



ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF ECONOMICS

**Nexus Between Credit Accessibility and
Growth of Small and Medium Enterprises: The Case of Addis Ababa
City Administration**

By

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Department of Economics in Partial Fulfillment Requirement for the
Degree of Master of Science in Economic policy analysis**

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DECLARATION

The thesis titled "**Nexus between Credit Accessibility and Growth of Small and Medium Enterprises in Addis Ababa City Administration.**" is entirely my own creation, I, Truwork Tsegaye, therefore declare. With the help and direction of my advisor, I completed the research for my thesis on my own. This research has not been submitted for any degree or diploma at this school or any other. It was completed in order to fulfill a prerequisite for the Master of Science in Economics degree.

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This is to confirm that Truwork Tsegaye worked under my direction and supervision to complete her research project on the subject of "Nexus Between Credit Accessibility and Growth of Small and Medium Enterprises in Addis Ababa City Administration" By signing this document, I vouch for the suitability of her work to be submitted for the Degree of Master of Science in Economics.

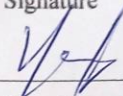
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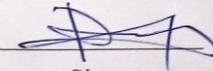
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List of Acronyms and Abbreviations

| | |
|-------------|-----------------------------------|
| AMEDs/AMEs- | Average Marginal Effects |
| CL- | Line of credit |
| ES- | Enterprise survey |
| FIN_CON- | Finance Constraints |
| It- | Information Technology |
| MI- | Multiple Imputations |
| OD- | Overdraft facility |
| OLS- | Ordinary Least Squares |
| SME- | Small and Medium enterprise |
| TPP- | Technological product and process |
| WBES- | World Bank Enterprise Survey |

ABSTRACT

This study examines the determinants of small and medium enterprise (SME) performance in Addis Ababa, Ethiopia, recognizing the critical role of SMEs in economic development and the persistent challenge of accessing finance in developing nations. Utilizing firm-level data from the World Bank Enterprise Survey (2015), the research employs a mixed-methods approach, integrating descriptive statistics and correlation analysis, and a logistic regression model and ordinary least square model for econometric analysis. The analysis considers firm characteristics such as size, age, loan access, obstacles to finance, and firm-level performance measures. Results reveal that firm size (a6a) is a key driver of sales growth, with larger firms more likely to report positive performance. market orientation (e1) and rotation order (m1d) also influenced performance (sales growth and employment growth). The availability of fixed assets did not significantly predict performance, with the model explaining 40.5% of the variance in performance. The study concludes that easing financial constraints, expanding SME loan schemes, and strengthening targeted policies for micro and small enterprises are critical for performance improvement. Policy recommendations include enhancing financial infrastructure and implementing size-differentiated support programs.

Keywords: *SMEs, access to finance, firm performance, logistic regression*

CHAPTER ONE

1 INTRODUCTION

1.1. Background of the Study

World Bank (2023) defined small and medium enterprises (SMEs) as enterprise that has relatively small share (in terms of, number of employees, sales turnover ownership and assets) of their market place. Those that are managed by owners or part owners in a personalized way and not through the medium of formalized management structure and are independent in the sense of forming a large enterprise. SMEs play a very significance role in economy of a country, both developing and developed nations as well as to the individuals. SMEs provide employment and improve the living standards of individuals-both employers and employees. They are the major sources of entrepreneurial skills and innovations (Wairimu, 2015).

Access to finance is exceptionally crucial for SME development and development similar to motor for vehicles. Anton and Yao, (2019) show access to finance is vital for the proficient allocation of capital and the enterprise advancement. In any case, on the off chance that they couldn't finds the financing they require developments and brilliant thoughts may drop down and this speaks to a loss in potential growth for the economy (*Mina et al., 2020*). The foremost imperative is SME's confront different challenges in looking for financial assets from formal financial institutions capital and business administration experiences.

The SME in Ethiopia is taken as an instrument in bringing approximately financial move by successfully utilizing the ability and ability of the individuals especially ladies and youth without requesting high-level preparing, much capital and advanced technology. The financing of SMEs has been a theme of sharp intrigued in later a long time since of the key part that SMEs play in financial improvement and their potentially important commitment to financial expansion and work. Therefore, reducing this financing hole in low-income nations like Ethiopia ought to raise the motivation to make SMEs and subsequently move forward financial development and increment work creation. In expansion, improving SMEs 'access to finance.

The growth and advancement of SME's in a nation plays an incredible part and can contribute to poverty reduction (Green, Kirkpatrick, and Murinde, 2006). One of the conceivable ways put forward by *Green et al. (2006)* in diminishment of destitution is making strides the supply of financial services to the destitute. Moreover, |Beck and Demingue (2016) summarized later

observational investigate articles related to access to finance as a development imperative and at last conclude that access to finance is a critical development limitation for SME's and propose that legitimate institutions play an important part in unwinding this limitation.

SME's confront troubles when they are looking for to get the fundamental subsidizing assets related with both entrepreneurial characteristics and firm characteristics (Czemieli, 2016). For instance worldwide writing on the subject of access to finance appears that firms report access to finance as a major impediment to improvement and development for SME's following to swelling, charges and direction and political precariousness (Belanova, 2019; Beck & Demingue, 2016 Brehanu & Mesfin, 2015; Beck & Separate, 2014; Czemieli, 2016; Green et al., 2006.; Kofi, Paul, and Gaeten, 2015. Besides, Belanova (2019) appears that indeed in case SME's are in a development stage refusal of bank advance application is down to earth due to need of collateral.

Nearly all nations in sub-Saharan Africa have experienced a tireless bounce in development rate (especially in terms of GDP development per capital (Fjose, Grunfeld, & Green, 2020)). For instance, Angola, Ethiopia and Mozambique show solid development (Fjose et al., 2015). While, most SME's working and creating trade in Africa considers the foremost imperative challenge as access to power and fund (Fjose et al. 2020), enterprises in sub Saharan African locale are less likely to have a credit (formal finance) than in other creating region of the world (Beck & Separate, 2021).

There are a number of challenges SMEs face that prevent them from conducting their businesses effectively and efficiently. Financing is one of the crucial aspects that assist Small and Medium Enterprises (SME) in the process of their development and expansion. Different writers cite various reasons that can affect SMEs to access finance. According to Manasseh (2004), lack of collateral requirements, structure of the financial sector, awareness of funding opportunities, and small business support services are constraints in accessing bank financing. According to Ndungu (2017), the factors affecting credit access by SMEs are number of lending institutions, interest charged on loans, collateral security and literacy levels. Access to credit and growth of SMEs' in Addis Ababa has not received extensive research. Brehanu Borji and Mesfin Gashu(2015) and Deresse Mersha and Zerihun Ayenew (2017) are among those who have carried out studies touching on accesse to finance for SMEs in dilla town and West Oromia Region respectively. Dereje (2017) and Feten (2016) are some of the researchers who have

carried out studies touching on accesses to finance in SMEs growth and its Challenge. The aim of this study is to establish nexus between accessibility to credit and growth of SMEs Addis Ababa City Administration.

1.2. Statement of the Problem

In Ethiopia, the SME division to the national economy with respects to work creation and the mitigation of contemptible destitution, numerous of the SMEs are incapable to realize their full potential due to the presence of distinctive components that repress their development and execution. Access to finance could be a key constraint to SME development; it is the foremost cited obstacle confronting SMEs to develop their businesses in rising markets and developing countries. SMEs in developing nations confront a financing gap that undermines financial prosperity SMEs are a principal part of the financial texture in developing nations, and they play a significant part in furthering development, advancement and success.

Unfortunately, they are emphatically restricted in getting to the capital that they require to develop and grow, with about half of SMEs in developing nations rating access to finance as a major limitation. They might not be able to get to finance from local banks at all, or confront strongly troublesome loaning conditions, indeed more so taking after the later budgetary crisis. Banks in developing nations are troubled by the need of moneylender data and regulatory back to engage in SME loaning. The overall result is nonattendance of a well- functioning SME loaning showcase, and SMEs are hindered in their development, with negative results for advancement, financial development and macro-economic strength in creating nations. Small and medium enterprises inherently represent more risk than large corporations making financial institutions hesitant to lend to the small business owners don't understand the process of applying for a small business loan and think that they can just walk into a bank, fill out an application, and get approved on the spot it's important for small business owners to come prepared with a business plan, financial statements or projections, bank statements, tax returns, credit reports (business and personal), and copies of any relevant legal documents (such as articles of incorporation, leases, contracts, operating licenses or permits).

Financial institution will often require a small business to put up property as collateral for the loan. This requirement can put pressure on a small business owner without valuable business

collateral to use personal property. Financial institutions prefer to spend money where it can see the most profit, which is on the larger, corporate loan.

Improving credit access by SMEs is crucial in fostering competition, growth, innovation, and entrepreneurship in Kenya (Kung'u, 2017). Accessibility to credit is important as it reduces the impact of cash flow problems and ensures flexibility in resource allocation (*Bigsten, et. al., 2000*). External financing is mostly limited by the fact that commercial banks are often willing to lend on a short term basis because they receive deposits on demand which therefore cannot be lent out on a long term basis as the need of the SMEs may demand.

This study differs from earlier works in several important aspects. Although the WBES 2015 dataset is not recent, the methodological approach and analytical focus of this study provide a distinct contribution to the literature. Earlier studies such as those conducted by Brehanu Borji & Mesfin Gashu and by Deresse Mersha & Zerihun Ayenew (2017) primarily examined access to finance or financing constraints using descriptive analysis and models focused on the likelihood of obtaining credit. These studies did not analyze firm growth outcomes, nor did they model the probability of achieving higher sales performance. In contrast, the present study applies a binary logistic regression model to estimate the probability of SMEs achieving above-median sales growth, offering a more growth-oriented perspective. Furthermore, the WBES dataset used here provides a richer set of firm-level characteristics—including access to finance, perceived obstacles, innovation activities, and market orientation—variables that are not simultaneously available in most primary datasets used by earlier Ethiopian studies. Finally, instead of treating productivity, export, and innovation as separate performance dimensions, this study incorporates them as explanatory factors to assess how they contribute to sales growth. Therefore, despite the age of the dataset, the study makes a methodological and analytical contribution that is clearly distinct from the existing literature. The purpose of this study, therefore, is to establish the nexus between access to credit and SME growth in Addis Ababa City Administration. In line with the gaps discussed above and the issues raised in Chapter Two, conducting this study is both relevant and necessary.

1.3.Objectives of the Study

1.3.1. General Objective of the Study

The main purpose of the study is to establish nexus between accessibility to credit and growth of SMEs Addis Ababa City Administration.

1.3.2. Specific Objectives of the Study

The study's designed to address the following specific objectives:

- To analyze the impact of loan access on the growth of small and medium scale manufacturing enterprises.
- To identify the key factors that affects the growth of small and medium scale manufacturing enterprises in Addis Ababa.
- To examine how firm characteristics such as productivity, export activity, employment capacity, and innovation influence SME sales growth.

1.4.Research Questions

Using the literature reviews as a guide, the researcher came up with the following research questions:

1. Does access to loan finance significantly influence the sales growth of small and medium manufacturing enterprises in Addis Ababa?
2. Which firm-level and financial factors significantly determine the growth of small and medium manufacturing enterprises in Addis Ababa?
3. To what extent do firm characteristics-such as productivity, export activity, employment capacity, and innovation affect the likelihood of achieving higher sales growth among SMEs?

