



**SCHOOL OF COMMERCE OFFICE OF GRADUATE STUDIES  
DEPARTMENT OF DEVELOPMENT ECONOMICS**

**FACTORS INFLUENCING PROJECT IMPLEMENTATION DELAY:  
THE CASE OF PROJECTS FINANCED BY DEVELOPMENT BANK OF  
ETHIOPIA.**

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**Addis Ababa, Ethiopia**

**ADDIS ABABA UNIVERSITY**  
**SCHOOL OF COMMERCE OFFICE OF GRADUSTE STUDIES**  
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**BY**  
**DEREJE FEYISSA**

**THESIS SUBMITTED TO THE SCHOOL OF COMMERCE GRADUATE STUDIES OF  
ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENT  
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**ADDIS ABABA UNIVERSITY**  
**SCHOOL OF COMMERCE DRADUATE STUDIES**  
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## **DECLARATION**

I, the undersigned, declare that this thesis is my original work, the result of my own effort, prepared under the guidance of Berhanu D. (PHD). All sources of material used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institutions for the purpose of earning any degree.

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Name

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Signature

## **ENDORSEMENT**

This thesis has been submitted to Addis Ababa University, School of Commerce, and Department of Development Economics for examination with my approval as a university advisor.

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Advisor

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Signature

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## **ACCRONOMY AND BBREVIATIONS**

ADB	African Development Bank
DBE	Development Bank of Ethiopia
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
FX	Foreign Currency
GTP	Growth and Transformation Plan
HFCDP	Horticulture and Food Crops Development Project
IPF	Investment project Financing
KYC	Know Your Customer
OLS	Ordinary Least Square
PAC	Percentage Accuracy Classification
RII	Relative Importance Index
SPSS	Statistical Package for Social Science
SWOT	Strength, Weakness, Opportunity, Threats
UNIDO	United Nations Industrial Development Organization
VIF	Variance Inflation Factor

## **Abstract**

*Projects are essential for implementing strategies, involving the execution of well-planned activities within a set schedule. However, project implementation delays have global ramifications, affecting both involved parties and national economies through time and cost overruns. This study aims to assess project implementation delays and evaluate factors influencing implementation delays in projects financed by the Development Bank of Ethiopia, hindering its goal of national development facilitation. It provides valuable insights for enhancing project planning and management practices. The research employed an explanatory research design, collecting qualitative and quantitative data through structured questionnaires and interviews. The target population consisted of projects financed by the bank's head office, with respondents' selected using purposive sampling and stratification. Data analysis employed econometrics/inferential analysis. The analysis revealed statistically significant factors influencing project implementation delays, such as project planning, loan approval processes, follow-up and supervision, promoter competency, contractor experience, and clarity in drawings and material costs. To address these delays, it is recommended to prioritize thorough feasibility studies, risk assessments, and timely fund approval in project planning. Regular site visits, progress assessments, and proactive problem-solving are crucial for effective monitoring and timely identification of delays. Additionally, investing in professional development and training for promoters, contractors, and project managers will improve their skills, leading to more efficient implementation and reduced delays. Implementing these recommendations will support the Development Bank of Ethiopia's national development facilitation goal while ensuring successful project execution.*

***Key words: Project, implementation, Delay, Development Bank***

# **1 Chapter One: Introduction**

## **1.1 Background of the study**

A project can be defined as a temporary effort where individuals work cooperatively together to create a unique product or service within a specified period, budget, and scope. Projects serve as a means of implementing strategies. Thus, projects are essential in driving organizational goals and objectives. This temporary nature of projects indicates that they have a definite beginning and end, and the uniqueness comes from various factors such as location, design, stakeholders, and circumstances. It is important to note that projects are not ongoing operations but rather temporary endeavors aimed at achieving specific outcomes (PMBOK®Guide, 2015).

In order to effectively manage projects, careful planning and implementation are required. Project implementation refers to the process of putting the properly planned activities into action, where project inputs are converted into outputs. This process involves various activities such as preparing, deploying, maintaining, and utilizing the final product of the project. Success factors in project implementation include clearly defining project goals, ensuring competency of the project management team, obtaining support from top management, allocating sufficient resources, consulting with end users, establishing effective communication channels, involving all relevant parties in project reviews and problem-solving, implementing appropriate technology and control mechanisms, and addressing daily issues and problem resolutions (Mishra and Sota, 2005).

However, despite careful planning and management, project implementation often faces challenges and difficulties, with delays and cost overruns being common issues (Wa'el et al., 2007). Delays can be defined as a slowing down of work without completely stopping construction, leading to time overrun beyond the contract date or agreed-upon delivery date (Lo et al., 2006). These delays can have significant impacts on project schedules, budgets, and overall project success.

The Development Bank of Ethiopia plays a vital role in supporting the country's socio-economic development by financing various development projects. However, many projects financed by the bank encounter implementation delays, which adversely affect their operational success and the bank's loan recovery performance (DBE, 2020). These delays can be attributed to many factors

related to the project owner, financial institution, contractor and external situations. Addressing these factors, evaluating their contribution to the delay and minimizing their effect on project implementation delays is crucial for the bank to fulfill its mandate and contribute effectively to the country's development.

As of June 30, 2016 G.C, 150 projects experienced implementation delay out of 200 different projects found at corporate level. Similarly, at June 30, 2017 G.C, out of 205 active projects at head office, 164 projects experienced implementation delay. As of 30 June 2018, 170 projects lagged behind the schedule set in the project appraisal out of 210 active projects of different sectors. Likewise, as of June 30, 2019 GC, 100 projects delayed from their implementation schedule out of 164 active projects. As of June 30, 2020, the number of delayed projects decreased from the preceding years because projects with loan amount less than 45 million transferred to different branches. I.e., as of June 30, 2020, out 140 active projects at head office, 105 of them experienced implementation delay. This shows that the number of projects delayed from their implementation period is significantly high (75% on average) compared to the active projects from year 2016 GC to 2020 GC (DBE, 2020/21).

In light of this focal problem, the researcher is motivated to assess and evaluate determinants of project implementation delay in projects financed by Development Bank of Ethiopia. The study specifically focuses on projects administered at the head office level, aiming to identify possible recommendations and methods for minimizing delays, improving project quality, and enhancing the planning and management of project implementation processes. By examining the factors contributing to delays and providing practical solutions, this research seeks to contribute to improved project delivery and the successful realization of development goals.

## **1.2 Statement of the problem**

The global landscape of project performance is marked by a concerning trend of falling short of targets, resulting in the wastage of substantial investments without yielding tangible outcomes. As cited in Teferi (2021), the extensive research conducted by Geneca (2011) revealed that only 47% of project teams were able to achieve between 70% and 89% of their goals, with nearly 20% reporting achievement levels ranging from 50% to 69%. Similarly, the PMBOK®Guide (2015) found that a mere 64% of projects successfully met their goals, indicating a significant gap between aspirations and actual outcomes. These statistics paint a grim picture of project performance worldwide, raising urgent questions about the factors contributing to this persistent problem.

Within the purview of the Development Bank of Ethiopia (DBE), a notable challenge arises in the implementation of agricultural and industrial projects. Despite meticulous planning, outlined in feasibility studies and revised schedules prepared by project promoters and the bank's appraisal studies, these projects frequently lag behind their intended timelines. Therefore, there is a recurring need for additional funding to cover cost increments resulting from incomplete project activities, as well as frequent requests for loan repayment rescheduling. The implementation delays plaguing these projects primarily stem from a combination of internal and external factors (DBE, 2020/21).

DBE, with its vision to become an excellent development bank contributing to Ethiopia's economic transformation by 2030, DBE (2019) faces a sobering reality. According to the bank's annual performance report for the year 2020/21, over 70% of projects financed by DBE across critical sectors such as Agriculture, Manufacturing, Mining, and Energy fail to adhere to their implementation schedules. That means only 30% of the projects are successfully completed or commence operations within the planned time, cost, and quality parameters, leaving the remaining 70% significantly delayed or falling behind schedule (DBE, 2020/21). This chronic problem of implementation delays gives rise to time and cost overruns, adversely affecting the bank's loan recovery performance and triggering a cascade of negative effects. Legal disputes between clients and banks, owners and contractors, increased costs, loss of productivity and revenue, and contract terminations further compound the issue.

This problem in turn leads the Bank to hold elevated amount of NPLs, since the repayment period are highly related to finalization of project implementation and proper operation of projects. The

NPLs ratio trend analysis of the bank shows that 10.59%, 12.87%, 17.65%, 24.98%, 39.67%, and 39.17% in the fiscal year 2013/14, 2014/15, 2015/16, 2016/17, 2017/18, 2018/19 and 2019/20 respectively. Accordingly, from the main reasons mentioned for the fresh entrants of NPL is the effect of the prolonged time taken to implement the project is the one (DBE, 2021/21).

The inability to collect loans on time jeopardizes the bank's operations, highlighting the seriousness of the problem and the imperative need for a comprehensive investigation. It is evident that a critical study is required to identify and examine the factors hindering projects from being implemented within their scheduled timeframes, particularly in the case of projects financed by the Development Bank of Ethiopia. While numerous studies have investigated project implementation delays, particularly in the construction sector, a significant research gap exists regarding the overall evaluation of the factors influencing project implementation delay in case of projects financed by DBE in Ethiopia. As far as the literatures reviewed by the researcher, there is few researches related to causes and effects of project implementation delay in case of project financed by DBE. Even the existing researches employed data collected from project financed and administered by the bank until year 2014 G.C (Hailemariam, 2013; Shifera, 2018 and Tulu, 2017).

In contrast to the aforementioned studies, this research distinguishes itself by employing projects financed and administered by DBE in the period of Year 2017 to 2021 as primary source of data for analysis, ensuring the most current and relevant findings. In addition, the research incorporated crucial contractor/consultant-related and external circumstances alongside bank-related and borrower/client-related considerations to evaluate factors influencing project implementation delays. To achieve this, an econometric model known as the binary logistic regression model has been utilized, enabling a more rigorous analysis, evaluation, and description of the relationship between dependent and independent variables.

In the lights of these prevailing problems, the research on the case bank is to determine and evaluate factors influencing project implementation delay and to adopt an appropriate framework for improving project implementation and administration methods. Therefore, the study's aim was to find out and evaluate the determinants of project implementation delay in case of projects financed by DBE is relevant and important.

## **1.3 Research Objectives**

### **1.3.1 General Objective**

The general objective of this research is to examine the factors that contribute to project implementation delays in projects financed by the Development Bank of Ethiopia.

### **1.3.2 Specific Objectives**

The specific objectives of this research are as follows:

- To assess bank-specific factors that affect project implementation delay.
- To evaluate promoter/client-related factors that influence project implementation delay.
- To assess contractor/consultant-related factors contributing to project implementation delay.
- To examine external circumstances that influence project implementation delay.

## **1.4 Research Questions**

Based on the aforementioned statement of the problem, this research aims to address the following questions:

- What are the factors that influence project implementation delay?
- To what extent does each factor contribute to project delays?

## **1.5 Significance of the Study**

The significance of this study lies in its impact on the Development Bank of Ethiopia, which serves as a crucial financial institution supporting the country's socio-economic development. Project implementation delays have posed significant challenges to the bank's operations and its ability to fulfill its mission. Such delays result in negative effects, including lawsuits between clients and banks, disputes between owners and contractors, increased costs, loss of productivity and revenue, and contract terminations. Furthermore, delays in loan recovery hinder the bank's ability to collect debts on time, ultimately affecting its overall operations.

This study will provide valuable insights to the Development Bank of Ethiopia, project owners, and managers, enabling them to understand the primary causes of project implementation delays. It will facilitate the development of prevention and mitigation measures to alleviate the negative effects of such delays, ensuring smoother project implementation throughout the project's lifecycle. Additionally, the study's findings will benefit project managers, project-driven offices, practitioners, and academics by providing a basis for comparing theoretical perspectives with on-the-ground realities regarding the causes of project implementation delays.

Moreover, the study will offer appropriate recommendations to the bank's management and project-driven offices, enabling them to create a conducive environment for successful project implementation. The outcomes of the study are expected to contribute to the development and/or amendment of effective policies and procedures aimed at addressing the problem. Furthermore, the study will contribute to the existing knowledge base, serving as a valuable resource for future researchers in the same or related disciplines.

