ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DETERMINANTS OF LOAN REPAYMENT PERFORMANCE OF GARMENT MANUFACTURING FACTORIES: THE CASE OF DEVELOPMENT BANK OF ETHIOPIA

REASERCH REPORT SUBMITTED TO ST.MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION

BY

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Abebaw Kassie (PhD). All sources of materials used for the thesis have been duly acknowledged.

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St. Mary's University, Addis Ababa January, 2016

ENDORSEMENT

This thesis has been submitted to St.Mary's University, School of graduate studies for examination with my approval as a university advisor.

_____ _____

Advisor Signature

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Table of Contents

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ABBREVATIONS

ADLI	Agricultural Development Led Industrialization
AIDB	Agricultural and Industrial Development Bank
AGOA	Africa Growth and Opportunity Act
CC	Contingency Coefficient
CMT	Curt –Made Trim
EEA/EEPRI	Ethiopian Economic Policy Research Institute
FOB	Free on Board
GDP	Gross Domestic Product
HSB	Housing and Saving Bank
KYC	Know Your Customer
LDC	List Developing Countries
MOTI	Ministry of Trade and Industry
MOFED	Ministry of Finance and Economic Development
NBE	National Bank of Ethiopia
NPLs	Non Performing Loans
NIC	Newly Industrialized Countries
PSSA	Pension and Social Security Authority
TGE	Transitional Government of Ethiopia
VIF	Variance Inflation Factor
WTO	world Trade Organization
SEA	East Asian and South African Countries

LIST OF TABLES

LIST OF TABLES IN THE APPENDES

ABSTRACT

This paper aims to identify the factors that influence the loan repayment performance of DBE'S garment manufacturing credit borrowers, and estimated the relative importance of factors that influence the loan repayment performance of the borrowers. To identify the factors behind successful loan repayment performance of the borrowers, probit model is used. In order to identify the order of their relative importance of determining variable, marginal effect model have been employed. In this study, secondary data has been collected from the individual files of thirty five garment manufacturing credit borrowers of DBE, which encompass the total population of the study. It is found that educational level of the borrowers, number of follow up conducted by the bank , Market demand level of the borrower factory product and loan utilization determine successful loan repayment performance of the borrowers positively and significantly. Other variables such as, other source of income, problems related to infrastructure and capital adequacy have positive sign, but are not statistically significant. On the other hand related experience show negative sign, and not statistically significant. The analysis of partial marginal effect shows that proper loan utilization of the credit borrowers is, the first, the level of Market demand level of the garment manufacturing credit borrower product, the second, the Education level of the borrowers and Follow-up/supervisory visits by the bank are the third and the fourth important factors affecting the loan repayment performance of the garment manufacturing credit borrowers of the bank.

The policy implications of the study are, lending institution make sure that:- their garment manufacturing credit borrowers have educated general manager, the borrowers' proper loan utilization of the disbursed loan for the proposed purpose ,the availability of sufficient market demand for the garment manufacturing credit borrowers both during loan approving and the operation time of the borrower, and undertaking of a close follow up or supervision work in order to provide information and technical assistance for the established project.

Thus credit institutions or lending agencies should adhere to the factors that significantly influence loan repayment before granting loans and at the time of loan administration of garment manufacturing borrowers to reduce the probability of loan defaults.

***KEY WORDS**: - Garment manufacturing borrowers, Loan repayment, Probit Model*

CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

Garment industry is one of the industries that have a potential in developing an economy such as Ethiopia. In today's world, garment industries make significant contribution to many national economies especially in the developing world. Many countries are exploiting this industry for reasons of economic growth (Alem, 2009).

History depicts that this industry sector has been a base for many successful industrial developments (Rajesh,2003) and hence Ethiopian government has defined a policy where one of the tasks identified is rapid export growth through production of high value agricultural products and increased support to export oriented manufacturing sectors such as textile and garment (Theovander, 2003).

The industry is labor intensive which makes it more convenient for developing countries due to available low wage labor and since labor cost is more expensive compared to other production costs. Hence the garment industry serves source of employment, income generation and export earnings.

In Ethiopia the sector is playing a major role in the strategy of ADLI, as it is closely linked in backward integration with the agricultural sector in terms of raw material supply (abundant raw material such as cotton and vertically integrated textile industries) and taps into the huge global textiles and garment market forward integration(IMF staff paper,vol.45.1. ecbp, 2009).

Due to labor wage increasing in developed countries, the apparel manufacturing has been migrating from the high wage developed world to developing countries due to availability of low wage labor (Rajesh Behda, 2003). Following these, different trading means such as cut-made-trim (CMT0 and free on board (FOB), outsourcing of the production activity, have been formed

by developed countries. Hence low wage labor is one of the competitiveness advantages of the industry.

Since the population of a country is increasing over time and it is the second largest population in Africa, it creates demand for garment products in the local market as well as sources of cheap labor force in the production process of garment industry and these can be also great sources of potential for growth and expansion of the garment sector. In addition to the local demand, the preferential market access of export market commitments, Africa Growth and Opportunity Act (AGOA) is one source of market (DBE Commodity study, 2013).

The textile and garment sector is under growing pressure to expand more rapidly - with the Ethiopian government setting ambitious goals for the industry. The Government has targeted the textile sector as a key economic activity towards harnessing the growth of the national economy by generating hard currency (DBE Commodity study, 2013).

In order to enhance the economic and social development of the country DBE financed garment manufacturing factories in the country. However, as per NBE directive of NPL time line, the garment factories credit borrowers of DBE are not paying their loan within the time framework .Hence, the loan availed for garment a factory has not been collected due to loan default (DBE central data base, April 2015). This has an impact on the sustainable provision of credit to the potential investors and existence of the bank as a financial institution. It is therefore, important for the bank to devise means to reduce the levels of loan default. This can be achieved if the bank knows the determinants that influence loan repayment performance of the bank's garment factories customers. Thus; the study investigates the determinants affecting loan repayment performance of garment factories.

1.2. Statement of the problem.

Banks exist to provide financial intermediation services while at the same time endeavor to Maximize profit and shareholders' value. Deterioration in banks' loan quality is one of the major causes of financial fragility. Past Experience shows that a rapid build-up of bad loans plays a crucial role in banking crises (Kunt and Detragiache, 1998, and Hermosillo, 1999). The solidity

of bank's portfolio depends on the health of its borrowers. In many countries, failed business enterprises bring down the banking system (Alemu, 2001). A sound financial system, among other things, requires maintenance of a low level of non- performing loans which in turn facilitates the economic development of a country. High level of nonperforming loan is linked with banks failures and financial crisis. In Ethiopian context, the Banks in the country are required to maintain ratio of their non performing loans below five percent (NBE, 2008).

The issue of the allocation of credit has a profound implication both at the micro and macro level. When credit is allocated poorly, poor investment projects are undertaken and the nation's resources are squandered, it raises costs to successful borrowers, erodes the fund that would be available for future investment, reduces banks flexibility in redirecting towards alternative activities.

The problem of loan default reduces the lending capacity of a financial institution. It also denies new applicants access to credit as the bank's cash flow management problems augment in direct proportion to the increasing default problem. In other words, it may disturb the normal inflow and outflow of fund a financial institution has to keep staying in sustainable credit market (Aberham, 2002).

On the other hand, high repayment rates allow the institutions to lower the interest rates and processing costs and consequently increase patronage of loans. Repayment performance thus serves as a positive signal for increasing the volume of credit availability to various sectors of the economy (Acquah and Addo, 2011).

But, the DBE central loan data base in April 2015 shows, above 60% of the DBE financed garment factories are in problems of loan repayment, or they are defaulter. As per the knowledge this research writer, there are no sufficient studies conducted on investigating on the factors affecting loan repayment performance of garment manufacturing borrowers of DBE. Hence the study focused on investigating on identifying of the factors that influence loan repayment behaviors of the bank's garment manufacturing credit borrowers. Therefore, the questions this study seeks to answer are:

- What factors are critically impeding the loan repayment performance of the garment manufacturing factories in Development Bank of Ethiopia?
- What would be the factors are critical in improving loan repayment performance of garment manufacturing factories?

1.3. Objective of the Study

The main purpose of the study is to investigate the major determinants of loan repayment performance of DBE financed garment manufacturing factories. Specifically, the study pursues the following specific objectives:-

1. To investigate the effect of internal factors on loan repayment performance of garment manufacturing borrowers of Development Bank of Ethiopia.
2. To investigate the effect of external factors on loan repayment performance of garment manufacturing borrowers of Development Bank of Ethiopia.
3. To identify the relative importance of factors on loan repayment performance of garment manufacturing borrowers of Development Bank of Ethiopia.

1.4. Delimitation/Scope of the Study

The study focuses on garment factories financed by DBE. Although, other financial institutions may have also been engaged in financing garment factories; the study had not incorporated garment factories financed by other financial institutions due to time and financial constraints. Although the study is restricted only to DBE borrowers, its finding is expected to somehow reflect some of the common features of others banks since some of the problems exhibited in DBE will also observed on others. The study comprises a cross-sectional data of the bank's existing 35 garment manufacturing borrower in April 2015.

1.5. Significance of the Study

DBE financed more than 35 garment factories but 60% of these borrowers are not paying their loan as per the agreed terms with the bank or they are defaulters. This has an impact on the

sustainable provision of credit to the potential investors and existence of the bank as a financial institution. It is therefore, important for the financial institutions to devise means to reduce the levels of loan default. This can be achieved if they know the factors that influence garment factories loan repayment performance. Thus, the study will help for future adjustment and improve literature on this specific issue. In addition Lesson to reduce to reduce loan defaults of clients is obtained. Other researchers will make use of the research outcome and also will help them to make research on similar issues.

1.6. Organization of the Thesis

The thesis is organized into five chapters. Chapter one comprise back round of the study, statement of the problem, objectives of the study, Significance of the study, and limitation of the study. The second chapter reviews the literatures relevant to the study which includes theoretical and empirical studies. The third chapter incorporates Brief description of methodology that is the population and sampling technique of the study; the sources of data; the data collection tools/instruments employed; the procedures of data collection; and the methods of data analysis. The results and discussions of the findings presented in chapter four. Lastly, the conclusion and recommendation of the study presented in chapter five.

CHAPTER TWO: LITERATURE REVIEW

A number of studies have been carried out about the cause of nonperforming loans in different banks in different countries. But in my view none of them addresses the determinants and the cause of loan default in the determinants of loan repayment performance of garment manufacturing industry borrowers in Development Bank of Ethiopia. Thus, this paper attempts to fill this gap and foster research in this important area further study.

The focus of this chapter is to give theoretical and conceptual foundation of the study. This chapter presents the literature review focusing on the determinants of nonperforming loans. Accordingly, the first subsection, 2.1.1 presents the challenges and opportunities of Ethiopian garment industry .These challenges and opportunities have their own impact on the success of the sector in the sector; hence this will intern the profitability and repayment capacity of garment factories. The second subsection 2.1.2 discusses review of literature on the Policies, Institutional Support and overview of the Sector. This to show how much attention is given to the sector what is the status of the sector in the country. The next subsection 2.1.3 discusses the Role of Credit Market. 2.1.4 Present Credit Management Policies. Good credit management enables have banks to successful borrowers.2.1.5discuss review literature on Credit Methodology .2.1.6 shows Banks Credit Policy in Ethiopia, and the last subsection 2.2 discusses studies made earlier on specific determinants of nonperforming loan, and finally the research gap is identified .