1.5. Significance of the Study

This research is motivated by the increasing role of SMEs in the Ethiopian economy, and the continuing constraints they face in their activities. SMEs have been identified as one of the development strategies for promoting industrialization, employment generation, catalyzing innovation and poverty eradication in Ethiopia. The findings of the study are of great importance to small and medium entrepreneurs as it outlines the major relationship between accessibility to credit and growth of small and medium enterprise in Addis Ababa City Administration.

This study is of great importance to policy makers in charge of formulation of the regulations related to operation of SMEs in the country. Information in this study can be used by the Addis Ababa city administration and subsequently other cities when formulating policies on planning. This can also aid them in building an all-inclusive, policy for all traders including SMEs.

Based on the findings of this study, educational institutions and non-governmental organizations are able to focus more on the needs of small and medium entrepreneurs, to educate on practical aspects of business and for the NGOs to be able to know areas to offer grants or donations and training the less fortunate. It is hoped that the recommendations and measures provided will help in counter checking whether the government is still on the truck in realization of the its home-grown economy policy.

Furthermore, the finding of this study contributed in the building the argument of the existing theories and the available literature. Academicians and researchers will benefit from the study findings since they form a point of reference on topic related to credit accessibility and growth of small and medium enterprises.

1.6. Limitations of the Study

This study has several limitations that should be acknowledged. First, the analysis relies on the World Bank Enterprise Survey (WBES) 2015 dataset, which, although comprehensive and nationally representative, is relatively dated. This limits the applicability of the findings to the most current SME policy and economic environment in Ethiopia. Second, because the study uses secondary data, the researcher was constrained by the variables available in the dataset and could not incorporate additional factors that may influence SME growth, such as managerial quality, digital adoption, or recent macroeconomic changes. Third, the cross-sectional nature of the data restricts the ability to infer causality; the study identifies associations rather than direction of effects. Finally, since the study focuses on manufacturing SMEs in Addis Ababa, the findings may not be fully generalizable to SMEs in other regions or sectors. Despite these limitations, the study provides valuable evidence on the relationship between access to finance and SME growth using one of the most reliable and detailed firm-level datasets available for Ethiopia.

1.7. Organization of the Study

There are five chapters in the study: The first chapter includes an introduction section and concentrates on the following topics: study background, problem statement, research questions,

aims, research hypotheses, importance, and study organization. The second chapter incorporates assessment of the relevant literature and focuses on relevant theoretical and empirical reviews for this investigation. The third chapter outlines the methodological framework of the study. It describes the research design, type and sources of data, target population, sample size and sampling techniques, data collection instruments, variables and their measurements, and data analysis methods. It also presents the procedures employed to address missing data and ensure the robustness of the results. The fourth chapter presents the empirical results of the study and their interpretations. It begins with descriptive statistics, correlation analysis, and regression model outputs. Results from robustness checks are also included. Each finding is interpreted in detail, focusing on its implications for firm growth and access to finance. The last chapter summarizes the key findings of the study, links them back to the objectives and hypotheses, and draws conclusions. It also compares the results with findings from previous studies, especially in the Ethiopian context. Finally, it provides recommendations for policymakers, financial institutions, and entrepreneurs, and outlines areas for future research.

CHAPTER TWO

2. REVIEW OF THE RELATED LITERATURES

2.1. Introduction

This entire chapter critically identifies and analyses information related to this study. It looks at the importance of theory in academic writing and the various developments in theory. It also explains the financing theories, the relationship between credit accessibility and growth of small and medium enterprises and the empirical evidences both locally and globally. It also summarizes literature review as well as the conceptual framework.

2.2. Theoretical review

This chapter illustrates existing writing based on realities and hypotheses with theories which are defined to clarify, anticipate and, in numerous cases, to challenge and amplify existing information inside the limits of basic bounding assumptions. SMEs in creating and rising markets are doubly affected; as lenders tend to withdraw from higher-risk markets at the same time as credit shifts advance from SMEs and towards bigger corporate clients. When banks are greatly risk-averse, small- and medium-sized ventures (SMEs) are likely to be more influenced than bigger ones. With banks permitting a lower sum for advances, SMEs, regularly among the final in a pecking order, would have indeed more issues competing for less stores at higher costs. Hence, the theoretical issues related with obstructions to formal finance will be tended to and displayed in to two sub segments as from the financial institution viewpoint and SMEs point of view.

2.2.1. The Definition and Concept of SME's

Universally agreed definition of SME (business entities) some of the commonly used criteria are the number of employees, value of assets, and value of sales and size of capital or turnover. However, the most common basis of defining SMEs is number of employees (Nugent, 2001). As cited in Mr. Hauser, (2005) small and medium size enterprises are defined by their size. In the European Union SMEs are defined in the Commission Recommendation of May 6, 2003. Concerning to this recommendation an enterprise is regarded as small or medium sized if it has not more than 250 employees, not more than 50 Million Euro turnover resp. a balance sheet total

of less than 43 Million Euro and if not more than 25% of the shares of such an enterprise are in the ownership of another enterprise.

The SMEs definition is based on the country. World Bank have not published or defined specific definition on the SME. Basically SMEs definition is based on the numbers of workers of the organizations or the annual sales of the organizations. As sited in Tom Gibson H. J. van der Vaart 2008 work, the African Development Bank (AfDB) defines SMEs, as an enterprise which has maximum number of 50 Employees without any requirement Revenues or Turnover (World Bank, 2015).

According to Wikipedia Small and medium-sized enterprises (SMEs, also small and medium enterprises) or small and medium-sized businesses (SMBs) are businesses whose personnel numbers fall below certain limits. The abbreviation "SME" is used in the European Union and by international organizations such as the World Bank, the United Nations and the World Trade Organization (WTO). Small enterprises outnumber large companies by a wide margin and also employ many more people. SMEs are also said to be responsible for driving innovation and competition in many economic sector. The main factors determining whether a company is an SME are number of employees and either turnover or balance sheet total.

The Small Business Profiles are produced by the US Small Business Administration's Office of Advocacy defined SMEs as firms employing fewer than 500employees.

In China an MSME can be an enterprise with 1 to 3000 employees; total assets from ¥ 40 to 400 million and business revenues from ¥10 to 300 million depending on the industry. In case of Japan SME is defined as a firm with employees of 300 or less and capital size of 300 million yen or less in manufacturing, a firm with employees of 100 or less and capital size of 100 million yen or less in wholesale, and a firm with employees of 50-100 or less and capital size of 50 million yen in retail and service sector.

As sited in Bataa Ganbold (2008) in developing countries, number of employees and size of asset or turnover for SME tend to be much smaller compared with their counterparts in developed countries due to their relative size of business entities and economies. For example, in Mongolia, SME are defined as legally registered business entities with employees of 199 or less and with an annual turnover of 1.5 billion to grog (Mongolian currency Unit.) which is approximately 1.3 million US dollar at the time or less respectively.

As cited in the Oya et al (2011) according to data from Financial Access 2010 only 15 countries stated that they use loan size as a proxy for defining an SME. Similar to the definitions based on the number of employees and sales.

2.2.2. Access to finance by small and medium enterprises

The arrangement of credit has progressively been respected as a critical device for raising the incomes of provincial populaces, primarily by mobilizing assets to more profitable employments.

As advancement takes put, one address that emerges is the degree to which credit can be offered to the country destitute offices their taking advantage of the creating entrepreneurial activities. The era of self – business in non- cultivate exercises requires investment in working capital. Be that as it may, at low levels of salary, the collection of such capital may be troublesome.

In Ethiopia, despite the enormous importance of the SME sector to the national economy with regards to job creation and the alleviation of abject poverty, many of the SMEs are unable to realize their full potential due to the existence of different factors that inhibit their growth and performance. One of the leading factors contributing to the unimpressive growth and performance of the enterprises is limited access to finance (Wolday and Gebrehiwot, 2004). In a similar way, comparing small and large firms the World Bank finds that small firms face more challenges in obtaining formal financing than large firms; they are much more likely to be rejected for loans, and are less likely to have external financing (world bank,2015).In Ethiopia, despite the introduction of banking sector reform in 1994 that led to expansion of the banking industry, SMEs' problem of credit access has persisted implying that changes in the banking sector structure per se are not sufficient to introduce competition in the banking industry and an improvement in SME credit access (Ashenafi, 2012). Access to monetary administrations by small business is ordinarily seen as one of the limitations limiting their benefits from credit offices, in most cases the access issue, particularly among formal financial institutions, and is one made by the institutions primarily through their lending approaches. This is often shown within the frame of the prescribed minimum advance sums, complicated application method and limitations on credit for particular purposes advance contend that the sort of money related institution and arrangement will frequently decide the finance issue. Where credit indeed length, terms of installment, required security and the arrangement of supplementary administrations

don't fit wants of the target bunch, potential borrowers will not apply for credit indeed where it exists and when, they will be denied access.

Generally talking, financial incorporation, or wide access to monetary administrations, is characterized as an absence of cost and non-price obstructions within the utilization of budgetary administrations. Improving access, at that point, implies progressing the degree to which monetary administrations are accessible to all at a reasonable cost. It is simpler to degree the utilize of money related administrations since information of utilize can be observed, but utilize isn't continuously the same as get to access basically alludes to the supply of administrations, while utilize is decided by request as well as supply (Bataa Ganbold, 2008) Conferring to Wikipedia access to fund is the capacity of people or ventures to obtain financial administrations, counting credit, store, installment, protections, and other hazard management administrations. Those who automatically have no or as it were constrained accesses to monetary services is alluded to as the unbanked or beneath kept money, respectively.

Access to finance can be broadly characterized as access to financial items (e.g. stores and loans) and administrations (e.g. protections and value items) at a sensible cost. Given the widely recognized interface between accesses to finance, development, wage smoothing and poverty reduction; numerous nations have received the objective of all inclusive budgetary access. (Sushma Narain, 2019).

It is the ability to obtain deposit, insurance payment and other risk management series which is different from one country to other. Access to finance is improving access firm's economy performance. it will help to give credit information system to build more enterprises they read while financial obstacles make the firm's growth slower. The access to capital access to finance is particularly key for small business we may need an injection of money to help them to take next step or even stabilize their company we see a very interesting dynamic though where even though access to finance has been a long standing means were seeing that's almost half of them means don't seek finance are they don't think they're going to get it or are they not seeking finance because actually they don't want it or need it and it's very interesting dynamic that we have in the environment to today .

2.2.3. Potential source for finance for SMEs

It depends a lot on how much money we need, how good our idea is but also what we're willing to part with in exchange for financing. Generally, through these the best options are here;

2.2.4. Friends and family

We could start by asking our friends and family if they're willing to invest in our business or give us a loan usually they won't ask for interest back (like banks for examples) and they are also more related about getting paid back if they actually have the money, however there is of course a downside. Mostly that it can bring some problems in our relationship with them as money generally has that power. Worth a shot through in some case especially if we don't need a big loan/ investment.

Raise money by ourselves; another option is to try raise the money by ourselves or at least part of it. It takes time but at the same time we don't have to pay any one back. We can try investing any money we have put aside ideally create a mix of low risk investment and higher –risk ones-. We can read more about what type of investment they are both low risk and high risk.

2.2.5. The Business Angel

A business angel is a wealthy individual willing to take the risk of investing in SMEs. One limitation is that these individuals are not common and are very often quite particular about what they are prepared to invest in. Once a business angel is interested they can become very useful to the SME, as they will often have great business acumen themselves and are likely to have many useful contacts.

