Management includes the processes that are required to ensure timely and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring, and the ultimate disposition of project information.

Project Risk Management

Project Risk Management includes the processes of conducting risk management planning, identification, analysis, response planning, and monitoring and controlling of risk on a project.

Project Procurement Management

Project Procurement Management includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team. It includes contract administration of the project.

Project Stakeholders Management

Project Stakeholder Management includes the processes required to identify all people or organizations impacted by the project, analyzing stakeholder expectations and impact positively or negatively on the project, and developing appropriate management strategies for effectively engaging stakeholders in project decisions and execution.

2.2.3 Definition and Concept of Delay

Sanders and Eagles, 2001 define delay as an event that causes extended time to complete all or part of a project. Delay may also be defined as the time overrun, either beyond the date for completion specified by the contract or schedule or beyond the extended contract period where an extension of time has been granted. The type of delay we focus on in this study is the time

overrun beyond the date for completion specified by project implementation schedule or by the contract not considering whether an extension of time has been granted.

Project implementation delay is a global phenomenon affecting not only the parties involved in the project but also the overall economy of countries as well. Delay involves multiple complex issues all of which are invariably of critical importance to the parties, in our case the bank and its clients. These issues concern entitlement to recover costs of delay or the necessity to prolong the project with the consequential entitlement to recovery costs for adjustments to the contract schedules. In the case of Development Bank of Ethiopia, project implementation delay causes wastage of resources to process loan repayment rescheduling, processing of additional loans due to cost overrun and projects are losing substantial market shares due to delay. Questions arise as to the causes of delay and the assigning of fault often evolves into disputes and litigation (Bolton, 1990).

For the purpose of this study, delay causes are classified into three. The first is the one caused by the Bank's actions such as, unfavorable policies and procedures, bureaucratic loan disbursement, failure to give the required technical advice and feedback, inefficiency of staffs to properly appraise projects and similar cases, the second is causes originating from the client such as loan diversion, plan (scope) change by clients or clients initiated variations, giving less to the project and the third is external factors such as devaluation of Birr against other currencies, delay in customs clearing, inefficient logistic, delay in suppliers and other government acts.

2.2.3.1Causes of Delays

Delay in implementation of projects is common phenomena in projects worldwide. However, these are especially severe in developing countries. Delayed implementation gives a project a difficult star. Unduly long time taken for project implementation results in time-overrun which is

invariably followed by cost overrun. The financial viability of the project is affected by cost overrun. The problem of cost-overrun will get more compounded if the finance necessary to meet the increased cost cannot be arranged in time. Any delay in arranging for the finance needed to meet the cost overrun will only further tend to increase the cost and this may land the project in trouble leading eventually to the death of the project and the project may not take off. (Proceedings of the world Congress on Project Management, IPMA, Ljubliana project pg. 360). The main purpose of this study is to identify the cause of delay factors and their impact (effect) on project completion. Earlier studies either considered the causes or the effects of project delays, separately. This study takes an integrated approach and attempts to analyze the impact of specific causes on specific effects. Literatures review was made for this particular research study on the causes and effects of delay in construction projects since some of the Banks' client's in the industry sector projects are turn key projects I think the it will be applied for projects delay in general. Generally, there are many factors that contributed to causes of delays in construction projects, these range from factors inherent in the technology and its management, to those resulting from the physical, social, and financial environment. There are in total of seven groups of causes for delay in construction project:

Table 2.1: List of causes of delay categorized into 7 groups (Theodore, 2009)

Group 1: Causes of delay by client

1	Delay in progress payments by owner
2	Delay to furnish and deliver the site
3	Change orders by owner during construction

4	Late in revising and approving design documents
5	Delay in approving shop drawing and sample materials
6	Poor communication and coordination
7	Slowness in decision making process
8	Conflicts between joint-ownership of the project
9	Suspension of work

Table 2 contractor related delay cause

1	Difficulties in financing project by contractor,
2	Conflicts in sub-contractors schedule in execution of project
3	Rework due to errors during construction
4	Conflicts between contractor and other parties (consultant and owner)
5	Poor communication and coordination
6	Ineffective planning and scheduling of project
7	Improper construction methods implement
8	Delays in sub-contractors work
9	Inadequate contractor's work
10	Frequent change of sub-contractors
11	Poor qualification of the contractor's technical staff

12	Delays in site mobilization

Table 3 consultant related delay causes

1	Delay in approving major changes in the scope of work
2	Poor communication and coordination
3	Inadequate experience of consultant
4	Mistakes and discrepancies in design documents
5	Delays in producing design documents
6	Unclear and inadequate details in drawings
7	Insufficient date collection and survey before design
8	Un-use of advanced engineering design software

Table 4 material related delay causes

1	Shortage of construction materials in market
2	Changes in material types and specifications during construction
3	Delay in material delivery
4	Damage of sorted material while they are needed urgently
5	Delay in manufacturing special building materials
6	Late procurement of materials