2.1. Theoretical Literature

2.1.1 Opportunities and Challenges on Sustainable Development of Ethiopian Garment Industry

2.1.1.1 Opportunities

Textile and garment is a first ranked industry and is supported with various policy measures. Textile and Clothing Industry meets the basic principles identified in Ethiopia's industrial development strategies. It saves capital, employs large labor force, uses agricultural outputs as inputs and creates the opportunity to be internationally competitive (MoTI, 2003). In the assumption of the multiple effects of the sector, Ethiopian government has issued a series of

policies for its prioritized industries such as revision of investment code, tax reform, tariff adjustments, land policy reform, and favorable export policies and measures that mainly focus on promoting these industries so that they sale their products in the foreign market. Some of the internal and external factors to the garment sector that enables it to sustain in the local and international market competitively are:-

Internal factors

Direct Government Support; Textile and clothing industry is a prioritized industry along with agro processing and construction. The government has intended to provide different incentives based on the gaps that limit the competitiveness of the industry in the international market (MoTI, 2003). According to the strategy major obstacles for the sector is low productivity of labor. There are efforts to establish training institutions that are engaged in the training of semi-skilled professionals and sewing operators. The government also supports garment exporters through identifying market for their products; provide land for production in the industrial areas which have basic infrastructure (road, electricity, water, telecommunication etc)(MoTI,2003), credit facility for investment and export credit guarantee schemes for export processing etc(NBE, 2002/03).

Supply of Raw materials: Ethiopia is climatically favorable for the production of cotton and this has a spillover effect on the expansion of vertically integrated textile and garment industries. However, even if the country has a favorable condition and potential in cotton production and textile and garment manufacturing, the performance of the garment sector, without holding large portion of working force of manufacturing sector, is negligible in its contribution to GDP, export earning and even to satisfy the local demand.

The continuous and integrated efforts of stakeholders to improve the quality and quantity of its produces in the process of cotton plantation, ginning, spinning, weaving/knitting, and fabric process are the main determinant factors for sustainable competitiveness of the country's garment industry. In addition to quality and quantity, costs of quality fabrics and accessories are very crucial for competitiveness of the garment industry in the international or local market. In

this regard, the country should further strengthen its efforts to reduce the unit cost of output and increase the value added of the sector.

Labor Resources: Garment manufacturing is labor intensive industry and demands mostly semi and unskilled labor force. In this regard since Ethiopia is one of the highly populated countries in Africa, its large working force can make this specific industry to be competitive in the international market and it could attract more investment to the sector. An organizational structure with the required human power based on process management principles with a transparent working system to successfully accomplish assignments by the staff of any production process is vital for the competitiveness of the factories. In fact, the organization and management of the firms vary with the size and complexity of production process. However, there should be a planned operation system that connects supply chain from sourcing of raw materials via designed production to distribution. It must be organized in such a way that specialized activities and each performer is located where they can contribute the most to the productivity of the company (Development Bank of Ethiopia, 2013). For the better operational performance of the factories well organized organizational structure and assigning of the required man is one of the success factor for garment manufacturing factories in the country.

Even if the majority of the country's working force can be categorized as se mi- skilled and unskilled the abundant labor force and the minimum wage, as compared to Asian and other African countries, makes the country attractive in the sector along with its potential to produce cheap and quality raw material supplies (MoTI, 2001).

External Factors

Advantage of International Market Accesses: Ethiopia has various opportunities to export its exportable items to different countries through preferential market access.

Change in the Trend of Production: The other external opportunity for the garment industry is the change in the trend of garment production globally.

As we discuss on the introduction part, since most garment producers in the industrialized countries face a fierce competition from labor intensive technologies of SEA countries, their

garment industries ceased production and are transferred to LDCs to use the comparative advantage of labor cost. Since these foreign companies bring new technologies and techniques as well as new market opportunities, the change can have a spillover over effect for local garment firms by way of encouraging them to increase their competitiveness through learning and experience sharing.

The Increasing Demand and the Dynamisms in Fashion Industry: Cloth is a highly demanded commodity, next to food; it always has a large market. Even in today's highly civilized world, Textile and Clothing is one of the industries with a large market share. Therefore, it would not be surprising if more industries enter to the sector and if it is put as the first ranked industry in many economies. Even though the demand for clothing tends not to increase at the same rate as income increases, fashion changes stimulate frequent purchasing and the natural tendency of declining in demand can be offset (Dicken, 1992, P. 250). This implies the attractiveness of the sector for both the local as well as international markets. Therefore, Ethiopian garment firms can be competitive using their comparative advantages if the necessary policy instruments and institutions are put in place.

2.1.1.2 Challenges

The Ethiopian economy is one of the least industrialized in the world. The manufacturing sector is least developed in many respects, including volume of production, quality of products, technology status, labor skill, export capacity, etc.(EEA/EEPRI,2005).

The problem in the garment industry is comparable with the manufacturing sector. The manufacturing sector is least developed in many respects, including volume of production, quality of products, technology status, labor skill, export capacity etc. It is structurally distorted, unbalanced and dependent on imports for its intermediate inputs and capital goods (EEA/EEPRI, 2005 p.1). These stated problems are fully applicable to garment manufacturing. Some of the peculiar challenges which are internal to the garment are low labor productivity, lack of fabrics and accessories, inefficient infrastructure, insufficient export incentives, high trade cost due to geographic disadvantage, out dated machineries and equipment, flooding of imported and smuggled garment products, lack of vertically integrated industries and lack of inter industry

cooperation, and lack of skilled manpower problems, it result in Low productivity due to unskilled man power aligned with low level of technology.

External Factors

Since most countries follow export oriented industrial development strategy, competition in the world market is becoming very strong. Apart from this, the removal of quota system from world market also creates additional stiff competition from SEA countries like China in the US, EU and other countries. Uncertainty of preferential market access is the other potential source of challenge, since it is attached with different political conditions. Currently, Ethiopia is planning to join WTO as a member and this requires removal of all trade barriers and opening of its market; this might expose local garment firms to a severe competition and as a consequence in the short run there may be adverse effects on the sector's performance. The cumulative effects of all these problems may limit the growth of the garment sector.

Development Bank of Ethiopia (2013) Textiles and garment comprise a unique industry in the global economy. Most developed countries of today as well as newly industrialized countries (NICs) have used this industry as the springboard for their development; even some least developed countries (LDCs) have been able to step on to the development ladder on the basis of their textile and garment industry.

Despite the different incentives provided by Ethiopian government, currently the country doesn't produce enough fabric even for domestic demand. The main reasons forwarded here are just problem in raw material supply, product diversification, low output capacity, inadequate skilled labor and management problem that forced investors to outsource in order to fill the gap.

In terms of technology, studies have pointed out that, a country with abundant labor force are better to have garment factories than textile industries, because they relatively employ more labor power and simple to install, operate even at ease and suitable for efficient production of smaller or larger orders. The previous one is labor-intensive where as the later is capital – intensive.

The capital requirements for manufacturing quality interlinings, labels, threads, buttons, zippers and polo bags are also high and the dependency on imports for the quality textile fabric and garment accessories will inevitably may stay for a longer period of time.

2.1.2 Policies, Institutional Support and overview of the Sector

Due to the prime importance of the sector, LDCs in general and Ethiopia in particular are striving to benefit from the sector. To this end the Ethiopian government designed different privileges and incentives for investors working in the production and export of textile and garment products so that to increase foreign exchange earning of the country. The major export incentives given by the government includes tax exemption in importation of investment goods with spare parts, tax holidays for the few operational years (2-5 years), established bonded manufacturing warehouse systems, export credit guarantee scheme, availing land at reasonable lease price or free of charge in some regional governments. In line with the government policy, DBE has been financed the lion's share of textile and garment plants found in the country.

Ethiopian garment and textile industry development institute (2014) currently the sector covers 20% of the manufacturing sector of the country. Now modern technologies created and applied for the sector development, but in the country few technologies are established in few factories, and there is low skill to utilize the technology. In the country there are 11,718 small scales textile and garment manufacturing enterprise .These enterprise create employment opportunities for 22,953 workers, and they are the bases of medium and large scale textile and manufacturing sectors. On the other hand the country has 64 textiles and 66 garment medium and large scale textile and garment manufacturing factories in the country. Out of 66 medium and large scales garment manufacturing industries 15 are owned by foreign investors and the rest are owned by domestic investors. 46 factories are found in Addis Ababa, 10 are found in Oromia, and the rest are found in other regions of the country.

In order to enhance the sector contribution to the country economy, the government has been attracted foreign investor and established technical and vocational educational center and selected universities in five zones such as Bahirdar University textile and fashion design technology institute, Axum University, combolcha technology institute, Wolkite and Diredawa University has established.

2.1.3 The Role of Credit Market

Finance is central to establish and operate productive activity. Sufficient finance is a prerequisite to proper organization of production, acquiring of investment assets and/or raw materials and development of marketing outlets e.t.c. Credit is a device for facilitating transfer of purchasing power from one individual or organization to another. As indicated by Oyatoya (1983) credit provides the basis for increased production efficiency through specialization of functions thus bringing together in a more productive union the skilled labor force with small financial resources and those who have substantial resources but lack entrepreneurial ability.

2.1.4. Credit Management Policies

Hoff and Stiglitz,(1990), pointed out that borrowers and lenders may have differential access to information concerning a projects risk, they may form different appraisal of the risk. What is clearly observed in credit market is asymmetric information where the borrower knows the expected return and risk of his project, where as the lender knows only the expected return and risk of the average project in the economy.

Lending institutions are faced with four major problems in the course of undertaking credit activity: a) to ascertain what kind of risk the potential borrower is (adverse selection), b) to make sure the borrower will utilize the loan properly once made, so that he will be able to repay it (moral hazard). C) to learn how the project really did in case the borrower declares his inability to repay and d) to find methods to force the borrower to repay the loan if the borrower is reluctant to do so (enforcement) (Ghatak and Guinnane, 1999). This problem of imperfect information and enforcement leads to inefficiency of credit market which in turn leads to default. Thorough credit assessment that takes into account the borrowers` character, collateral, capacity, capital and condition (what is normally referred to in the banking circles as the 5C`s) should be conducted if they are to minimize credit risk.

Charles Mensah (1999), Credit management process deserves special emphasis because proper credit management greatly influences the success or failure of financial institutions. An understanding of a bank’s credit risk management process provides a leading indicator of the quality of a bank’s loan portfolio. The key elements of effective credit management therefore are

well developed credit policies and procedures; strong portfolio management; effective credit controls and the most crucial of all a well trained staff that is qualified to implement the system.

