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2020

# Small and Medium Enterprises' Financing by the Commercial Banks in Bangladesh: An Evaluation

Moullick, Raj Kumar

University of Rajshahi

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**SMALL AND MEDIUM ENTERPRISES' FINANCING BY  
THE COMMERCIAL BANKS IN BANGLADESH: AN  
EVALUATION**



**A Thesis submitted to the Department of Accounting and Information Systems, Faculty of Business Studies, University of Rajshahi in fulfillment of the requirements for the award of the degree of Doctor of Philosophy.**

**Submitted by**

**Raj Kumar Moulick**

**Supervisors**

**Professor Dr. Subhash Chandra Sil**

**And**

**Professor Dr. Madan Mohan Dey (Retd.)**

**Department of Accounting and Information Systems**

**University of Rajshahi, Rajshahi-6205**

**Bangladesh.**

**September 2020**

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**Raj Kumar Moulick**

PhD fellow

Roll No - 1600033506

Registration No -1951

Session 2015-16

and

Assistant Professor

Department of Accounting and Information Systems

University of Rajshahi

Rajshahi-6205, Bangladesh

**SUPERVISOR**

**Professor Dr. Subhash Chandra Sil**

Department of Accounting and  
Information Systems

University of Rajshahi

Rajshahi-6205, Bangladesh

**CO-SUPERVISOR**

**Professor Dr. Madan Mohan Dey (Retd.)**

Department of Accounting and  
Information Systems

University of Rajshahi

Rajshahi-6205, Bangladesh

Dedicated to  
My Beloved Mother

## **DECLARATION**

I, Raj Kumar Moulick, Assistant Professor, Department of Accounting and Information Systems, University of Rajshahi, declare that the work has been carried out in accordance with the regulations of the University of Rajshahi and is original except where indicated by specific reference in the text. No part of the thesis has been submitted for the award of any Degree / Diploma / Associateship / Fellowship or other similar title of any candidate of any university. The thesis has not been presented to any other educational institutions in Bangladesh and the overseas.

(Raj Kumar Moulick)  
Assistant Professor  
Department of Accounting and Information Systems  
University of Rajshahi

## Supervisors' Certificate

This is to certify that the thesis entitled “SMALL AND MEDIUM ENTERPRISES’ FINANCING BY THE COMMERCIAL BANKS IN BANGLADESH: AN EVALUATION”, submitted to the University of Rajshahi, in Partial fulfillment of the requirements for the award of the degree of DOCTOR OF PHILOSOPHY IN AIS, is a record of original research work done by Mr. Raj Kumar Moulick during the period 2016-2020 of his research in the Department of Accounting and Information Systems, University of Rajshahi, Rajshahi, Bangladesh under our supervision and guidance and the thesis has not formed the basis for the award of any Degree / Diploma / Associateship / Fellowship or other similar title of any candidate of any university.

We also certify that we have gone through the partial draft and final thesis and found it satisfactory for final adjudication.

Principal Supervisor

Co-Supervisor

Professor Dr. Subhash Chandra Sil  
Department of Accounting and  
Information Systems  
University of Rajshahi  
Rajshahi 6205  
Bangladesh.

Professor Dr. Madan Mohan Dey  
Department of Accounting and  
Information Systems  
University of Rajshahi  
Rajshahi 6205  
Bangladesh.

Professor Dr. M. Humayun Kabir  
DEAN



FACULTY OF BUSINESS STUDIES  
UNIVERSITY OF RAJSHAHI  
BANGLADESH

Ref. No. :

Date : 08.09.20

*To Whom It May Concern*

This is to certify that Raj Kumar Moulick, Roll No: 1600033506, Session: 2015-2016, Ph.D Fellow, Department of Accounting and Information Systems, University of Rajshahi is going to submit his Ph.D Thesis entitled **Small and Medium Enterprises' Financing by the Commercial Banks in Bangladesh: An Evaluation**. The plagiarism check is done on 8<sup>th</sup> September, 2020. Only 25% similarities are found in his thesis and only 5% from single source, which are less than the accepted level as per rule of the University of Rajshahi.

I wish every success in his life.

