ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS & ECONOMICS

DEPARTMENT OF MANAGEMENT

CAUSES OF FAILURE OF PROJECTS FINANCED BY DEVELOPMENT BANK OF ETHIOPIA: THE CASE OF CORPORATE CREDIT PROCESS

A Research Project Submitted to the Department of Management in Partial Fulfillment of the Requirements for the Degree of Executive Master of Business Administration

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In Partial Fulfillment of the Requirements for EMBA Degree

Approved by Board of Examiners

_____	_____	_____
Advisor	Signature	Date
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External Examiner	Signature	Date

DECLARATION

I, the undersigned, declare that this research project paper is my original work and prepared under the guidance of my advisor, Dr.Yibarek Takele. All the materials used for the study have
been fully acknowledged.

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Name of Student	Signature	Date

STATEMENT OF CERTIFICATION

This is to certify that Yilkal Getachew has carried out his research work on the topic entitled "Causes of Failure of Projects Financed by Development Bank of Ethiopia: The Case of Corporate Credit Process". The work is original in nature and is suitable for submission for the award of Executive Master of Business Administration.

Advisor: _____

Signature: _____

Date: _____

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ACRONYMS/ABBREVIATIONS

ANOVA = Analysis of Variance

B =Logistic Coefficient

BSC =Balanced Scorecard

CCP =Corporate Credit Process

DA =Discriminant Analysis

DBE =Development Bank of Ethiopia

df =Degree of Freedom

GDP =Gross Domestic Product

GTP =Growth & Transformation Plan

LL =Log-Likelihood

LR =Logistic Regression

MDGs =Millennium Development Goals

N =Number

PMBK =Project Management Body of Knowledge

SE =Standard Error

Sig =Significance

SPSS =Statistical Package for the Social Sciences

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Abstract

Corporate Credit Process (CCP) of DBE is the major lending unit of the Bank and through which more than 75% of the total annual lending amount of the Bank has been granted to borrowers. However, failure of projects financed by the Process is becoming a big problem. According to the annual performance report of DBE (2013), 72% of the projects financed by the Process were under failure category. Hence the objective of this research project was to identify the major causes of failure of projects that were financed by CCP of DBE. Document analysis was employed to identify the major causes. As a result, technical support given by the Bank, implementation delay, project's manpower quality and overestimation of project's return were found to be the major causes of failure of projects that were financed by the Process. 80 projects, of which 40 were failed projects while the rest were successful projects, were selected for the study. The sample projects were from the three economic sectors, agriculture, industry and service. After collecting the required data, a regression analysis using the logistic regression model and comparison of the mean between and within these economic sectors using ANOVA had been conducted. The results of the analysis had shown that implementation delay, overestimation of project return and manpower quality of projects are found statistically significant while technical support given by the Bank was found statistically insignificant for failure/success of projects that were financed by CCP of DBE. Moreover, the highest ratio of project failure was found to be in the agricultural sector while the lowest ratio was registered in the service sector.

Key Words: Project failure/success, Corporate Credit Process, Development Bank of Ethiopia

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

The long term vision of Ethiopia is sustaining rapid, broad based and equitable economic growth to become a middle income country by 2025. Accordingly, Growth & Transformation Plan (GTP), a medium term national development framework for five-year period (2010/11-2014/15) has been launched. It is directed towards achieving the Millennium Development Goals (MDGs) so as to meet the above stated vision and eventually to end poverty (Annual Performance Report of Development Bank of Ethiopia, 2013).

Development Bank of Ethiopia (DBE) as one of the development institutions in the country is a financial institution established to support the economic development of the country by providing project finance; in particular for projects that support socio-economic development of the country. The Bank provides project finance through its five regional offices and Corporate Credit Process of the Bank. The DBE support is mainly focused at the national goal to accelerate the progress of the country‟s development effort so as to bring sustained economic growth. So as to meet this core objective, projects that are financed by the Bank should be successful or achieve the objectives for which they are established. According to the annual performance report of the Bank (2013), project success is evaluated using different dimensions including employment creation capacity, tax payment to the government, percentage of generating foreign currencies, local raw material consumption, agro-processing and technology transfer for the local economy.

So, in order to achieve this objective, DBE requires the successful implementation of projects. However many projects are being found under failure category (Annual Performance Report of DBE, 2013).

Failed projects are increasing the sunk cost of the country since fixed investments of the projects are specific to intended purpose and difficult to liquidate or require high switching cost. Moreover, it depletes the fund available for loan that the Bank could finance other projects that may have significant importance for economic growth of the country.

Hence the objective of this study is to identify major causes of project failure that are financed by Corporate Credit Process of the Bank and assist the management in achieving the core objective of the Bank which is creating successfully operating projects by forwarding appropriate recommendations.

1.2 Statement of the Problem

According to the Corporate Balanced Scorecard of DBE (2010), promoting the national development agenda through project finance is the mission of DBE. Hence, in order to achieve this mission, projects financed by the Bank should have been operated successfully.

However, failure of projects financed by the Bank becomes a big challenge to achieve the stated mission. According to the annual performance report of the Bank (2013), the percentage of successfully operating project of the Bank as at June 30, 2013 is stood at 31% and it falls down to 28% at the Corporate Credit Process of the Bank which is the main credit processing unit of the Bank and through which more than 75% of the total annual lending amount of the Bank is granted to borrowers. Hence, putting differently, 69% and 72% of the projects that are financed by the Bank as a whole and Corporate Credit Process are categorized under failure category respectively. From this figure we can easily understand that failure of projects in the Bank is becoming a very serious issue that should be given due attention. By understanding the seriousness of the problem, the Bank has set a vision of "100% success for all financed projects by 2020" (Corporate BSC, 2010). Hence in order to achieve this vision, the Bank has to overcome failure of projects by identifying the root causes.

Therefore, this research project is aiming at identifying the major causes of failure of projects that are financed by Corporate Credit Process of the Bank, testing their magnitude & direction of relationships with project failure/success, examining the variations of failure/success of projects between and within sectors and forwarding appropriate recommendation to the concerned management of the Bank.

1.3 Research Questions

In line with the above problem statement, the research questions that are going to be answered are:

- What are the major causes of project failure financed by Corporate Credit Process of DBE?
- What is the magnitude & direction of relationship between these causes and the dichotomous dependent variable, project failure/success?
- Is there any significant difference of project failure between and within sectors (i.e., agriculture, industry & service sectors) to which the projects are belonged?

1.4 Objective of the Study

1.4.1 General Objective

The general objective of this research project paper is to identify major causes of failure of projects financed by Corporate Credit Process of the DBE.

1.4.2 Specific Objective

The specific objectives of this study are:

- to measure the significance of major causes of failure of projects financed by Corporate Credit Process of DBE,
- to examine the magnitude & direction of relationships between these causes and project failure and
- to investigate the existence of variation of project failure between and within sectors to which the projects are belonged.

1.5 Significance of the Study

This study is believed to help in identifying the major causes of failure of projects that are financed by Corporate Credit Process of Development Bank of Ethiopia and investigating their relationships on the projects failure/success in addition to examining the variations of failure/success of projects between and within sectors. So the paper with thorough

analysis and discussion on the subject matter will forward appropriate recommendations to the concerned management of the Bank so as to create successfully operating projects (which in turn benefits the project owners in particular and the country in general) in its future operations and achieve the vision of the Bank-100% success for all financed projects by 2020.

This study will also be a stepping stone for further research in the area of causes of project failure.

1.6 Scope/Delimitation of the Study

The focus of this research project is to identify the major causes of failure of projects that are financed by Corporate Credit Process of DBE. In other words, all possible causes that make a project to fail are not included in this paper. In addition to this, the analysis is not conducted on all existing projects that are financed by the Corporate Credit Process of the Bank; i.e. only projects that are financed during the period covering from July, 01 2006 to June 30, 2013 are taken in to account. This time period was selected just to focus on the causes that are still important for project failure.

1.7 Organization of the Paper

This research paper is organized into five chapters. The first chapter contains background of the study, statement of the problem, research questions, objective of the study, significance of the study and delimitation /scope/ of the study. Chapter two is a review of related literatures. It deals with the formulation of the theoretical framework. Both theoretical and empirical literatures that are related to the topic under study are collected from different sources and discussed in detail. The relationships among variables are presented and finally hypotheses are generated from the literature review. Chapter 3 describes research design and methodology and it includes the research design, population of the study, data type and source, method of data collection, sample design, validity and reliability of research instrument, method of data analysis, ethical consideration and model selection and specification. In Chapter 4, the data gathered are statistically analyzed using the required statistical tools and the results of the analysis of the data are interpreted and discussed. The last chapter that is chapter 5 includes conclusion and recommendation. In addition to the above chapters, list of reference materials are added at the end of the paper.