Table 5 equipment related delay causes

1	Equipment breakdowns
2	Shortage of equipment
3	Low level of equipment-operator's skill
4	Low productivity and efficiency of equipment
5	Lack of high-technology mechanical equipment

Table 6 labor related delay causes

1	Shortage of labor
2	Working Permit of labor
3	Low productivity of labor
4	Personal conflict among labors

Table 7 external related causes

1	Effects of subsurface conditions (e.g. soil, high water table, etc.) s
2	Delay in obtaining permits from municipality
3	Hot weather effects on construction activities
4	Traffic control and restriction at job site
5	Accident during construction

6	Changes in government regulations and laws
7	Delay in providing services from utilities (such as water, electricity)
8	Delay in performing final inspection and certification by a third party

2.3 Empirical review on delays

Delay and cost overrun are inherent part of most projects despite the much acquired knowledge in project management. Although some may argue that this is negligible (Flyvbjerg, 2009), it is important to note that physical and economic scale of projects today is such that it is driven under the platform of profit to the parent organization, and of national interest by the degree of success defined within the iron triangle of cost, time, and scope. It is therefore much appreciated to look at some reasons of delays and cost overrun in project and their mitigation process, so as to increase the perception of project success.

Design error is one of the major factors for cost overrun in most projects (Ambsisi A., 2011).Proper representation of client's requirement and the blue print to achieving good technical input to project execution are usually mapped out based on project designs (Ibid).So it is important to note that a design with errors practically means wrong representation of project deliverables. This will lead to wrong application of techniques in achieving result, such that as the actual execution phase of the project unfolds these design errors, attempt to correct it will lead to delay and cost overrun. The other means of design errors that could lead to cost overrun and delay is the fact that project estimations are done based on the produced designs, as such, design with misrepresentation errors will result wrong project cost, thereby leading to extra

works, change order etc,thus resulting in delay and cost overrun. Bordat et al, 2004 cited causes of design errors in most projects as inadequate field investigation, error in design and specifications, plan errors, design changes etc.To control project delay and cost overrun due to design errors, it is important to consider the involvement of professional skills and application of competent tools through the project. Error free design will achieve through good communication with the entire design team and properly planned integrated design process, giving enough time for corrections, extensive investigation and reviews. Similarly, through an effective project planning, controlling and monitoring, project performance throughout the project life cycle will be enhanced.

Scope change could be the cause for project delay and cost overrun. Scope is the term that defines the entire deliverables that is expected at the end of a project. Therefore, logically, it can be said that all project plans, estimation, schedule, quality and base lines are usually designed based on the initial project scope (Ambsisi A., 2011). Thus, project scope change during execution will result the need for the entire initial project to be reviewed such that a reviewed budget, schedule and quality will have to be developed. As a result more time and resources will be needed against the initial baseline. “With each scope change, precious project resources are diverted to activities that were not identified in the original project scope, leading to pressure on the project schedule and budget” (Narayan 2010). Project scope change due to wrong scope definition, inherent risk and uncertainties, sudden change of interest, project funding change, etc. this could lead to change request which in turn could lead to change in project deliverables, budget and/or even the entire project team

Inappropriate and inadequate procurement and faulty contractual management system are another major reason for cost overrun and delay in project (Singh 2009). Every aspect of a

business correlation, including payment terms, pricing, and service levels will read out virtually by contracts. Therefore a contract that has not highlighted the entire project scenario may lead to dispute in the contract system. For instance, if every relevant aspects of the project work does not completely specify on the initial contract agreement, then long chains of negotiations, arbitration and/or mitigation due work change orders and the quest for reviewed contractual agreement with new budgets and schedule will result. The result will no doubt be a project delay and cost overrun.

Another contributing factor for project delay and cost overrun is the complexity of project. Project complexity could be affected by inflation, change in material price and changes in exchange rates such that the initial budget may need to be supplemented for the project to be completed. Then cost overrun and long chain of negotiation would be resulted. Similarly, high degree of project complexity usually results in complex plans, schedules and estimations. Therefore car must be taken during project plans; schedules and estimation to eliminate change orders which intern reduce cost overrun and delay. Also, project complexity could also be defined in term of the diversity of stakeholders with different interest and long chain of communication channel with slow feedbacks (Cerpa and Verner, 2009).Therefore integrating stakeholder's interest could take a lot of time and resources which when overlooked could result in conflicts and dispute, thus affecting the project in the context of delay and cost overrun. To eliminate or reduce the effect of delay and cost overrun due to project complexity, vigorous planning should be done, incorporating every important aspect of the project scope, milestones, delivery time, stakeholders, and methodology to be used. According Johnsinit2010, "Managing complex projects needs experience, expertise and exposure".

Thus, project goals and scope should be defined, based on the client requirements. This helps the project to be kept on track and ensures doing only the job that is intended. It is, therefore, important to build a good team with project success interest at heart to achieve this.