## **1.6 Scope and Limitation of the Study**

The scope of this study encompasses the identification of causes of project implementation delays in projects financed by the Development Bank of Ethiopia. The study focused on projects financed and administered at the bank's head office, given that more than 80% of the bank's total loan portfolio is located there. The research specifically targets projects within four priority areas: Manufacturing Industry, Agro-Processing, Commercial Agriculture, and Mining & Energy, which are key sectors supported by the bank in the five consecutive years from 2017 to 2021 GC. By focusing on these sectors, the study aims to gain insights into the factors influencing project implementation delays within specific industries.

From a conceptual perspective, the study delves into the factors that contribute to project implementation delays, examining various aspects such as bank-specific factors, promoter/client-related factors, contractor/consultant-related factors, and external factors. By considering these different perspectives, the study aims to provide a comprehensive understanding of the causes of project implementation delays in the context of projects financed by the Development Bank of Ethiopia.

It is important to note that this study has certain limitations. Due to budget and time constraints, the research focuses on projects administered at the bank's head office, which may limit the generalizability of the findings to projects implemented in other locations. Additionally, the study is restricted to projects within the four priority areas mentioned above, which may not encompass all sectors financed by the Development Bank. Nonetheless, the research objectives are accomplished within these defined boundaries, providing valuable insights into the causes of project implementation delays in projects financed by the Development Bank of Ethiopia by selecting sample projects found in different geographical distribution and by incorporating sample projects from all major sector groups.

### **1.7 Organization of the Thesis**

The organization of this research paper incorporated five chapters. Chapter 1 provides an introduction, highlighting the background of the study, the statement of the problem, research questions and objectives of the study, scope, limitations, and the significance of the research. Chapter 2 presents a comprehensive review of theoretical and empirical literature related to the research topic. This chapter includes an analysis of the relationships among variables and presents the conceptual framework derived from the literature review. Chapter 3 describes the research methodologies, including the research design, population of the study, sample design, data types and sources, methods of data collection and analysis, and the hypotheses formulated based on the literature review. Chapter 4 presents the results of the data analysis, and finally, Chapter 5 presents the research conclusions and provides recommendations based on the findings.

## 2 LITERATURE REVIEW

This section of the study contains review and summary of literatures (both theoretical and empirical) written by different authors in relation to the causes of project implementation delay. The section includes definitions, assumptions, major concepts regarding main causes of project implementation delay & effect of project implementation delay, review of empirical works and finally conceptual framework summary.

### 2.1 Definition of Terms

Policy and procedure manual of Development Bank of Ethiopia (2022), defined terms like project, project delay, project financing, project performance, the Bank (DBE) and corporate levels as follows.

**Project-** an overall task that 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 delay-** is an unplanned and unexpected deferment of a project because of some event or occurrence that impedes the project's commencement or continuation. Project delay is the length of time that extends the project duration, which result in disruption of the delivery of project goals and objectives.

**Project financing-** is the long-term financing of infrastructure, commercial agriculture and industrial projects based upon the projected cash flows of the project rather than the balance sheets of the project sponsors.

**Project performance-** It is an aspect of project accomplishment regarding to the subjective matter of the client and the public at large.

**The Bank (DBE)** - is specialized financial institutions established to support the economic development of the country by providing medium and long-term loan to encourage private sector investment.

**Corporate Level-** DBE head office credit process and project management unit.

**External Factors-** in context of this research, external factors are factors other than bank specific, promoter related and contractor/consultant related; that has direct or indirect influence on project implantation.

## **2.2 Theoretical Literature Review**

### **2.2.1 Introduction**

Nations usually prepare the overall development policies and strategies for equitable distribution and allocation of resources, and sustainable economic growth. These policies and strategies give rise to the country's development programs. Development programs, in turn, consist essentially of inter-related series of development projects.

Projects are the concrete manifestations of the development plans and programs in a specific place and time. One can think of projects as subunits and bricks of programs, which constitute a component of or the entire national plan. Either by public organization or by private establishment can implement projects. A project is a simple, non-routine, one-time effort limited by time, budget, resources, and performance specifications design to meet customer needs (Gray and Larson, 2008) as cited in (Nick & Anthony, 2018).

Project is a capital investment to develop facilities to provide goods and services Bierman and Smidth (1970) as cited in Legese (2013). A project is a temporary endeavor undertaken to produce a unique product, service, or result. It is a problem scheduled for solution (Joseph, 2015). Similarly, UNIDO (1972) defined projects as an activity that involves the utilization of scarce or at least limited resources in the hope of obtaining return or some benefits over a long period.

However, based on different literatures, 52.7% of projects were not able to complete on time and over cost, and 31.1% not fulfilled the scope (Charvat, 2003 and Clancy, 2008) as cited in (Abayneh, 2014). That means majority of projects experience implementation delay from the originally held implementation schedule due to different internal and external factors. This implementation delay in turn affects the budget held to complete the project. This is therefore a serious issue because resource especially financial resource is scarce in developing country like Ethiopia and may even enforce the project to fail early.

### **2.2.2 Definition and Concept of Project**

According to Project Management Body of Knowledge Guide (2008), project is a temporary effort undertaken to create a unique product, services, or result. According to this definition, the temporary nature of the projects indicates that the project has a definite beginning and end while unique means that the product, services or result is different in some distinguishing way from all

other products, services or results due to the different location, different design, different circumstances and situation, different stakeholders, and so on (PMBOKGuide, 2008). It is a combination of human and non-human resources pulled together in a temporary organization to achieve a specific purpose (Simplilearn, 2023). Hence, a project ought to have fixed time plan within which it accomplished, financial plan, a specified scope or magnitude of activities, and definite performance desired to meet.

As stated by Kerzner (2009) a project is any series of activities and tasks that have specific objective to be completed within certain specification, defined start and end dates, funding limits, consumed human and no-human resources (i.e. money, people, equipment) and multifunctional (i.e., cut across several functional lines). According to Wysocki (2009) Project is a sequence of exclusive, multifaceted, and related activity that have one aim or persistence and specified time, defined budget and specification.

According to Rory & Steve (2007), Projects are often a means of achieving an organization's strategic plan. In other words, they are critical to the realization of the performing organization's business strategy. The following are typical examples of projects, but are not limited to developing a new pharmaceutical compound for market; Expanding a tour guide service; Developing or acquiring a new or modified information system (hardware or software); Exploring for oil in a region; Constructing a building, industrial plant, or infrastructure.

### **2.2.3 Process and steps of projects**

There are varieties of definitions that generally reflect different industries' practices regarding the sequence of phases in which project must pass. The project life cycle generally defines the tasks to be accomplished in each phase or sub-phase and the team responsible for each of the phases defined (Prasanna, 2002).

“As advocated by Archibald & Voropaev, (2003), there is a general agreement that the four broad, generic project phases are (common alternative terms are shown in parentheses); (1) Concept (initiation, identification, selection.), (2) Definition (feasibility, development, demonstration, design prototype, quantification.), (3) Execution (implementation, realization, production and deployment, design/construct/ commission, installation, and test.), and (4) Closeout (termination, including post-completion evaluation. The number of stages in project life cycle depends on

variety of aspects like, industry nature, type output type, project size, etc.” (Prabhakar, 2008, P.6). According to Watt (2014), project management book, all projects share the process of initiation (project identification), planning, execution (implementation), control (monitoring) and close out as project cycle.

According to the definition of World Bank [WB] (2023), “the project cycle is the framework used by the World Bank (‘the Bank’) to design, prepare, implement, and supervise projects. In practice, the Bank and the Borrower work closely throughout the project cycle, although they have different roles and responsibilities” (Paragraph. 1).



Source: (WB, 2023).

Figure 2.1: The Baum’s Project Cycle

The six stages of project cycle that has developed by World Bank is the same to the phases of projects financed by DBE as briefly described below.

### **A. Identification**

The first stage in the cycle is to find potential projects. Project identification 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. In general, most projects start as an elementary idea (Hahuzone, 2022).

### **B. Preparation (Pre-feasibility & Feasibility Studies)**

According to Hahuzone (2022) “Once projects have been identified, there begins a process of progressively more detailed preparation and analysis of project plans. At this stage, the project become as a definite investment action. Project preparation (project formulation) covers 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.” (Chapt. 2). Preparation stage incorporates investigation of available resource bases and exploration of alternatives projects. In this phase, the primary tasks are identifying complete technical specification and requirements, developing detail schedule for the project, creating project management plan, and setting up objectives/deliverables expected at the end (Kissflow, 2023).

“The borrower is responsible for the project preparation phase, which includes conducting technical, economic, social and environmental assessments and preparing feasibility studies, engineering and technical designs, among others. Most Borrowers typically contract with consultants and private sector firms for goods, works and services, as needed, during this phase and later during the project's implementation phase” (WB, 2023. Parag. 5). In case of Development Bank of Ethiopia financed projects, both identification and preparation phase is the duty of the project promoter before approaching the Bank for loan.

### **C. Appraisal**

After the project preparation by the promoter or hired consultant, the next stage (project appraisal) gives the borrower and the Bank an opportunity to evaluation the project plan in detail and resolve or clarify any outstanding issues. The promoter and the financing Bank evaluation the work done in the first two phases (at the identification & preparation phases and ratify the anticipated project results, intended beneficiaries, application of ESF requirements (for IPF) and evaluation tools for monitoring progress (WB, 2023).

In case of DBE, the project appraisal unit of the bank has the mandate to appraise all feasibility study submitted by the promoter for each projects approached the bank for loan. As per the bank's policy and guideline, project appraisal report should cover all project aspects, which includes market availability, organizational structure and required labor, technical requirements, socioeconomic benefits, environmental impact of the project, SWOT analysis and financial analysis. Finally, the bank depends on its own appraisal for decisions with regard to loan approval.

#### **D. Negotiation/Approval**

Once all project aspects are appraised and agreed up on terms and conditions by bank and project promoter, the project appraisal team of the Bank finalize the appraisal document along with the conditions and terms for submission to the Bank's loan review and approval committee for consideration and approval (WB, 2023). The case of DBE is almost similar to the World Bank experience.

#### **E. Implementation**

As per the World Bank (2023), "Project implementation is the responsibility of the borrower, while the Bank's role is to provide effective implementation support to improve results, help manage risks, and increase institutional development. With technical assistance and support from the Bank, the borrower prepares the specifications for the project and carries out all procurement of goods, works and services needed, as well as any environmental and social impact mitigation set out in agreed plans, including those described in the Environmental and Social Commitment Plan (ESCP). Financial management and procurement specialists on the Bank's project team ensure that adequate fiduciary controls on the use of project funds are in place. Changing circumstances, project delays and unexpected events can sometimes require adjustments to the project design, such as implementation arrangements or even objectives, resulting in a restructuring. The implementing agency reports regularly on project progress and results. The Borrower and the Bank also join forces at least twice a year to prepare a review of project progress. Based on this review, the Bank team prepares an Implementation Status and Results Report" (Parag. 10-11).

The situation of the project implementation procedure of DBE is the same to that of World Bank. Once the conditions fulfilled and the contractual agreement signed between the Bank and borrower, the Bank release fund as per the disbursement schedule and the promoter is responsible

for implementation. The Bank conduct regular follow up (quarterly) or before each disbursement in order to assure the appropriate utilization of the previously released fund.

#### **F. Completion/Validation & Evaluation**

Once a project has been carried out, it is often useful, (though often neglected) to look back over what took place, to compare actual progress with the plans, and to judge whether the decisions and actions taken were responsible and useful (Hahuzone, 2022). The key actions in the completion phase are gathering project records; to formalize acceptance of the product, service, or project by disseminating information; and performing project closure (Watt, 2014).

“When a project is completed and closed at the end of the loan disbursement period, the World Bank, with input from the borrower and other stakeholders, compiles an Implementation Completion and Results Report, which evaluates the project’s outcomes; challenges, and lessons learned to determine what additional measures are needed to sustain the benefits derived from the project. In addition, the evaluation team assesses how well the entire operation complied with the Bank's operations policies and accounts for the use of Bank resources” (WB, 2023, Parag. 12).