CHAPTER 2

REVIEW OF RELATED LITRATURE

2.1 Introduction

Under this chapter of the research project paper, the available literatures on the area of the research topic under caption are reviewed. These literatures are obtained from books, journals, government publications and other dependable sources. Possible causes of project failure are discussed in detail using the theoretical and empirical perspectives. Before discussing causes of project failure, concepts and definitions of some terms that are related to the research topic are explained briefly.

.

2.2 Concept and Definition

In this section, concepts and definitions regarding to project, project finance, project failure, and project success are described splendidly.

2.2.1 Concept and Definition of Project

Various definitions of a project are given by different scholars of the field and hence some of them are discussed below.

Project Management Body of Knowledge (2013) defined project as a temporary endeavor undertaken to create a unique product, service, or result. According to it, the temporary nature of projects indicates that a project has a definite beginning and end while unique means that the product, service 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 situations, different stakeholders, and so on.

Hence, a project should have definite starting and ending points (time), a budget (cost), a clearly defined scope or magnitude of work to be done, and specific performance requirements that must be met. Kerzner (2009) had given a similar definition for a project. According to him, a project can be considered to be any series of activities and tasks that have specific objective to be completed within certain specifications, defined start and end

dates, funding limits (if applicable), consumed human and nonhuman resources (i.e., money, people, equipment) and are multifunctional (i.e., cut across several functional lines)

Typically a project is a one-time effort to accomplish an explicit objective by a specific time. Unlike an organization‟s ongoing operations, a project must eventually come to a conclusion (Greer, 2001). This means that a project is done only one time. If it is repetitive, it‟s not a project. In other words, a project is different from the normal operations of an organization. According to Lewis (2002), projects are different from standard business operational activities as they:

a. Are unique in nature: They do not involve repetitive process. Every project undertaken is different from the last, whereas operational activities often involve undertaking repetitive (identical) processes.
b. Have a defined time scale: Projects have a clearly specified start and end date within which the deliverables must be produced to meet a specified customer requirement.
c. Have an approved budget: Projects are allocated a level of financial expenditure within which resources can be adjusted up or down by management.
d. Have a limited resource: At the start of a project an agreed amount of labor, equipment and materials are allocated to the project.
e. Involve an element of risk: Unfortunately things seldom go according to plan because the project must adapt to a dynamic environment. It focuses on identifying, analyzing and developing strategies for responding to project risk effectively and efficiently.

Ghattas and McKee (2001, pp11) also defined project as:

> *"a group of multiple interdependent activities that require people and resources. It has a definite start and end date and a specific set of criteria that define successful completion. When these activities are combined, they achieve the desired results."*

According to Wysocki (2009), a project is a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and according to specification. To appreciate just what constitutes a project, he explained what each part of the definition mean as follows.

- Sequence of Activities: A project comprises a number of activities that must be completed in some specified order, or *sequence*.
- Unique Activities: The activities in a project must be *unique*. A project has never happened exactly in the same way before, and it will never happen again under the same conditions. Something is always different each time the activities of a project are repeated.
- Complex Activities: The activities that make up the project are not simple, repetitive acts.
- Connected Activities: Connectedness implies that there is a logical or technical relationship between pairs of activities. There is an order to the sequence in which the activities that make up the project must be completed. They are considered connected because the output from one activity is the input to another.
- One Goal: Projects must have a single *goal*
- Specified Time: Projects have a specified *completion date*. The project is over on the specified completion date whether or not the project work has been completed.
- Within Budget: Projects also have *resource limits*, such as a limited amount of people, money, or machines that are dedicated to the project. These resources can be adjusted up or down by management, but they are considered *fixed resources* by the project manager.
- According to Specification: The client, or the recipient of the project‟s deliverables, expects a certain level of functionality and quality from the project. These expectations can be self-imposed, such as the specification of the project completion date, or client-specified, such as producing the sales report on a weekly basis.

As it can be seen from the above discussions, the basic characteristics of projects are the same though various definitions of a project are given by different scholars of the field. For this research project too, the definition (meaning) of a project is not different from the definitions given above.

2.2.2 Concept and Definition of Project Finance

One of the techniques of solving financial constraints of projects is raising the required finance through project finance. According to Yescombe (2002), project finance is a method of raising long-term debt for major projects and lending of them relying on the cash flows generated by the project alone for repayment. Project financing involves the establishment of a legally independent project company, usually for large-scale and long term where the providers of funds are repaid out of cash flow and earnings, and where the assets of the unit (and only the unit) are used as collateral for the loans (Kerzner, 2009). With the same token, Development Bank of Ethiopia has been established by the government of Ethiopia just 100 years before for the purpose of supporting different development projects in terms of finance. To reduce the associated credit risks, the Bank hold assets of the project as collaterals. The Bank has also planned to collect its loans from the cash flow of the projects.

Similar definitions of project finance as defined by the above two scholars, Yescombe and Kerzner, but a more elaborate one is given in the Encyclopedia of project finance (2013, pp124). According to it, project finance is explained as follow.

> ***"****Project finance is the long-term financing of infrastructure and industrial projects based upon the projected cash flows of the project rather than the balance sheets of its sponsors. Usually, a project financing structure involves a number of equity investors, known as 'sponsors', as well as a 'syndicate' of Banks or other lending institutions that provide loans to the operation. They are most commonly non-recourse loans, which are secured by the project assets and paid entirely from project cash flow, rather than from the general assets or creditworthiness of the project sponsors, a decision in part supported by financial modeling. The financing is typically secured by all of the project assets, including the revenue-producing contracts. Project lenders are given a lien on all of these assets and are able to assume control of a project if the project company has difficulties complying with the loan terms."*

A major player in sponsoring infrastructure projects and providing financing in developing countries, the World Bank (2001) defined project finance as the "use of non-recourse or limited-recourse financing." Further defining these two terms, "the financing of a project is said to be non-recourse when lenders are repaid only from the cash flow generated by the

project, or in the event of complete failure, from the value of the project‟s assets. Lenders may also have limited recourse to the assets of a parent company sponsoring a project.”
Raising capital through project finance has many advantages. According to Cleland and Ireland (2008), project financing is most appropriate when a large amount of capital is required and high risks are involved and hence by using the method of project finance the risk is distributed to several parties who are in the best position to control the risk factors that in turn reduces the moral hazard problem and minimizes the cost of bearing risk.

The definition of project finance given by DBE is the same as the definitions given above and hence with this understanding of project finance this research project paper is conducted.

2.2.3 Concept & Definition of Project Failure

There is no commonly accepted definition for project failure. Different authors define project failure from different perspectives and context.

The Standish Group in their study of failure of IT projects, The Chaos Report (1994), defined project failure as a project that is impaired or a project that is cancelled at some point during the development cycle. As per The Standish Group definition, projects that are operational and completed over-budget, over the time estimate, and offers fewer features and functions than originally specified are not categorized under the category of project failure. However, Nick Graham (2008) defined project failure as the loss of the entire project or something can go wrong in one or more aspects-time, money or notably quality.

Ghattas and McKee (2001) defined project as Nick Graham did. They defined project failure as non-completion of or wrongly completed project.

According to Kerzner (2009), the true definition of failure is when the final results are not what were expected, even though the original expectations may or may not have been reasonable. He further divided failure into two components, planning failure and actual failure (poor performance). According to him planning failure is the difference between what was planned and what was, in fact, achieved while actual failure is the difference between what was achievable and what was actually accomplished.

The definition given by DBE is a little bit different from the definitions given above. As per DBE‟s Corporate BSC (2010), a project that doesn‟t fulfill some criteria such as properly meeting its debt service, performing above its breakeven point, meeting its objective by generating tax revenue to the government, creating employment opportunity and generating and/or saving foreign currency are considered to be a failed project.

Hence, for this research study the meaning of project failure is understood from the perspectives of what it is defined by DBE.

2.2.4 Concept and Definition of Project Success

In the past twenty years, project success was defined as the completion of an activity within the constraints of time, cost, and performance (Kerzner, 2009). Today, the definition of project success has been modified to include completion within the allocated time period, within the budgeted cost, at the proper performance or specification level, with acceptance by the customer/user, with minimum or mutually agreed upon scope changes, without disturbing the main work flow of the organization and without changing the corporate culture (ibid).

Since projects are temporary in nature, the success of the project should be measured in terms of completing the project within the constraints of scope, time (to ensure realization of benefits for the undertaken project, a test period such as soft launch in services can be part of the total project time before handing it over to the permanent operations), cost, quality, resources, and risk as approved between the project managers and senior management (Project Management Body of Knowledge, 2013). According to Project Management Body of Knowledge (2013), project success should be referred to the last baselines approved by the authorized stakeholders and the project manager is responsible and accountable for setting realistic and achievable boundaries for the project and to accomplish the project within the approved baselines.

Development Bank of Ethiopia has also defined the term project success from its perspective. According to DBE‟s Corporate Balanced Scorecard (2010), a project is classified under the category of successful project if the project properly meets its debt service, performs above its breakeven point and meets its objective by generating tax revenue to the

government, creating employment opportunity and generating and/or saving foreign currency.