Vigano(1993) pointed out that factors affecting credit risk are the customer's ability and willingness to pay, presence of favorable external conditions, quality of information and bank's ability to ensure the customers willingness to pay.

2.1.5. Credit Methodology

Credit methodology encompasses every activity involved in lending including sales, customer selection and screening, the application and approval process, repayment monitoring, and delinquency and portfolio management. It is also linked with the institutional structure pertaining to the credit process. Quality of credit methodology is one of the most determinant factors for the efficiency, impact and profitability of the institutions. According to William (2007), the Criteria for Successful Loan Repayment are generally categorized as: Good Credit, Equity, Experience, Good Business Plan, and Collateral.

Thus getting the credit methodology and product mix right is therefore one of the most demanding as well as rewarding challenges of every financial institutions (banks). The sections that follow discuss major issues in credit methodology that include credit information, credit analysis process, credit approval and credit monitoring processes.

2.1.5.1. Credit Information

Engagement in financing begins with customer recruitment. An issue of knowing the customer, customarily known as KYC (Know Your Customer) is so vital before proceeding to details. Banks use various means to obtain such information about the existing or potential customer. Use of financial statement, credit report from credit bureau, customers' history if not new is the potential sources of information (Ross et al., 1998).

Credit providers use credit information to conduct credit risk analysis of prospective borrowers in order to mitigate credit risk. Kallberg and Udell (2003) highlight that information sharing is

useful both at the origination stage and after credit has been extended. Especially at the origination phase, information sharing reduces the problems of adverse selection.

In fact the exchange of credit information improves non-performing loan ratios, leads to fewer losses through write offs and decreases interest rates for good credit risks (Jentzsch, 2008: 538). Jentzsch (2008) further supports that sharing credit information between lenders intensifies competition and increases access to finance. Jappelli and Paggano (2005) indicate that credit information sharing results in improved bank's knowledge of applicant's character, easing adverse selection and reduce the informational rents that banks could otherwise extract from their customers. Credit information also acts as a borrower disciplining device, by cutting insolvent debtors off from credit and eliminates or reduces the borrower's incentive to become over-indebted by drawing credit simultaneously from many banks without any of them realizing it.

Further, Gehrig and Stenbacka, (2007) highlight that information sharing reduces adverse selection problems and thereby promotes financial stability; it serves as a borrower disciplining device and it reduces the informational rents that banks can extract within the framework of their established customer relationships.

In addition, Barth, Lin, Lin & Song (2008) show that information exchange will assist in minimizing lending corruption in banks by reducing information asymmetry between consumers and lenders, improving the bribery control methods and reducing informational rent, and hence the bargaining power of lenders. The exchange of consumer credit information disciplines borrowers to repay loans because borrowers do not want to damage the good report which can make it difficult for them to get credit (Swiss National Bank, 2008).

2.1.5.2. Credit Assessment

Credit analysis is the first step in the process to tailor-make a solution to fit the customer's needs. The assessment starts with an understanding of the customer's needs and capacities to ensure there is a good fit in terms of the financing solution. Credit assessment is the most important

safeguard to ensure the underlying quality of the credit being granted and is considered an essential element of credit risk management (Cade, 1999).

The credit quality of an exposure generally refers to the borrower's ability and willingness to meet the commitments of the facility granted. It also includes default probability and anticipated recovery rate (Saunders & Cornett, 2003). Credit assessment thus involves assessing the risks involved in financing and thereby anticipating the probability of default and recovery rate.

A credit analysis is used by the credit official to evaluate a borrower's character, capital, capacity, collateral and the cyclical aspect of the economy, or generally referred to as the five capital, character, capacity, collaterals and conditions of the borrower.

2.1.5.3. Credit Approval

Extending credit is the careful balance of limiting risk and maximizing profitability while maintaining a competitive edge in a complex, global marketplace. Banks go through a thorough process in approving credit to hit the balance. Credit approval is the process of deciding whether or not to extend credit to a particular customer. It involves two steps: gathering relevant information and determining credit worthiness (Ross, Westerfield and Jordan, 1999).

The quality of credit approval processes depends on two factors, i.e. a transparent and comprehensive presentation of the risks when granting the loan on the one hand, and an adequate assessment of these risks on the other. Furthermore, the level of efficiency of the credit approval processes is an important rating element. Due to the considerable differences in the nature of various borrowers and the assets to be financed as well the large number of products and their complexity, there cannot be a uniform process to assess credit risks.

The quality of the credit approval process from a risk perspective is determined by the best possible identification and evaluation of the credit risk resulting from a possible exposure.

2.1.5.4. Loan Follow up

Lending decision is made on sound credit risk analysis /appraisal and assessment of creditworthiness of borrowers. But past records of satisfactory performance and integrity are no guarantee future, though they serve as useful guide to project trend in performance. A loan granted on the basis of sound analysis might go bad because of the borrower may not meet obligations per the terms and conditions of the loan contract. It is for this reason that proper follow up and monitoring is essential. Monitoring or follow-up deals with the following vital aspects:

- Ensuring compliance with terms and conditions
- Monitoring end use of approved funds
- Monitoring performance to check continued viability of operations
- Detecting deviations from terms of decision
- Making periodic assessment of the health of the loans and advances by nothing some of the key indicators of performance that might include: profitability, activity level and management of the unit and ensure that the assets created are effectively utilized for productive purposes and are well maintained.
- Ensuring recovery of the installments of the principal and interest in case of term loan as per the scheduled repayment program
- Identify early warning signals, if any, and initiate remedial measures thereby averting from possible default.

2.1.6. Banks Credit Policy in Ethiopia

2.1.6.1. Banks credit policy during the Derg Regime

According to Gebrehiwot(1998), during the Derg regime all financial institutions (except the Saving Associations, whose asset shares do not exceed 1% of the sector's assets and whose loan services are limited to their members) were publicly owned and entry was restricted, there by establishing a public monopoly in the financial sector. Moreover, the financial system has been segmented with the financial institution having specialized functions; specialization not based on

efficiency in risk and transaction cost considerations: individually institutions have been operating in specific sector allocated to them, each enjoying a monopoly in its segment.

According to this definition, there were two specialized financial institution namely Housing and Saving Bank (HSB) and Agricultural and Industrial Development Bank (AIDB) in the regime. The HSB specialized on the provision of loan for residential and commercial construction industries. In addition, the HSB was mobilizing time deposits, and accepted the deposits of Ethiopian Insurance Corporation and Pension and Social Security Authority (PSSA) as per the order of the government.

The second specialized bank during the period was Agricultural and Industrial Development Bank (AIDB) which specialized in development loans by raising fund only through borrowing (both foreign and domestic) and time deposit (Birhanu and Befekadu, 1999).

2.1.6.2. Banks credit policy post 1991

After the downfall of the military government in May 1991, the transitional government of Ethiopia (TGE) took unusual step of distributing its draft economic policy to public comment. This economic policy clearly defined the role of the state in the economy; explicitly acknowledged state control over the entire economy as the major cause of economic decline and the need to shrink that role and in steady broaden the scope of private sector participation in the economy (Gebrehiwot, 1998). Following this market-oriented economic policy designed by the Transition Government of Ethiopia, financial sector reform and liberalization under the existing financial institution was one among several reforms. The reform included elimination of priority access to credit, liberalization of interest rates, restructuring including portfolio cleaning and recapitalization of state owned banks, introduction of use of profitability criteria by financial institution, reduced direct government controls of financial intermediaries and limits on loans to the government both by the NBE and Banks, enhancement of the supervisory, regulatory, legal infrastructure and power of the NBE, allowing private financial institution and introduction of treasury bill auction market(Gebrehiwot, 1998).

In addition banks have decentralized loan decision-making which has an advantage on both the institution and the client. On the bank side, it reduced transaction cost of lending, shortened the time taken screening viable project and reduced the cost of provision (i.e. minimizing the default risk through frequent follow up before calculating the provision expense on the outstanding balance). In the side of the borrower it reduced the finding cost of loan approval body and other related expense to process the loan, and it shortened the loan processing time (Ibid, 1998).

Development Bank of Ethiopia (DBE) has been serving the national economy as development finance institution for a century. During this time, there were three notable credit policy of the current DBE. The first credit policy formulated in 1973 at the time of the merger of the ex-Ethiopian Investment Corporation and the then Agriculture and Development Bank of Ethiopia. The main objective of the credit policy was to facilitate the provision of credit service mainly to the private sector to enhance the socio-economic development of the country. The second, policy was formulated in 1976, after the establishment of the socialist oriented government. The main objective was to facilitate the provision of supply led and policy directed credit to the socialized sector of the economy. The third policy was issued by the then DBE's Board of Management (BOM) in 1999 following the restructuring and re-organization tasks of the bank. The new credit policy mainly targeted the facilitation of credit service provision for the private sector development on the basis of national development goals and institutional sustainability. After the final credit policy was issued in 1999, there was no major shift in policy but there were a number of adjustments at different times in order to provide customer focused credit facility and mitigating risk factors that hinder the sustainability of the bank.

Area of lending: DBE's main area of focus is the provision of medium and long term loans for investment projects in the government priority areas such as investment in Commercial agriculture, manufacturing and agro processing sectors are the major focus areas whether focused on export or not.

Credit product and services: the bank has been extending investment credit to creditworthy borrowers and projects that have received a through appraisal and found to be financially viable, economically feasible and socially desirable. Depending on the type and nature of the project,

DBE extends different products of credit and services to who could invest in economic growth of the country. Some of the credit product and services are:

Long term loan: the maximum length of time the bank advances long term loans are fixed at 20 years including any grace period.

Medium term loan: a medium term loan is a loan repayable within three to five years including any grace period.

Working capital loan: the bank extends this type of loan in order to solve short term cash flow problems of existing customer and to increase capacity utilization of customer. This type of loans is settled within two years from the date of disbursement.

Co-financing: in order to maintain the exposure limit, minimize risks and to overcome occasional liquidity problems the bank is involving in financing projects which need very large investment capital under co-financing arrangements with other national or international financial institution.

Guarantee service: the bank provides financial guarantee service to its reliable clients especially exports guarantee service.

Managed fund: the bank undertakes specific lending operation as a managed fund at the request of governmental and non-governmental agencies in support of development programs/projects.

Lease financing: the bank avail loan in the form of lease financing to its clients on the condition of the project must support agriculture and industrialization strategy of the country.

2.2. Empirical Studies on Determinants of Loan repayment performance

Ahmad (1997) in his Publication, Natural Hazards and Hazard Management in the Greater Caribbean and Latin America mentioned some important factors that cause loan defaults which include; lack of willingness to pay loans coupled with diversion of funds by borrowers, willful negligence and improper appraisal by Credit Officers. Balogun and Alimi (1988) identified the major causes of loan default as loan shortages, delay in time of loan delivery, high interest rate, and poor supervision.

According to Olomola (1999), loan disbursement lag and high interest rate can significantly increase borrowing transaction cost and can also adversely affect repayment performance.

Okorie (1986) shows that the nature, time of disbursement, supervision and profitability of enterprises contributed to the repayment ability and consequently high default rates. Other critical factors associated with loan delinquencies are: type of the loan; term of the loan; interest rate on the loan; poor credit history; borrowers' income and transaction cost of the loans.