“Evaluation may be undertaken when the project is in trouble, as the first step in a re-planning effort. Careful evaluation should precede any effort to plan follow – up projects. Finally, evaluation should be undertaken when a project terminated or well entered to routine operation” (Hahuzone, 2022, Chapt. 2). In the case of DBE, monitoring is a repetitive work following every release of fund at project implementation stage, which is an important task to control the fund utilization for the intended purpose.

#### **2.2.4 Definition and Concept of Implementation Delay**

The inability to complete projects on time and within budget continues to be a chronic problem worldwide (Ahmed S. M., 2000). Delay is an act or event that extends the time required to perform the tasks under a contract. It usually shows up as additional days of work or as a delayed start of an activity (Ghaleb, 2013).

“Delay could be defined as an act or event that extends the time required to perform the tasks under a contract. It usually shows up as additional days of work or as a delayed start of an activity (Sweis et al., 2007) as cited in (Hailemariam, 2013, P.12). “Delay is a situation when the contractor and the project owner jointly or severally contribute to the non-completion of the project within the

agreed contract period” (Obodoh, 2016, P. 66). Delays mean loss of output and revenues, since the contractor cannot become involved in other projects. The consequences of delay are different for different parties. The general consequences are the loss of wealth, time and capacity.

#### ***2.2.4.1 Classification of project implementation Delays***

Theodore (2009) mentioned that there are four basic ways to categorize type of delays.

##### **A. Critical or Non-Critical**

Critical delay is delays that affect the project completion, or in some cases, a milestone date (Theodore, 2009) as cited in (Ahmed & Twana, 2015). Delays that do not affect the project completion, or a milestone date, are non-critical delays. If these activities delay, the project completion date or a milestone date delay.

##### **B. Excusable versus Non-Excusable Delays**

Delays resulting from the events out of the contractor’s control called excusable delays (Theodore, 2009). “Normally, based on common general provisions in public agency specifications, delays resulting from the following events would be considered excusable delays: general labor strikes, fires, floods, acts of God like volcanic eruption, owner-directed changes, errors and omissions in the plans and specifications, differing site conditions or concealed conditions, unusually severe weather conditions” (Hailemariam, 2013, P. 17).

Non-excusable delays are events that are within the contractor’s control or that are foreseeable (Ahmed & Twana, 2015). Example events of non-excusable delays are late performance of subcontractors; untimely performance by suppliers; faulty workmanship by the contractor or subcontractors, a project-specific labor strike caused by the contractor’s unwillingness to meet with labor representative or by unfair labor practices (Ahmed & Twana, 2015).

##### **C. Compensable Delays Vs Non-Compensable Delays**

According to Theodore (2009) as cited in (Hailemariam, 2013, P. 17), “compensable delay is a delay where the contractor is entitled to a time extension and to additional compensation. Relating back to the excusable and non-excusable delays, only excusable delays can be compensable. Non-compensable delays mean that although an excusable delay may have occurred, the contractor is not entitled to any added compensation resulting from the excusable delay”.

As cited in (Albatsh, 2015), excusable non-compensable delays are normally beyond the control of either owner or contractor such as unusual weather conditions, natural disasters, wars, national crises, floods, fires or labor strike (Fugar and Agyakwah-Baah, 2010).

#### **D. Concurrent Delays**

It is delay caused by more than one factor occurred simultaneously, leading to overall delay in the project (Alaghbari et al., 2007 as cited in (Shifera, Causes of project implementation delay, 2018)). Owners often cite concurrent delays by the contractor as a reason for issuing a time extension without additional compensation. Contractors often quote concurrent delays by the owner as a reason why liquidated damages not be assessed for its delays. According to (Theodore, 2009) the delaying effects of events could cause concurrent delays.

### **2.3 Empirical Literature Review**

#### **2.3.1 Empirical Review of International studies**

The problem of project delay still not solved even today when the technology is advanced and project management practices are more common than before (Yang et al., 2013). Mydin et al., (2014) conducted a research on influential causes of construction project in Malaysian private housing from developer's viewpoint. They identified that, top ten causes of delays are weather conditions, poor site conditions, poor site management, incomplete documents, lack of experience, financial problems, contract modifications, delay in the approval of major variations, contractor coordination problems with other parties, and construction mistakes and defective works. They have analyzed that the causes of the delays point to the contractor factors, which contribute to the major factors that cause project delays in private housing development projects.

Haseeb et al., (2011) conducted a research on the causes of delay in large construction projects in Pakistan, where the following factors are reported to be the most influential: natural disaster; financial and payment problems; improper planning; poor site management; insufficient experience; shortage of materials and equipment.

David (2020) identified that 32 possible causes of Ghanaian government project failure among these factors poor monitoring, political interference, fluctuation of prices management practices, procurement processes, project funding, commitment to project, selection of project managers, project management techniques and scope change are determinants of project failure.

As per Nanakhoma (2015), the government of Malawi, in 2001, through the then Ministry of Irrigation and Water Development secured funding amounting to USA\$9.67 million from African Development Bank (ADB) to implement the Horticulture and Food Crops Development Project (HFCDP). However, the Project did not meet its aims and objectives and thus it is a typical example of big projects failed in the agriculture sector. The study identified that that involvement of right people with appropriate expertise, promoting ownership and adopting bottom-up approach are important factors for the successful project implementation and operation.

The project size, clarity of objectives, the proportion of funding from abroad, and political conditions have significant effects on the rate of implementation of externally assisted development projects in Africa. An increase in project size by \$1 million lead to a 0.04 decrease in the implementation rate of projects. (Millicent & Khashruzzaman, 2012).

Due to delays in project implementation, people have to wait for the provision of public goods and services longer than is necessary (Singh, 2010). According to Singh (2010), “services provided by infrastructure projects serve as input for other sectors, and cost overruns in these projects lead to an increase in the capital-output ratio for the entire economy. Simply put, delays and cost overruns reduce the efficiency of available economic resources, limit the growth potential and reduce the competitiveness of the economy” (page. 43).

Ashraf & Ghanim (2016) conducted research on the topic Causes and Effects of Delay in Public Construction Projects in Jordan. As per the finding of the research, inadequate management & supervision by the contractor, inadequate planning & control by the contractor, lack of making on time progress payments to contractor, bad bid leading to low performance, frequent changes in the extent of the project, errors in design & contract documents, rework due to mistakes during construction, changes in the original design and low level productivity are the factors influencing public sector projects implantation delay in Jordan.

### **2.3.2 Empirical Studies in Ethiopia**

As per the study conducted by Getachew (2015) on cause of project failure, when the weighted average recruitment variation of the project’s work force in terms of number, qualification and experience increase by 1% from the minimum appraisal plan, project failure increases by 10.7%.

Whenever the estimation of cash flow of a project overstate by 1% from what the project is actually generating project failure increase by 6.6%.

The study accomplished by Tsegay & Hanbin (2017), had concluded that corruption, unavailability of utilities at site, inflation/price increases in materials, lack of quality materials, late design and design documents are the five most important causes of implementation delay in construction sector. Moreover, the study identified that slow delivery of materials, late in approving and receiving of complete project work, poor site management and performance, late release budget/funds, and ineffective project planning and scheduling are the significant causes of project implementation delay.

Assefa (2015), in his research study concluded that construction delay in Ethiopia is mostly caused due to financial problem, managerial problem or local contractors limited capacity and ability. He further pointed out delay causes as; delay in delivering material on site, poor site management and untimely provision of documents by the contractor, slow supervision and decision by the consultant, delay in site handover, right of clearance, late in approving payments and lack of proper liaison work of the employer with local authorities.

According to Yenealem (2018) government purpose is to spend money on public infrastructure projects to enhancing social and economic activities; but most of infrastructure projects often suffer from cost over-runs. Delays and cost overruns have significant implications from an economic as well as political point of view. Delay in project implementation is one of the most repeatedly occurring problems in the industry of infrastructure construction (Mahamid, Bruland, & Dmaid, 2012).

The research conducted by Hailemariam (2013), on the Causes and Effects of Project Implementation Delay on Loan Recovery Performance (The case of selected projects financed by Development Bank of Ethiopia), five most important causes of delay are identified. These are shortage of equity contribution, miss utilization of the disbursed fund, ineffective planning & scheduling of project by the owners, lack of fulfilling conditions required for effectiveness of the loan and lack of comprehensive feasibility study of the project owners. Project owner/manager related delays was ranked the most significant groups that cause delays, followed by DBE related delays, cost escalation & suppliers related delays.

Tulu (2018), conducted assessment on Determinants of Project Implementation Delay: The Case of Selected Projects Financed by Development Bank of Ethiopia by collecting data from randomly selected project financed by the Bank in the period of January 2012 to December 2014. The results of the study revealed that poor project initiation, poor project planning/design system, poor project monitoring, and evaluation and controlling system, poor communication and improper project closure negatively influences project completion. Finally, the researcher concluded that any business initiators should select project those are more familiar and interesting for them and scope of project should be established, controlled and must be clearly defined and be limited.

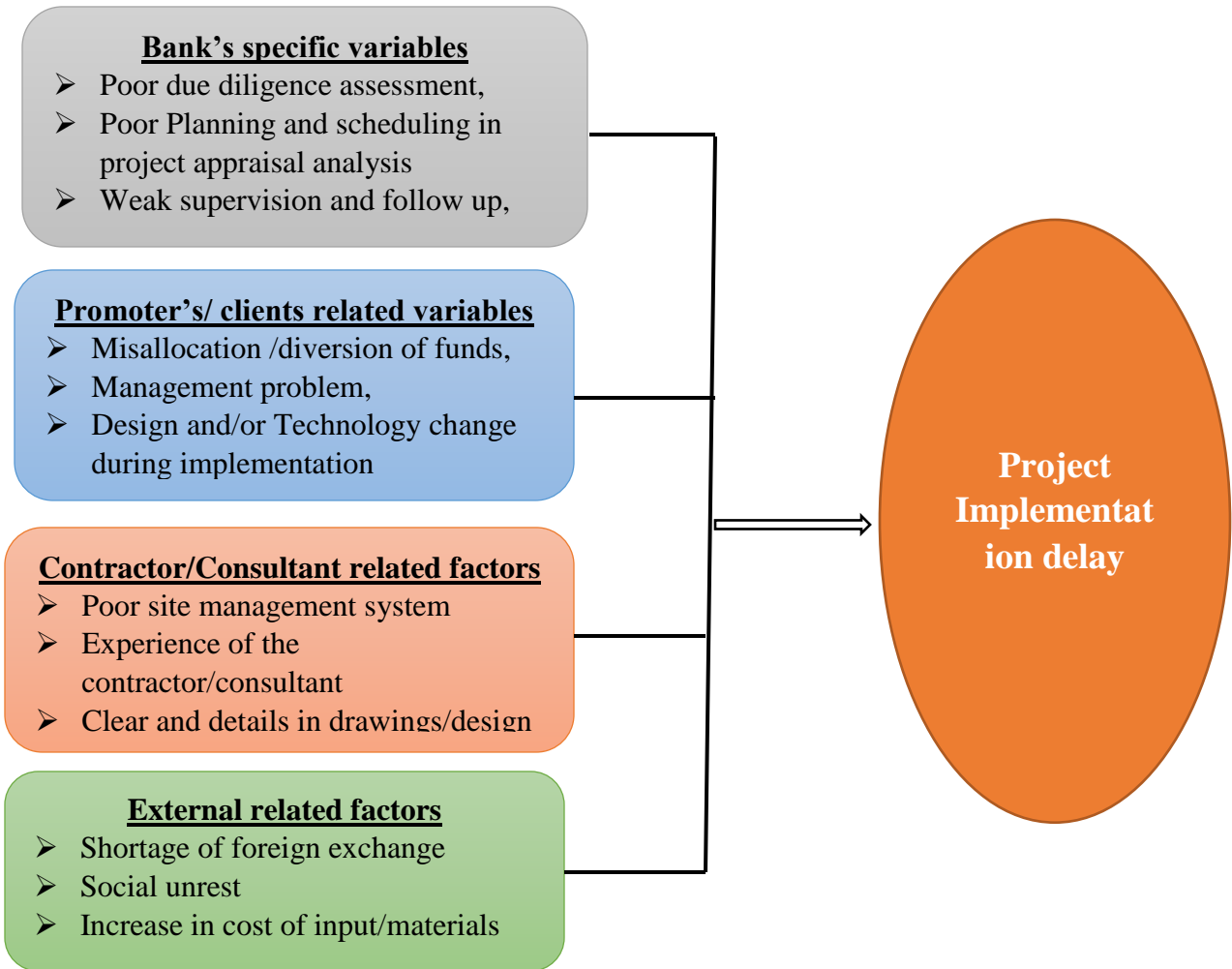
Legesse (2013) conducted research on the title Determinants of Failure for Projects Financed by Development Bank of Ethiopia. The researched collected data from project financed by DBE in the period of years (2007 to 2012) and the data analyzed using Logit Model. In the analysis, 15 explanatory variables broadly categorized to four group (project specific, credit management system of the Bank, macroeconomic and sociopolitical factors). The finding showed that time overrun, sales shortfall, recruitment variation, DBE's project planning capacity, the proxy measure of exchange rate – project cost overrun, population size and literacy level in which the projects operating are statistically significant project failure factors the case of projects financed by DBE.