For a project to be completed successfully great effort should be exerted on project success factors. Mishra and Soota (2005) had identified different project success factors. According to them, clearly defined goals, support of top management, competent project manager & team members, sufficient project resources, client involvement in defining needs and requirements, adequate communication channels, involvement of all parties in project review and corrections, consulting with users, implementing appropriate technology and control measures to keep project on track and daily trouble shooting and resolution of problems are the factors that have influences over the direction of project success.

In this research project, success (i.e., project success) is defined as it has been defined by Development Bank of Ethiopia.

2.3 Causes of Project Failure

2.3.1 Theoretical Discussion

Many studies have been done over the years that attempt to discover the reasons for project failure. Though the attempt to gain a more complete understanding of the causes of project failure has been a difficult task for both academic researchers and practitioners, many causes of failure of projects are identified by them at different times. Some of them are discussed below.

According to Cleland and Ireland (2008), the most significant reason for the success or failure of any project is the people involved and their respective skills that they bring to the project. With respect to the required skills that should be possessed by effective project managers so as to analyze situations and interact appropriately, Project Management Body of Knowledge (2013) has recommended skills that comprise a balance of technical, conceptual and interpersonal skills. It has defined interpersonal skills as leadership, team building, motivation, communication, influencing, decision making, political and cultural awareness, negotiation, trust building, conflict management and coaching.

According to the Project Management Body of Knowledge (2013), communication has been identified as one of the single biggest reasons for project success or failure. It gives emphasis on communication by stating as follows:

"Effective communication within the project team and between the project manager, team members, and all external stakeholders is essential. Openness in communication is a gateway to teamwork and high performance. It improves relationships among project team members and creates mutual trust."

Graham (2008) has identified many causes of project failure in addition to the human element mentioned by Cleland, Ireland and Project Management Body of Knowledge as discussed above. According to Graham (2008), the followings are the main causes of project failure.

1. Unclear objectives: They weren"t really sure what the project was about.
2. Unrealistic finance: They were never going to be able to do a project of that size on such a low budget.

3. Unrealistic staffing: They were never going to be able to do a project of that size with so few staff. Or perhaps they have enough staff, but what they didn‟t take on board was that all the people had other responsibilities and were only available to the project for 10 per cent of their time; the project team was only one-tenth of the size they thought it was.
4. Poor communications: Nobody knew what they were supposed to be doing or what anybody else was supposed to be doing, and people were unsure who they should report to and who could make decisions.
5. Poor planning: Actually that‟s a kind way to put it. No planning at all is actually the problem in many projects. Then they hit problems in the project that they could have found, and solved, during planning.
6. No effective progress monitoring: The project was going off track but nobody even noticed, much less did anything about it.
7. Unclear scope: Nobody was really sure what was in and what was out of the project. When they discovered essential things that nobody had talked about before, they had to include them. As they weren‟t in the original plan, the project went over time and over budget.
8. No change control: They added in all sorts of things with no attempt to check if they were sensible or affordable, or worth the effort or cost. This is known as „scope creep‟. Sometimes the cumulative impact of a lot of uncontrolled small changes overwhelms and kills the project.
9. No risk management: The project got killed by something that they clearly could have foreseen, controlled, or even prevented.
10. The project was not actually sensible: A manager said that he wanted it, but nobody realized that it would cost considerably more than it would save.

Wysocki (2009) has also identified many reasons for project failure. According to him, the major reasons for project failure are inadequate/no requirements documentation, inappropriate or insufficient sponsorship, unrecognized complexity of requirements, unwillingness to make tough decisions, lag time between project approval and kick-off, no plan revision after significant cuts in resources or time, estimates done with little planning or thought, over commitment of staff resources, inconsistent client sign-off, no credibility in the baseline plan and unmanageable project scope.

Mishra and Soota (2005) have identified many factors that have an influence over the direction of project failure. Inadequate skills, unsupportive top management, a project manager who can‟t cope up with the demands of project, ignoring the systematic nature of projects with hardware, software, and other resources handled precisely in an independent manner, inadequate communication in the project, failure to involve the user, inadequate project planning, insufficient project definition, improper estimation of time and resources, incorrect scheduling and handling of resources, enormous changes during the last implementation phase, inadequate control and poorly planned project termination are the possible causes of project failure.

2.3.2 Empirical Discussion

Due to shortage of research studies on causes of Bank financed project failures, the researcher is forced to consider similar studies conducted on different projects assuming that causes of project failure could be closely related. With this understanding, the project failure surveys on IT projects done by four organizations, i.e The Chaos Report (1994), The OASIG Study (1995), The KPMG Canada Survey (1997) and The Bull Survey (1998) were reviewed.

The Chaos Report (1994)

This research project is done by The Standish Group. The focus of this research project at The Standish Group has been to identify the scope of software project failures, the major factors that cause software projects to fail and the key ingredients that can reduce project failures. The project evaluation criteria were cost overruns, time overruns and content deficiencies.

The respondents were IT executive managers. The sample included large, medium and small companies across major industry segments. The total sample size was 365 respondents and represented 8380 applications. In addition, The Standish Group conducted four focus groups and numerous interviews to provide qualitative context for the survey results.

For purposes of the study, projects were classified into three resolution types:

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

Overall, the success rate was only 16.2%, while challenged projects accounted for 52.7% and impaired (cancelled) for 31.1%.

Opinions about why projects are impaired and ultimately canceled ranked incomplete requirements 13.1%, lack of user involvement 12.4%, lack of resources 10.6%, unrealistic expectations 9.9%, lack of executive support 9.3%, changing requirements and specifications 8.7%, lack of planning 8.1%, didn‟t need it any longer 7.5%, lack of IT management 6.2%, technology illiteracy 4.3% and other 9.9%.

On the other hand, according to this report, there are top 10 factors found in successful projects. These factors are user involvement 15.9%, executive management support 13.9%, clear statement of requirements 13.0%, proper planning 9.6%, realistic expectations 8.2%, smaller project mile stones 7.7%, competent staff 7.2%, ownership 5.3%, clear vision and objectives 2.9%, hard-working, focused staff 2.4% and other 13.9%.

The top four factors that contributed to project success are user involvement, executive management support, clear statement of requirements and proper planning.

This study reveals that absence of user involvement as the major cause of project failure. According to it, even when delivered on time and on budget, a project can fail if it does not meet users‟ needs.

As the study discloses, executive management support influences the process and progress of a project and lack of executive input can put a project at a severe disadvantage.

As it is shown above, clear statement of requirements which refers to the base level requirements is the third major factor of project success. According to this study, by creating a minimal, obtainable base level of requirements and then developing those features, the

effect of change will be reduced. As a result, an added benefit is that project managers are better prepared to articulate the needs and priorities of the next phase of the project.

Proper planning is one of the keys to a successful project as this study discloses. As the result of this study has shown creating a project plan is the first thing to do when undertaking any kind of project.

The OASIG Study (1995)

It has been conducted in the UK among 45 experts issued from universities and consultancies. The objective of the study is to identify the causes of systems failure to meet their objectives. Lack of attention to the human and organizational aspects of IT, poor project management, poor articulation of user requirements, inadequate attention to business needs and goals and failure to involve users appropriately were identified as the key findings of this study.

In general IT failures are rarely considered as purely technical. The integration and mutual influence of organization and IT is emphasized throughout the OASIG study.

The KPMG Canada Survey (1997)

This study has been conducted by KPMG Canada. The Key Findings of the study identified the followings as the main causes of project failure:

1. ***Poor project planning:*** Specifically, inadequate risk management and a weak project plan. Risk management becomes more important as the organization gets bigger, so larger organizations need to pay more attention to this area.
2. ***Weak business case:*** The need for the system should be justified in ways that relate directly to the organization's business needs.
3. ***Lack of top management involvement and support:*** This often dooms the project to failure before it starts. Securing buy-in from the top, often by a strong business case backed up with a realistic project plan, is an essential step.

The Bull Survey (1998)

In 1998, the French computer manufacturer and systems integrator, BULL, requested an independent research company, Spikes Cavell to conduct a survey in the UK to identify the major causes of IT project failure in the finance sector.

A total of 203 telephone interviews were conducted with IT and project managers from the finance, utilities, manufacturing, business services, telecoms and IT services sectors in UK. All the managers interviewed had previously taken the lead in integrating large systems within organizations in the Times Top 100.

The main IT project failure criteria identified by the IT and project managers were missed deadlines (75%), exceeded budget (55%) poor communications (40%) inability to meet project requirements (37%).

On the other hand, the main success criteria identified were meeting milestones (51%), maintaining the required quality levels (32%) and meeting the budget (31%)

The key findings of the survey reveals that the major causes of project failure during the lifecycle of the project are a breakdown in communications (57%), a lack of planning (39%) and poor quality control (35%).

2.3.3 Causes of failure of projects financed by CCP of DBE

As per the information taken from the data analysis, there are many factors which cause the projects to fail. The under listed factors are believed to be by the Bank as the major causes of failure of projects that are financed by CCP of the Bank.