A number of studies have been carried out to determine the causes of delay with special emphasis in construction projects. Sweis et al., 2008 studied the causes of delay in residential projects in Jordan and concluded that financial difficulties faced by the contractor and too many change orders by the owner are the leading causes of construction delay. Abd El-Razek et al., 2008 in a similar study in Egypt found that the most important causes of delay are financing by contractor during construction, delays in contractor's payment by owner, design changes by owner or his agent during construction, partial payments during construction, and non-utilization of professional construction/ contractual management.

Assaf and AlHejji, 2006 conducted a time performance survey of different types of construction projects in Saudi Arabia to determine the causes of delay and their importance according to each project participant (owner, consultant, and contractor). They identified seventy three (73) causes of delay during the research. The most common cause of delay identified by all three parties was "change order followed by financial difficulties."

2.4 Conceptual Framework

The conceptual framework of the study was developed from different authors findings (Assaf et al (1995); Assaf and Al-Hejji (2006); OdeyinkaHA, Yusif A. (1997); Theodore, 2009 ;).

According to Wideman (1990) and Ahmed et al. (2003) there are two type of factors caused delay in completing construction projects that are internal and external reasons. Internal related causes refer causes resulted from one of three main parties (contractors, consultant and owners). Whereas external related causes refer to causes related to materials, weather conditions,

governmental, political reasons, etc. There are many reasons that lead to delay in construction projects, which come from different sources and cannot be counted; each project has a special environment and circumstances that distinguish it from other projects such as nature of work, total cost, experience of contractor, site condition, and flexibility in design and implementation (Alzubaydi, 2000).

The conceptual framework for this study was developed based on based on above researchers and empirical review part of the study and the study was guided by conceptual framework.

Figure 2.1conceptual framework

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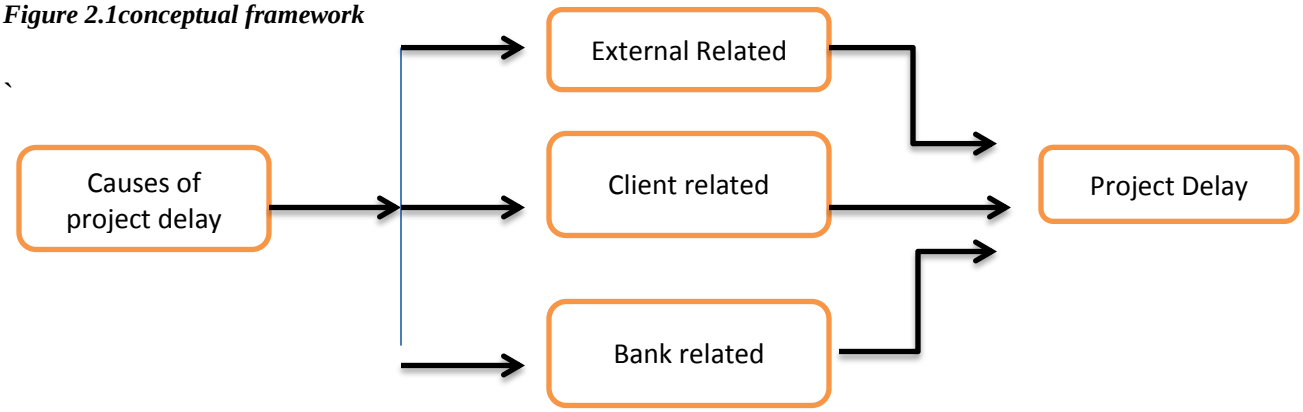


CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The methodology and procedures followed to determine the style and methods of collecting information and data from the study population deals with under this chapter. The aim of this study is to identify the common causes of delay in DBE financed projects from the bank and owner perspective. Furthermore , the scope of the research , research design , description of study population , study sample, methodology , location and statistical tools used in the research will discussed under this chapter.

3.2 Research Design and Approach

According to Vans, research design deals with a logical problem not a logistical problem (Vaus, 2001). To ensure that the evidence obtained enables to answer the initial question as unambiguously as possible, an appropriated research design should be selected. The aim of this study was, to identify the factors which are considered as grounds for DBE financed project delay. So to realize the objective of the study, a researcher has used a descriptive nature research design. This research type is used to describe and validate the extent to that the identified factors by intensive literature review contribute to project implementation delay for the case study (DBE financed project). It is used to provide quantitative or numerical description of attitude or opinions of participants and the perception of the parties involved in the project implementation process have been evaluated. Accordingly both quantitative and qualitative research approach have been employed for the study.