(Professor Dr. M. Humayun Kabir)  
Dean (Current Charge)

Dr. M. Humayun Kabir  
Dean  
Faculty of Business Studies  
University of Rajshahi

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Raj Kumar Moulick

## ABSTRACT

Small and Medium Enterprises (SMEs) are of growing importance for all national economies worldwide. SMEs all over the world have been playing a vital role in promoting economic development, improving structure facilities, reducing hunger and poverty, making potential contribution to the overall industry, generating employment, achieving millennium development goals, eradicating gender inequality and increasing women empowerment. Nowadays, it is broadly admitted that SMEs have been playing an elementary role with regard to thorough industrialization by means of entrepreneurship development. Industrialization's connection to poverty mitigation is by means of – exaggerating the economic growth rate of the country, ennobling of the efficiency of the labor in employment, delivering job opportunity to the unemployed. As a result SME in Bangladesh adopt numerous strategies to raise themselves and the economy of the country. This sector requires lower energy supply, lower infrastructure facilities and imposes less environmental risk. They contribute towards better utilization of local resources and skills that might otherwise remain unutilized. One of the most pressing troubles of SMEs to make sure their survival and development is accessibility to external finance.

The research is empirical in nature. Quantitative approach has been drawn on to find out contribution to GDP, financing gap in Bangladesh. Research reasoning approach of the research is deductive. Since it is quantitative in nature, statistical and mathematical techniques form an integral part of the positivist research paradigm.

The primary data in this study have been collected through questionnaire responses from 366 SMEs, 50 from credit officers of sample banks, 40 from academicians and 37 from accounting experts. Secondary data are obtained from the audited annual reports of the sample private commercial banks in Bangladesh. In addition, the relevant secondary data also have been collected from different sources like Bangladesh Bank, Bangladesh Bureau of Statistics, Ministry of Industries, SME foundation, MIDAS, Bangladesh Economic review, Bangladesh Economic Survey, Bangladesh Bank Bulletin, Statistical Year books, Economic Advisor's Wing, Ministry of Finance and from other SME related organizations. The data were analyzed using the following

methods: descriptive analysis, regression analysis, chi-square tests, t-tests, ANOVA tests, correlation tests and analysis of variance and then used to address the hypothesis and to meet the objectives of the study.

The objectives of the research are to determine the contribution of SMEs to GDP and enhance the understanding of the attendant factors that facilitate or impair SMEs' accessibility to bank finance from a demand side perspective as well as supply side perspective as per Pecking Order Theory, Information Asymmetry theory, Trade off Theory and Agency Theory. To achieve the plan, the researcher selects SMEs in Bangladesh as the population as representatives of the demand side.

The research findings confirm that different sectors of SMEs such as crops and horticulture sector, animal farming sector, forest and related sector, finishing sector, hotel and restaurants sector, transport sector, real estate sector, auricular sector have significant contribution to GDP in different years in Bangladesh. It was also found that manufacturing sector, construction sector, wholesale and retail trade sector, industry sector, service and other sectors have significant contribution to GDP in different years. The findings have also identified that service sector and trade sector have significant contribution to GDP through employment generation.

The findings also confirm that there are some significant influences of the internal finance, collateral and profitability on accessibility to bank loan. It was found also that one of the most important reasons for most owners or managers failing to obtain finance from the commercial banks were lack of collateral and incomplete financial statement prepared by the firm (financial information). The firm's features (sector, size and age of the firm) have also significant influence on accessibility to bank credit from demand side. From the supply side, the rate of interest, relative financial information opacity of SMEs and reliable collateral have significant influence on accessibility to bank loan.

Our finding also corroborate the fact that the financial performance variables, such as net profit before tax, net profit after tax, interest income, non interest income, loans and advances, total investments, total assets, shareholders' equity, return on assets and return on equity of the sample banks have influence on SMEs' financing except those of Eastern Bank Ltd.

From the result opinion survey, it is evident that internal finance, mortgage system, financial information, rate of interest and location of the business, profitability and firm's features (sector, size and age of the firm) are the influencing factors in access to external finance from the supply side and demand side as per chi square and ANOVA test. But structural defects, distribution channels, financial incentive scheme, taxation and nature of business are partly acceptable influencing factor in external financing since they did not satisfy both the tests.