1. Technical support given by the Bank,
2. The project‟s manpower quality,
3. Overestimation of cash flow of the projects (return of projects) made by the Bank‟s appraisal unit, and
4. Too much delay at the implementation stage of the project.

As discussed in the literature review section of this research project, different scholars have also identified these factors as the possible causes of failure of many projects.

In this research project paper, the aforementioned factors which have been believed by the Bank as the major causes of project failure are tested by collecting all the required data.

2.4 Conceptual Framework

The under stated figure is the concept map that depicts the relationship between the independent variables and dependent variable which is dichotomous. Here the independent variables are the technical support given by the Bank, delays at the implementation stage of the project life cycle, overestimation of project return and manpower quality of projects while the dichotomous dependent variable is project success/failure.

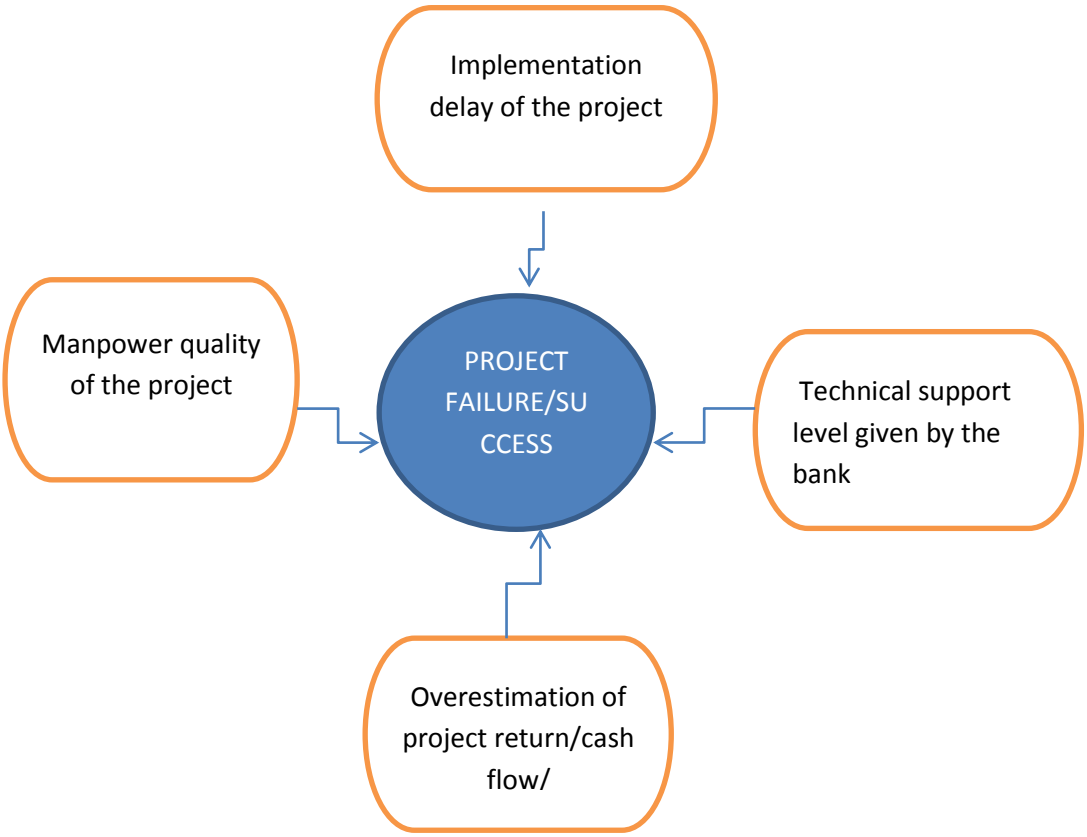

Figure 1 Relationship between independent & dependent variables

With regard to the relationship between these four independent variables and the dependent variable, it is believed to be by the Bank that when manpower quality of the project and technical support given by the Bank increase, project failure will decrease. On the other hand it is believed to be by the Bank that overestimation of project return and implementation delay will increase project failure.

Based on these beliefs, the under listed four hypotheses are generated.

Hypothesis 1: Technical support given by the Bank is significant on the failure/success of projects that are financed by Corporate Credit Process of the Bank and it has inverse relationship with project failure.

Hypothesis 2: Delays at the implementation stage of the project life cycle is significant on the failure/success of projects that are financed by Corporate Credit Process of the Bank and it has positive relationship with project failure.

Hypothesis 3: Overestimation of project return is significant on the failure/success of projects that are financed by Corporate Credit Process of the Bank and it has positive relationship with project failure.

Hypothesis 4: The quality of manpower of projects is significant on the failure/success of projects that are financed by Corporate Credit Process of the Bank and it has inverse relationship with project failure.

Hence in this research project paper, the above four hypotheses are tested using the appropriate statistical methods.

CHAPTER 3

RESEARCH DESIGN & METHODOLOGY

3.1 Research design

In this study both descriptive and explanatory analyses were conducted. Descriptive statistics such as mean, standard error of the mean, standard deviation, minimum and maximum were used to describe the data. Moreover, analysis of variance was employed to examine the variation of project failure/success between and within economic sectors to which the sampled projects are belonged. Explanatory analysis using both correlation and regression model (i.e., logit model) was employed to analyze the significant level of the relationship between causes of project failure and the Bank‟s CCP financed projects. Settings of major causes of failure of projects that are financed by Corporate Credit Process of the Bank were done based on document analysis.

3.2 Population of the study

The project to be selected has to be operational for at least one year and financed by Corporate Credit Process of DBE within the last seven years, i.e. from July 01, 2006 to June 30, 2013. Projects that have been operational for at least one year were considered because it is important to assess some of the causes of project failure and projects financed within the recent seven years were preferred in order to focus on the causes that are still important for failure of projects that are financed by Corporate Credit Process of the Bank.

3.3 Sample Design

Before a sample was drawn, all the projects financed by Corporate Credit Process of the Bank between 01 July 2006 and 30 June 2013 were stratified into success and failed category. Then simple random sampling technique was applied to take the representative sample from each stratum.

To obtain the representative sample size, the following Taro Yamane (1967) simplified formula at 95% confidence level (which is the accepted confidence level in social sciences) had been used.

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

Where n is the sample size, N is population size and e is the level of precision.

The total number of projects financed by CCP of the Bank during the period under caption was 97. Hence the required sample size as per the formula given above is as described below.

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

$$n = \frac{97}{1 + 97(0.05^2)}$$

$$n = 78$$

Although the required sample size to be obtained was 78, a total of 80 projects were taken for this study, of which 40 projects were under the category of failed projects while the rest 40 were successful projects. Regarding to the sector distribution of projects, 25, 41 & 14 projects were belonged to agriculture, industry & service sectors respectively. In terms of ownership, 8 projects are public while the rest 72 projects are privately owned projects.

3.4 Data type & source

Secondary data were used for this study. Secondary data were collected from client files, project appraisal reports, follow-up reports, internal audit reports and other periodic reports of DBE.

3.5 Method of data collection

It is known that there are a number of methods of data collection. In this research project, document analysis was used as an appropriate method of data collection.

3.6 Method of data analysis

The collected data had been analyzed by running such as correlation, ANOVA and regression analyses. Correlation analysis helps to examine the existence of multicollinearity which is the correlation among the independent variables. When the independent variables are highly correlated, it is not possible to determine the separate effect of any particular independent variable on the dependent variable (Anderson & et al., 2011). The variances of failure/success of projects between and within sectors were analyzed using the ANOVA method.

On the other hand, regression analysis was selected because it is the best alternative to examine the relationship between a dependent variable and a set of independent variables. It can also forecast the value of the dependent variable based on its relationship to the independent variables used in the analysis. In this research project, the independent variables are causes of project failure while the dependent variable is project success/failure.

For ease of data analysis, SPSS had been employed. SPSS can perform a variety of data analyses and presentation functions including statistical analysis and graphical presentation of data.

3.7 Validity and reliability of research instrument

In order to increase the reliability and validity of this research project, appropriate techniques had been used when collecting and analyzing data. Representative samples were taken by employing appropriate sample selection techniques.

3.8 Ethical Consideration

The data were collected from dependable sources. The analysis of data and interpretation of the results of data analysis were restricted to what the data actually tell.

3.9 Model Selection and Specification

3.9.1 Model Selection

Logistic regression, along with discriminant analysis, is the appropriate statistical technique when the dependent variable is a categorical (nominal or nonmetric) variable and the independent variables are metric or non-metric variables. When compared to discriminant analysis, logistic regression is limited in its basic form to two groups for the dependent variable, although other formulations can handle more groups. It does have the advantage, however, of easily incorporating non-metric variables as independent variables, much like in multiple regression (Hair et.al, 2010).