3.3 Population and Sampling Design

3.3.1 Sampling Design

The study employed the probability sampling design of stratified random sampling and non-probability sampling design of convenience sampling

- Study area-Although DBE has financed several industrial projects on several districts and branches found in every corner of the nation, due to limitation in time and financial resources, ultimately the study is carry out on the industrial projects financed by DBE, which are administered at Head office level only. This is because time and financial constraint has been encounter as a restraining factor to carry out the instruments on all industrial projects administered at Head office, Districts and Branches. In addition to these constraints, the head office selected because they have large numbers of clients and the project's capacities high related with their loan facility
- Target Population: Refers to the set of people or entities to which findings are to be generalized (Crooks, 2003). To achieve the objectives of this research, the study is conducted on project financed by Development Bank of Ethiopia at head office for consecutive of three years from January 2014-December 2017. Therefore The target populations of the study was the total number of delayed projects from January 2014-December 2017 that found in the head office and loan sanctioning limit was 180million that found Addis Ababa and surrounding.

3.3.2 Sampling Size

Though the result will be more accurate when taking all the population, however due to several factors such as time, cost and energy, census for all projects was not possible. Therefore, sampling technique has employed to select the sample population. Uma Sekarar (2003) stated that a simplified formula to calculate sample sizes of finite population, which is used to determine the sample size for this particular study.

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

A 95% confidence level is assumed for this formula to determine the sample size, at e=0.05 and the sample size is determined by the following formula.

Where 'n' is the required sample size,

N is the population size and

e is the level of precision

Applying the above formula, $\boldsymbol{n = 188/((1 + 188(0.05)2)}$=128. Hence the sample size for this study is 128

3.4 Types and Sources of Data

To achieve the main objectives of this research, both primary and secondary data source were used. The primary data obtained through questionnaire results. Whereas the secondary data collected from secondary sources of data such as books, journals, reports, and related articles from the internet.

3.5 Data collection and Instrument

Data collection instrument employed in this study was a questionnaire and document review. The questionnaire for this study was collected from the main parties (clients and bank employee) and it was adapted from the questionnaire used by L. Muhwezi et al (2014), based on the literature review and some additional suitable questions developed with the expert assistance in the field under study. Questions used in the questionnaire are closed ended based on likert scale and it has two parts; part I giving the background information of the respondent, Part II ranking of factors stated based on their contribution for implementation delay of projects financed by DBE.

There are a total of 42 well-organized project implementation delay causes which are categorized into three major groups; Client related, bank related and external factor related delay causes.

Document review was also employed to collect relevant secondary data from secondary sources (project completion reports, books, journals, reports).

The questionnaire designed to assess the perspective of respondents from each group (clients and bank) on the importance/severity and likelihood /frequency of occurrence of delay causes. Then based on the calculated mean, the Relative Importance Index has been computed and based on their contribution, each delay has been ranked.

3.6 Data Analysis

The survey data consisting of the 42 causes of delay were analyzed and grouped into three major areas: Bank Related Delay, Client Related Delay and External Related Delay.

The data collected from primary and secondary data sources are analyzed by using the Relative Importance of Index (RII). The aims of the analysis were to establish the relative importance of various factors that contribute to project implementation delays in DBE financed project. Based on their criticality as perceived by the respondents, Ranking of the major causes for project implementation delay was conducted. Divya. R, S. Ramya (2015), L. Muhwezi et al (2014), and Tsegay G., Hanbin Luo (2017) 4) used the RII method to determine the relative importance of the various causes of delays for construction projects. The same method is adopted in this study.

There are 2 steps to analyzing the data:

a) Calculating the Relative Importance index (RI I),

b) Ranking of factors in each category based on the Relative Importance Index (RII).

$$\boldsymbol{RII} = \sum \frac{(\boldsymbol{PUi})}{\boldsymbol{N}(\boldsymbol{n})!}$$

Where,

RII = relative importance index

Pi = respondent's rating of cause of delay

Ui = number of respondents placing identical weighting/rating on cause of delay

N = sample size

n = the highest attainable score on cause of delay

The values of RII ranges from 0 to 1 (0 not inclusive); the higher the RII, the more important the cause of delay is. The RII value is ranked and the results are shown using tables and/or graphs. The RII is used to rank different causes. The RII then being classified based on the RII classification table as shown below in table 3.1.

Table 3.2 classification of RII

Scale	**Level of importance**	**RII**
1	Not important at all	0<RII<=0.2
2	Slightly Important	0.2<RII<=0.4
3	Moderately Important	0.4<RII<=0.6
4	Important	0.6<RII<=0.8
5	Highly Important	0.8<RII<=1.0

3.7 Validity of the Instrument

Prior to using any research instruments for data collection, means of validation for their acceptance is required. Validity is one of an important ways by which any research instruments are evaluated for their accuracy. According to .Kumar, (2005) as cited by Ndegwa, (2013), validity is a measure of confidence that ensure the accuracy and meaningfulness of inference which are based on research result.

To check the validity of the instrument the researcher worked with the adviser as the expert and agreed whether the instrument was valid or not.