This study is the first of its kind in the Bangladeshi context. As such, it contributes significantly to the existing body of literature on SME financing in developing countries like Bangladesh. The findings have important implications for policymaking and economic planning in Bangladesh where the transition towards a more market-oriented economy is taking a place in which SMEs have a substantial role to play. In concluding the thesis, the owners of the SME firms oblige to give concentration on preparing financial information requirements to enhance their access to bank credit. There may also be an issue for the Government of Bangladesh and Bangladesh Bank to favor SMEs to providing better information. The commercial banks in Bangladesh give emphasis on internal capital and high quality of collateral as the fundamental condition of lending and these procedures are assumed to be out dated with international practice, which entrusts greater influence on the financial assessment of the business and on the firm's credit history. An independent review of the commercial banks' lending practices for SMEs can be introduced with a view to introducing the best polices, if necessary. At the same time, bank can organize relationship lending system as a substitute to mortgage based lending. The Bangladesh Government can provide more attention to build up lending policy for the SME firms.

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## LIST OF ABBREVIATIONS

ACA	Associate Chartered Accountant
ACMA	Associate of Chartered Institute of Management Accountants
ADB	Asian Development Bank
AFI	The Alliance for Financial Inclusion
AI	Agency Theory
BB	Bangladesh Bank
BBS	Bangladesh Bureau of Statistics
BEEPS	Business Environment and Enterprise Performance Survey
CV	Coefficients of Variance
DA	Debt Accessibility
EU	European Union
FCA	Fellow of the Institute of Chartered Accountants
FCMA	Fellow of Chartered Institute of Management Accountants
FSPDSME	Financial Sector Project for the Development of Small and Medium Sized Enterprises
GDP	Gross Domestic Product
GFS	Government Financial Support
GR	Growth Rate
HHI	Herfindahl-Hirschman Index
HMLR	Hierarchical multiple linear regression
IBM	International Business Machines
IDA	Initial Examination of Data
IDA	International development association
IPO	Initial Public Offering
IS	Information Asymmetry,
JICA	Japan International Cooperation Agency
LM	Lagrange Multiplier
MDGs	Millennium Development Goals
MIDAS	Micro Industries Development Assistance and services
MLR	Multiple Linear Regression
NBFIs	Non Bank Financial Institutions

NPBT	Net Profit Before Tax
NPAT	Net Profit After Tax
OECD	Organization of Economic Co-operation and Development
OLS	Ordinary Least Square
POT	Pecking Order Theory
RESET	The Regression Specification Error Test
ROA	Return on Assets
ROE	Return on Equity
R <sup>2</sup>	R-squared
Root MSE	Root Mean Square Residual
SLR	Single Linear Regression
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for the Social Sciences
SD	Standard Deviation
TIA	Theory of Information Asymmetry
TOT	Trade Off Theory
U.K	United Kingdom
U.S	United States
VIF	Variance Inflation Factor

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# CHAPTER ONE

## Introduction

### 1.1 Prelude

Small and Medium Enterprises (SMEs) universally have been contributing a vital and vibrant role in promoting economic development, structural change, reducing hunger and poverty and contributing potentials to the overall development (Jacobs et al. 2010; Osotimehin et al. 2012). SMEs contribute massively to the socio-economic growth of a country by creating a large job opportunities, greater emulation in the business field, motivation for novelty and a wide range of distribution of wealth (Becchetti & Trovato 2002). In economic development efforts in Bangladesh, the SME sector plays an important role. SMEs sector requires lower energy supply, lower infrastructural facilities and this sector imposes less environmental risk. They contribute towards better utilization of local resources and skills that might otherwise remain unutilized. The role of SMEs is indispensable for overall economic development of a country particularly for developing countries like Bangladesh. In economics, capital is one of the factors of production as well as land, labor and entrepreneurs (Saarani & Shahadan 2013; Ali 2005). The key dissimilar feature of SMEs is that they are not permitted openly to trade and depend mostly on owner's capital and the bank loan to collect funds (Ang 1991, 1992). Since this sector is labor intensive with short gestation period, it is capable of increasing national income as well as rapid employment generation, achieving Millennium Development Goals (MDGs). SME sector has played a vital role in economic development of some developing countries of Asia like India, Bhutan (*SME Credit polices and programmes of BB*). SMEs are

characterized by dynamism, flexibility and innovation which is capable of adapting the changes that occur in the economy and conceptualize quickly the market trends and can become promoter of the changes.