In a practical sense, logistic regression may be preferred for two reasons. First discriminant analysis relies on strictly meeting the assumptions of multivariate normality and equal variance-covariance matrices across groups-assumptions that are not met in many situations. Logistic regression does not face these strict assumptions and is much more robust, when these assumptions are not met, making its application appropriate in many situations. Second, even if the assumptions are met, many researchers prefer logistic regression because it is similar to multiple regression. It has straight forward statistical tests, similar approaches to incorporating metric and non-metric variables and non-linear effects, and a wide range of diagnostics. Thus for these and more technical reasons, logistic regression is equivalent to two-group discriminant analysis and may be more suitable in many situations(ibid).

In discriminant analysis, the non-metric character of a dichotomous dependent variable is accommodated by making prediction of group membership based on discriminant z scores. It

requires the calculation of cutting scores and the assignment of observations to groups. Logistic regression approaches this task in a manner more similar to that found with multiple regression. Logistic regression represents the two groups of interest as binary variables with values of 0 and 1. It does not matter which group is assigned the value of 1 versus 0 but this assignment must be noted for the interpretation of the coefficients (ibid).

Logistic regression differs from multiple regression, however, in being specifically designed to predict the probability of an event occurring (i.e., the probability of an observation being in the group coded 1). Although probability values are metric measures, there are fundamental differences between multiple regression and logistic regression (Gujarati, 2004).

The binary nature of the dependent variable (0 or 1) has properties that violate the assumptions of multiple regression. First, the error term of a discrete variable follows the binomial distribution instead of the normal distribution, thus invalidating all statistical testing based of the assumptions of normality. Second, the variance of a dichotomous variable is not constant, creating instances of heteroscedasticity as well. Moreover, neither violation can be remedied through transformations of the dependent or independent variables (ibid).

Logistic regression was developed to specifically deal with these issues. Its unique relationship between dependent and independent variables however requires a somewhat different approach in estimating the variate, assessing goodness-of- fit, and interpreting the coefficients when compared to multiple regression (ibid).

The dependent variable for this research project is project failure/success which is dichotomous and categorical. The independent variables are the technical support given by the Bank, project‟s implementation delay, overestimation of project return and project‟s manpower quality. All the independent variables are metric variables. Hence, based up on the above discussion, the appropriate model for this research project is logistic regression.

In multiple regression analysis, the mean or expected value of Y is referred to as the multiple regression equation (Anderson et al., 2011). According to them,

$$E(y) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_p X_P \quad \text{----------1}$$

In logistic regression, statistical theory as well as practice has shown that the relationship between $E(Y)$ and $X_1, X_2 \ldots X_p$ is better described by the following nonlinear equation (ibid).

$$E(Y) = \frac{e^{\beta_0+\beta_1 X_1+\beta_2 X_2+\cdots+\beta pXp}}{1+e^{\beta_0+\beta_1 X_1+\beta_2 X_2+\cdots+\beta pXp}} \quad \text{---------- 2}$$

If the two values of the dependent variable Y are coded as 0 or 1, the value of $E(Y)$ in equation 2 provides the probability that $Y = 1$ given the particular set of values for the independent variables $X_1, X_2, \ldots, X_p$. According to Anderson et al. (2011), because of the interpretation of $E(Y)$ as a probability, the logistic regression equation is often written as follows.

$$E(Y) = P(Y = 1/X_1, X_2, \ldots, X_P) \text{ ----------3}$$

Interpreting a regression equation involves relating the independent variables to the business question that the equation was developed to answer. With logistic regression, it is difficult to interpret the relation between the independent variable and the probability that $Y = 1$ directly because the logistic regression equation is nonlinear (ibid).

However, according to them, the relationship can be interpreted indirectly using a concept called the odds ratio. Hence, they calculated the odds in favor of an event occurring (the event of interest is always $Y = 1$) as follows:

$$odds = \frac{P(Y=1/X_1,X_2,\ldots,X_P)}{P(Y=0/X_1,X_2,\ldots,X_p)} = \frac{P(Y=1/X_1,X_2,\ldots,X_P)}{1-P(Y=1/X_1,X_2,\ldots,X_P)} \text{----------4}$$

According to them, the odds ratio in equation 4 measures the impact on the odds of a one-unit increase in only one of the independent variables.

Although most appropriate for determining the direction of the relationship, the original logistic coefficients are less useful in determining the magnitude of the relationship. They reflect the change in the logit (logged odds) value, a unit of measure not particularly understandable in depicting how much the probabilities actually change. Exponentiated logistic coefficients (which is the odds ratio), however, directly reflect the magnitude of the change in the odds value. Their impact is multiplicative, meaning that the coefficient"s effect is not added to the dependent variable (the odds), but multiplied for each unit change in the independent variable (Hair et al., 2010).

On the other hand, the direction of the relationship (positive or negative) reflects the changes in the dependent variable associated with changes in the independent variable. A positive relationship means that an increase in the independent variable is associated with an increase in the predicted probability and vice versa for a negative relationship. The direction of the relationship is reflected differently for the original and exponentiated logistic coefficients. The sign of the original coefficients (positive or negative) indicates the direction of the relationship. A positive coefficient increases the probability, whereas a negative value decreases the predicted probability, because the original coefficients are expressed in terms of logit values, where a value of 0.0 equates to an odds value of 1.0 and a probability of .50. Thus negative numbers relate to odds less than 1.0 and probabilities less than .50. Exponentiated coefficients must be interpreted differently because they are the logarithms of the original coefficient. By taking the logarithm, we are actually stating the exponentiated coefficient in terms of odds, which means that exponentiated coefficients will not have negative values. Because the logarithm of 0 (no effect) is 1.0, an exponentiated coefficient of 1.0 actually corresponds to a relationship with no direction. Thus, exponentiated coefficients above 1.0 reflect a positive relationship and values less than 1.0 represent negative relationship (Gujarati, 2005).

With respect to the significance of each independent variable of the logistic regression, we use a statistical test to see whether the logistic coefficient is different from 0. Using the logit as the dependent measure, a value of 0 corresponds to the odds of 1.00 or a probability of .50-values that indicate the probability is equal for each group (i.e., again no effect of the independent variable on predicting group membership). In multiple regression, the t value is used to assess the significance of each coefficient. Logistic regression uses a different statistic, the Wald statistic. It provides the statistical significance for each estimated coefficient so that hypothesis testing can occur just as it does in multiple regression. If the logistic coefficient is statistically significant, we can interpret it in terms of how it impacts the estimated probability, and thus the prediction of group membership (Hair et al., 2010).

On the other hand, regarding to the goodness-of-fit for a logistic regression model, according to Hair et al. (2010), it can be assessed in two ways. One way is to assess model estimation fit using "pseudo" R^2 values. The 2^{nd} approach is to examine predictive accuracy. The two approaches examine model fit from different perspectives, but should yield similar conclusions.

According to them, the pseudo R^2 for a logit model ($R^2{}_{logit}$) can be calculated as $R^2{}_{logit} = -2LL_{null} - (-2LL_{\text{model}})/-2LL_{\text{null}}$ and the logit R^2 value ranges from 0.0 to 1.0. As the proposed model increases model fit, the $-2LL$ value decreases. A perfect fit has a $-2LL$ value of 0.0 and an $R^2{}_{logit}$ of 1.0.

3.9.2 Model Specification

From the above discussion, we knew that the probability relation between independent variable (X_i) and dependent variable (Y_i) for a logistic regression is explained by the following formula.

$$P_i = E(Y) = \frac{e^{\beta_0+\beta_1X_1+\beta_2X_2+\cdots+\beta pXp}}{1+e^{\beta_0+\beta_1X_1+\beta_2X_2+\cdots+\beta pXp}} = \frac{e^{Z_i}}{1+e^{Z_i}} \quad \text{----------1}$$

Where $Z_i = \beta_0 + \beta_i X_i$

$P_i =$ the probability of project failure according to this study

Then, the probability of project success is given by:

$$1 - P_i = \frac{1}{1+e^{Z_i}} \text{----------2}$$

So, we can write $\frac{P_i}{1-P_i} = e^{Z_i}$ ----------3

Equation 3 tells us the odds ratio in favor of project failure - the ratio of the probability of a project failure to the probability of a project success.

As it can be discussed earlier, the natural logarithm of the odds ratio gives the logit model. So, $ln\frac{P_i}{1-P_i} = ln(e^{Z_i}) = Z_i = \beta_0 + \beta_i X_i$----------4

In equation 4, β_0 is the constant in the model, i.e. the value of the log odds in favor of project failure without the effect of the independent variables X_i. β_i is the slope and it measures the change in Z_i for a unit change in X_i.

Therefore, the relationship between the dependent variable and the independent variables of this study using the logit model is expressed as follow.

$$Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Where; $\beta_0 =$ the constant in the model

$\beta_i =$ the probability of a response

$Z_i =$ Project status represented by dummy variable 0 for failure and 1 for success

$X_1 =$ Manpower quality of a project and which was represented by weighted average of percentage variation from planned qualification, quantity and experience. Regarding to qualification, a point was given for each grade an employee has completed. For example, 12 points, 14 points, 16 points, 18 points and 22 points were given for an employee who has completed grade 12, has got diploma, BA/BSC degree, MA/MSC degree and a PHD degree respectively.