#### **2.4 Conceptual Framework of the Study**

Conceptual framework illustrates the causal relationship between the independent variables and the dependent variables. As per (Crawford, 2020) most academic studies uses a conceptual framework at the start because it aids the researcher to explain the research questions and objectives. From the theoretical and empirical review parts, the researcher identified factors that attributed to implementation delay of the project. Mainly, construction projects in the construction sector are sufferers of problem with regard to implementation delay in both developed and emerging countries even though the magnitude of these delays varies significantly from project to project and country to country.

As stated in the above empirical literatures, causes of project implementation delay can broadly categorized into four: like contractor specific factors, client/promoter related factors, contractor/consultant related and external related factors. The factors influencing implementation delays of projects financed by Development Bank of Ethiopia is also not far from the indicated categories. Thus, to hypothesize researcher categorized project implementation delay factors into

four groups: namely promoters/ client's related factors, bank specific related factors, consultant/ contractor related factors and external related factors based on the objectives of the study as depicted below



Source: The researcher's own illustration

Figure 2.2: Conceptual Framework Diagram

### **3 RESEARCH METHODOLOGY**

The methodology refers to the procedural framework within which the researcher conducted the research. This part of the study presents, the design showing how the research was conducted and it provide a clear description of the specific steps (procedure) followed in order to conduct the study and address the research problem. Therefore, this portion focuses on research design, target population, sample design, data type and source, method of data collection employed , method of data analysis, model specification, test statistics and definition of variables and working hypotheses.

#### **3.1 Description of the Study Area**

The Development Bank of Ethiopia (DBE) is one of the Government owned financial institutions engaged in providing short, medium and long term development credits. DBE's distinguishes feature is its "Project" based lending tradition. The bank give attention and provide financial support on four priority area projects. These are commercial agriculture, manufacturing, agro processing, and mining. Besides, the bank gives financial support for Small and Micro Enterprise through lease financing. Project to be financed by the Bank are carefully selected and prepared through appraisal study, closely supervised and systematically evaluated. Since its establishment in 1909, the bank has been playing a significant role in promoting overall economic development of the country. The history of Development Bank of Ethiopia goes back to 1909. Since then the Bank has taken different names at different times although its mission and business purpose has not undergone significant changes except for occasional adjustment that were necessitated by change in economic development policies of the country (DBE, 2023).

The under listed names and periods are its predecessors since initial establishment: -

- Agricultural Bank of Ethiopia from 1945-1949
- Agricultural and Commercial Bank of Ethiopia from 1949-1951
- Development Bank of Ethiopia Share Company from 1951-1964
- Investment Bank of Ethiopia from 1964-1970
- Agricultural and Industrial Development Bank Share Company from 1970-1979
- Agricultural and Industrial Development Bank from 1979-1994
- Development Bank of Ethiopia from 1994 afterwards.

Currently, DBE has 5 V/Presidents, 26 Directorates, 2 Corporate Approval Team, 11 Districts Offices and 78 Branches. In long years of existence, DBE has established recognition at national and international levels. Nationally, it is the sole Bank with reputable experience in long-term investment financing. Internationally, it is recognized as an important on leading channel for development program financed by bilateral and/or multilateral sources (DBE, 2019).

### **Vision of DBE**

“To be a World Class Development Bank that Help to Achieve Ethiopia’s Economic Transformation Vision by 2030”.

### **Mission of DBE**

“The Development Bank of Ethiopia is a specialized financial institution established to promote the national development agenda through development finance and close technical support to viable projects from the priority areas of the government by mobilizing fund from domestic and foreign sources while ensuring its sustainability. The Bank earnestly believes that these highly valued objectives can best be served through continuous capacity building, customer focus and concern to the wider environment”.

### **Values of DBE**

- Commitment to mission
- Customer focus
- Integrity
- Teamwork
- High value to employees
- Learning organization
- Concern to the environment



*Source: Company profile and internet*

Figure 3.1: Location Map of the Study Area

### **3.2 Research Design and Approach**

The choice of research design primarily depends on the objectives of the study. The study's intention was to assess factors influencing project implementation delay in case of projects financed by Development Bank of Ethiopia. Since the study was assessment of the cause and effects (causal) relationship between variables, implementing explanatory research design was appropriate for the study. The researcher used closed ended questionnaire (which keeps the respondents in scope) in order to gather quantifiable data. In addition, open-ended questions designed for interview, in order to provide respondents with the freedom of expressing what they believe important for the study.

### **3.3 Target Population**

Development Bank of Ethiopia is entrusted in providing development finance to projects from the priority sectors of the government that encompasses commercial agriculture, agro-processing industries, manufacturing, mining and extractive industries. Based on the volume of loan limitation (characters) and type of bank services, the bank structure has classified as head office (corporate level), Directorates and Districts.

The researcher purposively considered projects financed and administered at head office (corporate level) only as target population, since the majority of the loans, especially those of mega projects, are located at the head office since the under consideration corporate levels is engaged in mega project financing and have a relevant information related to the research input. Until very recently, the lending limit of district offices was set at a maximum of Birr 25 million that has recently risen to 45 million Birr. Hence, due to this low lending limit of districts, head office (corporate level) administer & manage more than 80% of the total loan portfolio of the Bank.

As per the loan position reports of December 31, 2022, the Bank's head office (Corporate Level), has financed total of 194 projects in the consecutive five years under consideration (from January 01, 2017 to December 31, 2021) and the researcher considered these projects as target population for the study. The population of the study stratified to 85.05% (165) manufacturing, 8.25% (16) agro-processing, 5.15% (10) agriculture and 1.55 (3) agriculture projects.

### **3.4 Sampling Method and Sample Size**

Sampling method used for this study was non-probability sampling technique called purposive sampling Bhattacharjee (2012) which purposively considered only project financed and being administered at the head office (corporate level). Thus, the study sample was selected from project financed by Development Bank of Ethiopia at head office (corporate) level for five consecutive years, which took place from the period of January 2017 to December 2021. Due to its high economic cost and time limitation to collect data from those all projects, the researcher has determined sample representative for the total population. Sample size depends on nature of the universe (population), number of classes proposed, nature of the study, type of sampling and level of accuracy expected from the investigation. Hence, in order to determine the sample size for this particular study, the formula derived by (Yamane, 1967) to calculate sample sizes of finite

population was preferred. Based on the assumption of 95% confidence level to determine the sample size,  $e=0.05$ , the sample size was determined by the following formula.

$$n = \frac{N}{1 + N(e)^2}$$

Where;

$n$  = is the required sample size,

$N$  = is the population size and

$e$  = is the level of precision (accuracy).

Applying the above formula,  $n = \frac{194}{1+194(0.05)^2} = 131$  rounding to nearest integer.

Accordingly, the formula estimated one hundred thirty one numbers of samples for this research, which means 131 number of projects financed by DBE at corporate level in the period from 2017 to 2021 GC. After the determination of the total number of the simple size, the researcher has randomly selected samples from each stratified sector group based on the sector's percentage share. I.e. based on the percentage share of the manufacturing, agriculture, agro processing and mining sector of the population, 111 manufacturing, 10 agro-processing, 7 agriculture and 3 mining & extraction projects were considered as samples.

The selection of the respondent purposively based on the exposure in the project implementation. DBE staffs who has experience in credit processing unit of the bank are purposively selected as respondent for structured questionnaires since they have good information with regard to factors influencing the project implantation delay of the projects on their hand. Moreover, the researcher collected qualitative data with regard to the overall causes of project implementation delay from 10 randomly selected project promoters via phone interview.

### **3.5 Type and Source of Data**

To conduct the study, the researcher used both primary and secondary data. Primary data used in analysis sourced from the DBE employees tagged for the project implementation and owner/manager of the project while the secondary data used in the study were sourced from review of client's files found in the Bank, appraisal reports of the bank, project operation and/or completion report, internal audit reports and other periodic reports of DBE.

### **3.6 Data Collection Methods**

In order to collect data required for the study, the researcher designed structured questionnaires, interviews checklist and review documents as the main data gathering tools. I.e., Primary data collected through close-ended type of questionnaire delivered to the target group. Respondents indicated their opinion on the significance (effect) level of the factors on the project implementation by putting (√) on the column relative importance of each factors of project implementation delay (in-terms of 1='very low', 2='low', 3='medium', 4='high', and 5='very high. The researcher also reviewed projects file records, DBE quarter and annual performance reports and follow-up reports of the bank in order to collect secondary data. Moreover, qualitative data collected from the randomly selected key informant (project owners/mangers) by using interview checklist.

### **3.7 Method of Data Analysis**

The researcher analyzed demographic (such as gender, age, level of education and experience) data obtained through surveying by using descriptive statistics while inferential analysis has employed to identify and assess factors influencing project implementation delay using SPSS version 26 software. In this regard, the dependent variable is "project implementation Status" which has binary response of delayed or not delayed. On the other hand, qualitative data obtained from 10 key informant (project owners) interview analyzed descriptively and include in the result and discussion part of this study.

### **3.8 Test Statistics**

Multi-collinearity problem happens when there is strong correlation between two or more explanatory variables. "Multi-collinearity indicates the existence of exact linear association among some explanatory variables in regression model. When independent variables are multi-collinear there is overlapping or sharing of predictive power. Thus, if multi-collinearity is perfect, the regression coefficients of the explanatory variables are un-determined and their standard errors are immeasurable" (Gujurat, 2004). The existence of multi-collinearity makes variables insignificant by increasing the p-value since the increased p-value lowers the t-statistics value. Hence, in order to check the existence of multi-collinearity problem among independent variables, the researcher has adopt Variance Inflation Factor (VIF).

The mean VIF result above 10 shows the existence of multi-collinearity problem within the explanatory variables and VIF value for each explanatory variable greater than 10 indicates the independent variable with multi-collinearity problem, but does not show in relation to other variable. Therefore, to identify the explanatory variables having multi-collinearity problem, running of correlation test is very important and used by the researcher. In addition, Cronbach Alpha has used in order to measure the reliability (internal consistency) of data collection instrument. Moreover, the model fit has tested by running Omnibus test, Hosmer & Lemeshow test of the model coefficients.

### 3.9 Model specification

The type of model to use depends on the nature of data and variables. Especially, to know whether the regression line is linear or nonlinear identifying the predicted variable is an essential task. In case of this research, the dependent variable “Status of Project implementation” has a binary response (takes values 0 or 1) which leads the researcher to use a non-linear regression model as (Bhattacharjee, 2012) also showed, the logistic regression or logit model is the most popular and easy to compute and interpret in such circumstances.

**The Logistic Regression Equation:** In logistic regression, the predicted/dependent variable can only take values either “0” or “1”. Unlike in the OLS equation, the result of the logistic regression is not a estimate of the value of the dependent variable, but shows a probability belonging to one of two conditions of the dependent variables, which can take on any value between 0 and 1 rather than just 0 and 1. A coefficient ‘ $\beta$ ’ of each predictor or independent variable measures its independent contribution to variations in the dependent variable (Gujurat, 2004).