Most of the defaults arose from poor management procedures, loan diversion and unwillingness to repay loans, Kohansal and Mansoori (2009). According to them a number of factors can cause loan defaults some of which are interest rate ceilings usually imposed by the government, Monopoly power in credit markets often exercised by informal lenders, large transaction costs incurred by borrowers in applying for loans and moral hazard problems.

Richard (2011), on his study on Factors that cause NPL in commercial banks in Tanzania and strategies to resolve them, identified that the most ranked factor contributed to non-performing loans is allocation of funds by borrowers to businesses other than agreed one, the second significant factor was weak loan portfolio management especially weak credit analysis at the application stage, followed by lack of integrity of borrowers. Change in country policies, court injunction instituted when bank intends to dispose properties, low prices fetched when disposing mortgaged assets and business failure were ranked as moderately.

Greenidge and Grosvenor,(2010)GDP growth, inflation and interest rates are common macro-economic factors, while size and lending policy are micro-economic variables that can influence the bank could have non performing loan .

Jimenez and Saurina (2005) examine the Spanish banking sector from 1984 to 2003; they provide evidence that non-performing loans are determined by GDP growth, high real interest rates and lenient credit terms.

Khemraj and pasha (2005) explained some macroeconomic and specific variables which affect non performing loan (NPLs) ratio. The survey concludes that loan to asset ratio and real interest rate has a positive impact with NPLs while credit growth and GDP have a negative relationship with NPLs.

Hoque and Hossain (2008) observed that NPLs are highly correlated with interest rate which enhance the debt burden of the borrower and cause loan defaults. Furthermore Bloem and Gorter (2011) studied that frequent changes in interest rate policy cause an increase in the bad loans. According to their findings sample bankers perceived that interest rate; exchange rate, unemployment, inflation, and energy crisis have positive association with NPLs while GDP growth has negative relationship with NPLs.

Jameel (2014) identified that that bank's nonperforming loans can be affected by variation in GDP, weighted average lending rate, maturity period of loans, capital adequacy ratio and credit deposit ratio in Pakistan.GDP growth rate, maturity time period of loans, capital adequacy ratio and credit deposit ratio has negatively associated with NPLs in Pakistan banking sector.

Study of Rajan & Dhal (2003) employed the regression analysis for Indian banks. It claimed that macroeconomic factors and financial factors both have significant impact over the NPLs rate. Reported macroeconomic factors include the GDP growth, among financial factors; maturity, bank size, credit orientation, and credit terms were included. Some studies also considered the impact of ownership structure on the NPLs rate.

Hu et al (2006) which studied Taiwan's banking sector. It covered the study period of 1996 to 1999. The study found negative relationship between the bank size and NPLs rate. The study suggests a strapping association between NPLs and several macroeconomic factors. These are annual growth in GDP, credit growth, real interest rates, the annual inflation rate, real effective exchange rate annual unemployment rate, broad money supply (M2) and GDP per capital etc.

In Ethiopia an econometric estimation was conducted by Mengistu (1997), made an empirical analysis on the determinants of industrial loan repayment in Ethiopia with particular reference to manufacturing firms in Addis Ababa. The regression result employing tobit model based on 65 manufacturing firms revealed that total investment cost, ratio of value of collateral to total loan amount, the firm's grace period, number of disbursement installments, and time were statistically insignificant, while repayment period and number of supervision visits are significantly and positively related to loan recovery rate.

However, coefficients of loan amount and ratio of pre-operating interest to total loan amount are significant at 10% and 15% respectively and negatively related with loan recovery rate. In this case, he employed only information specific to the terms and conditions of the loan during appraisal.

Vigano (1993), employing a credit scoring model for development banks based on 118 sample borrowers, taking the case of Development Bank of Burkina Faso, found out that customer's characteristics, enterprise characteristics and customer's activity, profitability and revenue stability, asset value and composition, financial situation, loan use, bank-customer relationship, contractual conditions and credit risk control, quality of information and the customer's banking behavior are identified to influence the bank's credit risk. The study revealed that being women, married, aged, proximity to the bank, use of better technology and being flexible to adjust to market changes, proper use of the loan, project diversification, frequency of loan maturity, collateral, personal guarantee and being a pre-existing depositor are negatively related to loan default risk. Loans in kind, long waiting period from application to disbursement and being younger firm, past default, existence of other loan are those positively related to loan default rate.

Kibrom(2010) Major Determinants of Agricultural Loan Repayments, Savings and Development . Identify the determinants of successful loan repayment performance of borrowers a probit model is estimated. The probit model describes that educational level of the borrowers, repayment period of the loan, availability of other source of income, sector, purpose of the loan and type of labor determine successful loan repayment performance of the borrowers positively and significantly. Other variables such as, gender and household size have positive sign, but are not statistically significant. Moreover, variables such as age, loan diversion, other source of credit show negative sign but not statistically significant. The variable experience is statistically significant but show negative sign. Projects with medium repayment period are relatively found to repay their loan successfully, while projects with short and longer repayment period are found to be high defaulters relative to that of medium repayment period, which are reflected by the positive and significant relationship between medium repayment period and successful loan repayment performance. This leads to suggest that repayment period should be set in a way that consider the financial viability of the project, loan size and market situation and the repayment period.

Wondimagegnehu(2012) with his mixed approach study examined the determinants of nonperforming loans the case of Ethiopian banks. The findings of the study shows that poor credit assessment, failed loan monitoring, underdeveloped credit culture, lenient credit terms and conditions, aggressive lending, compromised integrity, weak institutional capacity, unfair competition among banks, willful default by borrowers and their knowledge limitation, fund diversion for unintended purpose, over/under financing by banks ascribe to the causes of loan default. Evans Brako, Emmanuel,, Beatrice, and Anthony (2014) in their study on Loan Default Rate and its Impact on Profitability in Financial Institutions were identifying the loan default rate and its impact on profitability in Financial Institutions by adopted both qualitative and quantitative methods . The results of study the show that, management of loans given to clients, the problem of recovery and overdue of loans, and analysis of project viability are the major factors that determine the profitability of financial institution.

Aberham(2012) conducted study on determinants of loan repayment small scale enterprise in Ethiopia: case of private borrowers around Zeway area .The estimation result employing tobit model reveals that , loan diversion , other source of income, education, work experience in related economic activity before the loan and engaging on economic activities, the size of loan, grace period, and form of disbursement and credit experience of the borrower and loan repayment period are the factors that affect loan repayment performance .The evidences of both descriptive analysis and econometric regression show that loan diversion is found to be one of the major determinants adversely affecting the loan recovery rate. Loan diversion itself is found to be influenced by the size of loan, grace period, and form of disbursement and credit experience of the borrower. Increasing the loan size increases the loan diversion rate. Having long grace period, previous credit experience and releasing loan in kind are found to reduce the probability of loan diversion. Borrowers who have other alternative income source are found to show better loan repayment record. Similarly, business experience in related economic activity and education are found to be significantly and positively while repayment period and sex are negatively associated with loan repayment rate. Borrowers who have extensive experience in related activity and educated ones shows better repayment record while male borrowers and projects with long repayment period show poor repayment record. Another variable that

significantly affect loan repayment status of borrowers is the type of activity that the promoter is engaged in. Borrowers who involved in agricultural sector are found to be relatively defaulters as compared with other sectors. This complies with the hypothesis that agricultural projects are more subjected to risk and uncertainty. With regards to the loan rationing mechanism, collateral is found to be the major device for credit rationing purpose. Borrowers with high value of collateral are clearly favored by the lending institute. Similarly projects with long repayment period are favored by the bank, as reflected by the positive and significant association with loan rationing ratio. Projects with higher equity share as a ratio of total investment and borrowers who are relatively educated and acquired extensive experience in related economic activities are not favored by the lending institute. It may not be a deliberate action of the lender but due to biasness towards collateral as main screening device, which rationed educated and experienced borrowers who don't have sufficient security to be offered. The variables having other source of income, loan diversion, sectoral distribution of loan were not given much concern during loan rationing but they are found to be major determinants of loan recovery rate of borrowers. Similarly, projects with higher equity share, experienced and relatively educated borrowers were discouraged during rationing, and however they are found to be the major positive determinants of loan repayment status of borrowers.

Tinsae (2006) on her study on the competitiveness of Ethiopian Garment industry in response to export market identified that the survey affirmed that the garment industry was found in short of professionals and skilled laborers which could enable the sector to compete in a sustainable manner in the various market segments. Concerning the capital resource, the survey confirmed that the financial market was not in a position to solve the problem with supply of capital (investment or working capital), which could enable the firms to operate in their full capacity and to quickly respond to product market demand. The main reasons were the ill functioning and unclear working procedures of the financial market, lack of transparency and lack of international banking system knowledge and experience (affects export and import business) of banking institutes. Financial incentives are also biased mainly to garment exporting firms due to the export oriented strategy of the government. This limits the growth potential of local garment producers, since they cannot manufacture the needed produce in quantity and quality. If

incentives are given to them they may build their capacity through learning and experience and become successful exporters through time.

The survey also confirmed that garment firms and the industry as a whole seriously faced problems on the availability, quality and cost of inputs. Absence of locally produced inputs at the required quantity, quality and reasonable price forces the firms to depend on foreign inputs. These problems limit the firms from being cost competitive in view of their foreign competitors. In addition to the limitation on their cost competitiveness, the firms also face obstacles in terms of delivering products on time at the required style, color, size and fabric. The value added of the sector also becomes intangible because of the absences of coordinating specific activities in the value chain. On the other hand the survey confirmed that firms and the industry as a whole faced serious competition from their competitors in the local as well as international market. Poor quality of the products for local consumption and export limits the growth and potential of the garment industry from having significant market share at the local and international market. The supply constraints such as the problem in raw materials, the limited access to finance, low labor productivity, poor business environment, limited export incentives etc resulted in the low demand for the garment products in various market segments. Accordingly all these conditions affect the profitability and sustainability of the garment factories in the country, and in turn this affects the loan repayment performance of the borrowers.

Rahel (2010) examined the Performance measurement And Improvement of Ethiopian Garment Industries, and found out that there are different performance factors that are hindering the performance improvement of the garment industries, where the factors can be categorized as external factors and internal factors. Internal factors are including; poor quality of garment, low productivity, and poor performance measurement practice, under utilization of resources, lack of information about market as well as poor skill of workers. External factors are linked with the Ethiopian business environment including, infrastructure and local conditions outside the control of the industry.

Moreover production managers and supervisors are not trained enough in order to properly manage the process and unable to balance efficiently the production lines with constant supplying of fabrics and accessories.

2.3 Research Gap

A number of studies have been carried out about the cause of nonperforming loans in different banks in different countries.This paper will attempt to fill this gap and foster research in this important area further study. This study focuses on examining the determinants or the cause of the poor loan repayment performance of garment manufacturing borrowers in Development Bank of Ethiopia.