3.8 Reliability Test

Reliability is an important condition that ensures the confidence level of any research. It is used while building up a questionnaire for a research and allows the researcher to know about the consistency of a proportion of an idea. According to Babbie, E. R. (2010), reliability is the measure of the extent to which similar finding can be gotten utilizing similar instrument more than one time.it is one of a determinant factors that determine whether a measure is solid and stab Cronbach's alpha coefficient is one of the most commonly utilized instruments for accepted measure of reliability. It determines or indicates how the items in a questionnaire are related to each other (Fubara and Mguni, 2005). In order to achieve internal reliability a satisfactory value of Cronbach's alpha coefficient required to be more than 0.6(Sekaran, 2003, as cited by Mariam Sirbel, 2012) The Cronbach's alpha method was used in this study and the reliability of the instrument to be used in this study has been tested and the result was 0.953. Hence data reliability is good.

3.9 Ethical Considerations

Ethical consideration is part of this study. Documents reviewed from the organization will remain confidential. The findings and results from this study will not use for other purpose. During this study respondents are also free to respond their own opinion from their experience, and their personal information such as name and religion was not mentioned.

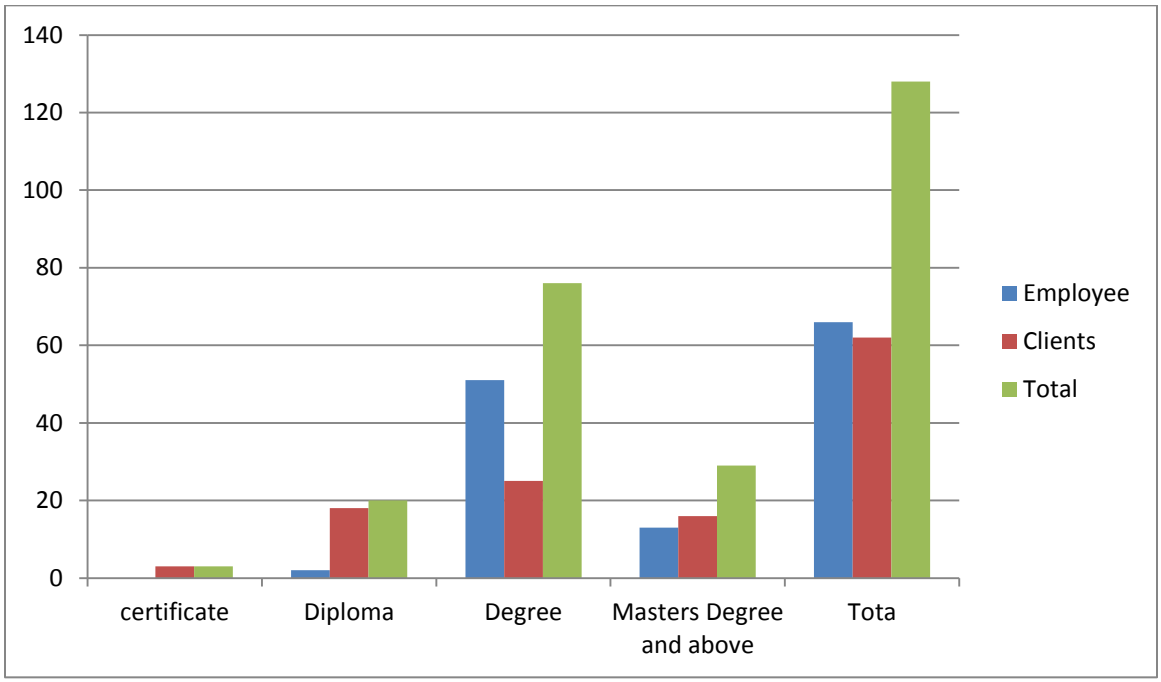
CHAPTER: FOUR RESULT AND DISCUSSION

Introduction

The results and discussion of causes of project implementation delay in DBE financed project discussed under this chapter. The causes of delay are discussed under three groups, Causes related to clients, causes related to bank, and causes related to external factors. Each delay causes are assessed and evaluated from the view point of the main parties and ranked based on their severity/importance and likelihood of occurrence as perceived by respondents. To rank delay causes, the calculated mean are taken using Relative Importance Index (RII).