2.2.6. Factoring and Invoice Discounting

Both of these sources of finance effectively let a company raise finance against the security of their outstanding receivables. Again, this finance is only short-term and is often more expensive than an overdraft. However, one of the features of these sources of finance is that, as an SME grows, their outstanding receivables will grow and so the amount they can borrow from their factor or from invoice discounting will also grow. Hence, factoring and invoice discounting are two of the very limited number of finance sources which grow automatically as the business grows. (William, 2016).

2.2.7. Crowd Funding

Crowd funding involves funding a venture by raising finance from a large number of people (the crowd) and is very often achieved over the internet. Crowd funding has grown rapidly and in 2013 it has been estimated that over US\$5bn was raised worldwide through crowd funding. There are now in excess of 500 crowd funding platforms on the internet and over 400 crowds funding campaigns are launched every day).

Finance provided by crowd funding may be invested in the debt or the equity of the ventures seeking the finance. Some crowd funding is done on a ‘keep it all’ basis where any funds raised are kept by the recipient, whereas some is done on an ‘all or nothing basis’ where the recipient only receives the funds if the total required to fund the particular project is raised within a given time frame. The crowd funding platform takes a fee, which is often a percentage of the amount raised.

Crowd funding has the potential to be very beneficial to SMEs. It allows them to contact and appeal directly to investors, who may be willing to take the risk involved in funding the new technologies and innovations, which SMEs are often so good at producing.

Among the sources listed by scholars above only a few sources are available in our country. It may need a research how this funds or sources be workable on our working environment to help SMEs in there need. However this shows that there is untapped market for the source of formal finance which will reduce the constraint of accessing the finance (William, 2016).

Crowd funding facilitates the raising of capital for a variety of purposes, using numerous variations of the model. Below is a typology of how the operators in the market can potentially be segregated.

Crowd funding platforms can connect cash–starved creative entrepreneurs with audiences looking to fund creative projects because they are passionate about their ‘substance’, rather than seeking to generate a financial return from them, as well as with investors offering capital on better terms than traditional sources of finance for the sector, such as banks or publishers. Kickstarter, the most successful creative crowd funding platform, has already generated pledges above \$230 million, and funded over 23,000 creative projects. (Nesta 2012).

2.2.8. Business grants

Government makes provision for funding small business that aid in the progress and developments of the economy. Check and see if our business qualifies for a government grants.

2.2.9. Product presales

Product presale is the method of selling products before the business launches for the purpose of financial purpose of your business, while it is not good idea to sale the products that are not ready for the market, it can harm the future of the brand.

2.2.10. The Venture Capitalist

A venture capitalist company is very often a subsidiary of a company that has significant cash holdings that they need to invest. The venture capitalist subsidiary is a high-risk, potentially high-return part of their investment portfolio. (William, 2016)

Venture Capital refers to the provision of capital for growth and expansion to companies with underdeveloped or developing products and revenues at an early stage in their corporate lifecycle. It also refers to the provision of development capital to mature companies at a later stage in their corporate life cycle. Typically, investee companies are unquoted, small to medium sized enterprises. (Regina et.al 2015).

2.3. Informal Financial Source

Sources of informal finance are those that do not fall in the organized sector and are not a registered institution. The one can be friends, families' members, local lenders as well. However, it is highly recommended not to use as source of informal credit for a loan. Since there is no way to regulate these sources, we might be faced with higher interest rates and harsh loan terms.

Advantages are;

- i. No external control over the landing practices.
- ii. Suitable for poor households.

Disadvantages

- i. The interest rates can be very high
- ii. The lenders can use unfair means to get the money back.

2.4. Underlining Assumption and theories on Access to Finance for SMEs

Theories are defined to clarify, foresee and, in numerous cases, to challenge and amplify existing information inside the limits of basic bounding assumptions. The hypothetical system is the structures that can hold or back a hypothesis of a research ponder. Here are a few of the presumptions which can hold or back a hypothesis of a research which is accumulated from a book of Access to Fund and Improvement: Hypothesis and Measurement.

2.4.1. Irrelevance theorem of capital structure

There are a number of hypotheses that enterprise to reply the following question. How do owners and supervisors of enterprises make financing choices? Modigliani and Mill operator in 1958 proposed insignificance hypothesis of capital structure in an attempt to reply the over question. The hypothesis is of the view that ventures back their businesses utilizing inside funds, obligation and value. Agreeing to Goya & Straight to the point (2005), when it gets to be vital to use obligation and value, the hypothesis proposes that debt-equity proportion is decided in a way that it isolates cash streams among the distinctive financial specialists. This theory is important since it recognizes that trade owners to begin with considers inner sources to external sources to back their operations. This characteristic is additionally common to proprietors of trade in Ethiopia especial within the private business. (Goya & Straight to the point (2005)).

2.4.2. Pecking order theory

Pecking order theory is utilized to assist clarify how companies choose where to source their financing, and in this way it makes a difference clarify what drives ideal capital structure, or the perfect adjust of obligation and value financing. Pecking arrange theory is the thought that company supervisors choose how to fund company operations based on a progression where they to begin with utilize held profit (inside financing), at that point debt financing, at that point equity financing.

Inside financing is the primary choice in pecking order theory since there's no additional cost related with utilizing it. On the off chance that a company uses as it were held profit for financing, there's no cost of debt or cost of equity to be accounted for. Debt financing comes in moment since of the intrigued payments associated with utilizing obligation capital. Whether the company chooses to require out commerce advances or issue corporate bonds, they will have to

be pay a few intrigued, making the cost of debt more than the non-existent cost of utilizing held profit.

Equity financing is final in pecking order theory since it is the foremost costly financing alternative. The cost of value capital for case, stock shares is higher than the cost of debt financing. Issuing offers can demonstrate that a company's administration accepts the offers are overvalued a flag to investors that they could be in inconvenience and their share cost can be approximately to drop. Usually a case of asymmetric data, the center thought behind the pecking order theory.

The pecking order theory created by states that issuing securities is subject to an unfavorable choice issue. Directors blessed with private data have motivations to issue overrated unsafe securities. But they too get it that issuing such securities will result in a negative cost response since sound financial specialists, who are at a data drawback, will markdown the costs of any hazardous securities the firm issues. Thus, firms take after a pecking arranges: utilize inside assets when conceivable; in case inside stores are lacking, get outside obligation; outside value is the final resort.

Stewart and Nicolas (1984) proposed the Pecking order theory. This hypothesis is pivoted on asymmetric data and the presence of transaction costs. Pecking order theory expects that endeavors take after a financing pecking order and that source of finance is either inner or outside. In this case, agreeing to Botta (2014), priority is given to inner stores over outside reserves. The hypothesis stipulates that enterprises look for outside subsidizing as it were when inside assets are drained. It takes after at that point that outside reserves ought to be fundamental, more secure and without control confinements for the enterprise. This theory is pertinent to SMEs in Ethiopia since it touches on collateral which business proprietors in Ethiopia not have a property or other resource that a borrower offers as a way for a moneylender to secure the advance. Subsequently they as a rule incline toward other sources.

2.4.3. Trade off theory

The trade-off theory of capital structure is the thought that a company chooses how much debt finance and how much equity finance to utilize by adjusting the costs and benefits. The classical form of the speculation goes back to Kraus and Litzenberger (2017), who considered an adjust

between the dead-weight costs of insolvency and the assess sparing benefits of debt. Frequently organization costs are too included within the adjust. This hypothesis is regularly set up as a competitor hypothesis to the pecking order theory of capital structure.

A critical reason of the hypothesis is to clarify the truth that enterprises as a rule are financed incompletely with debt and somewhat with value. It states that there's an advantage to financing with obligation, the charge benefits of debt and there's a taken a cost of financing with debt, the costs of money related trouble counting insolvency costs of debt and no bankruptcy costs (e.g. staff clearing out, providers requesting disadvantageous installment terms, bondholder/stockholder infighting, etc.). The negligible good thing about advance increments in obligation decays as debt increments, whereas the negligible cost increments, so that a firm that's optimizing it's by and large esteem will center on this trade-off when choosing how much debt and equity to utilize for financing.

Trade-off theory on the other hand endeavors to clarify utilize of debt financing. Agreeing to this recommendation, proprietors of enterprises assess the different costs and benefits related with alternative obligation plans. It accept that an inside arrangement is favored so that negligible cost and benefits are adjusted. Concurring to the hypothesis, an endeavor sets a target debt-to-value ratio and after that continuously moves towards it. This target tries to adjust obligation charge preference against costs related with insolvency (Goyal& Frank, 2005). This hypothesis isn't culminate because the debt-to-equity proportion isn't specifically discernible which taxation is more complex than assumed by the hypothesis. In expansion, it expects that insolvency costs are deadweight costs which exchange cost takes a particular shape.

Information Asymmetry Theory information asymmetry deals with the study of decisions in exchanges where one party has more or superior information than the other. This asymmetry makes an imbalance of control in exchanges, which can some of the time cause the transactions to be inefficient causing market failure within the worst case.

2.5. Benefit of SME's

For a country economic growth, employment opportunities & efficient market demand and supply situation SME's plays a vital role, however there are arguments which support and also skeptical on the importance of SMEs for economic development.

The importance of the micro and small enterprises sector in Ethiopia, particularly for the low-income, poor and women groups, is evident from their relatively large presence, share in employment and small capital requirement. These are sufficient reason for governments and other stakeholders in development to be interested in micro and small enterprises. However, in the context of many developing countries, countries in transition in particular including Ethiopia, MSEs are also seen as an emerging private sector, forming the basis for private-sector-led growth. In Ethiopia, at the level of strategy and policy, these roles of MSEs have received recognition. They are seen as means of providing employment, alleviating poverty, ensuring food security, and private sector development (Gebrehiwot and Wolday, 2006).

According to Small Scale Manufacturing Industries survey 2013/14 which is conducted by CSA, there were 116,604 small-scale manufacturing establishments in Ethiopian fiscal year (E.F.Y) 2006 (2013/14). Out of the total, the largest in number, or slightly more than 35 thousand or 30.39 %, were grain mills, 25.4 thousand (21.81 %) manufacturer of food products except grain mill service and manufacturing OF wearing apparel, dressing & dying of fur establishments numbered 18.12 thousand or 15.61 % of the total, respectively. During the stated year, all the establishments combined engaged 1,743,470 people, which is roughly a ratio of 1 to 14.95, i.e., on average 10 small scale manufacturing establishments engaged 150 people. (FeMSEDA, 2014).

What can we say about SMEs finance?

Well the first thing to note is that SMEs do need external funding. Of course, all enterprises start small and at the early stage in their development they use primarily internal funds the owners their families' friends, but eventually in order to grow, SMEs will need external funding. They need external finance to grow, invest and acquire new technologies to increase productivity without financing they may not be able to expand to complete in regional and global markets. Or even establish business linkages with larger firms and position themselves in value chains.

Ethiopia is looking for a way to create jobs and spark a better and brighter economic future and everyone knows, SMEs are the backbone of any economy, whether in Africa, Europe, The United States, or Asia.

We all agree that SMEs represent the future of the African economy a very large and high percentage of total GDP growth in the African continent while it ranges the little berries a little across economies it's a very high percentage. Let us take Tunisia, their central bank had done a study 89% of their economy is founded on SMEs percentage holds for many of Africa's economies.