Causes of loan default could be the nature, time of disbursement, supervision and profitability(Okorie 1986), poor management procedures, loan diversion and unwillingness to repay loans(Kohansal and Mansoori,2009), allocation of funds by borrowers to businesses other than agreed one, weak loan portfolio management especially weak credit analysis at the application stage, lack of integrity of borrowers(Richard, 2011).

Acording to Kibrom(2010), Educational level of the borrowers, repayment period of the loan, availability of other source of income, sector, purpose of the loan and type of labor determine successful loan repayment performance of the borrowers positively and significantly. On the other hand Wondimagegnehu(2012) findings of the study shows that poor credit assessment, failed loan monitoring, underdeveloped credit culture, lenient credit terms and conditions, aggressive lending, compromised integrity, weak institutional capacity, unfair competition among banks, willful default by borrowers and their knowledge limitation, fund diversion for unintended purpose, over/under financing by banks ascribe to the causes of loan default.

Aberham(2012) other source of income, education, work experience in related economic activity before the loan and engaging on economic activities, the size of loan, grace period, and form of disbursement and credit experience of the borrower and loan repayment period are the factors that affect loan repayment performance . Having long grace period, previous credit experience and releasing loan in kind are found to reduce the probability of loan diversion. Borrowers who have other alternative income source are found to show better loan repayment record. Similarly, business experience in related economic activity and education are found to be significantly and

positively while repayment period and sex are negatively associated with loan repayment rate. Borrowers who have extensive experience in related activity and educated ones show better repayment record. Similarly equity share, experienced and relatively educated borrowers are found to be the major positive determinants of loan repayment status of borrowers. Thus the variables of the study which will affect the loan repayment of garment factories credit borrowers are identified in the literature review of this paper.

Among which the major variables are chosen based on the features of the garment sector, the conditions in the country and the policy of Development Bank of Ethiopia. The selected variables for this paper are Loan repayment, education, financial availability, market availability, Bank supervision, and the associated problems, experience of the general manger, Loan utilization for the indented purpose, availability of other source of income other than the factory and Availability of infrastructure.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY.

Chapter three has presented the review of the existing literature on the determinants of Nonperforming loans and identified the knowledge gap. This chapter discusses the research Design and methodology. The chapter is organized in four sections. The first subsection 3.1 presents the research design; Subsection 3.2 discusses the research population and sampling. Sub section 3.3 presents the type of data and method of data collection for the study. Sub section 3.4 presents method of data analysis and the last subsection of this chapter 3.5 presents the variables of the study.

3.1. Research Design

The main objective of this research is to investigate the determinants of loan repayment performance of garment manufacturing factory borrowers of Development Bank of Ethiopia. In order to meet the objectives set explanatory research design is used. In this research, considering the nature of the phenomenon this study has employed mainly quantitative research approach.

3.2. Population and Sampling Technique

Development Bank of Ethiopia avails loans for thirty five garment manufacturing borrowers (April 30, 2015, DBE central data base). Hence the total population of the study is these garment manufacturing borrowers of the Bank. Since the population of the study is not a large number, the survey represented the actual garment manufacturing borrowers of Development Bank of Ethiopia.

3.3. Types of Data and Method of Data Collection.

The data is collected from the files of Development Bank of Ethiopia garment factory credit borrowers. Hence, source of data for the analysis of factors affecting loan repayment performance of the garment factory is the individual borrower file and financial reports of the bank. The data is collected using a format prepared for the purpose of collecting all the necessary information from the individual file with the help of an assigned contact officer of the garment

manufacturing factories borrowers of the Bank. The format prepared for data collection is taken from different previous similar studies: Aberham (2002),Kibrom(), Tinsae(2010) and Muluken(2014).

The collected data mainly include socio economic characteristics such education, capital adequacy , market availability, Bank supervision, experience of the general manger, Loan utilization for the indented purpose, availability of other source of income other than the project and availability of sufficient infrastructure on loan repayment performance of garment manufacturing borrowers of Development Bank of Ethiopia.

The dependent variable, Loan Repayment Performance is Measured (NBE Directive No SBB/48/2010) as a dummy, and takes 1 for all garment manufacturing credit borrowers whose loan position is categorized as pass and special mention, and those which did not able to repay their loans, that their loan position is categorized in substandard, doubtful and loss are all categorized as defaulters and taking a value of 0.

The directive of NBE which is stated in the above for Development Finance Institutions (NBE Directive No SBB/48/2010 which was in use Since August 5, 2010 and the amended NBE Directives No 52/2012 Which came into force starting on January 19, 2012) , Loan position of borrowers of DBE are classifieds into five categories of pass, special mention, substandard, doubtful and loss based the elapsed repayment period from the loan repayment schedule stipulated in the loan agreement between the bank and the borrower .: Pass(Short term loans past due for less than 30 (thirty) days; and Medium and long term loans past due for less than 180 (one Hundred eighty), Special Mention(Short term loans past due for 30 (thirty) days or more, but less than 90 (ninety) days, Medium and long term loans past due six months or more, but less than 12 (twelve) months. Substandard (Short term loans past due 90 (ninety) days or more, but less than 180 (one-hundred-eighty) days, Medium and long term loans past due 12 (twelve) months or more, but less than 18 (eighteen) months. Doubtful Loans (Short term loans past due 180 (one-hundred-eighty) days or more, but less than 360 (three-hundred-sixty) days; Medium and long term loans past due 18 (eighteen) months or more, but less than 3 (three) years. and Loss (Short term loans past due 360 (three-hundred-sixty) days or more,) Medium and long term loans past due three years or more. Based on DBE calcification, the loan position of Borrowers

which falls in Pass and Special mention loan category are non defaulter (reliable Borrower), Where as the Borrowers which falls in Substandard ,Doubtful ,and loss loans are defaulter (non reliable borrowers).

3.4. Methods of Data Analysis

The data's collected for the study is analyzed using both Descriptive and Econometric analysis methods using software called SPSS version 21 and STATA.

3.4.1. Descriptive analysis

The descriptive statistics like the means, percentages, standard deviations and frequency distribution of the variables were used to describe the socio economic characteristics of the respondents.

3.4.2. Econometric analysis

The garment manufacturing borrower's ability to pay for his/her loan at the right time is dichotomized, involving two mutually exclusive alternatives. The garment manufacturing borrower is either able to pay for his/her loan at the right time or not. Models for estimating such phenomena in which the dependent variable is binary have been propounded (Madala, 2005; Asante et al., 2011, Muluken, 2014). The framework for such analysis has its root in the threshold theory of decision making in which a reaction occurs only after the strength of a stimulus increases beyond the individual's reaction threshold (Hill and Kau, 1981). This implies that every individual when faced with a choice has a reaction threshold influenced by several factors (Asante et al., 2011).This yields a binary dependent variable, yi which takes the values of zero (Garment manufacturing borrower's inability to pay for his/her loan (Defaulter)) and one (a Garment manufacturing borrower's able to pay for his/her loan (Non defaulter)).

Non-defaulters are credit worthy borrowers who settled the debt amount on the due date signed on the contract. This implies that the clients are committed on the agreements made with the

lending institution. Defaulters are non credit worthy borrowers who breach their loan contract and have repayment problem on the due date (Hunte, 1996).

The probability of observing a value of one is:

$$pr(Yi = 1/xi\beta i) = 1 - F(-x\beta i) \quad \text{----------1}$$

Where, F is a cumulative distribution function. It is a continuous, strictly increasing function that takes a real value and returns a value which ranges from 0 to 1.

Then, it follows that the probability of observing a value of zero is:

$$\Pr\ (yi = 0 \setminus xi\beta i) = F(-xi\beta i) \text{----------2}$$

Given such a specification, we determine the parameters for estimating this model using the maximum likelihood estimation approach. The dependent variable is an unobserved latent variable that is linearly related to yi by the equation.

$$yi = \beta ixi + \cup i \text{ ----------3}$$

Where, ui is a random disturbance term. The observed dependent variable is determined by whether yi exceeds a threshold value or otherwise:

$$yi = \begin{cases} 1if\ yi^{*\cdot} > 0 \\ 0if\ yi^{*} \leq 0 \end{cases} \quad \text{----------4}$$

Where yi* is the threshold value for yi and is assumed to be normally distributed. Common models for estimating such parameters include probit (standard normal), logit (logistic) and tobit (extreme value) (Madala, 2005; Asante, 2011).

Specification of the probit model

The study adopted the probit model partly because of its ability to constrain the utility value of the ability to pay for loans variable to lie within 0 and 1, and its ability to resolve the problem of heteroskedasticity. The other advantages of the probit model include believable error term distribution as well as realistic probabilities. Following from Madala (2005), Asante (2011), and Muluken (2014) the probit model adopted for the study is specified as:

$$Pi = P(y^* < yi)$$

$$Pi = P(y^* < \beta_0 + \beta ixji) = F(yi) \text{----------} 5$$

$$Pi = F(yi)\, {}^{1}/_{\sqrt{2\pi}} \int_{-\infty}^{2i} e\ {}^{s^2}/_{2}\, ds$$

where Pi is the probability that an individual will make a certain choice (ability to pay for loans collected at the right time or otherwise); s is a random variable normally distributed with mean zero and unit variance; yi is the dependent variable (ability to pay for loans collected at the right time or otherwise); yi* is the threshold value of the dependent variable. To obtain an estimate of the index Zi, the inverse of the cumulative normal function is used:

$$yi = F^{-1}(Pi) = \beta_0 + \beta ixi + \cup i \text{----------} 6$$

The parameters β0,β1,β2,β3,…….,β∞ of the probit model do not provide direct information about the effect of the changes in the explanatory variables on the probability of a garment manufacturing borrower's being able to pay his/her loan alone. The relative effect of each explanatory variable on the likelihood that a borrower will be able to repay his or her loan (marginal effect) is given by

$$\frac{\partial Pi}{\partial Pxij} = \beta_{ij} f(zi)$$----------7

Where Pi is the mean dependent variable whose value is given in the probit results as:

$$f(zi) = F^{-1}(pi)$$----------8

$$z_i = \beta_0 + \beta_1 x_1 + \beta_2 x_{2+} \beta_3 x_3 - - - \beta_k x_k$$ --9

F(Zi) = Density function of the standard normal variable and is given by:

$$f(zi) = \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}z^2}$$ ----------10

The empirical model is specified as:

$$LRP = \beta_0 + \beta_1 EDU + \beta_2 LOD + \beta_3 EXP + \beta_4 MD + \beta_5 ASF + \beta_6 \text{IF} + \beta_7 OSI + \beta_8 \text{NSPV}$$

(Madala, 2005; Asante , 2011, Muluken, 2014 and derivation).

Where

LRP = Loan Repayment performance

EDU = Educational level of Borrowers

LOD = Loan Diversion

OSI = Availability of Other Source of Income

EXP = Experience in Related Economic Activity (in Years)

MD= Market demand of the product

ASF= Availability of sufficient fund.