4.1 Respondent Characteristics

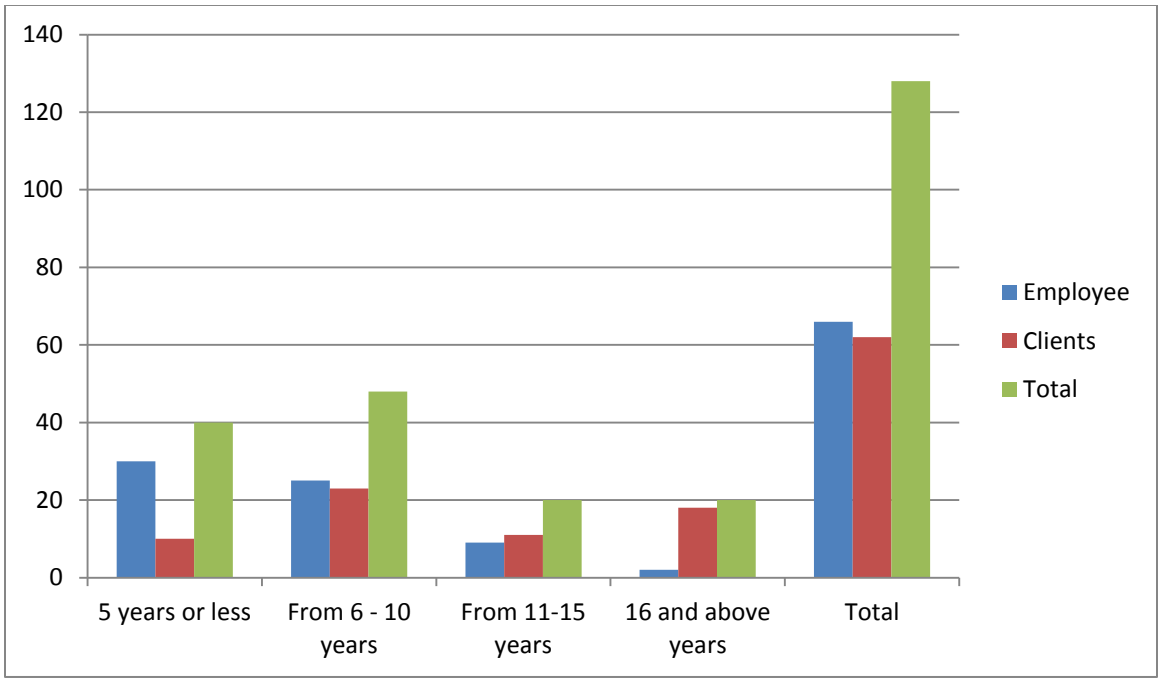
Figure 4.1 Educational Level



Referring the above data , out of the total 66 respondents from the employees side, 2 respondent has diploma, 3 respondents have diploma, 51 respondents have degree and the rest 13 respondents have Master's Degree and above. Moreover, out of the total 62 respondents from the

clients side, 3 respondents have certificate, 18 respondents have diploma, 25 respondents have degree and the rest 16 respondents have Master's Degree and above. This shows that the majority of the respondents from Bank's employees side have degree while majority of the respondents from clients side have diploma and Degree

Figure 4.2 Experience of the respondents



Referring the above data , out of the total 66 respondents from the employees side, 30 respondent has less than 5 years of experience, 25 respondents have from 6 years to 10 years of work experience, 9 respondents have from 11 years to 15 years of work experience and the rest 2 respondents have more than 16 years of work experience. Moreover , out of the total 62 respondents from the client side, 10 respondent has less than 5 years of experience, 23 respondents have from 6 years to 10 years of work experience, 11 respondents have from 11 years to 15 years of work experience and the rest 18 respondents have more than 16 years of work experience.

4.2 Correlates of project implementation schedule

The perspective of all parties that were participated in the Development Bank of Ethiopia financed projects was first analyzed from each stakeholder's perspectives and then the overall result was computed. The causes of delay were discussed based on the RII ranking depicted in the following table

Table 4.2.1 overall ranking of causes of delay

Relative Importance Index (RII)							
S/N	Factors of Delay	Clients		Employees		Overall	
		RII	Rank	RII	Rank	Average	Rank
1	Shortage of foreign currency	0.7849	1	0.8094	1	0.79715	1
2	Failure to contribute equity contribution in time	0.7125	3	0.7531	2	0.7328	2
3	Plan (scope) change by clients or clients initiated variations	0.7487	2	0.7031	10	0.7259	3
4	Governments failure to avail the required infrastructures like road, water, power on time	0.6961	4	0.7281	5	0.7121	4
5	Lack of cooperation and insufficient communication among different stakeholder government organizations like	0.6862	5	0.7281	6	0.70715	5

	the DBE, investment office, different ministerial offices, regional governments, EEPCO and ERCA etc						
6	Fluctuation in foreign currency	0.6566	8	0.7219	8	0.68925	6
7	Fluctuation of prices of materials and increase in total cost of projects	0.6336	13	0.7188	9	0.6762	7
8	Diversion of funds for unintended purpose by promoters	0.6007	16	0.7438	3	0.67225	8
9	Existence of missed items & long time taken to incorporate them through additional loan	0.6599	7	0.6781	17	0.669	9
10	Underestimation of complexity of projects by promoters	0.6368	11	0.6813	16	0.65905	10