According to the Organization of Economic Co-operation and Development (OECD, 2004), SMEs have contributed about 70 percent to employment and more than 55 percent to Gross Domestic Product (GDP) in high-income economies. In middle-income economies, the corresponding figures were 95 percent and 70 percent, and in low-income economies the statistics were 70 percent and 60 percent for employment and GDP respectively. But in Bangladesh, among formal business enterprises SMEs are about ninety nine percent (The Daily Star, 2017). SMEs generate about seventy five percent of non-agricultural employment. Only manufacturing sector of SMEs contributes about twenty five percent to GDP (The Daily Star, 2017).

Though the SME sector's importance in the socio-economic development has been unanimously approved; it is faced with serious financing constraints. Accessibility to bank loan is vital for ongoing and sustainable development of three key sectors (Trade, Service and Manufacturing) of SME through their role in establishment of new business and developing the innovation process as well as encouraging the expansion of continuous businesses, which will enhance the economic growth of the country (Ardic, Mylenko and Saltane, 2012). Berger & Udell (2006) described the SME finance as the fund required to initiate a business and to operate the daily functions of business organization. Garvin (1971) described the SME financing by the fund needs of the organization at the stage of growth to earn profit and other related factors.

Bank is devoted to serve excellent financial services or products which are the way to the growth and development of the country through increasing trade and commerce, stimulating industrialization, making employment prospect for the youth, alleviating poverty, lifting up standards of living and maintaining socio economic growth of the country. Banks' loan portfolios include commercial loan, industrial loan, consumer loan and SME loan. At present SME financing is given more importance since it is the way of enhancing our economy (Islam, Yousuf and Rahman, 2014). Investment is very much essential for the growth of any industry and increased facilities in obtaining credits can enhance that growth. Finance is needed at the starting phase of a business as well as at the enduring phases. Most businesses often have to start with their own savings or borrowing from friends and relatives, with bank financing coming later. Banks remain extremely reluctant to lend to small scale entrepreneurs who do not have any startup equity, despite sound business models. SMEs have long been considered as the principal driving force of the economy of Bangladesh (Nehereen, 2010). The role of commercial bank credit is very much important in the development of entrepreneurship and SMEs. Credit is the largest element of risk in case of most banks and failures in the management of credit risk weakens individual banks and in some cases the banking system as a whole leads to many episodes of financial instability. A greater understanding of the nature of credit risk, leading to improved measurement and management, would help strengthen the financial system vis-à-vis the small and medium enterprises in the long run (Joseph and Nnanyeluge, 2015). In developing economy, SMEs are considered as a driving force for sustainable economic development because of generating employment, improving local technology, diversifying output, developing indigenous entrepreneurship

and engaging in forward integration with large scale industries. SMEs are the dominant form of business organization in all developing countries and SMEs are recognized as engine of economic growth and employment generation for sustainable industrialization (Qamruzzaman, 2015). SMEs have positive impact on economic development by creating employment for both male and female employees and increasing literacy rate. It is also providing the good health by supplying nutritious foods which are possible for SME. By taking loans, people generally start a business, boost-up their earnings and get the opportunity to have better life. SME plays an important role in the economic development and provides the largest number of employment and indeed constitutes the foundation of the private sector. The SME sector is also considered both a trust sector and a pillar of the economic growth and actually it works as the platform for creation, income generation and development of forward and backward industrial linkages and fulfillment of local social needs. SMEs occupy a unique position in the economy of Bangladesh (Khandakar, Chowdhury and Ahmed, 2016). Particularly, SMEs provide the necessary foundations for continuous development in transitional economies. From the economic, social arguments and technical point of view, the development of SMEs is very much essential because of their contribution to large scale employment, usage of local raw materials, development of entrepreneurship (Akterujjaman, 2010). SMEs act as a vital player for the economic growth, poverty alleviation and rapid industrialization of the developing countries like Bangladesh. SMEs are significant in underlying country's economic growth, employment generation and accelerated industrialization. As the SMEs' e-sector is labor intensive, it can create more employment opportunities. For this reason Government of Bangladesh has recognized SME as a poverty alleviation tool. SMEs also