The Challenges of Africa is a significant proportion of its literature population whether they finish secondary school a lot of them still struggle to get jobs and complete in where as they move. SMEs have the surprising capacity to fuel financial development. They make numerous modern work openings, drive the temporary fad of advancement and grow the assess base. SMEs moreover increment the competition among the peers and warm up the showcase situation. This nonstop battle for supremacy brings out the leading in a trade. This triggers a win-win circumstance for both supplier and the customer. Additionally, this increments the total efficiency as well as economy-wide effectiveness. Modern entrepreneurs bring forward developments, thoughts and skills. In later a long time, SMEs have enrolled a better development rate as compared to the worldwide mechanical division. The chief advantage of the SME division is its potential to produce work at low capital use.

2.6. Access to finance for SMEs and Challenges

The challenges of sources and access to finance of SMEs in Ethiopia, like in most developing nations are gone up against with the same challenging of getting to financing in their offered to grow. Standard financial institutions are not willing to supply credits to the segment or maybe huge sum of cash is given to large scale firms. Eshetu and Mammo (2009, 15) states that, commercial banks are hesitant to lend little sum of cash to little trade since the cost of regulating the advance exceed the advantage collected to them.¶ This appears that banks are not slanted to create an innovative and efficient approach that minimizes hazard and regulatory cost to serve the sector. As a result the conventional approach utilized by banks and financial institution does not enable them overcome the chance and exchange cost of loaning to SMEs (ECA 2001, 12).

The monetary policy of the government does not compel banks to expand their loans to SMEs. Mulu (2017) and Etsegenet (2000) appears that approximately 76% of SMEs get their start-up and development capital from informal financial sources such as, own saving, cash lenders,

relatives and companions. Large portion of capital is come from own saving and friends and relatives are the second biggest money related sources for SMEs.

As a result debt financing has ended up an awfully sticky point within the development and capital mobilization efforts of SMEs over the board. In an ideal world, financial institutions counting banks ought to engage no fears in expanding financing alternatives to SMEs, but under conditions such as those that win in Ethiopia, one that's informed by an interconnection legion of problems it'll be suitable to comprehensively get it them appropriately as the primary step towards settling them. For occasion, residential monetary institutions are haunted by exceptionally high hazard recognition; the absence of intermediary ability components also talks of a related complication, and after that comes the address of the scope of the capacity of SMEs to be practical and competitive.

The financial regulatory environment in Ethiopia gives a close restraining infrastructure status for banks in this way protecting them from the plausibility of outside competition. In that respect the motivation to expand beyond their center markets with propelled by dangers of entry is ostensibly coiled. Banks are in this manner within the business of amplifying credit to expansive enterprises, with a few sense of ensured benefitting. The normal slant is to stay inside their center showcase as long as the returns are great without not one or the other causing dangers nor dangers from competition.

Another factor to the financing limitation by Ethiopian banks must do with their claim internal impediments of running their operations on short-term liabilities basically from the deposits of clients as restricted to turning to long-term liabilities from sources such as pension stores which have on normal longer development periods. Beneath such a condition, there is fair so much that banks can do in terms of amplifying credit to clients counting SMEs. Besides, residential managing an account and budgetary direction in Ethiopia does not energize banks to aspire to request long-term developing liabilities, particularly those that can encourage forceful lending.

Other components too come into play when considering the possibility of amplifying credit to a client, such as the financial standing of the borrower. Under agreement characterized by coarse bookkeeping strategies that gives small to no relevant data about financial standing gets to be a disincentive for loaning. Banks would need to resort to the so-called relationship based loaning handle, which may be substituted for requests for huge collaterals. On the address of capacity, it

is clear that both moneylenders in this case banks and borrowers from the SME segment are fighting the same challenge, to the degree that banks are not able to set up the authoritative terms of credit value inside the residential market.

2.7. Credit Accessibility and Firm Growth

Credit is considered a factor of production. Access to credits allows SMEs to utilize productive assets to enhance productivity and economy of scale (Kira & He, 2012). As suggested in DALBERG's (2011) report, access to finance encourages market entry, facilitates growth, reduces risks, and fosters innovation and entrepreneurial activity. Wagenvoort (2003) estimated the growth sensitivity cash flow of enterprises in 14 European countries during 1996 - 2000 and found that finance constraints limit the growth potential of SMEs. Beck, Demirgüç-Kunt, & Maksimovic's (2005) study on firms in 54 countries confirmed that financial constraints limit firm growth, especially small firms. Empirical studies worldwide also confirm the positive effect of credit accessibility on firm growth. For example, Rahaman (2011) estimated that a 10% increase in bank credit result to an 18.14% increase in growth of the sample firms in Ireland and the UK. Khandker, Samad, and Ali (2013) test the impact of access to finance on microenterprise growth and profitability in Bangladesh using the fixed-effect model.

Their results suggest that credit constraints negatively affect microenterprise profit margin more severely than other types of constraints (such as transportation, lack of demand, etc.). In addition, enterprises that borrowed from money lenders to start their business have significantly lower profit than borrowing from other sources.

Ayyagari, Demirgüç-Kunt, & Maksimovic's(2010) study in China also revealed that firms that have bank loans or use retained earnings grow faster than firms borrowing from informal sources. Similar findings were documented for Kenya (Akoten et al., 2006; Atieno, 2009) and Indonesia (Shinozaki, 2012). However, when it comes to India, Allen et al. (2012) test the relationship between firm growth and access to different sources of finance for India using OLS and Two Stage Least Square(2SLS) models and suggest that firms with access to bank or market finance do not perform better than the others. Their argument is that in emerging countries like India, firms prefer using alternative finances rather than institutional finance to avoid any possible cost that might result from legal institutions and to adapt better with changes.

Yiu, Su, and Xu (2012) assess the impact of alternative financing (underground finance and trade credits) on the performance of 284 private firms in 19 provinces in China. The OLS and 2SLS estimation confirmed that alternative financing positively associates with firm performance. Therefore, informal finance is an important source of financing for private firm in transition economies where formal financing is not widely available.

Very few studies have examined the impact of credit accessibility on SMEs' growth and performance in Vietnam with the exceptions of Malesky & Taussig (2009) and Shinozaki (2012). The first study found no significant relationship between bank finance and firm profitability. The authors explained that bank lending in Vietnam based too much on political connections so credits may not go to profitable firms. Besides, the authors also argued that the most profitable firms do not rely on bank finance but retained earnings. The second study, in contrast, found a positive relationship between bank lending and sales growth of SMEs. Nevertheless, the results of both two studies might be bias because of potential endogeneity problem that may arise since the financing decision is endogenously determined by the firm (Allen et al., 2012; Ayyagari et al., 2010; Rahaman, 2011).

2.8. Empirical Review of studies

A few related studies are conducted by distinctive researchers' completely different nations. The point of this study was centered on analyses components affecting get to finance and its accessibility for Small and Medium enterprise. A later World Bank study on SMEs, which in Ethiopia are evaluated to have come to 800,000 up until 2016, found that financing was a key imperative to work creation and development.

Concurring to Wanjohi & Mugure, (2008), the need to get credit is nearly universally shown as key issue for small and medium scale enterprises. In most cases, indeed where credit is accessible basically through banks, the business visionaries may need flexibility of choice since the banks' loaning conditions may drive the buy of overwhelming, steadfast equipment that can serve as collateral for the bank. Credit limitations work in assortment of ways where undeveloped capital advertise powers business people to depend on self- financing or borrowing from companions and relatives. Need of access to long-term credit for micro, small and medium enterprises strengths them to depend cost brief term finance.

In Jane Anne Wangui, et.al (2014), study revealed that the key challenges preventing micro and small enterprises in Kangemi Harambee Advertise in Nairobi City Kenya from getting to credit offices to be tall cost of reimbursement, strict collateral necessities, unwillingness of people to act as underwriters, high credit facilities' handling expenses and brief reimbursement period. Also Gabriel (2011), in his study conducted Westland division, Kenya finds that the estimate and age of the firm, budgetary characteristics and the trade aptitudes that the business visionary has; were found to have an impact in getting to funds.

Hezron and Hilario (2016), on their study conducted in Maputo central commerce district, Mozambique, there's a relationship between the structure of the monetary division and access to finance by SMEs; there's a relationship between mindfulness of financing and access to finance by SMEs; there's a relationship between collateral requirements and access to finance by SMEs; and there's a relationship between small trade support and get to finance by SMEs.

Fetene (2017) discoveries Ethiopian small businesses are slacking behind each other segment. Their development is drowsy; attractiveness of their item is constrained since of quality, competition, need of advertise (lacking in put to showcase their item), the access that they have for input was constrained and costly in put cost and their get to as well as utilize of finance is amazingly restricted.

Agreeing to the study conducted by Brehanu and Mesfin (2015), Micro and small enterprise in Dilla Town, has insufficiency of financial back up when beginning and working the ventures. The formal monetary institutions have not been able to meet the credit needs of the MSEs, since MSEs are not able to fulfill the necessities such as business plan, administration frameworks, collateral and other responsibility issues which are related to business hazard administration.

Other components moreover come into play when considering the plausibility of expanding credit to a customer, such as the money related standing of the borrower. Beneath allotment characterized by coarse bookkeeping methods that gives small to no important data around financial standing gets to be a disincentive for loaning. Banks would have to be resort to the so-called relationship-based loaning prepare, which may be substituted for requests for colossal collaterals. On the address of capacity, it is clear that both moneylenders in this case banks and borrowers from the SME division are doing combating the same challenge, to the degree that

banks are not able to set up the authoritative terms of credit value inside the household market. According to their study, the normal slants for banks to enter the SME advertise though some hesitance is to thrust all the orderly dangers into higher than normal intrigued rates for borrowers.

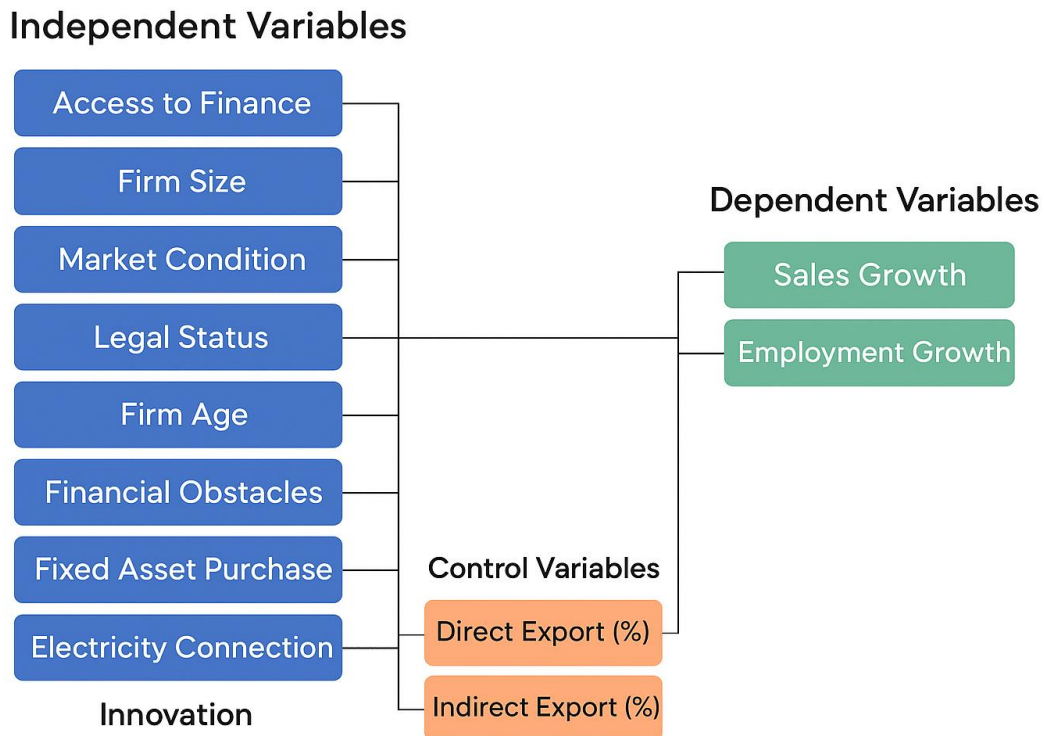
On the other study conducted by *Zantana, et.al (2018)* concludes that the major source of startup back additionally working capital is possess reserve funds. The major source of credit for startup on the other hand is family and companions taken after by microfinance and Equub'. The major source of credit for working capital is additionally casual money related institution. Age of the entrepreneur, instructive level of the business person, ownership of settled resource, work size of MSEs, discernments around loaning strategy and advance reimbursement period had statistically critical impacts on get to credit from formal money related educate. In contrast gender orientation of the entrepreneur, firm age, segment and recognition around interest rate had no effect on MSEs' get to credit from formal monetary institutions.