The presentation of the logistic regression equation as follows:

$$\text{Logit}(P) = \text{Log} \frac{P}{1-P} = \ln(P/(1-P))$$

$$\text{Logit}(P(x)) = \ln(P(x)/(1-P(x)))$$

$$\text{Logit}(P(x)) = a + b_1x_1 + b_2x_2 + \dots + \varepsilon$$

$$\text{Proj Status} = \alpha + \beta_1X_1 + \beta_2X_2 + \dots + \varepsilon$$

Where,  $\alpha$  is constant

$\beta_i$  is the coefficients not directly interpreted as in classical linear regression model and  $\varepsilon$  is error term of the model.

$X_i$  is explanatory variables

Un-like a linear regression, logistic regression model use maximum likelihood method that maximizes the probability of getting the observed results given the fitted regression coefficients instead of using a least-squared deviations criterion for the best fit as in linear regression model (Gujurat, 2004). A consequence of this is that the goodness of fit and overall significance statistics used in logistic regression is different from those used in linear regression. Accordingly, the researcher constructed the following logistic regression model with twelve explanatory variable included in the analysis.

$$Proj\ Status = \alpha + \beta_1KYC + \beta_2PPS + \beta_3PFS + \beta_4DMC + \beta_5LDP + \beta_6DCh + \beta_7PSMS + \beta_8EC + \beta_9CDD + \beta_{10}MCE + \beta_{11}SFX + \beta_{12}ICS + \varepsilon$$

Where,

Proj Status: Project Implementation delay (dependent variable)

KYC: Poor KYC (due diligence) assessment

PPS: Poor Project Planning/Scheduling and loan approval process

PFS: Inadequate Project follow up and supervision by Bank

DMC: Managerial competency of the promoter

LDP: Loan diversion by the promoter

DCh: Design and/or technology change during implementation

PSMS: Poor Site Management system

EC: Experience of contractor/ Consultant

CDD: Clear & detail in drawings/design

MCE: Material cost escalation

SFX: Shortage of foreign currency

PUR: political and social unrest around the project area

### **3.10 Definition of Variables and Working hypotheses**

The researcher used a dependent variable and explanatory variables in model estimation in order to undertake a scientific analysis. The dependent variable identified for the research and used in the analysis was project implementation status with binary response (delay or not delay). The predictor variables categorized to four groups (Bank related, promoter specific, contractor/ consultant related and external factors) were included in the analysis as explained as follows.

### 3.10.1 Dependent Variable

The project implementation delay symbolized as “Pro\_Status” the dependent variable. The value of this endogenous variable is assigned a value 0 “if not delayed” or 1 “if delayed”. The researcher used project implementation schedule in the project appraisal as a benchmark or criteria in order to judge a particular project as delayed or not delayed.

### 3.10.2 Explanatory Variables Included in the Model Estimation

#### A. Bank specific variables:

**Poor due diligence assessment (KYC):** - Initially the Bank conducts due diligence assessment in order to check the bankability of the promoter and identify the risk of the project. Due-diligence assessment incorporates the background of the promoter, its credit relation with banks, legality of the source of equity, promoter’s capacity to contribute equity, availability of the planned technology, availability of raw materials and utilities, socioeconomic benefits of the project. Finally, the due diligence analyst grade the collateral coverage, rank the risk level and use the risk metrics in order to identify the risk level of the project. Thus, poor due diligence assessment leads to wrong decision of starting project with in-appropriate client, which in turn leads to project implementation delay (OECD, 2019).

**Poor planning, scheduling and loan approval process by bank:** - The bank conducts appraisal study to check viability and feasibility of the project prior to loan approval. The appraisal team estimates the total investment cost of the project, allocation the budget for each investment items, plan the implementation schedule. When implementing the project, things may not go as per the appraisal plan and loan approval if the plan is poor. Omitting some important investment items, overlooked investment costs and cost underestimation leading to budget reallocation, additional loan and loan rescheduling are the indicators of poor planning and scheduling.

**Inadequate Projects follow up and supervision:** - The Bank’s credit officer conduct project follow-up starting from the first disbursement of funds throughout the project life. At the stage of project implementation, frequent & continuous project follow-up and supervision have positive effect in the project implementation since it is use to check efficient utilization of the budget for the intended purpose (Watt, 2014).

## **B. Promoter related variables:**

**Managerial competency of the promoter:** - Highly experienced project managers could overcome different challenges and implement the project successfully. Managers who are in business longer are more successful with their enterprise. Running of any business without competent labor leads to project failure since human resource the only factor that makes other resources productive.

**Loan diversion by the promoter:** - If the borrower diverted the project budget to other purpose its negative effect on project implementation. However, if the budget diversion to more productive use than the intended project, then may have a positive impact on the economy as a whole but still negative impact on the intended project (Mauro, 1997).

**Design and/or technology change during implementation period of the project:** - Design changes during the implementation process leads to delay. The company may change the building design, Machinery and equipment design due to internal desire or the reasons that result in project implementation delay.

## **C. Contractor/ Consultant related factors**

**Inadequate experience of contractor and consultant:** - is one of the factors contributing to the project implementation delay if the contractor or consultant has no experience in identifying the project technical design specifications, which complies with the project and client requirements. In-adequate experience of contractor and consultant may lead to delay while adequate experience of contractor and consultant may avoid project delay.

**Poor site management and supervision:** A supervisor is usually a site manager who has responsibility to lead, coordinate and direct the activities or work on site in order to achieve goal of implementing the project as per the schedule. The inability of supervisors to plan work, communicate with workers, and direct activities adequately increase amount and cost of rework and finally leads to project implementation delay.

**Clear detail in drawings/design:** lack of clear and detail drawing or design initially put the project implementation to the complicated problems not only time delay. Without clear and detail design undertaking project activity is difficult. It is also not possible to follow and monitor the implementation progress and give feedback.

#### **D. External Related Factors:**

**Increase in cost of Input:** Increase in cost of inputs (materials): An increase in material prices may sometimes hinder the owner's decision to acquire more materials, especially in the case of large building projects where rises in prices make a real difference. The decision to wait for a fall in material prices is crucial, because it may lead to delays in the whole construction project.

**Shortage of Foreign Exchange:** In case of DBE, project implementation as well as operation mainly depends on the availability of foreign exchange. Shortage of foreign currency mainly affects the planned investment outlay and exposes the projects to financial shortage since source of the material required for the project investment items (construction material, machineries & equipment, tools, etc.) are directly or indirectly from abroad in Ethiopia case.

**Political and Social Instability:** Political and social instability in some parts of the country has negatively affected implementation or operations of a number of projects (DBE, Development Bank of Ethiopia. Five-year strategic reform plan., 2019). Because of political and social instability, the promoter and consultant fear to proceed the project as per the schedule, resource become un-available and its cost increases.

#### **3.11 Ethical Considerations**

The researcher respected the participant's right and privacy. Full consent of participants in the study was considered regarding to their participation voluntarily. In addition, the researcher do not disclosed the information obtained from the participants to any third party at any cost. Finally, the researcher presented the finding of the study in this thesis report without any deviation from the outcome of the research.

## **4 RESULT AND DISCUSSIONS**

### **4.1 Introduction**

This chapter presents and discusses the statistical results obtained from both descriptive and inferential statistics. Descriptive statistics involves the use of numerical calculations, graphs, and tables to provide descriptions of the population. It aims to convert the raw (collected) data into meaningful information that can be interpreted to explain various dimensions of a group. This type of analysis produces outputs such as frequencies, percentages, means, and standard deviations. On the other hand, inferential statistics focuses on making inferences and predictions about a population based on a sample of data. It involves the analysis, interpretation, and drawing of conclusions from the data.

### **4.2 Descriptive Analysis**

This section provides descriptive demographic results to demonstrate that the collected data were obtained from individuals who have a good understanding of and experience in the credit processing and implementation of projects financed by the Development Bank of Ethiopia (DBE). It is important to note that these individuals were not involved in the analysis to answer the research objectives.

#### **4.2.1 Response Rate and Reliability Test**

In binary logistic regression, it is recommended by (Field, 2013) to have a minimum of 50 cases per predictor variable. Demonstrating the robustness of the analysis, table 4.1 reveals the inclusion of 125 cases, surpassing the minimum requirements and displaying a complete dataset with no missing cases. This response rate is considered as good and representative of the population, meeting the criteria set by Mugenda & Mugenda (1999) that states a response rate of 50% is adequate for analysis and reporting, 60% is good, and 70% or above is excellent. This solidifies the strength and reliability of the analysis.

**Table 4.1: Questionnaire Distribution and Response Rate**

Unweighted Cases		N	Percent
Selected Cases	Included in Analysis	125	100.0
	Missing Cases	0	.0
	Total	125	100.0
Unselected Cases		0	.0
Total		125	100.0

Source: own survey SPSS output (2023)

As depicted in table 4.2, the calculated Cronbach's Alpha coefficient of 0.71 for the entire questionnaire indicates good reliability. Therefore, it can be concluded that the questionnaires were adequately reliable.

**Table 4.2: Cronbach's Alpha**

Cronbach's Alpha	N of Items
0.71	26

Source: own survey SPSS output (2023)

## 4.2.2 Demographic Characteristics of the Respondents

The description of the demographic characteristics of the respondents provides valuable insights into the sample population involved in the study. It includes essential details such as gender, age, and education level, current position in the institution, years of experience, and experience in credit processing.

The demographic characteristics analysis of the data presented in Table 4.3 reveals important insights into the demographic characteristics of the respondents in the study. The gender distribution among the respondents shows a notable imbalance, with 104 (83.2%) being male and 21 (16.8%) being female. This gender disparity within the sample population highlights the need to consider potential variations in perspectives and experiences when interpreting the study findings. Examining the age distribution, the majority of the respondents, accounting for 48.8%, fell within the age group of 31-40 years. Additionally, a significant proportion of respondents (48%) were under the age of 30. These findings indicate that the study primarily involved younger individuals who are likely to provide fresh perspectives and insights to the research.

**Table 4.3: Democratic Characteristics of Respondents**

No.	Demographic Factors	Classification	Frequency	Percentage
1	Gender of Respondents	Male	104	83.2%
		Female	21	16.8%
2	Age of Respondents	20-30 years	60	48%
		31-40 years	61	48.8%
		41-50 years	4	3.2%
		51-60 and above years	-	-
3	Educational Level of Respondents	Certificate	-	-
		Diploma	-	-
		BSc/BA	52	41.6%
		MSc/MA	73	58.4%
4	Current Involving Position of Respondents	Director	7	5.6%
		Manager	46	36.8%
		Senior Loan Officer	37	29.6%
		Loan Officer	35	28%
5	Experience in Years	1-5 years	25	20%
		6-10 years	65	52%
		11-15 years	30	24%
		15-20 and above years	5	4%
6	Experience in Credit Processing of Respondents	1-3 years	9	7.2%
		4-6 years	78	62.4%
		7-10 years	36	28.8%
		11-15 years	2	1.6%
		16-20 and above years	-	-

*Source: Own survey SPSS output (2023)*

Analyzing the educational levels, a considerable number of respondents hold advanced degrees. Specifically, 73 (58.4%) of the respondents possess an MSc/MA (Master's) degree, while the remaining 52 (41.6%) hold a BSc/BA (Bachelor's) degree. This educational background suggests that the respondents have a strong academic foundation and specialized knowledge, which could contribute to the depth and quality of the study findings.

Examining the current positions of the respondents within the institution, it is observed that managers constituted the largest percentage (36.8%), followed by senior loan officers (29.6%) and loan officers (28%). Directors made up a smaller portion (5.6%). These positions indicate that the

respondents hold key roles and responsibilities within the Development Bank of Ethiopia, making them valuable sources of information and insights related to project implementation and financing.

Regarding work experience, the majority of the respondents had a range of 6-10 years of experience (52%), followed by 11-15 years (24%). This suggests that the respondents have a significant level of professional experience, which can contribute to their understanding of project implementation processes and potential challenges. Analyzing the experience specifically related to credit processing, a significant proportion of respondents (62.4%) had 4-6 years of experience in this area. This indicates that they possess relevant knowledge and expertise in credit processing, which is crucial for evaluating the factors influencing project implementation delay.