Table 4.2.2 ranking of cause of delay from clients perspectives

S/	Factors of Delay	Clients

N		RII	Rank
1	Shortage of foreign currency	0.7849	1
2	Plan (scope) change by clients or clients initiated variations	0.7487	2
3	Failure to contribute equity contribution in time	0.7125	3
4	Governments failure to avail the required infrastructures like road, water, power on time	0.6961	4
5	Lack of cooperation and insufficient communication among different stakeholder government organizations like the DBE, Investment Office, Different Ministerial Offices, Regional Governments, EEPCO and ERCA etc.	0.6862	5
6	Underestimation of cost of projects by the Bank	0.6796	6
7	Existence of missed items & long time taken to incorporate them through additional loan	0.6599	7
8	Fluctuation in foreign currency	0.6566	8
9	Short implementation period given by the Bank during project appraisal	0.6533	9
10	Unfavorable policies and procedures of the Bank	0.6401	10

Table 4.2.3: Ranking of causes of delays from employee perfective

S/N	Factors of Delay	Employees	
		RII	Rank

1	Shortage of foreign currency	0.8094	1
2	Failure to contribute equity contribution in time	0.7531	2
3	Diversion of funds for unintended purpose by promoters	0.7438	3
4	Project Management problem at implementation stage	0.7313	4
5	Governments failure to avail the required infrastructures like road, water, power on time	0.7281	5
6	Lack of cooperation and insufficient communication among different stakeholder government organizations like the DBE, Investment Office, Different Ministerial Offices, Regional Governments, EEPCO and ERCA etc	0.7281	6
7	Poor professionals management by promoters	0.7219	7
8	Fluctuation in foreign currency	0.7219	8
9	Fluctuation of prices of materials and increase in total cost of projects	0.7188	9
10	Plan (scope) change by clients or clients initiated variations	0.7031	10

Based on the different groups of delay, the respondents generally agreed that the main causes of delay are attributed to delays resulting from client's actions followed by Bank's actions. External factors are rated third.

From the above table, groups of delay causes were ranked based on the two stakeholders

From client perspective;

1st Delay related to bank action

2nd delay related to client action

3rd delay related to external action

From employee perspective

1st Delay related to client action

2nd Delay related to bank action

3rd Delay related to external action

CHAPTER FIVE CONCLUSION AND RECOMMENDATION

5.1 Summary of Major Finding

From overall results it was found shortage of foreign currency was considered the first cause affecting delay in DBE financed project. Generally respondents from the two major stakeholders agreed that out of a total of 42 delay attributes; the following project implementation delay causes in DBE financed projects are considered as the top ten influencing factors in causing delay arranged in descending order of importance;

1. Shortage of foreign currency;
2. Failure to contribute equity contribution in time;
3. Plan (scope) change by clients or client initiated variations;
4. Governments failure to avail the required infrastructures like road, water, power on time;
5. Lack of cooperation and insufficient communication among different stakeholder government organizations like the DBE, Investment Office, Different Ministerial Offices, Regional Governments, EEPCO and ERCA etc.;
6. Fluctuation in foreign currency;
7. Fluctuation of prices of materials and increase in total cost of projects;
8. Diversion of funds for unintended purpose by promoters;
9. Existence of missed items & long time taken to incorporate them through additional loan;
10. Underestimation of complexity of projects by promoters.

5.2 Conclusion

Project delay is still happening and will continue to happen for various reasons. Delays are inevitable; however, they can be avoided or minimized when their causes are effectively identified and analyzed. The objective of this research was to identify the main causes of project

implementation delay in DBE financed project. A literature review and expert interviews were conducted to identify the causes of delay. A compiled list of 42 delay attributes were identified and categorized into three groups of client related delay factors, bank related delay factors, and external related delay factors and listed on the questionnaire for further quantitative evaluation in a questionnaire survey to confirm the causes and to identify the most important causes of DBE financed project implementation delay. The most important causes of delay identified by the survey through questionnaire and the results were analyzed for the overall view and for each of the two major parties who participated in the questionnaire (clients/owner, and employee) separately to make an overall view of the causes of delay in DBE financed projects.

The above mentioned Forth two (42) delay attributes were categorized into three major groups (clients, DBE and external factors) and were ranked using relative importance indices (RII). The results show that the average results of respondents from the two major groups indicated that the client related causes of delay was the most prominent delay factor. DBE related causes were considered the second most influential causes of delay in DBE financed projects followed by external related causes of delay.

5.3 Recommendation

Project success can be realized when all activities under the project are conducted by proper planning and scheduling, within the allocated budget and specified quality, under specified timeframe and by the satisfaction of the stakeholders. To minimize project implementation delay in DBE financed projects, the major causes should be effectively identified and analyzed. Based on the above mentioned results and findings of this study, the following points can be recommended as ways to minimized and control delay in DBE financed project