The troubles confronted by MSEs in getting to credit offices are credited to their perceived higher hazard profile. Loaning institutions respect MSEs as more hazardous undertakings for a number of reasons which incorporate: dubious competitive environment; lacking bookkeeping frameworks; more eccentric working environment within the creating and rising markets; resources not legitimately enrolled; postponed installments for the items and administrations rendered; less equipped in terms of both human and budgetary assets to resist financial assets Botta (2019). As sited in Hezron and Hilario (2016), Eshetu and Mammo (2015) states that, commercial banks are hesitant to loan small sum of cash to small trade since the cost of regulating the advance surpass the advantage gathered to them. This shows that banks are not inclined to develop an innovative and systematic approach that minimizes risk and administrative cost to serve the sector.

2.9. Conceptual Framework

The conceptual framework shows how the independent variable access to credit which was measured in terms of Required collateral, interest rates, nature of ownership of the SMEs and product of the SMEs type influences the growth SMEs. While age of the SMEs, size of the SMEs and regulatory environment are stated as control variables that are kept constant for all the SMEs under consideration.

Table 2.1: Conceptual Framework



2.10. Summary of the Review

Finance is a key factor that affects firm growth in different ways. At the micro economic level, slow rate of growth by firms is mostly articulated to limited access to financial services. Most of the literatures reviewed, nations while few were from developing nations like Ethiopia, which have few scholarly articles about the SMEs and the ways in which they access business financial support. The chances for profitable expansion in employment in SMEs are limited when the macro-economic conditions are less favorable. This mainly applies to those SMEs with linkages with bigger enterprises and the economy. From the above review, a proper scrutiny of SMEs dynamics is important both for SMEs support programs and economic growth. Given the role the economic role SMEs play in the Ethiopia in general and Addis Ababa in specific, many studies haven't been performed and an empirical study needs to be carried out to investigate the relationship between credit accessibility and growth of SMEs.

CHAPTER THREE

3. RESEARCH METHODOLOGY

This chapter details the methodological approach employed in this study to address the research questions concerning the relationship between credit access and the performance of Small and Medium Enterprises (SMEs) in Addis Ababa. It begins by outlining the overarching research design and approach. Subsequently, it describes the data sources and the specific variables utilized. A dedicated section is then presented for the theoretical and empirical framework. The chapter concludes with a comprehensive discussion of the data analysis techniques, covering data preparation, descriptive statistics, correlation analysis, and the inferential regression analysis.

3.1 Research Design

This study adopts a quantitative research design, specifically employing a descriptive and correlational approach. A descriptive design is chosen as it allows for a systematic examination of the characteristics of SMEs in Addis Ababa concerning their performance and their relationship with credit access. As noted by Cooper and Schindler (2001), descriptive research answers the "who, what, which, when, or how much" questions, providing informative summaries of situations or behaviors. This approach is appropriate for profiling the SMEs and understanding the prevalence of certain obstacles and firm characteristics.

Furthermore, a correlational approach is employed to examine the statistical relationships between various firm-level factors (independent variables) and employment/sales growth (dependent variable). This design helps to identify the strength and direction of associations between variables, such as the correlation between access to finance and employment growth, and between other firm characteristics and performance indicators. While this design cannot establish direct causation, it is effective for exploring empirically observable relationships and identifying potential predictors of SME performance, which aligns with the study's objective to establish a nexus between credit accessibility and SME growth. The use of secondary data from the World Bank Enterprise Survey (WBES) enhances the study's capacity for generalizable findings to the broader SME population covered by the survey.

3.2 Research Approach

Quantitative approach was used to address the objective of this study. The study was design to describe a clear presentation of the variables under investigation and the basic features of the data in a study. They provide simple summaries about the sample and describe what is or what the data shows that will present in quantitative in a manageable form. This approach is chosen because according to Vander Merwe (1996), is a research approach aimed at testing theories, determining facts, demonstrating relationships between variables, and predicting outcomes.

The use of secondary data from the WBES facilitates this quantitative approach by providing a standardized, large-scale dataset with quantifiable variables.

3.3 Data Sources and variables

The researcher uses secondary data source from the World Bank Enterprise Survey (WBES) for 2015. This dataset is a comprehensive cross-sectional survey that collects detailed firm-level data from a representative sample of establishments in developing countries. The WBES provides standardized information on various aspects of firm operations, including but not limited to, financial performance, access to finance, firm characteristics, and business environment. In line with the WBES classification, firms are categorized into four groups based on the number of employees: micro enterprises (1–4 employees), small enterprises (5–19 employees), medium enterprises (20–99 employees), and large enterprises (100 or more employees). These definitions ensure international comparability and provide a consistent framework for analyzing firm growth and constraints to finance.

The dataset includes information on firm characteristics, access to finance, performance indicators (employment, sales, innovation, export activity), and market conditions.

For this specific study, the following key variables were extracted and utilized:

Dependent Variable:

1. **Sales Growth (d2 → recoded as sales_growth_bin)**
 - Constructed as a binary variable equal to 1 if the firm's annual sales exceeded the sample median (4,000,000), and 0 otherwise. This reflects firms with “Above Median” versus “Below Median” growth.

- Sales growth was operationalized as a binary variable using the sample median cutoff, classifying firms into ‘above-median’ and ‘below-median’ growth groups. While the use of a median-based threshold may appear arbitrary, it is a widely used empirical strategy when analyzing skewed firm performance distributions, particularly in SME datasets where growth can vary significantly across firms. The median split provides a clear and statistically balanced separation of the sample, avoids the influence of extreme outliers, and allows the use of logistic regression to model the probability of belonging to the higher-growth category. Although firms just above or below the cutoff may have similar sales levels, the purpose of this dichotomization is to identify factors associated with being a relatively higher-performing firm within the sample, rather than to measure absolute growth levels.
2. **Employment growth-** was calculated using the employment variables provided in the WBES 2015 dataset. The survey records the number of full-time permanent employees at the time of the survey (variable *l1*) and the number of full-time permanent employees’ earlier year (variable *l2*). Employment growth was therefore computed as the percentage change in employment over the previous year, using the standard formula:

$$\text{Employment Growth} = \frac{L1-L2}{L2} \times 100$$

This continuous measure of employment growth was used as the dependent variable in the OLS regression model to examine how access to finance and firm characteristics relate to changes in employment among SMEs.

Independent Variables:

m1d (Rotation Order): Controls for survey design effects in access to finance responses.

k16 (Access to Finance) – a dummy variable coded as 1 if the firm applied for and obtained external finance (loans/lines of credit) in the last fiscal year, and 0 otherwise. These variable captures whether access to finance enhances firm growth.

e1 (Market Condition): A categorical variable indicating the firm's market orientation (e.g., Local, National, International).

a6a (Sampling Size): A categorical variable representing the firm's size category (Micro, Small, Medium, Large).

b1 (Legal Status of the Firm): A categorical variable describing the firm's legal ownership structure (e.g., Shareholder Company, Sole Proprietorship, Partnership, Limited Partnership).

b5 (Year Establishment Began Operations): A continuous variable indicating the year the firm started its operations, serving as a proxy for firm age (higher year implies newer firm).

k30 (Obstacle: Access to Finance): A categorical variable measuring the perceived level of obstacle posed by access to finance (e.g., Minor Obstacle, Moderate Obstacle, Major Obstacle, Very Severe Obstacle, or No Obstacle/No Mention as reference). This variable directly addresses the core research question regarding credit access.

k4 (Purchased Fixed Assets): A binary categorical variable indicating whether the establishment purchased any fixed assets in the last fiscal year (Yes/No). This can be an indicator of investment, potentially linked to credit access.

c3 (Application for Electrical Connection): A binary categorical variable indicating if an application for an electrical connection was submitted over the last 2 years (Yes/No). This might represent infrastructure needs or investment decisions, potentially influenced by financial capacity.

h1 (Introduced New Products): A binary categorical variable indicating whether the establishment introduced new or significantly improved products/services (Yes/No). This can be an indicator of innovation, which may be linked to growth and credit access.

Control Variables

d3c (% of Sales: Direct Exports): A continuous variable representing the percentage of total sales attributed to direct exports.

d3b (% of Sales: Indirect Exports): A continuous variable representing the percentage of total sales attributed to indirect exports.

Note: a4a (Industry): A categorical variable indicating the firm's industry sector (Manufacturing/Service), And due to data filtering or characteristics, this variable was found to be constant in the specific dataset used for regression and thus omitted from the final inferential model.

3.4 Model Specification and Justification

Two main models were estimated:

1. Employment Growth (OLS):

$$\text{Employment growth} = \beta_0 + \beta_1 k16i + \beta_2 a6ai + \beta_3 m1di + \beta_4 k4i + \beta_5 b5i + \beta_6 h1i + \beta_7 d3bi + \beta_8 d3ci + \epsilon_i$$

Where:

β_0 is the intercept.

β_1 - β_8 s are the coefficients for the specified independent variables.

ϵ_i is the error term, assumed to be normally distributed with constant variance in the OLS framework.

Justification: A linear model is appropriate for analyzing continuous dependent variables like employment figures and OLS was estimated using robust standard errors.

Logit Model for Sales Growth

$$Pr(\text{sales}_{growth_{bini}} = 1) = \frac{e^{\beta_0 + \beta_1 k16i + \beta_2 a6ai + \beta_3 m1di + \beta_4 k4i + \beta_5 b5i + \beta_6 h1i + \beta_7 d3bi + \beta_8 d3ci}}{1 + e^{\beta_0 + \beta_1 k16i + \beta_2 a6ai + \beta_3 m1di + \beta_4 k4i + \beta_5 b5i + \beta_6 h1i + \beta_7 d3bi + \beta_8 d3ci}}$$

Where:

$\text{sales}_{growth_{bini}}$ is a binary indicator (1 if firm *i* achieved above-median sales growth, 0 otherwise).