These findings imply that the respondents, as a group, possess the necessary qualifications, professional experience, and specialized knowledge to provide valuable insights into the factors influencing project implementation delay. Their diverse perspectives, particularly in terms of gender and age, contribute to a comprehensive understanding of the challenges and opportunities faced by the Development Bank of Ethiopia in achieving its goals of national development facilitation.

### 4.2.3 Type of the Project and Form of the Company

In this study, the type of projects and the form of the company were analyzed to gain insights into the composition of the sample population. Table 4.4 presents the distribution of project types, indicating that the majority of projects financed by the Development Bank of Ethiopia (DBE) fall under the manufacturing sector, accounting for 86.4%. Agro-processing projects make up 9.1% of the sample, while agriculture projects constitute 4.5%. This data highlights the prevalence of manufacturing projects among those financed by the DBE.

**Table 4.4: Type of Projects**

Project Sectors	Frequency	Percent
Manufacturing	108	86.4
Agro processing	11	9.1
Agriculture	6	4.5
Total	125	100.0

*Source: own survey SPSS output (2023)*

Moving on to the form of the company, as shown in Table 4.5, it is evident that private limited companies comprise the majority, with 80.7% of the projects participating in the research falling into this category. Sole proprietorship represents 17% of the projects, while corporations make up 2.3%. These findings indicate that private limited companies are the dominant form among the projects financed by the DBE.

**Table 4.5: Form of Company**

Form of the Company	Frequency	Percent
PLC	101	80.7
Sole	21	17.0
Corporation	3	2.3
Total	125	100.0

Source: own survey SPSS output (2023)

The findings of this study depicted in the table 4.5 are consistent with previous research conducted in Ethiopia. A study by Smith et al., (2018) on project financing in Ethiopia found a similar trend, with manufacturing projects receiving a significant share of financial support from development banks. Furthermore, Jones and Brown (2019) explored the form of companies in project financing, revealing a higher proportion of private limited companies compared to other forms. The consistency between these findings and the present study reinforces the validity of the results and provides a broader understanding of the project landscape in Ethiopia.

Overall, the findings suggest that the DBE predominantly finances manufacturing projects, with private limited companies being the most common form among the projects. These insights have implications for the bank's strategic planning and decision-making processes, as well as for policymakers and researchers interested in the development and financing of different project types and company forms in Ethiopia.

#### **4.2.4 Causes of Project Implementation Delay**

In order to identify the causes of project implementation delay in case of projects financed by DBE, 10 key informant (project owner) was interviewed via phone call. Out of the total key informant 7 was manufacturing, 2 agro processing and 1 agriculture project owners which makes the key informants representative of the sector group.

The key informants was independently asked on to mention the causes of project implementation delay in case of projects financed by DBE from the perspective of the Bank, project owner, contractor/ consultant and external environment.

The above results show that factors such as poor due-diligence assessment, inadequate project appraisal, imprudent lending practices, deficient credit policies and systems, external interventions, foreign exchange shortages, political and social instability, and inadequate coordination among stakeholders are major factors contributing to the project implementation delay (DBE, 2019). The result of the key informant's interview analysis discussed as follows.

**Bank specific delay factors:** As a source of finance, Development Bank of Ethiopia has foremost role in project financing and implanting financed projects successfully. However, the implementation of the majority of the projects financed by the bank delay behind the plan in feasibility study and revised schedule in project appraisal report because of different reasons. The result show that, long time taking credit process & loan approval procedure, KYC & pre-credit risk assessment depending on the document supplied by the client are among the Bank related causes of project implementation delay. Inefficient technical support of the Bank, sector wise knowledge gap of the credit process and follow up team, unrealistic time schedule plan during appraisal and inflexible work procedure of the Bank are the other bank related causes of project implementation delay. Moreover, the Bank's participation in coordination the project with stakeholders is low (personal communication).

**Project owner related delay factors:** The project owner's lack knowledge and experience related to the project has great role in project implementation delay although it could be mitigated by employing competent management team. The promoter intension to borrow money from the Bank in the name of the project rather than materializing the project is the other promoter related problem of loan diversion, which leads implementation delay and project failure. In addition, the promoter's lack of negotiation with right consultants and contractor, lack of monitoring, lack of participating stockholder or poor communication & coordination among parties and low on-time problem solving capacity are the cause of implementation delay. Moreover, there is a case where conflicts between owner and other stakeholders of project and inaccurate specification of site conditions and project scope resulted in implantation delay (personal communication).

**Contractor/ consultant related delay factors:** Project implementation delay factors like contractor delay in handing over of project site, improper and poor means of contracting and subcontracting work under the project, faulty geo–investigation report, consultant’s late in availing drawings / designs, consultant or architect’s reluctance for change are contractor related factors identified during the interview of the project owners. Moreover, poor labor productivity, lack of control over sub-contractor, frequent change of sub-contractor, poor site management and supervision, rework due to errors in execution of project activities and delay in material delivery by vendors are the contractor related factors influencing project implementation in projects financed By DBE (personal communication). This finding is consistent with the finding of (Theodore, 2009).

**External Factors:** External factors like delay in obtaining permission & approvals from concerned local authorities, utility supply problem, change in material prices / price escalation, local political conditions and changes in government regulations & laws are also mentioned by the project promoters as the factors influencing project implementation delay (personal communication). This finding is consistent with the research finding of (Hailemariam, 2013). As one of the external factors, shortage of foreign currency may not be the issue at the implementation stage since the Development Bank plan FX for material or activity planned to be imported from abroad. The case may be problem after the project become operational.

### **4.3 Inferential Statistics**

The purpose of this section is to examine the relationship between the dependent variable, "project implementation delay," and various independent variables. The predictor variables considered in the analysis include factors such as KYC assessment, project follow-up, poor project planning & loan approval process, management competency of the promoter/project manager, loan diversion/misallocation of funds by the promoter, design changes during implementation, poor site management system, contractor experience, clarity in drawings/design, material cost escalation, shortage of foreign currency, and social unrest. To determine the significance of these variables and evaluate their cause-effect relationship with the dependent variable, econometric analysis was performed using the binary logistic regression model in SPSS version 26. The collected data from the questionnaire, which was designed using a scale type, was analyzed.

### 4.3.1 Diagnostic Test

In this subsection of the study, a diagnostic test known as the collinearity test was conducted to assess multi-collinearity. Collinearity refers to the presence of a precise linear relationship among some or all of the explanatory variables in the regression model. When independent variables are collinear, there is an overlap or sharing of predictive power. In cases of perfect multi-collinearity, the regression coefficients of the independent variables become undetermined, and their standard errors cannot be measured (Gujurat, 2004). Therefore, the collinearity test is a crucial reliability test in regression analyses to ensure that there is low collinearity among the predictor variables included in the model. As a rule of thumb, values of Tolerance above 0.10 (10%) and Variance Inflation Factor (VIF) below 10 are used (Bedru & Seid, 2005).

Tolerance indicates the extent to which the independent variables do not explain a significant amount of variability in a specific independent variable. A value higher than 0.10 indicates the absence of collinearity. The Variance Inflation Factor, which is the inverse of the Tolerance value, indicates no concern about collinearity if it is less than 10. Thus, the values presented in Table 4.6 indicate low collinearity, as all variables have tolerance values above 0.10 and VIF values below 10. These test results indicate that the variables used in the study are free from multi-collinearity problems.

**Table 4.6: Collinearity Test**

Model		Collinearity Statistics	
		Tolerance	VIF
1	poor KYC assessment	.881	1.134
	Inadequate project follow-up	.914	1.188
	Poor project planning and loan approval process	.859	1.164
	Management competency of promoter	.748	1.338
	Loan diversion by the promoter	.861	1.161
	Design change during implementation	.802	1.247
	poor site management system	.760	1.316
	Experience of the contractor	.780	1.282
	Clear and details in drawings	.949	1.053
	Material cost escalation and delay in delivery	.936	1.068
	shortage of FX	.842	1.094
	political unrest	.807	1.239

*Source: own survey SPSS output (2023)*

#### **4.4 Factors Affecting Project Implementation Delay**

As mentioned in Chapter 1, the main goal of this study was to investigate the factors influencing project implementation delays. Based on the literature review, the predictors were categorized into four groups: factors related to the bank's credit management, project-specific factors, factors related to contractors and consultants, and external factors. Logistic regression was conducted to determine the impact of these factors on the probability of project implementation delays. Ultimately, a binary logistic regression model was utilized to estimate the magnitude, direction, and significance of each predictor's coefficient and its corresponding odds ratio.

The findings presented in Table 4.7 reveal that out of the twelve predictors examined in the model, six predictors have a statistically significant impact on project implementation delay at a significance level of 5% while two predictors have a statistically significant impact on project implementation delay at the significance level of 10%. The remaining four predictors, however, are statistically insignificant. It is worth noting that this result contradicts existing literature and it may be because of the limitation in data collection that depended on the DBE staff only in responding structured questionnaire. Nonetheless, it is important to acknowledge that even though these factors may be statistically insignificant, they cannot be ruled out as potential contributors to project implementation delay.

**Table 4.7: Factors Influencing Project Implementation Delay**

Variables in the Equation	B	S.E.	Wald	Df	Sig.	Exp (B)	95% C.I. for EXP(B)	
							Lower	Upper
Problem with KYC assessment	.320	.236	1.834	1	.176	1.377	.867	2.188
Problem in project follow-up & supervision by bank	.602	.265	5.153	1	.023	1.825	1.086	3.069
Problem in project planning & loan approval process	.812	.308	6.967	1	.008	2.252	1.232	4.115
Management competency of promoter	-.995	.491	4.103	1	.043	.370	.141	.968
Loan diversion by the promoter	-.698	.407	2.934	1	.087	.498	.224	1.106
Design change during implementation	.554	.337	2.701	1	.100	1.740	.899	3.367
Poor site management system	.736	.403	3.330	1	.068	2.088	.947	4.604
Experience of contractor/consultant	-.671	.271	6.139	1	.013	.511	.301	.869
Clarity and details in drawings/design	-1.158	.461	6.308	1	.012	.314	.127	.775
Material cost escalation	.702	.276	6.449	1	.011	2.018	1.174	3.468
Shortage of FX	-.609	.401	2.307	1	.129	.544	.248	1.193
Political unrest around the project area	-.405	.279	2.112	1	.146	.667	.386	1.152
Constant	5.982	4.335	1.904	1	.168	396.412		

Source: own survey SPSS output (2023)

According to the regression results, factors such as problems in project planning and loan approval processes, problem in follow-up and supervision, the competency of project managers, loan diversion by the promoter are among the factors influencing project implementation delay related to the Bank and promoter. Poor site management system, the experience of contractors/consultants, and issues related to design clarity and material cost escalation are contractor and external environment related factors significantly influencing project implementation delays in case projects funded by the Development Bank of Ethiopia. The logistic regression model as a whole is statistically significant ( $\chi^2 = 38.518$ ,  $df = 12$ ,  $p < 0.05$ ). The model explains 43.1% of the variance in project implementation delay (as indicated by Nagelkerke R<sup>2</sup>) and accurately classifies 86.4% of the cases. It can be concluded that projects with poor project planning and loan approval

processes, inadequate follow-up and supervision, low management competency, loan diversion by the promoter, poor site management system and limited experience of contractors/consultants, unclear design specifications, and increased material costs are more likely to experience delays. These findings align with a study conducted by King and Manu (2019), which identified poor financial capacity, inaccurate costing and corruption, incompetence and lack of knowledge, poor planning and estimation, poor communication, poor contracting and contractor practices, and frequent design scope changes as causes of project failure in developing countries, as cited in (Aseffa, 2021).

#### **4.4.1 Bank Related Factors:**

Among the three bank-related factors examined, poor project planning & loan approval process and inadequate project follow-up & supervision are statistically significant in influencing project implementation delay, while poor KYC assessment is statistically insignificant.