$X_2 =$ Implementation delay of a project and which is measured by percentage actual time overrun from planned schedule

$X_3 =$ Over estimation of project return that is measured by percentage variation between actual cash flow and appraisal cash flow

$X_4 =$ Technical support level of the Bank and it is measured by weighted average of number of follow-up undertaken for a project

3.10 Dependent and Independent Variables

3.10.1 Dependent Variable

The dependent variable of this study, project success or failure, was specified based on the criteria set by DBE. The project to be categorized as successful project according to DBE required properly meeting its debt service fully, performing above break-even point, and generating or saving at least half of foreign exchange, create half of employment opportunity and generate half of tax revenue for the government from estimated of the same in appraisal report. The project that couldn‟t fulfill any of the above criteria is classified under failed category.

3.10.2 Independent Variables

1. Technical support level of the Bank: DBE as a project financing Bank filled with multidisciplinary professionals and expected to provide technical advice and alleviate any problems arising in due course of the project life to ensure project success. This determinant is proxy by follow-up coverage of the Bank since the Bank has planned to provide technical service through its follow-up operation twice in a year to every project.

2. Implementation Delay: Over lengthen project implementation from schedule exposes to accumulation of pre-production interest and distortion in projected cash flow in addition to missing market opportunity. This in turn causes project failure because of incapability to settle debt commitment. Implementation delay was captured by percentage time overrun from planned schedule in DBE"s appraisal report.

3. Overestimation of returns from the project: Project return overestimation leads to financing of unviable business in addition to shortening of payback period. Short payback period means short repayment period since project financing solely depends on cash flow for its repayment. The repayment overburden created because of short repayment period leads to incapability to serve the debt commitment and project failure. This determinant, therefore, was measured by percentage change between DBE"s appraisal cash flow and follow-up cash flow of the project.

4. Manpower Quality: A soft element of any business is human resource. Running of any business without competent manpower leads to project failure since human resource is the only factor that makes other resources productive. The determinant was captured by percentage variation in number, qualification and experience of the project employees with respect to DBE"s appraisal report.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

In this chapter, the data gathered are statistically analyzed using the required statistical tools and the results of the analysis of the data are interpreted and discussed. The data are summarized using the numerical methods of descriptive statistics such as mean, standard error of the mean, standard deviation, minimum, maximum, range, skewness and standard error of skewness. Failed projects are compared with successful projects for each independent variable using the aforementioned descriptive statistics. Project status is disaggregated by the economic sector of the project, i.e., agriculture, industry and service. Moreover, analysis of variance with respect to failure/success of projects between and within these sectors has been explained.

Tests of significance for a logistic relationship are also conducted in this chapter. Appropriate statistical tests were used to conduct both overall significance and individual significance. A test for overall significance helps to determine whether a significant relationship exists between the dependent variable and the set of all independent variables while a test for individual significance helps to determine whether each of the individual independent variables is significant for the dependent variable, project failure/success. The direction and magnitude of relationship between each independent variable and the dependent variable has also been explained.

Moreover, multicollinearity test is conducted to know whether there exists a correlation among independent variables. How to handle the problem of heteroscedasticity is also discussed.

4.2 Results of Descriptive Statistics

Under this section the comparison of project status (failed projects with successful projects) are conducted by appropriate descriptive statistics. The comparisons are made using the independent variables, technical support level of the Bank, manpower quality of the project, implementation delay and overestimation of project return.

4.2.1 Comparison of Project Status using Technical Support Level of the Bank

Table 1 Technical Support Level of the Bank

	Project Status		
	Failed	Successful	Total
N	40	40	80
Mean	74.46%	81.15%	77.80%
Minimum	.00%	.00%	.00%
Maximum	133.33%	150.00%	150.00%
Std. Error of Mean	5.08%	5.55%	3.76%
Std. Deviation	32.14%	35.12%	33.62%
Range	133.33%	150.00%	150.00%
Skewness	-.69%	-.66%	-.63%
Std. Error of Skewness	.37%	.37%	.27%

Source: computed from survey data, 2014

Table 4.1 has described the result of descriptive statistics of sampled projects in general and failed and successful projects in particular with regard to the explanatory variable, technical support level given by the Bank which is captured by follow-up coverage.

As the table portrays, the mean follow-up coverage of sampled projects (80 projects) is 77.80% at standard error of the mean, 3.76%. The minimum follow-up coverage is 0.00% while the maximum is 150% and hence the range value is 150%. Its skewness (which is a measure of the shape of a distribution) is -0.63% at standard error of skewness, 0.27%. The negative sign shows that the sample data are skewed to the left.

Regarding to failed projects (which are 40 projects), the mean follow-up coverage is 74.46% at standard error of the mean which is 5.08%. The minimum value of follow-up coverage is 0.00% while the maximum value is 133.33% and hence the range value is 133.33%. It is also skewed to the left with skewness value of -0.69% at standard error of skewness, 0.37%.

The mean follow-up coverage of successful projects (40 projects) is a little bit greater than failed projects and it is 81.15% at standard error of 5.55%. Its follow-up coverage goes from the minimum value of 0.00% to the maximum value of 150.00% and its range value stood at 150%. It is also skewed to the left with skewness value of -0.66% at standard error of skewness which is also 0.37%.

From the above discussion it can be inferred that there is no any significance difference between failed and successful projects in terms of follow-up coverage.

4.2.2 Comparison of Project Status using Manpower Quality of the Project

Table 2 Recruitment Variation of the Project

	Project Status		
	Failed	Successful	Total
N	40	40	80
Mean	-75.59%	37.45%	-19.07%
Minimum	-264.74%	-74.48%	-264.74%
Maximum	91.56%	117.80%	117.80%
Std. Error of Mean	14.93%	6.51%	10.29%
Std. Deviation	94.44%	41.16%	92.06%
Range	356.30%	192.28%	382.54%
Skewness	-.25%	.07%	-.92%
Std. Error of Skewness	.37%	.37%	.27%

Source: computed from survey data, 2014

The results of descriptive statistics of the projects‟ manpower quality which is captured by percentage variation in number, qualification and experience of the project employees with respect to DBE‟s appraisal report is explained by the above table, table 4.2.

As it can be seen in the table, the mean of sampled projects is -19.07% at standard error of the mean, 10.29%. It has a minimum and maximum value of -264.74% and 117.8% respectively. Hence its range value becomes 382.54%. The skewness of the sampled data is -0.92% (which shows that the distribution of the data is skewed to the left) at standard error of skewness which is 0.27%.

With respect to failed projects, the mean of the recruitment variation is worsened to -75.59% at standard error of 14.93%. The minimum value of recruitment variation for failed projects is -264.74% while its maximum value is 91.56% and hence its range value is 356.30%. It is skewed to the left with a value of -0.25% at standard error of skewness which is 0.37%.

On the other hand, the mean value for successful projects is improved to 37.45% at standard error of the mean, 6.51%. Its minimum and maximum values are -74.48% and 117.80% respectively and its range value is 192.28%. Unlike failed and sampled projects it is skewed to the right with a value of 0.07% at standard error of skewness, 0.37%.

4.2.3 Comparison of Project Status using Implementation Delay of the Project

Table 3 Project Implementation Delay

	Project Status		
	Failed	Successful	Total
N	40	40	80
Mean	73.90%	-4.12%	34.89%
Minimum	-100.00%	-121.00%	-121.00%
Maximum	201.97%	81.00%	201.97%
Std. Error of Mean	15.35%	6.23%	9.33%
Std. Deviation	97.09%	39.39%	83.43%
Range	301.97%	202.00%	322.97%
Skewness	-.03%	-.56%	.76%
Std. Error of Skewness	.37%	.37%	.27%

Source: computed from survey data, 2014

Table 4.3 has depicted the result of descriptive statistics with regard to the third independent variable, project implementation delay which is captured by time overrun from the plan stated in the Bank‟s appraisal document.

As it is explained in the table, the mean time overrun of sampled projects under study is 34.89% at a standard error of the mean, 9.33%. While the minimum value of time overrun is -121.00%, its maximum value is stood at 201.97% and hence its range value is 322.97%. It is skewed to the right with a value of 0.76% at standard error of skewness which is 0.27%

With respect to the time overrun of failed projects, the mean value is worsening to 73.90% at standard error of the mean which is 15.35% and its minimum and maximum value is -100.00% and 201.97% respectively with a range value of 301.97%. It is skewed to the left with a value of -0.03% at standard error of skewness which is 0.37%.

When we see the mean time overruns for successful projects, it has improved significantly and its mean value is -4.12% at standard error of the mean, 6.23%. It has a minimum value of -121.00%, a maximum value of 81.00% and a range value of 202.00%. It is skewed to the left with -0.56% at standard error of skewness which is 0.37%.