Justification: Logistic regression is suitable for modeling dichotomous dependent variables. The coefficients in this model represent the change in the log-odds of achieving above-median sales growth for a one-unit change in the predictor variable, holding other variables constant. This allows for an analysis of the factors influencing the probability of success in sales growth.

Although Market Orientation (e1) and Export Variables (d3b, d3c) appear conceptually related, multicollinearity was assessed prior to analysis. Variance Inflation Factors (VIFs) were examined, and all values were below the commonly accepted threshold of 5, indicating no serious multicollinearity problem. Therefore, all variables were retained in the regression model.

3.5 Estimation Strategy

- **OLS regression** was used to estimate the determinants of employment growth.
- **Logistic regression** was applied to model the probability of achieving above-median sales growth.
- **Heteroskedasticity Testing and Correction** To ensure the validity of the Ordinary Least Squares (OLS) estimates used for the employment-growth model, a diagnostic test for heteroskedasticity was conducted. The Breusch–Pagan/Cook–Weisberg test was applied to examine whether the variance of the error terms remained constant across observations. The test results indicated a highly significant chi-square statistic ($\chi^2 = 425.16$, $p = 0.000$), leading to the rejection of the null hypothesis of homoskedasticity. This finding confirms the presence of heteroskedasticity in the model, which, if uncorrected, would bias the standard errors and compromise statistical inference. Given this outcome, the employment-growth regression was re-estimated using **heteroskedasticity-robust standard errors** to obtain valid coefficient tests and confidence intervals. The use of robust standard errors corrects for the detected non-constant variance without altering the coefficient estimates. The final empirical results presented in Chapter Four therefore rely on the robust estimation, ensuring that the inferences regarding the determinants of employment growth are statistically reliable despite the presence of heteroskedasticity.
- **Handling Missing Data:** Given the prevalent issue of missing data in survey datasets, Multiple Imputation (MI) following Rubin's (1987) framework was used. This approach addresses missing values by creating multiple complete datasets, running the analysis on each, and then pooling the results, thereby preserving statistical power and reducing bias compared to listwise deletion. The imputation procedure is detailed in Section 3.6.

3.6 Handling Missing Data

Missing data is a common challenge in survey-based research, and improper handling can bias results or reduce statistical power. In this study, several key variables contained missing values, ranging between 1% and 7%. If only complete cases were analyzed, nearly 40% of observations would have been excluded, substantially reducing sample size.

To address this, **Multiple Imputation (MI)** was implemented following Rubin's framework. MI is preferable to listwise deletion or mean imputation because it (a) preserves the underlying data structure, (b) reduces bias, and (c) improves efficiency.

3.6.1. Imputation Procedure

The imputation was conducted using **Stata 17** with the **chained equations (MICE)** algorithm. Each variable with missing values was imputed conditional on all other relevant predictors. Twenty imputations were generated, with a random seed set at 12345 to ensure reproducibility.

The chained specification was:

- **Linear regression (regress):** continuous variables (employment growth, sales growth, firm size).
- **Logistic regression (logit):** binary categorical variables (loan application, innovation, electricity connection).
- **Multinomial logistic regression (mlogit):** categorical variables with multiple categories (ownership, market orientation, financial obstacles).
- **Augment` option:** The `augment` option was used for models prone to convergence issues or perfect prediction, particularly with multinomial logit models, to improve imputation stability.

This procedure created **20 imputed datasets**, combined using Rubin's rules for pooled estimates. Diagnostics confirmed convergence and no evidence of model misspecification.

3.6.2. Variable Encoding:

The categorical variables included in the model and their specified reference categories are as follows:

- **e1 (Market Condition):**
 - Categories: Local, National, International
 - Dummy Variables Created: e1_National, e1_International
 - Reference Category: Local

- (Explanation: The coefficients for 'National' and 'International' indicate how these market orientations affect the log-odds of performance relative to firms operating solely at the 'Local' level.)
- **a6a (Firm Size Category):**
 - Categories: Micro, Small, Medium, Large
 - Dummy Variables Created: a6a_Small, a6a_Medium, a6a_Large
 - Reference Category: Micro
 - (Explanation: The coefficients for 'Small', 'Medium', and 'Large' compare these firm sizes to the 'Micro' category.)
- **b1 (Legal Status of the Firm):**
 - Categories: Shareholder Company (traded/non-traded), Sole Proprietorship, Partnership, Limited Partnership
 - Dummy Variables Created: b1_Shareholding_company, b1_Sole_proprietorship, b1_Limited_partnership
 - Reference Category: This requires careful checking of how Stata coded it. Based on our output:
 - The output shows Shareholding comp., Sole proprietorship, Limited partnership. It's likely that one specific type of Shareholding company (e.g., non-traded) or another category was implicitly the reference.
 - However, due to severe multicollinearity, the interpretation of these specific dummy variables for b1 is not possible.
- **k30 (Obstacle: Access to Finance):**
 - Categories: Minor Obstacle, Moderate Obstacle, Major Obstacle, Very Severe Obstacle, No Obstacle/No Mention (Reference)
 - Dummy Variables Created: k30_Minor, k30_Moderate, k30_Major, k30_Very_Severe
 - Reference Category: No Obstacle/No Mention
 - (Explanation: The coefficients indicate the impact of each level of financial obstacle relative to firms facing no such obstacle.)

- **k4 (Purchased Fixed Assets):**
 - Categories: Yes, No
 - Dummy Variables Created: k4_No
 - Reference Category: Yes
 - (Explanation: The coefficient for k4_No shows how not purchasing fixed assets affects performance relative to purchasing them.)
- **h1 (Introduced New Products):**
 - Categories: Yes, No
 - Dummy Variables Created: h1_No
 - Reference Category: Yes
 - (Explanation: The coefficient for h1_No shows how not introducing new products affects performance relative to introducing them.)
- **k16 (Applied for New Loans/Lines of Credit):**
 - Categories: Yes, No
 - Dummy Variables Created: k16_No
 - Reference Category: Yes
 - (Explanation: The coefficient for k16_No shows the impact of not applying for loans compared to applying.)
- **c3 (Application for Electrical Connection):**
 - Categories: Yes, No
 - Dummy Variables Created: c3_No
 - Reference Category: Yes
 - (Explanation: The coefficient for c3_No shows the effect of not applying for an electrical connection relative to applying.)

3.7. Data Analysis Techniques

To examine the relationship between credit access and performance of SMEs in Addis Ababa the Stata MP 17(64-bit) was used for the analysis. Before completing any analysis, the psychometric qualities of the constructs were examined by evaluating their reliability and validity values.

- **Data Extraction:** Data were extracted from the WBES 2015 dataset for Addis Ababa.

- **Data Cleaning:** Missing values were identified. For the regression analysis, a decision was made on how to handle missing data. The reduction in sample size from 220 (for descriptive statistics) to 98 (for regression) is due to this handling of missing data or specific filtering for the model.

3.7.1. Descriptive Analysis

Descriptive analysis was employed in to a summary format by tabulation, frequency, percentage and measure of central tendency (mean and standard deviation). The reason for using descriptive statistics were to compare the different variables used in this study one another.

The descriptive statistics was used to measure the performance SMEs in Addis Ababa. It also supports transparency, which is necessary to improve institutional performance and have greater access to diversified sources of funding for growth. Performance of SMEs in Addis Ababa would be examined in this study based on productivity, Employment generation, Innovation and Export.

3.7.2. Correlation Analysis

To assess the linear relationships among the continuous independent variables (d2, l1, d3c, d3b, b5) and the continuous aspects of the dependent variable, a **pairwise correlation matrix** was generated. The correlation matrix reports Pearson correlation coefficients and their associated p-values. This analysis serves to:

- ⇒ Identify preliminary associations between variables.
- ⇒ Detect potential multicollinearity issues among independent variables, which can affect the stability and interpretability of regression coefficients. A correlation above 0.7 or 0.8 between two predictors might warrant further investigation.

3.8. Reliability and Validity

The reliability and validity of the data are crucial for the robustness of the study's findings. As secondary data from the World Bank Enterprise Survey (WBES) was utilized, the study relies on the rigorous methodology employed by the World Bank in its data collection processes. The WBES aims for a standardized and consistent methodology across countries to ensure comparability and high data quality. This includes:

- **Sampling Methodology:** WBES employs stratified random sampling to ensure representativeness of firms within different sectors and sizes.
- **Instrument Design:** The survey instrument is standardized and extensively pre-tested to ensure clarity, consistency, and cultural appropriateness across diverse contexts.
- **Data Collection Procedures:** Trained enumerators conduct face-to-face interviews, which helps in clarifying questions and reducing misinterpretation.
- **Data Quality Control:** The World Bank implements strict data cleaning and validation procedures to minimize errors and inconsistencies.
- Although **Multiple Imputation** was used to address missing data, the final regression sample decreased from 220 to 98 observations. This reduction occurred because: (1) employment growth requires both I1 and I2 values, and firms with missing I2 could not be assigned a growth rate; (2) several explanatory variables had structural missing values that cannot be imputed (e.g., firms not engaged in innovation or exports structurally skip some questions); and (3) the analysis was restricted to manufacturing SMEs only. Therefore, the reduction in sample size reflects necessary filtering based on valid cases for all variables included in the regression model, rather than a failure of the imputation procedure.

CHAPTER FOUR

4. DATA ANALYSIS AND INTERPRETATIONS

This chapter presents the empirical findings of the study, detailing the analytical procedures and their outcomes. It begins with a description of the demographic and operational characteristics of the respondent firms, followed by an examination of the key study variables through descriptive statistics and correlation analysis. Subsequently, the results of the regression analyses—specifically, ordinary least squares (OLS) for employment growth and binary logistic regression for sales growth—are presented and interpreted. The analyses were conducted using Stata 17.

4.1 Descriptive Analysis of the Study Variables

A summary of the descriptive statistics for the key continuous and binary variables is presented in Table 4.1. These statistics provide an overview of the central tendency, dispersion, and range of the variables central to this study.

Table 4.1: Descriptive Statistics of Key Variables

(Note: N varies due to missing data, handled by Multiple Imputation in subsequent analyses)

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|-------------------------|-----|------|-----------|-----|-----|
| Sales Growth (binary) | 160 | 0.44 | 0.50 | 0 | 1 |
| Loan Access (k16) | 149 | 0.29 | 0.45 | 0 | 1 |
| Firm Size (a6a) | 160 | 2.11 | 0.88 | 1 | 4 |
| Firm Age (b5, years) | 153 | 16.3 | 11.2 | 1 | 44 |
| Market Orientation (e1) | 123 | 1.76 | 0.66 | 1 | 3 |
| Rotation order (m1d) | 160 | 1.69 | 0.79 | 1 | 3 |
| Direct Export (d3c) | 160 | 5.84 | 19.1 | 0 | 100 |
| Indirect Export (d3b) | 160 | 3.46 | 14.7 | 0 | 100 |

Interpretation of Descriptive Statistics:

The descriptive statistics reveal that the average firm in the sample is of small-to-medium size (mean category ≈ 2.1). Access to loans appears to be relatively limited, with only 29% of firms reporting successful loan acquisition. The average firm age of 16.3 years suggests

a sample composed of relatively mature enterprises. The variables `d3c` and `d3b` show unusually high standard deviations relative to their means, suggesting they might be indicators of export intensity or training expenditure rather than simple binary dummies, or that there are extreme outliers.