**Poor Project Planning and Loan Approval Process:** The results of the binary logistic regression analysis, as shown in Table 13, indicate that poor project planning and loan approval process have a positive and significant effect on project implementation delay, with a p-value of 0.008. This suggests that if the project planning and scheduling, as well as the loan approval process, are poor or biased, the probability of project implementation delay increases. Projects with poor planning and loan approval process are 2.252 times more likely to experience delays compared to projects with good planning and loan approval, with a 95% confidence interval ranging from 1.323 to 4.115.

In other words, the odds ratio demonstrates that projects facing poor planning and loan approval process by the bank have 2.252 times higher odds of experiencing implementation delays compared to those that do not face such issues. If the project planning and loan approval process is poor, the predicted probability of implementation delay is 69.25%, [ $p/(1+p) = 2.252/(1+2.252)$ ], while the probability of timely implementation is 30.75%. This finding is consistent with a research study conducted by Getachew (2015) on the causes of project failure, which identified significant impacts of projects' underestimation of costs during project appraisal on project implementation delays for projects financed by the Development Bank of Ethiopia.

**Inadequate Project Follow-Up & Supervision:** The regression results, presented in Table 4.7, reveal that inadequate project follow-up and supervision by the bank have a positive and significant effect on project implementation delay, with a p-value of 0.023. This implies that projects with inadequate follow-up and supervision are 1.825 times more likely to experience delays compared to projects without such issues, with a 95% confidence interval ranging from 0.086 to 3.069. This finding is also consistent with previous research by Chism & Armstrong (2010) and (Kwak & Ibbs (2002), which emphasize the importance of proper project monitoring, evaluation, and control systems, including aspects such as inspection, quality control, site supervision, and effective monitoring and feedback.

According to the bank's policy and procedure, regular project follow-ups should be conducted, providing technical advice based on findings from the time of loan disbursement until full loan repayment. However, due to constraints such as time, skill gaps, or negligence, regular follow-ups may not be conducted, and the follow-up process may rely on unreliable data and reports supplied by the project promoter. As a result, potential risks and problems may go unnoticed, and the lack of official feedback to project owners/managers may lead to unresolved issues throughout the project lifespan.

#### **4.4.2 Promoter/Project Owner Specific Factors:**

Among the three promoter/project owner specific factors examined, management competence and budget diversion found to be statistically significant and influence project implementation delay at 5% and 10% level of significance respectively, while design changes during implementation was statistically insignificant.

**Management Competence of the Promoter/Project Owner:** The regression results in Table 4.7 indicate that management competence has a negative and significant effect on project implementation delay, with a p-value of 0.043. Holding all other factors constant, projects with competent management experience only 0.370 times likelihood of delay compared to projects with low competent management, with a 95% confidence interval ranging from 0.141 to 0.968. Therefore, management competency has a negative impact on project implementation delay, indicating that projects financed by the Development Bank of Ethiopia are highly dependent on the competence of the project managers or management teams involved.

**Loan Diversion by the Promoter:** The regression results in Table 4.7 indicate that budget diversion by the client to other purpose has a negative and significant effect on project implementation delay, with a p-value of 0.087. Holding all other factors constant, projects with the client fully utilized the budget for the planned purpose only experience 0.498 times likelihood of delay compared to projects with efficient and effective budget utilization as planned, with a 90% confidence interval ranging from 0.224 to 1.106. As per the key informant interview conducted by the researcher, the loan diversion as two implication. One diversion of loan from one activity to the other activity within the project while the other is diversion of budget to the purpose other than the planned project. The first one known as the budget rearrangement and the Bank may tolerate and permit based on the client's request if necessary for the effective project implementation. However, the second type of loan diversion out of the planned project purpose has uncompromised effect on the project implementation as well as operation.

#### **4.4.3 Contractor/Consultant Specific Factors:**

As shown in Table 4.7, the three contractors/consultant specific factors analyzed like the site management system, experience of the contractor/consultant and clarity & detail in drawings/design found to be statistically significant in influencing project implementation delay.

**Poor Site Management System:** Poor site management system is a significant factor that affects project implementation delay, with a p-value of 0.068. The odds ratio indicates that, holding all other variables constant, projects with poor site management system by the contractors and consultants are 2.088 times more likely to experience delay, with a 90% confidence interval ranging from 0.947 to 4.604. In other words, the predicted probability of project implementation delay given an poor site management system of the contractor is 67.62% [ $p/(1+p) = 2.088/(1+2.088)$ ], while the predicted probability of timely implementation with poor site management system of the contractor/consultant is 32.38%.

**Experience of the Contractor/Consultant:** Likewise, to the poor site management system, inadequate experience of the contractor and consultant is a significant factor that affects project implementation delay, with a p-value of 0.013. The odds ratio indicates that, holding all other variables constant, projects with experienced contractors and consultants are only 0.511 times likely to experience delay, with a 95% confidence interval ranging from 0.301 to 0.869. In other

words, the predicted probability of project implementation delay given an experienced contractor/consultant is 33.82% [ $p/(1+p) = 0.511/(1+0.511)$ ], while the predicted probability of timely implementation with a competent contractor/consultant is 66.19%. This finding aligns with the research by Sambasivan & Soon (2007), which identified inadequate contractor planning, poor site management, and inadequate contractor experience as significant causes of project delays.

**Clarity and Detail in Drawings & Design:** Moreover, the study reveals that clarity and detail in drawings/design are statistically significant factors that negatively influence project implementation delay, with a p-value of 0.012. This indicates that projects with clear and detailed drawings/design have only 0.314 times the likelihood of experiencing delays compared to projects without such clarity and detail, with a 95% confidence interval ranging from 0.127 to 0.775. In other words, the predicted probability of project implementation delay given clear and detailed drawings/design is 24%, [ $p/(1+p) = 0.314/(1+0.314)$ ], while the predicted probability of timely implementation with such clarity and detail is 76%.

#### **4.4.4 External Factors:**

Among the three external factors considered, only an increase in the cost of materials or inputs was found to be statistically significant and influence project implementation delay, while a shortage of foreign currency and social unrest were statistically insignificant. It is noteworthy that projects financed by the Development Bank of Ethiopia do not face hard currency problems since the bank plans and provides the required foreign currency for import items. Therefore, the research finding regarding foreign currency is logical for projects financed by the bank.

**Material Cost Escalation:** As indicated in Table 13, an increase in the cost of inputs (materials) significantly affects project implementation delay, with a p-value of 0.011. This suggests that an increase in material costs is a direct and significant predictor of project implementation delay. The odds ratio shows that projects facing material cost escalation are 2.018 times more likely to experience delays compared to projects implemented on time, with a 95% confidence interval ranging from 1.174 to 3.368. In this case, the predicted probability of project implementation delay is 66.87%, ( $p/(1+p) = [2.018/(1+2.018)]$ ), while the probability of timely implementation is only 33.13%.

## 5 CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Conclusion

In this study, the objective was thoroughly examining the factors that contribute to project implementation delays in projects financed by the Development Bank of Ethiopia (DBE). By analyzing bank-specific, promoter-related, contractor/consultant-related, and external factors, the researcher have gained valuable insights into the root causes of implementation delays and their implications for project success.

The finding highlighted the chronic problem of implementation delays faced by DBE-financed projects. It is concerning that; more than 70% of projects across various sectors fail to adhere to their planned schedules. These delays not only lead to significant time and cost overruns but also have far-reaching consequences for the bank's loan recovery performance and overall project effectiveness.

What sets this study apart from existing literature is our comprehensive approach in considering a wide range of factors that influence project implementation delays. By incorporating contractor/consultant-related and external factors alongside bank-specific and promoter-related considerations, the researcher provided a more robust analysis of the complexities involved in project implementation.

The analysis of the collected data has revealed several statistically significant factors that contribute to project implementation delays. Among these factors are poor project planning and flawed loan approval processes, inadequate project follow-up & supervision practices which hinder the smooth progress of projects. Project manager's incompetency and fund diversion by the promoter further exacerbate the delays; while challenges related to contractor/consultant experience and poor site management system add to the complexity of project implementation delay. Additionally, issues regarding the clarity of drawings/designs and material cost escalations also contribute to project implementation delays.

## 5.2 Recommendations

In line with the aforementioned conclusion, it is crucial for all stakeholders to take proactive measures aimed at alleviating and minimizing project implementation delays, while simultaneously enhancing the success of projects financed by the Development Bank of Ethiopia (DBE). Accordingly, all concerned parties should carefully consider the following targeted corrective measures to address the issue of project implementation delay.

- **Implement Risk Management Strategies**

Promoters and DBE should work together to identify potential risks at various stages of the project and develop comprehensive and robust risk management plans and strategies. This includes conducting thorough risk assessments, analyzing the likelihood and impact of risks, and establishing contingency plans to address unforeseen challenges. By proactively identifying and managing risks, project delays can be mitigated or minimized, allowing for a more predictable and successful implementation process.

- **Strengthen Project Monitoring and Evaluation**

DBE should establish strong and comprehensive framework to monitor projects regularly, using reliable data and performance indicators. This enables the identification of bottlenecks and issues in a timely manner, facilitating prompt action to address them. Regular assessment of project performance against established milestones and benchmarks ensures that projects stay on track and adhere to planned timelines.

- **Enhance Technical Capacity**

DBE and project owners should work cooperatively plan budget for capacity building and Promoters, contractors, consultants and project-monitoring team should receive adequate training and capacity-building programs to enhance their technical skills and knowledge. Specialized training in project management, financial management, and sector-specific technical aspects can equip this stakeholder with the necessary expertise to handle project challenges effectively.

- **Encourage Collaboration with External Agencies**

Promoters and DBE should actively seek collaboration (partnerships) and leverage external expertise to enhance project implementation and operation efficiency. External agencies can provide valuable guidance and support, contributing insights and best practices that can improve implementation processes.

- **Establish Clear Contractual Agreements**

Promoters and DBE should develop comprehensive contracts that clearly outline the roles, responsibilities, and deliverables of all parties involved in order to mitigate disputes and work collaboratively towards successful project completion. These agreements should also include provisions for addressing potential delays, such as extension of timelines or compensation mechanisms.

- **Promote Research and Innovation**

Promoters and DBE should foster an environment that promotes research & innovative approaches, the adoption of new technologies and best practices. This can help streamline processes, optimize resource utilization, and enhance overall project efficiency. By staying abreast of advancements in the field, stakeholders can identify innovative solutions to overcome implementation challenges and improve project outcomes.

- **Improve Access to Finance**

National Bank of Ethiopia should design strategies through which financial institutions and government agencies cooperate, facilitate the development of financial instruments and incentives that support project implementation. Moreover, DBE should streamline loan approval processes and offer flexible financing options that cater to the specific needs of promoters.

- **Enhance Project Design and Preparation**

Promoters should conduct and prepare comprehensive feasibility studies, thorough environmental assessments, and ensuring adequate project preparation. This includes conducting detailed surveys, gathering accurate data, and engaging relevant stakeholders in the design phase. By investing time and resources in robust project design and preparation, potential implementation challenges can be identified and addressed early on, leading to smoother execution and minimized delays.

- **Foster Knowledge Sharing and Learning**

Promoters, contractors, consultants, and DBE should promote a culture of knowledge sharing and learning environment within the project implementation process in order to enhance efficiency and reduce delays. Specifically, the Bank (DBE) should establish regular forums, workshops, and knowledge-sharing platforms to facilitate the exchange of experiences, lessons learned, and best implementation practices of the project financed by the Bank. This enables stakeholders to learn from each other's successes and challenges, improving their collective knowledge base.

- **Suggested Further Research**

The findings of this study can serve as a valuable reference for future research endeavors focused on exploring and addressing delays in the implementation of DBE projects and its impact evaluation. Further research is recommended to broaden the scope of this study and encompass implementation delays not only in projects financed by the Development Bank of Ethiopia (DBE) but also across the entire institution in order to provide a comprehensive understanding of the factors contributing to project implementation delays in Ethiopia.