1. Even though a number of incentives such as tax holidays, loan guarantees, land guarantees to investors involving in manufacturing, agriculture and agro- processing sectors has availed, such incentives could not bring a change. So it is better to give attention for the required infrastructure like power, telecom, water, road and other infrastructures.
2. In order to give breathing time for projects, DBE shall incorporate contingency budget plan in the project cost determination during appraisal report.
3. DBE needs to revise its cost estimation technique. Cost escalation on various items, and budget deficit resulted from price fluctuation and price escalations are also other causes of projects implementation delay. Therefore, the Bank needs to be aware on this factor and revise its cost estimation technique.
4. Delay/ Late procurement of machineries and materials, late deliveries of materials are significantly affecting the implementation of projects from scheduled time. Therefore, award of contracts for civil works/supply of machinery and equipment to experienced firms of repute on fair and equitable contractual obligations plays a vital role in the execution of works and implementation of projects for achieving the objectives conceived at the planning stage. As the implementation of the project in physical terms begins with the award of contracts, it should be concluded with maximum expedition.
5. The bank shall monitor the whole operation of the project and ensure proper utilization of disbursed fund.) Diversion of funds for unintended purpose by clients shall be subject for immediate action on the project to the extent of blocking subsequent disbursements and/or cancellation of the loan.

6. The bank needs to be aware on cost escalation related causes and revise its cost estimation techniques to reduce budget deficit resulted from cost escalation of various items

Appendix

Questionnaire on Factors contributing to project implementation delay for DBE financed projects

I am kindly requesting you to participate on this survey questionnaire which is intended to:

- Identify the major factors that contribute for causes of project implementation delay in DBE financed projects;
- Understand the relationship between the factors of delay identified as major causes of delay by both the Bank and Clients;
- Suggest possible ways of eradicating or minimizing the causes of project implementation delay.

The information you will provide will be used as primary data for the partial fulfillment for the Award of Master of Arts Degree in Project Management. All your responses are strictly confidential and the findings of this study will be used for academic purpose only.

Please don't write your name anywhere on this questionnaire. I would like to express my heartfelt gratitude in advance for your kind participation. Please Tick (√) where appropriate in the box.

Part One: Demographic information

1 Sex: Male ☐ Female ☐

2 Age: 25 years or less ☐ between 26- 30 years ☐ between 31-40 years ☐ between 41-50 years ☐

51 and above years ☐

3 Marital statuses: Married ☐ Single ☐

Divorced ☐ Widowed ☐

4. Education level: < grade 8 ☐ 8-12 ☐

12 complete and certificate ☐ Diploma ☐

Degree ☐ Masters and above ☐

5. Business Experience: 5 years or less ☐

From 6 – 10years ☐ From 11 – 15 Year ☐

16 & above Years ☐

PART TWO: Please tick (√) and give a rate for each cause of project implementation delay, each scale represents the following rating: 5= 'Strongly agree', 4 = "Agree", 3 = 'Neutral', 2 = 'Disagree, 1 = 'Strongly Disagree"

Which of the following related to internal and external factors stated below contribute most for projects implementation delay of projects financed by DBE?

Table Causes of project implementation delay

SN	**Factors of delay**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
1	Diversion of funds for unintended purpose by promoters					
2	Short implementation period given					

	by the Bank during project appraisal					
3	Conflict between shareholders in case of PLCs and S.Cs and between spouses in case of sole proprietors					
4	Plan (scope) change by clients or clients initiated variations					
5	Failure to contribute equity contribution in time					
6	Existence of missed items & long time taken to incorporate them through additional loan					
7	Delay in honoring payment certificates					
8	Inefficiency of staffs to properly appraise projects					
9	Delay in disbursement of loan and equity by the Bank					
10	Underestimation of cost of projects by the Bank					
11	Unfavorable policies and procedures of the Bank					

12	Delay in appointing project managers					
13	Project Management problem at implementation stage					
14	Underestimation of complexity of projects by promoters					
15	Poor supervision, follow up and inspection by the Bank					
16	Failure to give the required technical advice and feed back					
17	Governments failure to avail the required infrastructures like road, water, power on time					
18	Delay in suppliers of machineries and equipment's					
19	Poor customs clearing and inefficient logistics					
20	Lack of cooperation and insufficient communication among different stakeholder government organizations like the DBE,					

	Investment Office, Different Ministerial Offices, Regional Governments, EEPCO and ERCA etc					
21	Underestimation of time for completion by contractors & delay by sub-contractors					
22	Shortage of materials					
23	Poor professionals management by promoters					
24	Owners lack the required technical knowhow and experience in projects					
25	Fluctuation of prices of materials and increase in total cost of projects					
26	Poor site management					
27	Delay in instructions from consultants					
28	Late deliveries of materials					
29	Lack of program of works by clients					
30	Poor project design and planning by					

	owners					
31	Political unrest and upheaval					
32	Shortage of skilled and un skilled labor					
33	Legal disputes					
34	Bad weather conditions					
35	Mistakes with site, soil and foundation conditions investigations					
36	Failure to build as per the approved design and specification.					
37	Unskilled equipment operators					
38	Accidents during construction					
39	Increase in cost of inputs (materials)					
40	Underestimation of cost of projects by Investors					
41	Shortage of foreign currency					
42	Fluctuation in foreign currency					

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