IF= Availability of Infrastructure

NSPV= Number of Supervisory project visits

3.5. Definition and Hypothesis of variables:-

The variables of the study which will affect the loan repayment of garment factories are identified in the literature review of this paper. Among which the major variables are chosen based on the features of the garment sector, the conditions in the country and the policy of Development Bank of Ethiopia. The selected variables for this paper are Loan repayment, education, financial availability, market availability, Bank supervision, and the associated problems, experience of the general manger, Loan utilization for the indented purpose, availability of other source of income other than the factory and Availability of infrastructure.

3.5.1. Dependent (explained) variable

Loan Repayment Performance: It is Measured as a dummy, and takes 1 for all garment manufacturing credit borrowers that have able to repay their loans when due or within thirty and ninety days (for short term working capital loan and long term loans respectively) .From the due date were classified as non defaulters and those who did not able to repay their loans within the above specified days from the due date were all categorized as defaulters and taking a value of 0.

3.5.2. Independent (explanatory variables)

Education: - It is defined as the education status of either the owner or the manager who runs the project. It is a categorical variables measured education status interval below grade twelve and grade twelve and above. It is measured 2 if the education level is degree and above, 1, if the education level is diploma, 0 if the education level is below grades twelve. Based on the education status interval the effect of education on the loan repayment of the borrower will be

evaluated. It is assumed that as the borrower gets educated, he could acquire more Knowledge so that his efficiency in allocation of resources increases and so does the proper utilization of the loan. His ability to adopt himself to changing situation would be better than the illiterate ones, hence would have positive relation with loan repayment. It is also supported by Kibrom(2010), Wondimagegnehu(2012), Aberham(2012).

Experience: - It is a continuous variable measured in numbers of years. Hence the effect of relevant work experience of the borrower /manager on the loan repayment performance of the borrower is investigated. Borrowers who acquired extensive experience in similar economic activity before the loan knows how to run a profitable business than new ones hence could have better repayment record. Thus, a positive sign is expected. It is also supported by Kibrom(2010), Wondimagegnehu(20120), Aberham(2012)

Availability of Other Source of Income: - It is defined as income derived from other business activities outside the garment factories established by DBE loan. It is measured as a dummy, 1 if the borrower has other source of income and 0 otherwise. Hence the effect of other income of the borrower on the loan repayment performance of the borrower will be investigated. Borrowers with other sources of income may make loan repayment from the proceeds of those jobs. Thus, the borrowers with other sources of income may have higher repayment rates hence, a positive sign is expected. It is also supported by Kibrom(2010), Aberham(2012).

Bank Supervisory project visits: It is a continuous variable and measured in Number of supervisory project visits of the factory by the bank. Visits by the bank s to borrowers will motivate the borrowers to work harder and make sure the loans given to them are not diverted to unintended purposes. Therefore, borrowers who are visited frequently may have higher repayment. It is also supported by Mengistu (1997), Wondimagegnehu(2012).

Product Marketing Demand: It is defined as the availability of market for the garment product of the garment manufacturing credit borrower of the DBE. It is measured as a dummy, 1 if the factory product has sufficient market and 0 otherwise. This is to investigate the effect of the garment manufacturing product market demand on the loan repayment performance of the borrower. The availability of market demand for the garment manufacturing factories product

will enhance profitability and will induce more production , and no working capital is tied up faced ,no product wastage . The availability of viable market will enables the factory to generate sufficient revenue (profit). Hence these will enable better loan repayment performance. Acording to Tinsae (2006) and Rahel (2010), the garment industry product demand and marketability in the market is one of the major factor that affect the competitiveness and sustainability of the sector.

Infrastructure: - It is measured as a dummy, 0 if the factory has been affected by infrastructural problems and 1 otherwise. This is to analyze whether infrastructure affect loan repayment performance of the borrower or not. Availability of sufficient Infrastructure is basic for garment industry productivity and productivity .Hence the availability of road , telecommunication and Electric power in a sufficient condition enhance the better operational performance by reducing cost of production, enhancing production and increasing efficiency .The availability of sufficient infrastructures will make the project profitable and hence it will enable the garment manufacturing borrowers of the Bank to repay their loan timely.

According to Tinsae (2006), and Rahel (2010) infrastructure is one of the major factor that hinder the competitiveness of the garment industry.

Proper utilization of the Loan: - It is defined as the utilization of the disbursed loan for the planned action for which the bank is disbursed for the intended purpose. This is a dummy variable taking 0 if the project is diverted and 1 if the project is not diverted. Thus the effect of loan diversion on the loan repayment performance of the bank borrower will be analyzed. The proper utilization of the loan enables the factory to implement the factory timely, to run the project smoothly by having sufficient working capital. Hence the factory could be profitable; it will have a capacity to repay its loan. It is also supported by Vigano (1993), Wondimagegnehu (2012), Aberham (2012) and Richard (2011).

Capital Adequacy to Run the Project: - It is defined as the availability of sufficient money to run the factory. This is a dummy variable taking 1 if the factory has sufficient finance and o if the factory does not have sufficient finance. This is to investigate does really the financial position of the factories affect the loan repayment performance of the borrower.

The availability of sufficient finance for the factories will enables to run the operation of the project smoothly. Raw materials will purchase timely, marketing and promotion could make adequately, required items like vehicle, man power would acquire. Hence this will make factories more competitive and profitable hence it will enhance loan repayment. If there is financial shortage the reverse could be happened. It is also supported by Wondimagegnehu (2012).

CHAPTER FOUR: RESULTS AND DISSCUSSION

This section presents the findings of the study using both descriptive and econometric analyses. The results of descriptive analysis are presented in the form of mean, percentages, standard deviations and frequency distribution. Econometric analysis was carried out to identify the most important factors that affect loan repayment performance of garment manufacturing borrowers and measure the relative importance of significant explanatory variables on loan repayment.

4.1. Characteristics of Borrowers

4.1.1. Education status

Table 1 below summarizes the educational status of the owner or the manager of the garment manufacturing project. The result revealed that, of all the borrowers, about 82.9% attended degree and above level education whereas about 17.1% of them attend less or equals to Diploma level.

Table 1: Education level of Garment manufacturing Borrowers

Education	Defaulter		Non-defaulter		Total	
	Frequency	%	Frequency	%	Frequency	%
Below Grade 12	3	14.3	2	14.3	5	14.3
Diploma	1	4.7	0	0	1	2.8
Degree and Above	17	81	12	85.7%	29	82.9
Total	21	100	14	100	35	100

Chi-Square - Value =0.690

Source: SPSS output from Survey Data, 2015

The result shows that, 19 % of defaulters' and 14.3% of non defaulter borrowers attended less than or equal to Diploma. On the other hand, 81% of the defaulters, and 85.7% of the non-defaulters attended first degree and above. The chi-square test result shows that the difference

between defaulter and non defaulter is not statistically significant with respect to variable education.

4.1.2. Management Experience of Garment manufacturing Borrowers

Experience is crucial element for the success of business project running. According to the results of this study, the average management experience of the garment manufacturing factories project whether employed or business owned was about 12. The minimum and maximum managerial experience was zero and twenty nine years, respectively.

Table 2: Management Experience of Garment manufacturing Borrowers

Related Experience	Defaulter		Non-defaulter		Total	
	Frequency	%	Frequency	%	Frequency	%
≤12	15	71.2	6	42.6	21	60
>12	6	28.8	8	57.4	14	40
Total	21	100	14	100	35	100
Mean	10.76		13.57		11.89	
Std.Deviation	8.09		7.96		8.05	

t-value =8.7345

Significant at 1% probability level

Source: SPSS output from Survey Data, 2015

Group wise, the average related experience of the mangers of garment manufacturing credit borrowers of DBE was about 10.76 years and 11.89 years for defaulters and non defaulters respectively. 71.2 % of the defaulter and 42.6 % of the non defaulter credit borrowers managers had related experience less than or equal to 12. On the other hand, 28.8 % of the defaulter and 57.4 % of the non defaulter has related work experience of running garment manufacturing product. This means the credit borrowers factory which have more experienced manager looks likely to have better loan repayment performance than those which have less experienced factory

manager. The difference between defaulter and non defaulter in terms of number of years of related experience garment sector factory administration is statistically significant at 1% probability level (table 2).

4.1.3. Other source of Income

Even if Sales of project product are the major source of income for the borrowers to repay their loan on the bases of loan contract agreement, other source of income will contribute the borrowers to repay their loan. As per the study result, 60% of the borrowers do not have other source of income whereas about 40% of the borrowers have other sources of income.

Table 3: Proportion of garment manufacturing borrowers by other source of income

Other Source of Income	Defaulter		Non-defaulter		Total	
	Frequency	%	Frequency	%	Frequency	%
No	13	61.9	8	57.1	21	60
Yes	8	38.1	6	42.9	14	40
Total	21	100.0	14	100.0	35	100

Chi-Square - Value =0.079
Source: SPSS output from Survey Data, 2015

As shown in table 3, about 61.9% of defaulters and 57.1 % of non defaulters had no other source of income, whereas 38.1 % of defaulters and 42.9 % of non defaulters has other source of income other than the financed project. As per the chi- square test of the result, the effect of availability of other source of income on loan repayment performance is not statistically significant.

4.1.4. Number of follow ups by the bank

The study result indicated that, on average, the bank supervised the projects 7 times during the entire project life with minimum and maximum of two times and twenty three times respectively.

Table 4:- Number of follow-ups, made by the bank.

Number of follow up	Defaulter		None.-defaulter		Total	
	Frequency	%	Frequency	%	Frequency	%
<4	4	19.1	4	28.6	8	22.9
≥4 and ≤7	10	47.6	6	42.9	16	45.7
>7	7	33.3	4	28.5	11	31.4
Total	21	100	14	100	35	100
Mean	7.10		7.57		7.29	
Std.deviation	3.53		6.69		4.95	

t-value =8.6969

Significant at 1% probability level

Source: SPSS output from Survey Data, 2015

As shown in table 4, on average about 7 and 8 visits were made to defaulters and non defaulters' garment manufacturing projects by the bank's credit officers, respectively. On average the mean follow up conducted for non defaulter is higher than for defaulter. This means garment factories visited more times are likely to repay the loan. The mean difference between defaulter and non defaulter in terms of number of follow up conducted for garment sector factory is statistically significant 1% probability level (table 4).

4.1.5. Availability of Sufficient Finance

The study result indicated that 31.4 % of garment manufacturing project borrowers does not have adequate capital for the smooth operation of their project, whereas 68.6 % of the borrowers have sufficient finance to run their project smoothly.

Table 5.Sufficent Finance availability

Sufficient Finance Availability	Defaulter		Non-defaulter		Total	
	Frequency	%	Frequency	%	Frequency	%
No	10	47.6	1	7.1	11	31.4
Yes	11	52.4	13	92.9	*24*	68.6
Total	21	100	14	100	35	100

Chi- Square - Value =6.386
Significant at 1% probability level

Source: SPSS output from Survey Data, 2015

As shown in table 5, 47.6% of the defaulter and 7.1 % of the non defaulter does not have adequate capital, whereas 52.4% of the defaulter and 92.9% of the non defaulter has sufficient finance for their project operation. This shows projects which have adequate capital looks likely to have better repayment performance and projects which does not have sufficient finance looks likely to have low repayment performance. This shows capital adequacy seems to affect the loan repayment performance of the garment manufacturing borrowers of DBE. The difference between the defaulter and non defaulter with regard to other capital adequacy is statistically significant 1 % probability level (table 5).