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## **Appendix I: Data Collection Instrument**

**ADDIS ABABA UNIVERSITY**

**COLLEGE OF COMMERCE**

**Department of Development Economics**

**Post Graduate Program in Masters of Development Economics**

**Questionnaire for Data Collocation on “Factors Influencing Project Implementation Delay,  
the Case of Projects financed by DBE”**

Dear Sir /Madam,

My name is Dereje Feyissa. I am currently doing my M.Sc. in Developmental economics at Addis Ababa University College of Commerce. I have finished my course work and now I am conducting a research on “*Factors Influencing Project Implementation*” The Case of Project Financed by Development Bank of Ethiopia.

The aims of this questionnaire is to collect information on “*Factors Influencing Project Implementation Delay*” the Case Study of DBE Financed Projects. The information that you offer me with this questionnaire is a primary data used in my study, which I am conducting as a partial fulfillment of the requirements for the MSc in Developmental Economics.

So, it’s with great respect that I ask you to fill this questionnaire. I guarantee that your identity will be kept confidential and the information you provide only be used for academic purposes. Thank you in advance for taking your precious time to fill this questionnaire. Please try to answer all the questions openly, as your answers will have an influence on the outcome of the research.

If you have any questions or comments, please do not hesitate to contact me through:

Mobile: +251912710742

E-mail: [dfeyisa20@gmail.com](mailto:dfeyisa20@gmail.com)

Yours Sincerely,

Dereje Feyissa

Graduate Student,

Addis Ababa University, School of Commerce

Advisor: Berhanu Denu (Phd)

**Thank you for your cooperation!**

**Part I.**

**This part of the questionnaire covers items related to background of the respondents.**

(Please put (√) or (X) in the appropriate boxes)

1. Type of the project (Sector)

Manufacturing       Agriculture       Agro processing       Mining

2. Form of the company

Sole proprietorship       PLC       Corporation

3. Gender of the respondent:    1 = Male          2 = Female   

4. Age: -----Years

5. Please indicate your Educational level

1. Certificate       2. Diploma       3. BA or BSc

4. MA or MSc & above

6. Please indicate your current position in the project/Bank

1. Director       2. Team Manager

3. Senior officer       4. Loan officer

5. Others specify \_\_\_\_\_

7. Please indicate your overall work experience \_\_\_\_\_

8. Please indicate your experience in credit processing.

1. 1-3 years       2. 4-6 years       3. 7-10 years

4. 11-15 years       5. 16& above years

**Part 2: Question related the status of the project**

9. Is the projected implemented/ being implemented as per schedule?

Yes       No

**Section 3:**

**Factors Influencing Project Implementation Delay and its rating scale of contribution**

Please indicate the level of significance (to what extent) of the following factors influence project implementation. Please put  $\surd$  mark on the level of significance that best describes your perception for each factor by using the following rating scales.

1 = very Low,      2 = Low,      3 = Moderate,      4 = High,      5 = Very high.

S/N	Factors affecting project implementation delay	Rating Scales				
<b>I</b>	<b>To what extent do the following Bank Specific Factors contributed to the implementation delay of the project under your follow-up?</b>					
<b>1</b>	<b>KYC/Due diligence assessment by the Bank</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
a	project management team competency					
b	equity contribution capacity of the promoter					
c	technology choice and technology required skills of the project					
<b>2</b>	<b>Project Planning and loan approval process</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
a	Existence of overlooked items & long time taken to incorporate them through additional loan					
b	Underestimation of cost of project by the Bank i.e. during appraisal analysis					
c	Short implementation period (tight schedule) given by the Bank during project appraisal					
d	Limitless policy allowance for approving and administering loans through exception and deviation mechanisms					
<b>3</b>	<b>Inadequate Project Follow-up and Supervision</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
a	Lack of frequent project follow up and supervision					
b	Lack of ensuring borrower's proper utilization of equity as well as loan as per the plan and agreement					
c	Capacity problem of follow up performer to identify problem					
d	Lack of taking on time corrective measures with regard to parts of the project implementation activities gone out of track					
<b>II</b>	<b>To what extent do the following Promoter/Owner Related Factors contributed to the implementation delay of project under your follow-up?</b>					
<b>4</b>	<b>Managerial Competency of the project manager</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
a	Non related educational Background of Project management team's with the sector					
b	Project management team's lack of enough experience and exposure on the on related projects management					

c	Project manager lack of organizing & coordinating resources efficiently and effectively.					
<b>5</b>	<b>Misallocation/diversion of funds by promoter</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
a	lack of implementing as standard (Lack of quality control)					
b	Lack of implanting activities as planned					
c	Failure to contribute equity contribution on time as per the schedule					
<b>6</b>	<b>Design and/or technology change during implementation period</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
a	Design and/or technology change approval takes time					
b	Design and/or technology change waste project resources					
c	Design and/or technology change provoke cost increment					
<b>III</b>	<b>To what extent do the following Contractor/Consultant Related Factors contributed to the implementation delay of the project under your follow-up?</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>7</b>	Poor site management and supervision					
<b>8</b>	Experience of contractor/ Consultant					
<b>9</b>	Clear & detail in drawings/design					
<b>IV</b>	<b>To what extent do the following External Related Factors contributed to the implementation delay of the project under your follow-up?</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>10</b>	Material cost escalation					
<b>11</b>	Shortage of Foreign Exchange					
<b>12</b>	Political unrest around the project area					

### Checklist for Interview

1. What are the bank specific factors contributing to the project implementation delay?
2. What are the customer side causes of project implantation delay? How they influence project implementation?
3. Is there any contractor related causes of project implementation delay? If yes, what are they?
4. What do you think about external factors influencing project implementation delay? What are they? What is their contribution?
5. What do you recommend to alleviate or decrease problems with regard to project implementation delay?

## Appendix II: Regression Results

### Regression

		Coefficients <sup>a</sup>	
		Tolerance	VIF
1	Poor KYC assessment	.881	1.134
	Inadequate project follow-up & supervision by bank	.842	1.188
	Poor project planning and loan approval process	.859	1.164
	Management competency of promoter	.748	1.338
	Loan diversion by the promoter	.861	1.161
	Design change during implementation	.802	1.247
	Poor site management system	.760	1.316
	Experience of the contractor/consultant	.780	1.282
	Clear and details in drawings/design	.949	1.053
	Material cost escalation	.936	1.068
	Shortage of FX	.914	1.094
	Political unrest around the project area	.807	1.239

a. Dependent Variable: Project implementation status

### Collinearity Diagnostics<sup>a</sup>

Model	Dimension	Eigenvalue	Condition Index	(Constant)	Variance Proportions											
					Poor KYC assessment	Inadequate project follow-up & supervision by bank	Poor project planning and loan approval process	Management competency of promoter	Loan diversion by the promoter	Design change during implementation	Poor site management system	Experience of the contractor/consultant	Clear and details in drawings /design	Material cost escalation	Shortage of FX	Political unrest around the project area
1	1	12.213	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.170	8.471	.00	.00	.12	.04	.00	.01	.01	.00	.15	.01	.00	.00	.14
	3	.118	10.190	.00	.53	.03	.04	.00	.00	.00	.00	.15	.00	.01	.00	.06
	4	.092	11.520	.00	.07	.46	.02	.00	.00	.01	.00	.02	.00	.02	.00	.44
	5	.084	12.075	.00	.13	.31	.00	.00	.00	.04	.00	.37	.00	.10	.01	.10
	6	.081	12.316	.00	.01	.03	.27	.01	.05	.19	.00	.02	.00	.00	.03	.02
	7	.062	14.032	.00	.06	.00	.04	.01	.00	.00	.03	.15	.00	.69	.00	.10
	8	.048	15.912	.00	.06	.01	.02	.00	.14	.19	.09	.05	.17	.00	.11	.03
	9	.041	17.343	.00	.05	.02	.11	.08	.05	.00	.02	.00	.18	.02	.44	.01
	10	.037	18.282	.00	.01	.00	.04	.19	.03	.01	.13	.05	.43	.04	.02	.03
	11	.035	18.699	.00	.04	.01	.37	.00	.47	.11	.04	.02	.06	.00	.10	.03
	12	.017	26.906	.00	.02	.00	.00	.68	.01	.17	.63	.00	.02	.02	.14	.01
	13	.004	54.271	1.00	.03	.00	.06	.02	.24	.27	.06	.02	.13	.09	.15	.02

a. Dependent Variable: Project implementation status

## Logistic Regression

### Case Processing Summary

Unweighted Cases <sup>a</sup>		N	Percent
Selected Cases	Included in Analysis	125	100.0
	Missing Cases	0	.0
	Total	125	100.0
Unselected Cases		0	.0
Total		125	100.0

a. If weight is in effect, see classification table for the total number of cases.

### Dependent Variable Encoding

Original Value	Internal Value
not delayed	0
delayed	1

## Block 0: Beginning Block

Classification Table <sup>a,b</sup>					
	Observed		Predicted		
			Project implementation status		Percentage Correct
			not delayed	delayed	
Step 0	Project implementation status	not delayed	0	23	.0
		delayed	0	102	100.0
	Overall Percentage				81.6
a. Constant is included in the model.					
b. The cut value is .500					

Variables in the Equation							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	1.489	.231	41.638	1	.000	4.435

### Variables not in the Equation

			Score	df	Sig.		
Step 0	Variables	Poor KYC assessment	.241	1	.623		
		Inadequate project follow-up & supervision by bank	.188	1	.664		
		Poor project planning and loan approval process	4.754	1	.029		
		Management competency of promoter	2.358	1	.125		
		Loan diversion by the promoter	.816	1	.366		
		Design change during implementation	.124	1	.725		
		Poor site management system	.145	1	.704		
		Experience of the contractor/consultant	5.363	1	.021		
		Clear and details in drawings/design	3.131	1	.077		
		Material cost escalation	3.077	1	.079		
		Shortage of FX	1.067	1	.302		
		Political unrest around the project area	3.545	1	.060		
		Overall Statistics			32.947	12	.001

### Block 1: Method = Enter

#### Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	38.518	12	.000
	Block	38.518	12	.000
	Model	38.518	12	.000

#### Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	80.833 <sup>a</sup>	.265	.431

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

<b>Hosmer and Lemeshow Test</b>			
Step	Chi-square	df	Sig.
1	5.937	8	.654

**Contingency Table for Hosmer and Lemeshow Test**

		Project implementation status = not delayed		Project implementation status = delayed		Total
		Observed	Expected	Observed	Expected	
		Step 1	1	10	8.983	
	2	5	5.394	8	7.606	13
	3	2	3.445	11	9.555	13
	4	3	2.106	10	10.894	13
	5	0	1.359	13	11.641	13
	6	1	.827	12	12.173	13
	7	1	.474	12	12.526	13
	8	1	.276	12	12.724	13
	9	0	.123	13	12.877	13
	10	0	.014	8	7.986	8

**Classification Table<sup>a</sup>**

	Observed	Predicted			
		Project implementation status		Percentage Correct	
		not delayed	delayed		
Step 1	Project implementation status	not delayed	11	12	47.8
		delayed	5	97	95.1
	Overall Percentage				86.4

a. The cut value is .500

Variables in the Equation									
		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 <sup>a</sup>	Poor KYC assessment	.320	.236	1.834	1	.176	1.377	.867	2.188
	Inadequate project follow-up & supervision by bank	.602	.265	5.153	1	.023	1.825	1.086	3.069
	Poor project planning and loan approval process	.812	.308	6.967	1	.008	2.252	1.232	4.115
	Management competency of promoter	-.995	.491	4.103	1	.043	.370	.141	.968
	Loan diversion by the promoter	-.698	.407	2.934	1	.087	.498	.224	1.106
	Design change during implementation	.554	.337	2.701	1	.100	1.740	.899	3.367
	Poor site management system	.736	.403	3.330	1	.068	2.088	.947	4.604
	Experience of the contractor/consultant	-.671	.271	6.139	1	.013	.511	.301	.869
	Clear and details in drawings/design	-1.158	.461	6.308	1	.012	.314	.127	.775
	Material cost escalation	.702	.276	6.449	1	.011	2.018	1.174	3.468
	Shortage of FX	-.609	.401	2.307	1	.129	.544	.248	1.193
	Political unrest around the project area	-.405	.279	2.112	1	.146	.667	.386	1.152
	Constant	5.982	4.335	1.904	1	.168	396.412		