4.2.4 Comparison of Project Status using Overestimation of Project Return

Table 4 Overestimation of Project Return

	Project Status		
	Failed	Successful	Total
N	40	40	80
Mean	-71.54%	31.71%	-19.91%
Minimum	-290.78%	-104.00%	-290.78%
Maximum	87.84%	177.04%	177.04%
Std. Error of Mean	12.90%	11.71%	10.43%
Std. Deviation	81.61%	74.09%	93.26%
Range	378.62%	281.04%	467.82%
Skewness	-.14%	.44%	-.05%
Std. Error of Skewness	.37%	.37%	.27%

Source: computed from survey data, 2014

The last explanatory variable of this study is overestimation of project return which is captured by the projects cash flow. The result of its descriptive statistics is tabulated by table 4.4 above.

The mean value of cash flow of the projects under study is -19.91% at standard error of the mean which is 10.43%. The minimum value is -290.78% while its maximum value raise to 177.04% and its range value is 467.82%. It is skewed to the left with -0.05% at standard error of skewness which is 0.27%.

With respect to failed projects, the mean value of the cash flow overestimation is increased to -71.54% at standard error of the mean, 12.90% and its minimum value is -290.78% while the maximum value is 87.84%. Its range value goes down to 378.62% when compared to the total projects under study. Its skewness is -0.14% at standard error of 0.37%.

On the other hand, the mean value of cash flow overestimation of successful projects has improved to 31.71% at standard error of the mean, 11.71%. The minimum value is -104% while the maximum value is 177.04% and hence its range value is 281.04%. In contrary to failed and the total sampled projects, it is skewed to the right with a value of 0.44% at standard error of skewness which is 0.27%.

4.2.5 Analysis of Variance (ANOVA)

4.2.5.1 Project Status Disaggregated by Economic Sector

Table 5 project status disaggregated by sector

Sector	Project Status				Total	
	Failed		Successful			
	N	%	N	%	N	%
Agriculture	17	68	8	32	25	100
Industry	18	44	23	56	41	100
Service	5	36	9	64	14	100
Total	40	50	40	50	80	100

Source: computed from survey data, 2014

As it can be seen in table 4.5, of the total sampled projects, 25, 41 and 14 projects are belonging to agriculture, industry and service sectors respectively. From this it can be

inferred that the largest number of sampled projects are found in the industry sector while the smallest number of projects are found under the service sector.

With respect to the status of projects in the agricultural sector, 17 projects from the total 25 projects (which is 68%) are failed projects while the rest, 8 projects (which is 32%), are successful projects.

On the other hand from the total 41 projects in the industry sector, 18 projects (44%) are failed projects while the majority 23 projects (56%) are successful projects.

Regarding to the status of projects under the service sector, 5 of them which is 36% are under failed category while the majority, 9 projects (64%), are successful projects.

From the above discussion, it can be concluded that highest ratio and lowest ratio of project failure are found in the agriculture and service sectors respectively.

4.2.5.2 Comparison of Means between & within Economic Sectors

Table 6 Variance of project status & its explanatory variables between & within sectors

		Sum of Squares	df	Mean Square	F	Sig.
Project Status	Between Sectors	1.248	2	.624	2.563	.084
	Within Sectors	18.752	77	.244		
	Total	20.000	79			
Recruitment Variation	Between Sectors	17564.682	2	8782.341	1.037	.359
	Within Sectors	651921.628	77	8466.515		
	Total	669486.311	79			
Time overrun	Between Sectors	39554.980	2	19777.490	2.984	.056
	Within Sectors	510349.644	77	6627.917		
	Total	549904.624	79			
Cash Flow Overestimation	Between Sectors	5336.995	2	2668.497	.301	.741
	Within Sectors	681710.109	77	8853.378		
	Total	687047.104	79			
Follow-up Coverage	Between Sectors	3411.310	2	1705.655	1.530	.223
	Within Sectors	85863.733	77	1115.113		
	Total	89275.042	79			

Source: computed from survey data, 2014

Table 4.6 has explained the variance of the mean with respect to project status, recruitment variation, time overrun, cash flow overestimation and follow-up coverage between and within economic sectors which are agriculture, industry and service. As it can be seen in the table, the variance of the mean between and within sector for all variables (project failure/success, time overrun, recruitment variation, cash flow overestimation and follow-up coverage) are not significant at 5% significance level. However, at 10% significance level, the mean variance of project status (project failure/success) and time overrun are found to be statistically significant. This is to mean that had the significance level of the study been increased to 10%, there could be a significant variance with respect to failure/success and implementation delay among projects financed by CCP.

4.3 Results of the Econometric Model

4.3.1 Test of model fit

According to Hair et.al (2011), if R^2 values of a logistic regression model is 50% and above, the model is deemed acceptable in terms of both statistical and practical significance. As it is shown by table 4.5, (a) & (b), the overall significance of the model is above the standards. Both Pseudo R^2 and the classification table have resulted with the same conclusion.

As per Cox & Snell R Square, Nagelkerke R Square and McFadden R Square, 69.2%, 92.2% and 84.9% of the variability of the dichotomous dependent variable, project success/failure, is expressed by the four explanatory variables (technical support level of the Bank, implementation delay, cash flow overestimation and manpower quality) respectively.

The other approach used to examine overall model fit of the logistic regression is to assess the classification accuracy of the model. The classification matrices represent the levels of predictive accuracy achieved by the logistic model. The measure of predictive accuracy used is the hit ratio, the percentage of cases correctly classified. These values are given by the classification table of table 4.5 (b). This classification table has revealed that 95.00% of the cases are correctly classified and this tells us that the model is fit enough.

Table 7 Overall Significance of the Model

(a) Pseudo R^2 & -2LL Table

-2 Log likelihood(-2LL)	16.800
Cox & Snell	.692
Nagelkerke	.922
McFadden	.849

Source: computed from survey data, 2014

(b) Classification Table

Observed		Predicted		
		Project Status		Percentage Correct
		Failed	Successful	
Project Status	Failed	38	2	95.00
	Successful	2	38	95.00
Overall Percentage				95.00

Source: computed from survey data, 2014

4.3.2 Multicollinearity Test

A sample correlation coefficient greater than +0.7 or less than -0.7 for two independent variables is a rule of thumb warning of potential problems with multicollinearity (Anderson et.al, 2011). As it can be seen in the table below, table 4.9, the correlation coefficients among the independent variables are either less than +0.7 or greater than -0.7. From this it can be deduced that there is no multicollinearity problem among the independent variables. Hence running the logistic regression equation becomes feasible.

Table 8 Coefficient of Correlation

	Recruitment Variation	Time Overrun	Cash Flow Overestimation	Follow-up Coverage
Recruitment Variation	1	-.081	.380	.304
Time Overrun	-.081	1	-.283	.154
Cash Flow Overestimation	.380	-.283	1	-.181
Follow-up Coverage	.304	.154	-.181	1

Source: computed from survey data, 2014

4.3.3 Heteroscedasticity Test

Heteroscedasticity is a systematic error that happens when the variance of the errors is not constant (Gujarati, 2004). Heteroscedasticity problem makes the model inefficient to estimate the regression coefficients because of biased variance and covariance of the coefficient. Thus, to alleviate the heteroscedasticity problem, the robust logit model is used.

4.3.4 Estimates of the Logistic Regression Model

Table 9 Estimates of the Logistic Regression Model

	B	S.E.	Wald	df	Sig.	$*Exp(B)$
Recruitment Variation	.102	.043	5.534	1	.019	1.107
Time Overrun	-.062	.025	6.281	1	.012	.940
Cash Flow Overestimation	.064	.028	5.222	1	.022	1.066
Follow-up Coverage	-.025	.023	1.203	1	.273	.975
Constant	5.546	3.182	3.038	1	.081	256.103

* $Exp\ (B)$ --------exponentiated coefficient/odds ratio

Source: computed from survey data, 2014

Table 4.9 has depicted whether each explanatory variable is significant to the model at a significant level of 5%. As it is shown, all the explanatory variables except follow-up coverage (technical support level of the Bank) are significant to the model at 5% significant level.

Based on the statistical tests of the Wald Statistic, the statistical significance of the coefficients of the three explanatory variables which are recruitment variation, time overrun and cash flow overestimation are .019, .012 and .022 respectively. Since these values are less than the significant level of the study which is .05, we can conclude that all of the three explanatory variables are statistically significant. In other words, it can be deduced that recruitment variation, time overrun and cash flow overestimation as the statistically significant causes of failure/success of projects which are financed by Corporate Credit Process of the Bank at 95% confidence level.

On the other hand, the result of the fourth explanatory variable which is the technical support level of the Bank and it is captured by follow-up coverage is different from what it is expected to be. Since the statistical significance of its coefficient of 0 .273 is greater than the significant level of this study which is .05, this explanatory variable becomes insignificant to the model at this significant level. It was believed by the Bank that conducting follow-up

report reduces project failure significantly. However, it simply tells that the follow-up work of DBE is not problem solver by providing technical support based on finding or not aligned with its purpose rather than reported for consumption of performance evaluation since its coverage is used for annual performance measure of credit processing units.