foster the development of entrepreneurial skills and innovation. Along with poverty alleviation small and medium enterprises can reduce the urban migration and increase cash flow in rural areas. As a result, they will enhance the standard of living in rural areas (Rouf and Islam, 2015). At present, SMEs have become an important sector that is supposed to play a pivotal role in boosting the economy of Bangladesh. People in Bangladesh have a strong sense of entrepreneurship and banks are the key role players in funding SMEs. SMEs need money to start-up, extend, purchase material, purchase of equipment and machineries and maintain sound working capital requirements. SMEs in Bangladesh collect their fund from various sources and private commercial banks provide a vital role in financing SMEs as well as non financial services (Akther and Alauddin, 2016). SMEs are important to almost all economies in the world, especially to developing countries like Bangladesh with major income discrepancies between the rich and the poor, and with a headache of unemployment. However we observe that SMEs contribute to output by participating in the mainstream economy and to the creation of jobs. All that information, coupled together will make SMEs the biggest employer and can close the inequality between the rich and the poor. On the other hand, SMEs are a nursery for the larger firms of the future - more and more large firms started as SMEs before they grew large. From this background it can be apprehended that SMEs are the next and important step up for expanding micro enterprises; they contribute directly and often significantly to aggregate savings and investment for any nation, and it is involved in the development of appropriate technology also. With increasing competition among the SMEs new solutions will be brought forth across different sectors. One of the most important factors in developing new, small and medium sized enterprises



and converting the existing ones from traditional to modern line of manufacturing is the crying need of present situation. SMEs are essential ingredient of the economy in developing countries, and they assist a vital role in promoting growth, modernization and success. Bangladesh is characterized by different business ventures-small, medium, and large. Small businesses are abundant in Bangladesh and form a large majority in the domestic markets.

### **1.2 Statement of the Problem**

The contribution of the agriculture sector to GDP has declined from 50 percent in 1972-73 to around 20 percent in 1999- 2000 and 15 percent in 2004-2005 (Bangladesh Bureau of Statistics). Although the contribution of agricultural sector to GDP is moving downward, still this sector is the main employment provider. The growth of industrial production has achieved more than 6% over the last 5 years. Moreover, the export sector has also accelerated with an average growth of 30% over the last 5 years (Hasan & Islam 2008). Along with growth of industrial sector by large industry, small and medium enterprises sector is also contributing to the GDP silently by playing a significant role in the rural economy. In the industrial sector, SMEs are widely believed to be the potential engine of economic growth of Bangladesh. According to the 2003 National Private Sector Survey of Enterprises in Bangladesh, the SME sector accounts for around 40 percent of gross manufacturing output, 80 percent of industrial employment, and 25 percent of the total labor force in this economy. The survey estimated that micro, small, and medium enterprises contributed around 20–25 percent of GDP. The sector was found to encompass about 79,754 establishments, of which 93.6 percent were small and 6.4 percent medium (ADB, 2004). Despite the significant contribution of SME sector

to the economy, this sector has been seriously suffering from the limited access to financial services (Hasan & Islam 2008). The performance of SMEs of Bangladesh, especially in terms of employee turnover rate, quality assurance, allocation of funds has been found significantly below the international standard. This sector gets negligible support from the Government. The rate of development of SME is not up to the expectation (Ahmed and Chowdhury 2009). SMEs are considered one of the driving forces towards incisive growth. SME sector helps alleviate poverty, increase income level of rural people and promote agro-industrial linkage in Bangladesh, SMEs offer large-scale employment and income earning opportunities at relatively low costs, especially in the rural areas but the inadequate financing has been considered as a critical bottleneck in the development of SMEs of all types (Khan, 2016). The terms and conditions of SME loan are not easy. The opinion of respondents' is dissatisfactory regarding some aspects of the SME banking systems and it indicates that the existing SME banking services are not capable of meeting the users' needs (Rouf and Islam 2015).

SME is the backbone of all economies and a key source of economic growth. SMEs assist in regional and local development as they accelerate industrialization in rural areas by linking them with the more organized urban sector. These help achieve fair and equitable distribution of wealth by regional dispersion of economic activities but the SMEs are facing difficulties to access to financing, human capital, technology and market. One of the main reasons why bank and financial institutions are reluctant to disburse funds to the SMEs is due to lack of collateral and good track record of the company (Haron et al, 2013). SMEs have different kinds of difficulties such as shorter life time, existence of estate tax, intergenerational transfer of problems and prevalence of implicit