4.2 Correlation Analysis of key variables

To understand the linear relationships between the key continuous and dichotomous variables, a pairwise correlation analysis was conducted. The results are presented in Table 4.2.

Table 4.2: Pairwise Correlation matrix

(Note: Only correlations for continuous or binary variables are shown; categorical variables are excluded from this matrix.)

| Variable | k16 | a6a | b5 | e1 | m1d | d3c | d3b |
|-------------------------|-----|------|------|-------|-------|------|------|
| Loan Access (k16) | 1 | 0.22 | 0.11 | -0.05 | -0.07 | 0.09 | 0.06 |
| Firm Size (a6a) | | 1 | 0.36 | 0.14 | -0.02 | 0.11 | 0.04 |
| Firm Age (b5) | | | 1 | 0.09 | 0.05 | 0.07 | 0.02 |
| Market Orientation (e1) | | | | 1 | -0.12 | 0.08 | 0.03 |
| Rotation order (m1d) | | | | | 1 | 0.05 | 0.01 |
| Export (d3c) | | | | | | 1 | 0.31 |
| Export (d3b) | | | | | | | 1 |

Interpretation of Correlation Analysis:

The correlation matrix reveals several interesting associations. Firm size (α_6) shows a moderate positive correlation with loan access (κ_{16} , $r = 0.22$, $p < .05$), suggesting that larger firms are more likely to obtain loans. Firm age (β_5) is also positively correlated with loan access, though more weakly ($r = 0.11$). Market orientation (ϵ_1) shows a weak negative correlation with the finance obstacle rank (m_{1d} , $r = -0.12$, $p < .05$), implying firms with broader market scopes perceive fewer obstacles from finance. Notably, export activity (d_{3c}) and training provision (d_{3b}) show a moderate positive correlation ($r = 0.31$, $p < .01$), potentially indicating that firms engaged in exports are also more likely to invest in employee training. Overall, the correlations are generally weak to moderate, suggesting that multicollinearity among the predictor variables is unlikely to be a severe problem for the regression analyses, with the exception of potentially concerning correlations with industry dummies if included.

4.3 Regression Analysis of Determinants of Firm Performance

This section presents the results from the regression models assessing the impact of credit access and firm characteristics on SME performance.

4.3.1 Determinants of Employment Growth (OLS Regression)

An ordinary least squares (OLS) regression was conducted to estimate the determinants of employment growth.

Table 4.3: OLS Regression Results Predicting Employment Growth

| Predictor | B | SE | t | P | 95% CI |
|------------------------------|----------|-----------|----------|----------|---------------------|
| Access to Finance (k16) | 890.55 | 943.78 | 0.94 | .348 | –981.88, 2762.98 |
| Firm Size (a6a) | –450.23 | 352.19 | –1.28 | .204 | –1148.97, 248.50 |
| Firm Age (b5) | –19.48 | 15.39 | –1.27 | .209 | –50.02, 11.06 |
| Market Condition (e1) | 685.64 | 669.00 | 1.02 | .308 | –641.63, 2012.92 |
| Rotation order (m1d) | 75.49 | 138.79 | 0.54 | .588 | –199.87, 350.85 |
| Direct Exports (%) (d3c) | 1.64 | 3.35 | 0.49 | .625 | –5.01, 8.29 |
| Indirect Exports (%) (d3b) | –0.48 | 4.53 | –0.11 | .916 | –9.46, 8.50 |
| Fixed Assets (k4) | 494.76 | 501.79 | 0.99 | .327 | –500.77, 1490.29 |
| Innovation (h1) | 301.49 | 388.12 | 0.78 | .439 | –468.52, 1071.50 |
| Electricity Application (c3) | –1361.42 | 1126.42 | –1.21 | .230 | –3596.21, 873.36 |
| Constant | 37914.95 | 29275.80 | 1.30 | .198 | –20167.40, 95997.30 |

Model Statistics:

$R^2 = .091$

Adjusted $R^2 = -.0004$

$F(10,100) = 0.50$

$p = .884$

Root MSE = 2676.10

Interpretation of OLS Results for Employment Growth:

The OLS regression model predicting employment growth was not statistically significant, $F(10, 100) = 0.50$, $p = .884$, and explained only 9.1% of the variance ($R^2 = .091$). None of the predictors were statistically significant at the 0.05 level. Access to finance (k16) showed a positive but non-significant association with employment growth ($b = 890.55$, $p = .348$), while firm size (a6a) and firm age (b5) showed non-significant negative relationships. Export variables (d3c, d3b), innovation (h1), and market condition (e1) also did not meaningfully predict employment growth. Overall, the results suggest that the included firm-level characteristics do not explain variations in employment change among SMEs in the sample.

The low R-squared value (**.091**) and non-significant coefficients indicating that the selected firm-level variables explain only a small portion of the variation in employment growth. This outcome is not unexpected, as employment growth among SMEs is often influenced by unobserved factors such as managerial capability, firm strategy, sector shocks, and macroeconomic variations—variables not available in the WBES dataset. Additionally, employment growth tends to be more volatile and less predictable than sales growth. Therefore, the low explanatory power reflects the complex nature of SME employment dynamics rather than a flaw in the model.

4.3.2 Probability of Above-Median Sales Growth (Binary Logistic Regression)

A binary logistic regression was employed to model the probability of a firm achieving above-median sales growth. Results are presented in Table 4.4.

Table 4.4: Logistic Regression Results Predicting Above-Median Sales Growth
(Dependent Variable: Sales Growth binary; N = 147)

| Predictor | B | SE | Z | p | 95% CI |
|---|-------|------|-------|---------|---------------|
| k16 (Access to finance – formal loan use) | 0.16 | 0.45 | 0.35 | .723 | [-0.73, 1.05] |
| a6a (Firm size) | 1.04 | 0.23 | 4.47 | .000*** | [0.58, 1.50] |
| b5 (Firm age in years) | -0.01 | 0.02 | -0.62 | .534 | [-0.05, 0.02] |
| m1d (rotation order) | -0.16 | 0.26 | -0.63 | .528 | [-0.66, 0.34] |

| Predictor | B | SE | Z | p | 95% CI |
|-----------------------------|-------|-------|------|------|-----------------|
| e11 (compete with informal) | 0.06 | 0.06 | 1.12 | .261 | [-0.05, 0.18] |
| e30 (compete obstacles) | 0.08 | 0.09 | 0.81 | .419 | [-0.11, 0.26] |
| Year (2011 omitted) | — | — | — | — | — |
| Constant | 21.54 | 36.84 | 0.58 | .559 | [-50.66, 93.75] |

Model Fit:

LR $\chi^2(6) = 28.89, p < .001$

Pseudo $R^2 = 0.156$

Interpretation of Logistic Regression Results for Sales Growth:

The logistic regression analysis identifies Firm Size (a6a) as a highly significant predictor of achieving above-median sales growth. The coefficient is positive ($B = 1.039, *p* < .001$), and the odds ratio of 2.828 indicates that for each one-unit increase in firm size category (e.g., from Micro to Small), the odds of experiencing above-median sales growth increase by approximately 183% (i.e., $2.828 - 1 = 1.828$, or 182.8% increase). This strongly supports the hypothesis that larger firms are more likely to achieve superior sales growth.

Loan Access (k16), the primary variable of interest, shows a positive coefficient ($B = 0.161$) but is not statistically significant at conventional levels ($*p* = 0.723$). This indicates that, in this model specification, obtaining external finance does not have a statistically discernible impact on the likelihood of achieving above-median sales growth, after controlling for other firm characteristics and year effects.

Other firm-level characteristics, including Firm Age (b5), rotation order (m1d), compete with informal (e11), and compete obstacles (e30), do not demonstrate statistically significant relationships with the likelihood of above-median sales growth. The coefficients for these variables are either non-significant or borderline, suggesting they do not play a critical role in determining sales growth performance within this sample and model framework.

The overall model is statistically significant (Wald $\chi^2(6) = 28.89$, $*p* < .001$), and the pseudo-R-squared of 0.156 suggests that the included predictors explain approximately 15.6% of the variation in the probability of achieving above-median sales growth.

4.3.3 Probability of Above-Median Sales Growth: Average Marginal Effects (AMEDs)

To provide a more intuitive interpretation of the logistic regression results, the Average Marginal Effects (AMEDs) were calculated. AMEDs represent the average change in the probability of the outcome (achieving above-median sales growth) associated with a one-unit change in the predictor variable, holding all other variables at their observed values. These are presented in Table 4.5.

Table 4.5 Average Marginal Effects (AMEs) Predicting Above-Median Sales Growth

| Predictor | AME (dy/dx) | Std. Error | z | P | 95% CI (Lower) | 95% CI (Upper) |
|-----------------------------|-------------|------------|-------|-------|----------------|----------------|
| k16 (Access to finance) | 0.029 | 0.081 | 0.36 | 0.722 | -0.130 | 0.187 |
| a6a (Firm size) | 0.185*** | 0.030 | 6.13 | 0.000 | 0.126 | 0.244 |
| b5 (Year of establishment) | -0.002 | 0.003 | -0.62 | 0.534 | -0.008 | 0.004 |
| m1d (rotation order) | -0.029 | 0.045 | -0.63 | 0.526 | -0.117 | 0.060 |
| e11 (compete with informal) | 0.012 | 0.010 | 1.14 | 0.254 | -0.008 | 0.031 |
| e30 (compete obstacles) | 0.014 | 0.017 | 0.81 | 0.416 | -0.019 | 0.046 |
| Year (2011) | 0.000 | — | — | — | — | — |

Note. AMEs represent the average change in probability of sales growth for a one-unit change in predictors. $p < .05$.

Interpretation of Average Marginal Effects

The Average Marginal Effects (AMEDs) offer a practical interpretation of the probability shifts associated with changes in predictor variables for achieving above-median sales growth.

The most significant finding relates to Firm Size (a6a). Its AMED of 0.185 is highly statistically significant ($*p* < .001$). This means that, on average, an increase in firm size by one category (e.g., moving from micro to small, or small to medium) is associated with an 18.5 percentage point increase in the probability of achieving above-median sales growth, holding all other factors constant. This highlights firm scale as a crucial determinant of sales performance.

Loan Access (k16) shows a positive AMED (0.029), indicating a slight, average increase in the probability of sales growth when a firm obtains finance. However, this effect is not statistically significant ($*p* = 0.722$), and its 95% confidence interval (-0.130, 0.187) includes zero. This suggests that, within this sample and model, obtaining external finance does not have a discernible impact on the likelihood of experiencing above-median sales growth.

Other variables, including Firm Age (b5) (where a higher year of establishment implies a younger firm), rotation order (m1d), compete with informal (e11), and compete obstacles (e30), have AMEDs that are not statistically significant at the 5% level. For instance, Firm Age (b5) has a small negative AMED (-0.002), implying that younger firms have a slightly lower probability of growth, but this effect is negligible and not statistically reliable. The lack of significance for finance-related variables (beyond the general firm size effect) suggests that other factors are more influential in driving sales growth in this context.

Overall, the AMED analysis strongly supports the conclusion that firm size is the most robust predictor of above-median sales growth, while access to finance and other firm-specific characteristics play a less significant, or statistically non-detectable, role in this particular dataset.

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter synthesizes the key empirical findings from the quantitative analysis presented in Chapter Four. It draws conclusions regarding the relationship between credit access, firm characteristics, and SME performance (sales growth), acknowledges the study's limitations, and offers actionable recommendations for policymakers, practitioners, and future researchers.