Table 4.9 has also depicted the direction of the relationship between the independent variables and the dependent variable using B which is the coefficient of the logistic regression and $Exp(B)$ which is the odds ratio.

As explained by the table, recruitment variation and cash flow overestimation have positive relationship with project failure. When the variation is increased during recruitment of a project‟s manpower from below the plan, which is stated in the appraisal document of the Bank, the probability of project failure will increase. The same is true for cash flow overestimation, i.e. when the overestimation of the cash flow of a project increases, the probability of the project‟s failure also increases.

On the other hand, follow-up coverage (technical support level of the Bank) and time overruns (implementation delay of a project) have inverse relationship with project failure.

Although the technical support level of the Bank is insignificant at 5% significant level, conducting more and more follow-up reports can reduce project failure.

The other unexpected result is the inverse relationship between implementation delay and project failure. According to this result, project failure will decrease as implementation delay increases. The inverse relationship between time overrun and project failure is an indication of the Bank‟s strong exercise of its rehabilitation mechanisms.

The direction of the relationship between the four explanatory variables and the dependent variable has also been shown by the odds ratio. The odds ratio which is greater than 1 for recruitment variation and cash flow overestimation has shown that these explanatory variables have positive relationship with project failure.

On the other hand, implementation delay and follow-up coverage has odds value of less than 1 and hence these explanatory variables have inverse relationship with project failure.

The magnitude of the relationship of each independent variable with the dependent variable has been also portrayed by table 4.9 using $Exp(B)$ which is the antilog of the coefficient of the logistic regression, B. $Exp(B)$ is also called the odds ratio. The interpretations of the odds ratio of statistically significant independent variables are as follows.

The odds ratio for the independent variable, recruitment variation is 1.107. This is to mean that the ratio of the probability of the project exposed to failure to the probability of the project being successful is 1.107 to 1 when the weighted average recruitment variation of the project‟s manpower in terms of number, qualification and experience are increased by 1% from below the plan which is stated in the Bank‟s appraisal document. In other words, since the percentage change in odds is expressed by($odds\ ratio - 1)x100$, the odds ratio in favor of project failure will be increased by 10.7% if the weighted average recruitment variation of the project‟s manpower is increased by 1% from below the plan. Therefore, running of projects below the manpower requirements which is stated in the Bank‟s appraisal report is one of the major causes of failure of projects which are financed by CCP of the Bank at 5% significant level.

The second significant independent variable for this study is cash flow overestimation and its odds ratio is 1.066. The corresponding odds ratio for this variable shows that the ratio of the probability of project failure to the probability of project success is 1.066 to 1 whenever the estimation of cash flow of a project is overstated by 1% from what the project is actually generating. The odds ratio in favor of project failure will be increased by 6.6% if overestimation of cash flow of a project is increased by 1%. Hence, overestimation a project‟s cash flow is also the other significant causes of project failure.

The odds ratio for the third statistically significant independent variable which is time overrun is 0.940. This odds ratio justifies that the ratio of the probability of project failure to the probability of project success is 0.940 to 1 as the time overrun is increased by 1%, which means that the prolonging of project implementation rather decreases the failure of the Bank‟s CCP financed projects. This result is completely against from what is expected and it may reflect the impact of credit rehabilitation operation of the Bank and the corrective measures taken to correct the problems.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

In this research project paper, the four explanatory variables which are believed to be the major causes of failure of projects that are financed by CCP of DBE are investigated. Three of them have been found to be statistically significant while the fourth explanatory variable is found to be insignificant.

The three explanatory variables which are found to be significant are implementation delay (which is captured by time overrun) the projects‟ manpower quality (which is captured by percentage variation in number, qualification and experience of the project employees with respect to DBE‟s appraisal document), and overestimation of returns from the project.

The inverse relationship between time-overrun (implementation delay of projects) and project failure is among the unexpected result of this study. Project failure decreases as time overrun increases for project implementation. As per the observation of the researcher, this is attributed to the intervention of the Bank to protect the projects from failure through rescheduling of loan repayment, reallocation of loan and weaving of interest payment. However, time overrun is among the three independent variables that are found to be significant for project failure/success. As per the information obtained from document analysis and based up on the observation of the researcher, projects have faced with many problems at their implementation stage. Unavailability of power supply and raw materials are among the major problems that make projects‟ implementation to delay.

From the results of recruitment variation, which is one of the statistically significant variables of this study, it can be deduced that many project owners have poor understanding with respect to the human resource aspect of their projects. As it is discussed in the literature review part of this paper, human resource is one of the key elements for any business organization to be successful. However, there is a governing perception in our society that looks business organizations as opportunity for family job creation and eager to be beneficial through saving from salary payment rather than optimally producing using appropriate manpower. It is common, therefore, seeing most projects filled with relatives than professionals and finally failed.

Overestimation of project return by the Bank‟s appraisal unit is one of the statistically significant causes of project failure/success. Because of the result of the overestimation of projects‟ return, larger loan repayment amount is set in the loan contract, which is an agreement made between the Bank and the borrower, and this in turn shortens the repayment period of projects. However, the actual returns of many projects are significantly lower than what it is stated in the loan contract/the Bank‟s loan appraisal document/. Since the loan repayment of projects largely depend up on their return, repayment of their debts within the agreed time period which is stated in the loan contract becomes impossible.

The explanatory variable that resulted in an unexpected result, follow-up coverage, is a bad signal for DBE because it has shown that statistically insignificant for project failure/success. The intention of follow-up process is believed to provide technical support to projects based on critical findings to insure the success of projects and enhance collection of loan. The insignificance of this explanatory variable means that the cost the Bank spending for this operation is meaningless because the operation has no contribution either for project success or failure for which it is solely designed. The researcher of this study also agrees with the result of statistical estimation based up on observed follow-up reports during data collection. Most of the reports lack critical findings, complete physical performance of the projects, comparing and contrasting of the actual to project plan at appraisal, and providing of concrete solution for corrective action. Simply, the follow-up reports seem a visit report in which the visitors reporting what they watched and told from the project contact person.

The other finding of this research project discloses that from the three economic sectors, agriculture, industry and service, the highest ratio of failure of projects that are financed by CCP of the Bank has been observed in the agricultural sector. On the other hand, the lowest failure ratio is registered in the service sector.

5.2 Recommendation

Aligned with the above conclusion, the researcher proposes the following corrective measures that should be taken by the concerned stakeholders in order to reduce project failure regarding projects that are financed by CCP of DBE.

- Regarding manpower problem of projects, the Bank has to enforce the project owners to recruit as per stipulated number, experience and knowledge requirements of manpower plan in appraisal documents since the project working capital requirement is determined considering the salary of these employees. The government has been also expected to do the same in addition to providing training in order to change the wrong perceived mind of local project owners (i.e. to increase their awareness regarding to the significant contribution of human resources for the success of any business organization), because employment creation, increasing government revenue in the form of tax, generating foreign currency and sustainability of project to generate to nation GDP are among the main goals for the projects established with all investment policy privilege.

- In order to help projects to be implemented as per the stated schedule, the Bank has to conduct strict project implementation follow-up in order to verify whether the implementation of the project is conducted as per the schedule which is stated in the Bank‟s appraisal document. Immediate & appropriate actions should be taken on the identified problems which hinder the project from being implemented on and or before the stated schedule.

- So as to prepare dependable and practicable appraisal report of projects, the Bank has to recruit different professionals since appraising of projects requires a group of experts with multidisciplinary professionals. Besides, the Bank has to give them the required training such as project appraising technique on timely basis. The Research Process of the Bank should also prepare and give real and workable research commodity study which is one of the inputs to prepare appraisal reports and hence the concerned management of the Bank should evaluate and monitor this activity through its Internal Audit Process.

- With respect to the follow-up activity of the Bank, the Bank has to give intensive training to the operators to fill the skill gap in addition to assigning the required human resource on merit base. Follow-up reports have to be conducted with a group of multidisciplinary experts rather than on an individual basis so as to achieve the purpose for which the follow-up report is designed to meet. The follow-up reports should have been made critically. The concerned management of the Bank has to take immediate action as per the recommendation of the follow-up report. Moreover, the performance evaluating unit of the Bank has to check the depth of the follow-up report prepared by operating units by going one step forward and has to take appropriate measure rather than collecting simply coverage number.

- Since the magnitude of failure of projects that are financed by CCP of the Bank is severe in the agricultural sector, the Bank should take great precaution during financing of projects from this sector. During collection of data, the researcher has observed that the Bank has failed to purchase crop insurance policies for many projects. Hence the required insurance policies should be purchased for all movable and fixed assets of financed projects.

- And finally, the researcher recommends further research for the highest ratio of project failure which is observed in the agricultural sector.

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