contracts (Ang 1992). A survey by World Bank in 2002 on SMEs development in Bangladesh finds that shortage of finance is an important issue. SMEs of Bangladesh have limited (around 10%) accessibility to bank loan. Owner's capital, the major source of fund contributes 76.5 % of permanent capital and 51.8 % of operational capital (Mahmud 2006). In most cases owners' saving fund and funds borrowed from friends and relatives are the main sources to start business and fund from the bank loan comes after that. For the SME firms it is very much difficult to collect permanent capital and operational capital from the bank loan because the banks are not interested to offer small size loan with high cost (Mahmud 2006). The most vital constraint of manufacturers sector of SMEs in Bangladesh is the shortage of adequate capital to operate the daily business (Hoassain 1998).

SMEs are the elementary part of the economic structure in developing countries as they contribute a very important role to promote growth, modernization and prosperity (Dalberg 2011). For the overall economic development of Bangladesh, SMEs have a crucial role. To advance economic progress and growth, the Government of Bangladesh has called attention to the rapid expansion of SMEs. The attention to the SMEs is for their notable role in employment generation, poverty reduction, and overall economic development of Bangladesh (Akterujjaman, S. M. 2010). In many developing countries credit markets are not functioning well. SMEs in developing countries have limited accessibility to bank loan for the shortage of collateral and high transaction cost for small size bank loans (Doan et al. 2010). Rahman et al. (2016) examine the issue of pledging collateral and its effect on access to credit, interest rates and credit risk of SMEs financing in Bangladesh with respect to bank size. They also examine the collateral classification (fixed assets collateral,

personal guarantee and third-party guarantee) by bank ownership types to find what types of collateral are preferred by public, private and foreign banks in Bangladesh for lending to firms.

Again, SMEs' information shortage is the main cause of limited accessibility to bank loan. This information gap between SMEs and commercial bank makes the firm the risky borrower in taking bank loan (Roberts, 2015). The size of the enterprise is in a small scale. The enterprise information transparency is low in case of SME. The enterprise's information asymmetry problem is large. The commercial bank's loan decision cost and supervision cost are high (Sun, Cen & Jiang, 2013). SMEs contribute enormously to GDP and they have a noteworthy influence in the development of economy. However, SMEs are constrained in their accessibility to bank loan as banks are not willing to allow credit for information asymmetry (Nilufa and Thalil 2016). SMEs lack of access to capital and high interest rate charges are partially the result of incomplete (or no) accounting records, and the inefficient use of accounting information. Poor record keeping and accounting information make it difficult for financial institutions to evaluate potential risks and returns (World Bank 1978), making them unwilling to lend to SMEs. The capital of the owner originating from personal funds, family and friends, retained earnings is not sufficient for expanding SMEs operation successfully due to technological advancement in the large organization (Kira and He, 2012). Due to small size of internal fund it is very much difficult for the SME organization to survive in the market (Beck, 2013). The bank is the main source for external fund in the developing country where financial market is small (Klonowski, 2012). However, SMEs face difficulties in accessing bank finance.

It has been great concern to all that the important sub-sector of SMEs has fallen short of expectation. The position is more alarming and disturbing when the contribution is compared with that of other developing and developed countries. There is a high correlation between the degree of scarcity, unemployment problem, economic development (standard of living) of the general public of countries and the degree of vibrancy of those countries' SMEs. If Bangladesh wants to achieve an appreciable success towards attaining the Millennium Development Goals for 2021, one of the sure ways would be to vigorously pursue the development of her SMEs.

One of the most important factors in developing new, SMEs and converting the present ones from traditional to modern line of manufacturing is the shortage of fund. The shortage of finance affects the ability of the industrial units to install modern machinery and tools, to maintain well organized and fully equipped factories, to buy and store good quality raw materials or stock their finished products and to use effective technique of marketing (Ahmed and Chowdhury, 2009). Nilufa and Thalil (2016) found that age of the proprietors and gender of the proprietors, living status and work place have influence on credit rationing.

Limited access to credit for SMEs, especially in developing countries, has been identified as a major bottleneck limiting their size, growth, profits, functions, liquidations and scope of financial organization (Alexander 2003). Hence, at the global level, SMEs have reported that a difficulty in access to finance is obvious (Yongqiang, Armstrong and Clarke 2012). Nevertheless, similar academic study has not been carried out in SME sector of Bangladesh. Based on researcher's information, this research is

the first of Bangladeshi SMEs exploring SMEs' limited accessibility to bank credit. These constraints are unfavorable legal and regulatory framework, undeveloped infrastructure, and poor business development services, ineffective and poorly coordinated institutional support framework etc.