4.1.6. Product Market Availability

The demand of the garment product both in domestic as well as in international market will enable the borrowers to produce at expected capacity production and will enable sufficient sales and remarkable profit margins with controllable cost of production and reasonable price.

The study result indicated that 37.1 % of garment manufacturing project borrowers have problems related to market demand of their product whereas 62.9% the garment manufacturing borrowers does not faced market problems for their product.

Table 6: The Effect of product Market Demand on the loan repayment performance

Market of The product	Defaulter		Non-defaulter		Total	
	Frequency	%	Frequency	%	Frequency	%
Insufficient	12	57.1	1	7.1	13	37.1
Sufficient	9	42.9	13	92.9	22	62.9
Total	21	100	14	100	35	100

Chi-square - Value =8.995
Significant at 1% probability level

Source: SPSS output from Survey Data, 2015

As shown in table 6, about 57.1% of defaulters and 7.1 % of non defaulters garment manufacturing borrowers of the bank has market demand problems of their product, whereas 42.9 % of the defaulter and 92.9% of the non defaulter does not have problem of market demand to this product. Both of these results show the market demand conditions of the borrower likely to affect the loan repayment performance of the product. Projects with better market demand have better loan repayment performance and projects with products market demand problems seems to be low loan repayment performance. The difference between the defaulter and non defaulter with regard to problems related to market demand of the borrower product is statistically significant 1 % probability level (table 7).

4.1.7. Problems with Infrastructure

To be competitive in the world market, the firms should have access to well organized production and marketing infrastructure including power supply, telecommunication service, and roads to the port, domestic quality of packaging, sea and air transport.

The study result indicated that 51.4 % of garment manufacturing project borrowers have problems related to infrastructure availability, and 48.6% the garment manufacturing borrowers does not faced infrastructural problems.

Table 7: The effect Infrastructure on loan repayment Performance

Infrastructure Problems	Defaulter		Non-defaulter		Total	
	Frequency	%	Frequency	%	Frequency	%
Yes	13	61.9	5	35.7	18	51.4
No	8	38.1	9	64.3	17	48.6
Total	21	100	14	100	35	100

Chi-Square - Value =2.307
Significant at 10% probability level

Source: SPSS output from Survey Data, 2015

As shown in table 7, about 61.9 % of the defaulter and 35.7 % of the non defaulter garment manufacturing borrowers of DBE faced infrastructure Problems. On the other hand 38.1 % of the defaulter and 64.3% of the non defaulter does not faced infrastructure problems in their operational activities. These results show that the problems related to infrastructure looks likely to have impact on the loan repayment performance of the borrowers. Therefore projects with infrastructural problems have low repayment performance and projects with no infrastructural problems seem to have high loan repayment performance. The difference between the defaulter and non defaulters with regard to problems related to infrastructure is statistically significant 10 % probability level (table 8).

4.1.8. Loan Diversion.

The bank prepared its own project feasibility study (business plan) to each borrower project and provides the required finance for each type of project items costs .Thus loan diversion will have its own negative impact on the successful operation of the project. This will affect the loan repayment performance of the borrowers.

The study of the result shows that 34.3% of the borrower does not utilize the disbursed loan for the intended purpose whereas 65.7% of the borrower actually utilizes the disbursed loan for the planned purposes.

Table 8:- The proportion of proper loan utilization of garment manufacturing borrowers.

Proper Loan utilization	Defaulter		Non-defaulter		Total	
	Frequency	%	Frequency	%	Frequency	%
No	11	52.4	1	7.1	12	34.3
Yes	10	47.6	13	92.9	23	65.7
Total	21	100	14	100	35	100

Chi-square - Value =7.630
Significant at 1% probability level

Source: SPSS output from Survey Data, 2015

As shown on table 8, about 52.4 % of the defaulter and 7.1% of the non defaulter divert their loan from the intended purpose to others use. On the other hand 47.6 % of the defaulter and 92.9 % of the non defaulter actually utilize their loan properly for the intended purpose. This shows the borrowers who utilize their loan for the intended purpose likely to have better loan repayment performance. The difference between the defaulter and non defaulter with regard to problems related to loan diversion is statistically significant 1 % probability level (table 9).

4.2. Econometric Analysis

This sub section describes the whole process of deriving the factors that influence loan repayment performance among garment manufacturing credit borrowers. It explains the estimation of the important factors that affects the loan repayment using binary outcome estimation method, probit model and estimates the relative importance (marginal effect) of each significant variable.

4.2.1. Determinants of loan repayment among Garment manufacturing factories credit borrowers in DBE.

As discussed in chapter 3, the probit econometric model was selected for analyzing the determinants of the loan repayment performance of garment manufacturing borrowers of DBEs. Prior to running the probit regression model both the continuous and discrete explanatory variables were checked for the existence of multicollinearity and the degree of association using Variance Inflation Factor (VIF) and contingency coefficients, respectively. The VIF values for continuous variables were found to be very small (much less than 10) indicating that absence of multicollinearity among the continuous explanatory variables (Appendix 1).

Similarly, contingency coefficients were computed to check the existence of multicollinearity problem among the discrete explanatory variables. When the correlation coefficient becomes high (close to 1) in absolute value, multicollinearity is present with the result that the estimated variances of both parameters get very large. The results of the computation of contingency coefficients reveal that there was no a serious problem of association among discrete explanatory variables (Appendix 2). Based on the computed results of VIF and contingency coefficients, eight explanatory variables were included in the final analysis. More specifically, two continuous and six discrete explanatory variables were used to estimate the probit model.

To determine the explanatory variables those are good predictors of the loan repayment performance among garment manufacturing factories, the probit regression model was estimated using the Maximum Likelihood Estimation Method. The results of the analysis are presented In Table 9.

Table 9: The Maximum Likelihood Estimation of probit model

Variables	Estimated coefficient	Std. Error	z-statistics	p-value
Education	1.902621	1.096662	1.73	0.083*
Experience	-0.2998838	0.2225584	-1.35	0.178
Other Source of income	1.627485	1.876811	0.87	0.386
Follow up	0.7514882	0.4363293	1.72	0.085*
Sufficient finance availability	3.926681	2.78569	1.41	0.159
Better Market Demand	8.322538	4.508645	1.85	0.065*
loan utilization for the intended purpose	10.16926	5.756132	1.77	0.077*
Infrastructure Problem	0.8760637	1.289149	0.68	0.497
Constant	-23.6559	12.68326	-1.87	0.062*

Number of observations= 35

Log likelihood = -6.4097475

LR chi2(8) = 34.29

Prob > chi2 = 0.0000

Pseudo R2 = 0.7279

Source : STATA output from Survey Data, 2015

From the results in table 9 above, a likelihood ratio (LR) statistic of 34.29 with a chi squared ($\chi 2$) distribution at eight degree of freedom is significant at 1% probability level. This means that at least one of the explanatory variables in the model has a significant effect on loan repayment performance of garment manufacturing factories and that the explanatory variables jointly influence garment manufacturing factories ability to pay for their loans.

Out of the eight variables hypothesized to influence the loan repayment performance of garment manufacturing factories, four were found to be statistically significant. The maximum likelihood estimates of the probit regression model shows that education level, number of supervisions/ follow-ups by the bank, market availability and loan diversion of the garment manufacturing

factories credit borrowers were important factors determining the loan repayment performance of DBE's garment manufacturing factories . On the other hand, the coefficients 0f four explanatory variables, namely management related experience, other source of income, capital adequacy, and infrastructural related problems were less powerful in explaining loan repayment performance of DBE's garment manufacturing borrowers.

EDUCATION

The result of the probit model shows that education level of garment manufacturing factory has significant and positive effect on ability to repay their loan. It might be because of the fact that borrowers, who have higher education level, could find better market for their products, they could be cost conscious that is economical usage of resources (efficiency in allocation of resources increases and so does the proper utilization of the loan), their ability to adopt themselves to changing situation they collude able to coordinate the activities well, they will and they may have future investment plan working with the bank. These and other reasons make the borrowers who have a higher education status to have a good repayment performance. Increasing education level of a garment manufacturing factory credit borrower by one level has the effect of increasing the probability of a garment manufacturing factory been able to repay the loan by 87.1%. This implies that a borrower will likely have greater loan repayment ability when he or she has a higher educational level and vice versa. This also confirms the results of Wongnaa and Awunyo (2013), Abrham (2002) and Muluken(2014).

FOLLOW UP

The Number of follow-up/supervisory visit is an important institutional factor, which is positively related to garment manufacturing factories ability to repay their loans and is significant at 10% probability level. Increasing the number of supervisory visits by one will increase the probability of a garment manufacturing credit borrower been able to repay the loan by 34.3%. This means that the more the bank visit garment manufacturing factories credit borrowers, the better borrowers' repayment abilities and vice versa. In other words, this implies that garment manufacturing credit borrowers with more accesses to technical assistance and guidance on garment manufacturing activities during the visit were able to repay their loan as

promised than those who had less or no visiting at all. The reason for this is that borrowers who have frequent contact with the bank's professionals are better informed about markets and production technologies as well as bank's rule and regulation on repayment of loan. This will motivate garment manufacturing credit borrowers to work harder and there will be less probability of diverting the loans to unintended purpose. This is in line with the results of Wongnaa and Awunyo (2013), Fantahun (2000) and Muluken(2014) have also reported the positive effect of this variable on loan repayment.

MARKET DEMAND

The result of probit estimate confirmed that garment manufacturing credit borrowers had better market demand for their product positively affect the loan repayment performance of the garment manufacturing credit borrowers of DBE. The coefficient is positive and significant at 10% probability level. The probability of being defaulter increases by100 % for garment manufacturing credit borrowers of DBE among those have poor market demand of their product than those who have better market demand for their product. Thus factories that have better market demand for their product will enable the credit borrower to repay his/her loan at the right time. The reason for this is that nowadays; the market is characterized by the existence of a multitude of standards in their quality in international market, and in the domestic market, there is high competition among imported garment products. This will have its own effect on the market demand of the garment manufacturing credit borrowers or the garment manufacturing sector in the country. As per the study the major reason for low market demand of the defaulter of DBE garment manufacturing credit borrowers are low quality of product and fierce competition in the market.

LOAN UTILIZATION

Another variable that adversely and significantly influence loan recovery rate is loan diversion. Borrowers who diverted the loan other than the intended purpose are found to be defaulters. The proper utilization of the disbursed loan for the intended purpose is an important institutional factor, which is positively related to garment manufacturing factories ability to repay their loans. On the other hand loan diversion negatively affects the loan repayment performance of garment

manufacturing credit borrowers of DBE and is significant at 10% probability level. This implies that the activities to which the loan was diverted are either non-productive ones or generate income less than what if it was properly utilized. In other words the loan diversion is mostly to less productive activities than the project under consideration. The probability of being defaulter increases by 100 % for garment manufacturing credit borrowers of DBE; those have diverted the disbursed loan for other purpose.