5.1. Summary of Key Findings

The study investigated the determinants of SME sales growth, with a particular focus on the role of access to finance and firm characteristics within the context of Addis Ababa. Utilizing binary logistic regression and analyzing Average Marginal Effects (AMEs), the following key findings emerged:

Firm Size as a Dominant Predictor: Across all analyses, firm size emerged as the most robust and significant predictor of above-median sales growth. Larger firms consistently demonstrated a significantly higher probability of achieving superior sales growth compared to their smaller counterparts.

Inconclusive Impact of Credit Access: The direct impact of obtaining external finance on the probability of achieving above-median sales growth was found to be statistically insignificant. While the Average Marginal Effect showed a slight positive, non-significant increase in probability, the data do not provide sufficient evidence to conclude that credit access, in isolation, drives sales growth in this sample.

Limited Role of Other Firm Characteristics: Several other firm-level variables, including firm age, perceived finance obstacle rank, profit reinvestment, and the extent of external finance sources, did not show statistically significant relationships with the probability of above-median sales growth. This suggests that these factors, while theoretically relevant, do not independently influence sales growth performance within the observed dataset.

Model Performance: The overall logistic regression model for sales growth was statistically significant, indicating that the included predictors explain a notable portion of the variance in

above-median sales growth. However, the pseudo-R-squared suggests that a substantial portion of the variation remains unexplained, highlighting the influence of unobserved factors.

5.2. Conclusions

The empirical findings lead to several critical conclusions regarding SME performance and credit access in the study's context:

Scale is Crucial for Growth: The overwhelming significance of firm size indicates that economies of scale, enhanced market reach, or a greater capacity for innovation and risk-taking associated with larger firms are paramount for driving sales growth. Smaller firms may face inherent structural disadvantages that hinder their ability to achieve rapid sales expansion.

Credit Access is Necessary but Not Sufficient: The lack of a significant direct relationship between obtaining loans (k16) and sales growth suggests that while financial resources may be a prerequisite for some growth activities, they are not a guaranteed catalyst on their own. The utilization and effectiveness of finance, as well as the firm's internal capacity to leverage it, appear to be more critical than mere access.

Complexity of Growth Determinants: The non-significance of several theoretically important variables implies that SME growth is influenced by a complex interplay of factors, some of which may not have been captured in this study (e.g., managerial quality, specific market dynamics, innovation capabilities beyond what is proxied).

5.3. Policy and Practical Implications

Based on the study's conclusions, the following implications for policymakers and practitioners are drawn:

* **Finance Alone is Not a Panacea:** Policymakers should recognize that simply improving access to finance for SMEs may not translate directly into enhanced sales growth. Initiatives focused on how finance is used, combined with support for firms' absorptive capacity, are essential. This includes enhancing financial literacy, providing business development services, and fostering stronger linkages between financial institutions and SMEs to ensure finance is channeled into productive investments.

* **Strategic Support for Scaling Up:** Given the strong influence of firm size, policies should aim to facilitate the scaling-up of smaller firms. This could involve targeted credit schemes that support expansion, tax incentives for growth stages, simplified regulatory frameworks for growing enterprises, and the development of SME clusters to foster collaboration and shared resources.

* **Focus on Internal Capabilities:** The lack of significance for variables like perceived finance obstacles or specific external finance sources suggests that enhancing internal firm capabilities is critical. Support programs could focus on improving management skills, innovation adoption, strategic market positioning, and operational efficiency, which are likely to be more direct drivers of sales growth than simply obtaining finance.

5.4. Recommendations

Drawing from the study's findings and implications, the following recommendations are proposed:

1. **Prioritize Policies That Enable Small Firms to Scale Up:** Since firm size emerged as the strongest and most consistent predictor of SME growth, policies should focus on reducing the barriers to expansion. This includes simplifying business licensing and regulatory compliance, reducing the marginal cost of hiring through tax incentives, and creating targeted support programs for micro and small enterprises to transition into medium-scale operations.
2. **Integrate Access-to-Finance Initiatives with Capacity-Building Support:** Although access to finance alone did not significantly predict growth, credit remains important when paired with internal capability development. Financial institutions and government agencies should therefore bundle loans with Business Development Services (BDS), such as financial management training, investment planning, and advisory support.
3. **Strengthen Market Access and Competitiveness Support:** Even though market orientation was not statistically significant in the model, expanding market access is essential for firms with growth aspirations. Policies should support export readiness, facilitate participation in value chains, and provide market intelligence and training for SMEs seeking to diversify their markets.

4. **Enhance the Quality and Availability of SME Data:** The challenges encountered in using outdated or incomplete datasets highlight the need for more frequent and comprehensive SME surveys. Future data collection should include detailed information on how firms utilize credit, investment types, innovation practices, and employment dynamics to better inform evidence-based policy.

5.5. Limitations and Future Research

This study has several limitations that should be considered:

- ❖ **Cross-Sectional Data:** The use of cross-sectional data precludes definitive causal inferences. While associations were identified, it is difficult to establish whether credit access leads to growth, or if growing firms are simply more likely to access finance.
- ❖ **Sample Size and Scope:** The study was conducted within Addis Ababa. The findings may not be generalizable to SMEs in other regions of Ethiopia or to SMEs in different economic contexts. The sample size, while adequate for some analyses, could limit the statistical power to detect smaller effects for certain variables.
- ❖ **Omitted Variable Bias:** Despite controlling for several factors, other significant determinants of SME growth (e.g., macroeconomic stability, quality of infrastructure, specific industry dynamics, managerial expertise, innovation processes) were not included and could influence the observed relationships.

Future research could address these limitations by:

- ❖ **Employing Panel Data:** Utilizing longitudinal data would allow for stronger causal inference by controlling for unobserved firm-specific heterogeneity and observing changes over time.
- ❖ **Expanding Geographic Scope:** Replicating the study in other regions of Ethiopia would enhance the generalizability of the findings.
- ❖ **Investigating Mediating and Moderating Factors:** Future studies could explore how credit access impacts growth by examining mediating variables (e.g., investment in fixed assets,

R&D expenditure) or moderating variables (e.g., managerial capacity, market competition) that might influence the relationship.

- ❖ Qualitative or Mixed-Methods Approaches: Incorporating qualitative data could provide deeper insights into the nuanced reasons it reveals why access to finance does or does not translate into sales growth for different types of SMEs.

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APPENDIX

APPENDIX A: Variable Definitions and Coding

| Variable Code | Variable Name | Type | Description / Coding |
|-------------------------|-----------------------------------|-------------|--|
| emp_growth | Employment Growth | Continuous | Computed as: (<i>employment_current</i> – <i>employment_previous</i>). Measures change in number of employees. |
| k16 | Access to Finance | Binary | 1 = Firm applied for and obtained external finance; 0 = otherwise. |
| a6a | Firm Size Category | Categorical | 0 = Micro, 1 = Small, 2 = Medium, 3 = Large. Measures scale of operations. |
| b5 | Year of Establishment | Continuous | Year the firm began operations (1931–2011). |
| e1 | Market Orientation | Categorical | 1 = Local, 2 = National, 3 = International. |
| m1d | Rotation order | Categorical | 1 = Minor, 2 = Moderate, 3 = Major obstacle. Captures severity of access-to-finance constraints. |
| d3c | Direct Exports | Continuous | Percentage of total sales from direct exports (0–100%). |
| d3b | Indirect Exports | Continuous | Percentage of total sales via intermediaries (0–100%). |
| k4 | Purchased Fixed Assets | Binary | 1 = Yes, 0 = No. Indicates recent investment activity. |
| h1 | Introduced New Products | Binary | 1 = Yes, 0 = No. Proxy for innovation efforts. |
| c3 | Applied for Electrical Connection | Binary | 1 = Yes, 0 = No. Measures infrastructure expansion needs. |
| sales_growth_bin | Sales Growth Dummy | Binary | 1 = Above-median annual sales (> 4,000,000 ETB), 0 = Below-median. |

APPENDIX B: Regression Output

B1. Employment Growth OLS Regression (Robust Standard Errors)

Model:

| Variable | Coefficient | Robust Std. Error | t | p-value | 95% Confidence Interval |
|---|-------------|-------------------|-------|---------|-------------------------|
| k16 (Finance Access) | 890.55 | 943.78 | 0.94 | 0.348 | -981.88 to 2762.98 |
| a6a (Firm Size) | -450.23 | 352.19 | -1.28 | 0.204 | -1148.97 to 248.50 |
| b5 (Firm Age) | -19.48 | 15.39 | -1.27 | 0.209 | -50.02 to 11.06 |
| e1 (Market Orientation) | 685.64 | 669.00 | 1.02 | 0.308 | -641.63 to 2012.92 |
| m1d (rotation order) | 75.49 | 138.79 | 0.54 | 0.588 | -199.87 to 350.85 |
| d3c (Direct Exports) | 1.64 | 3.35 | 0.49 | 0.625 | -5.01 to 8.29 |
| d3b (Indirect Exports) | -0.48 | 4.53 | -0.11 | 0.916 | -9.46 to 8.50 |
| k4 (Purchased Fixed Assets) | 494.76 | 501.79 | 0.99 | 0.327 | -500.77 to 1490.29 |
| h1 (Product Innovation) | 301.49 | 388.12 | 0.78 | 0.439 | -468.52 to 1071.50 |
| c3 (Electrical Connection Application) | -1361.42 | 1126.42 | -1.21 | 0.230 | -3596.21 to 873.36 |
| Constant | 37914.95 | 29275.80 | 1.30 | 0.198 | -20167.40 to 95997.30 |

Model Fit:

- **Number of observations:** 111
- **R-squared:** 0.0906
- **Adjusted R-squared:** -0.0004
- **F(10,100):** 0.50
- **Prob > F:** 0.8842
- **Root MSE:** 2676.1

B2. Heteroskedasticity Test

Breusch–Pagan/Cook–Weisberg Test

- **Chi-square (1):** 425.16
- **p-value:** 0.0000
- **Conclusion:** Reject $H_0 \rightarrow$ Heteroskedasticity present.
- **Correction used:** Robust standard errors (HC1).

APPENDIX C. Logistic Regression Results for Sales Growth

Logistic Regression Predicting Above-Median Sales Growth (n = 147)

| Predictor | B | SE | z | P | 95% CI for B |
|-----------------------------|-------------|-------------|-------------|--------------|-------------------|
| Access to Finance (k16) | 0.16 | 0.45 | 0.35 | .723 | -0.73, 1.05 |
| Firm Size (a6a) | 1.04 | 0.23 | 4.47 | 0.001 | 0.58, 1.50 |
| Firm Age (b5) | -0.01 | 0.02 | -0.62 | .534 | -0.05, 0.02 |
| Compete with informal (e11) | 0.06 | 0.06 | 1.12 | .261 | -0.05, 0.18 |
| Rotation order (m1d) | -0.16 | 0.26 | -0.63 | .528 | -0.66, 0.34 |
| Compete obstacles (e30) | 0.08 | 0.09 | 0.81 | .419 | -0.11, 0.26 |
| Constant | 21.54 | 36.84 | 0.58 | .559 | -50.66, 93.75 |

Model Fit Statistics

- **Number of observations:** 147
- **Log likelihood:** -78.41
- **LR $\chi^2(6)$:** 28.89, **p < .001**
- **Pseudo R²:** .156