This result complies with the result obtained by Vigano (1993), Njoku and Odii (1991) and Okorie (1986) and Aberham (2012).

4.2.2. Marginal effect of significant variable

All significant explanatory variables do not have the same level of impact on loan repayment performance of garment manufacturing credit borrowers. In order to determine the relative importance of each explanatory variable on repayment performance of garment manufacturing 35 credit borrowers, the marginal effect of each significant explanatory variable result after the probit model estimation is presented as follows:

Table 10. Marginal effect of significant variables

Variable	dy/dx(Marginal Effect)
Education	0.1888323
Follow Up	0.0745841
Better Market Demand	0.8259995
Loan utilization for the intend purpose	1.009284

Source : STATA output from Survey Data, 2015

As indicated in table 10, the marginal effect of loan diversion about 100% that is the highest when compared to other significant explanatory variables. The percentage implies that the probability of being defaulters increase by 100% for garment manufacturing borrowers credit

borrowers who diverted their loan for other purpose which are out of the intended purpose, citrus paribus. Next to the loan diversion of garment manufacturing credit borrowers, the level of Market demand level of the garment manufacturing credit borrower product has a significant and positive effect on repayment performance of borrower,(better market demand favors better loan repayment performance whereas low market demand negatively affect the loan repayment performance of DBE garment manufacturing Credit borrowers). The probability of being non defaulters increases by 82.5 for garment manufacturing credit borrowers who have higher market demand for their product, citrus paribus. The Education and Follow-up/supervisory visits by credit officers takes the third and fourth important factors affecting repayment performance of garment manufacturing credit borrowers. Education and Follow-up/supervisory visits by credit officers takes the third and fourth important factors affecting repayment performance of garment manufacturing credit borrowers with 18.8% and 7.4% respectively.

CHAPTER FIVE: CONCLUSION AND POLICY IMPLICATION

5.1. Conclusion

This study is carried out to identify the determinants of loan repayment performance of DBE's garment manufacturing credit borrowers. The study specifically identified critical factors and estimated the relative importance of factors in improving loan repayment performance among garment manufacturing credit borrowers.

The result shows that among eight explanatory variables, which were hypothesized to influence loan repayment performance among garment manufacturing credit borrowers, four explanatory variables namely education level, number of follow ups/supervisory project visit by the bank, market demand level of their product and loan diversion were statistically significant while the remaining four were less powerful in explaining the variation in the dependent variable. The model result reveals that there is no contrary sign from priori hypothesized among the significant explanatory variables.

Education level is one of the factors which have positive and significant influence on loan repayment performance of garment manufacturing credit borrowers of DBE. This implies that a factory will likely have greater loan repayment ability when he or she has a higher educational level.

The model result shows that number of follow-up/supervision has a significant positive influence on the loan repayment performance of DBE's garment manufacturing credit borrowers. This is due to the fact that borrowers who have frequent contact with the bank's professionals are better informed on the banks rule and regulation, implementing and operating the project as per the planed action. As a result a borrower who has a frequent contact with bank's professional was more likely to be non defaulter.

The evidences of econometric regression show that loan Diversion is found to be one of the major determinants adversely affecting the loan repayment performance of the borrower. The descriptive study result Loan shows that the loan diversion was arising from the intentional doing

of the borrowers and capital inadequacy to run their factories. The cause for loan diversion may arise from poor feasibility study like not properly financing for the required item and poor disbursement releasing mechanisms like not disbursing phase by phase, not put direction for following up for the proper utilizations of the subsequent loan. This will open opportunity to loan diversion for those borrowers who does not have entrusted characteristics.

Another variable that significantly affect loan repayment performance of borrowers is the market demand level of the credit borrower's factories product. Those factories that have insufficient market demand for their product adversely affect the loan repayment performance of garment manufacturing credit borrowers of DBE. As per the study the main reasons insufficient market demand for the products was inferior quality and fierce completion in the market.

5.2. Policy Implication

Based on the results obtained in this study to reduce loan defaults it is recommended that.

- The lending institution should undertake close follow up of their borrowers and provide relevant information and technical support for the success of the garment manufacturing credit borrower.

- The lending institution should asses the education status of the borrowers, and make sure that the general manager is well educated before they granting the loan for the borrowers. The lending institutions should also enforce the borrower to recruit educated manger after the loan is availed and the factories are in operation. Thus the garment manufacturing borrowers should have educated manger for the better operational performance of their factory and to repay their loan timely.

- The bank should give focus on evaluating the relevant education level of the garment manufacturing factories borrowers during know your customer (KYC) assessment due to the fact that more educated garment manufacturing factory could find better market for their products, they could be cost conscious that is economical usage of resources and probably they could overcome problems faced, and unexpected change.

- Lending institutions should have a mechanism of controlling loan diversion by the borrower like disbursing loans directly to the suppliers of the machinery or raw materials and to the contractor for building construction.

- More over the lending institutions should disburse loans phase by phase based on the sequence of investment and operations after ensuring the previous disbursed loans are utilized for the intended purpose. All these variables revolve around the effectiveness of the appraisal technique and method of disbursement.

- Lending institution make sure that there is sufficient Product market demand level of the garment credit borrowers by insuring the availability of quality of raw materials, the availability of required technical professional, level of technology (garment manufacturing machineries), and the training facilities for the employs, competition level in market level of credit borrowers factories the time of appraising the loan application of the borrower for granting the loan.

- Moreover the lending institution should encourage the borrowers to utilize better quality raw materials, recruit the required professionals and update the level of technology, and provide product that have better market demand in the market at the time of operation.

5.3. Suggestions for Future Research

The focus of this study is investigating the determinants of loan repayment performance of Development Bank of Ethiopia garment manufacturing credit borrowers. Therefore it is recommended that:-

- Similar study could be conducted on the determinants of loan repayment performance of all the garment credit borrowers (especially Banks')

- Continuous studies must be conducted on investigating the cause of nonperforming loan in the country.

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APPENDIX

Appendices I. VIF of the continuous explanatory variables

Variable	Tolerance (1/VIF)	VIF
Experience	0.991	1.009
Number of Follow –up	0.991	1.009
Mean VIF		

Source: - Own Computation (2015)

According to Gujarati (2003), VIF can be defined as:

VIF= 1/1-R2

Where, R2 is the square of multi correlation coefficients that results when one explanatory variable (Xi) is regressed against all other explanatory variables. The larger the value of VIF (xi) the most troublesome or collinear the variable Xi is.as a rule of thumb, if the VIF of a variable exceeds 10, there is a multicollinearity problem. The VIF values displayed above (Appendices 1) have shown that all the continuous explanatory variables have no serious multicollinearity problem.

Appendices 2. Contingence coefficient for discrete variables

Variables	CC
Education	0.139
Other Source of Income	0.048
Sufficient finance availability	0.393
Market Problem	0.452
Loan Diversion	0.423
Infrastructure Problems	0.249

Source: Own Compilation (2015)

When the variables to be calculated are discrete in nature, Contingency coefficient (CC) is used. Contingency coefficients can be calculated as:

$$CC = \sqrt{x^2/_{N + x^2}}$$

Where, CC= Contingency coefficient, χ2 = Chi-square random variable and N=total sample size

Appendices 3: Standard format prepared for data collection.

Format prepared for data collection.

The format prepared for data collection is taken from Tinsae Berhanu (2006), Kibrom (2010), Aberham(2012, and Muluken (2014).

This format is prepared to collect data's from the files of individual garment manufacturing credit borrowers financed by DBE to undertake my research titled 'Determinants of Loan Repayment performance of Garment Manufacturing Borrowers: The Case of DBE.

I. Back Ground Information.

1. Name of the Borrower _____

2 .Form of Business Ownership

Sole proprietorship _____

Private Limited Company_____

Others_____

3. For how many years the factory stayed in DBE since the original loan is granted? _____

4. Does loan repayment rescheduling made for the project_____

5. If the answer for Q 4 is yes, for how many times loan repayment rescheduling has made _____

6. Age of the borrower _____

7. Education status of the borrower / the Manager (Who Manage the Project)

Primary education (1- Grade 12) _____

Diploma certificate_____

Degree and above_____

8. Does the borrower have other income source?

Yes_____

No_____

II. **Management**

9. Years of relevant experience the Borrower/manager has in running such enterprise? _____

10. Does the company recruit the required professional as per the banks business Plan (appraisal report)?

Yes_____

No_____

11. If the answer for question10 is no, what is the reason for not having technical professional (Select one or more).

Lack of professional in the market_____

Unwillingness of the project to higher professionals due to undermining of their contribution by other factors not willing to higher due to different reasons_____

Lack of finance to higher the professional_____

III. **Loan Utilization**

12. Did the company utilize the entire loan for the intended purpose?

Yes_____

No _____

13. If the answer to Q. 12 is No, what is the reason for loan diversion? (Select one or more)

The loan released is not enough for the intended purpose_____

It was the promoter initial intention_____

Due to the project faced market problem._____

Others (please specify) _____

IV. **Bank Supervision Visits**

14. How many times the Bank made follow up/ Inspection? _____

V. **Finance and Loan Repayment**

15. Does the company failed in repaying its loan according to the original repayment period?

Yes _____

No_____

16. Is the promoter willing to pay its loan timely from any source?

Yes _____

No_____

17. Does the company have sufficient finance to run the project?

Yes _____

No _____

18. If the answer for Q17 is No what are the reasons?(select one or more)

Due to the bank does not provide sufficient loan like additional and special working capital etc and the promoters are not willing to inject additional loan _____

Loan diversion by the promoter _____

The provided additional loan and the promoters equity was not invested in profitable product due to different reasons and poor business plan._____

VI. **Raw materials**:-

19. Does the factory faced raw material problems?

Yes _____

No_____

20. If the answer for question Q19 is yes, what are the problems?

Absence of inputs_____

Lack of inputs _____

Inferior quality _____

Problem with reliability_____

High cost of inputs relative to imported_____

Other, please specify_____

21. If the raw materials locally supplied then, what are the problems with local inputs? (Select one or more)

Lack of inputs/ raw materials_____

Inferior quality _____

Problem with reliability _____

High cost of inputs relative to imported_____

Other, please specify _____

22. If the inputs are fully or partially imported then, what are the problems with importing process?

Delay in clearing goods through customs _____

Duty exemption is not recognized _____

Reliability on foreign suppliers is problematic _____

High cost of inputs _____

VII. Other Information

23. Does the factory faced infrastructure problem which affected its operation?

Yes _____

No_____

24. If the answer for question 23 is yes, what are the problems related to Infrastructure?(select one more)

Power supply_____

Roads from factory to port_____

Domestic source of quality Package_____

See freight_____

Port facility_____

Other, please specify

25. What is the level of the market demand of the product?

Sufficient _____

Insufficient _____

26. If the answer for Q25 is insufficient, what is/are the reason/s? (You can choose one or more)

Low quality of product_____

Fierce competition _____

High Price _____

Others, Please Specify_____