### **1.3 Research Questions**

Based on the research problem, the following broad research questions have been formulated to direct the course of the study:

1. What is the nature of contribution of SMEs to GDP and financing practices of sample commercial banks to SMEs in Bangladesh during 2008 to 2017?
2. What are the reasons for financing restrictions for SMEs in Bangladesh based on monetary theories like Information Asymmetry, Agency Theory, Pecking Order Theory and Trade Off Theory?
3. What are the impact of financial performance variables of the sample commercial banks on SME financing in Bangladesh during the study period?
4. How to evaluate the expert's opinions regarding the influencing factors of SMEs financing in the different sectors by the sample commercial banks in Bangladesh?

### **1.4 Objectives of the Study**

The main objective of the study is to evaluate the present scenario of SMEs financing of commercial banks in Bangladesh. With a view to achieving this objective and to find the answer of the research question, researcher has considered some specific objectives and these will be collateral to fulfill this effort:

1. To examine the contribution of sectoral SMEs financing to GDP and the nature of financing practices by the sample commercial banks to SMEs in Bangladesh.
2. To examine the reasons of the financing restrictions in Bangladesh by accepting a theoretical structure based on literature of the monetary theories such as Information Asymmetry, Agency Theory and Pecking Order Theory.
3. To investigate the impact of financial performance variables on SMEs financing of the sample commercial banks in Bangladesh.
4. To evaluate the experts' opinions regarding the influencing factors of SMEs financing in the different sectors by the sample commercial banks in Bangladesh.

### **1.5 Justification of the Study**

SMEs play a vital role in the economic progress of developing countries such as Bangladesh and they have earned special significance for their role in poverty reduction programs and potential contribution to general economic and industrial growth. There is no alternative to creating an environment conducive to development of SMEs for attaining that goal (Khan 2016). Commercial banks contribute a significant and dynamic role in both developed and under developed economies. Short term capital and fixed capital is helpful for the modernized SME organizations which are the backbone of Bangladesh economy. The role of SMEs sector is immense to alleviate the poverty from the country as well. SMEs are particularly suitable for the densely populated countries like Bangladesh where SME sector can provide huge employment opportunity with much lower investment. They are expected to create jobs, reduce poverty and drive a resilient national economy. Rapid and sustainable growth of

SMEs is undoubtedly one vehicle for accelerating national economic growth to the point of having a measurable impact in the way of reduction of poverty and unemployment, generation of more employment (Alauddin and Chowdhury, 2015). The commonly perceived merits often emphasized for their promotion especially in the developing countries like Bangladesh. Considering the country's level of economic growth, composition of resources, level of global integration, and growing urbanization, there is ample scope for developing diversified and new SMEs in agriculture, manufacturing and service sectors. Thus scope of employment can be widened both in rural and urban areas, which will help reduce income inequality between urban and rural areas (Alauddin, Rahman and Rahman, 2015). Chide & Shadare's study (2015) revealed that small and medium size enterprise has received little attention whereas they provide employment for approximately triple the number engaged in large scale manufacturing as well as playing their roles of crucial importance to our developing economy. Now-a-days SMEs have come to the forefront of development agenda due to the recognition of their contribution to fostering economic growth, sustaining global economic recovery, generating employment and reducing poverty. Small capital requirement, traditional technology, agro based resources and available labor can make the SME sector 'the engine of development' through increasing production and development. There is great interest in SMEs as major tool of poverty reduction in Bangladesh. Country context contributes a key role in determining the nature of these characteristics, especially the amount of investment in capital accumulation and the number of employees. Government of Bangladesh formulated a comprehensive Industrial Policy-2005 by putting special emphasis for developing SMEs as a thrust sector for balanced and sustainable



industrial development in the country to help deal with the challenges of free market economy and globalization. But for this, research and development activities of SMEs have not been advanced much. Moreover, a few studies (Wangmo, 2016; Alauddin and Chowdhury, 2015) on financing issues of SMEs have been done. But no such study on SME financing of commercial banks was done at any level. Considering the future prospects and existing research gap, the researcher finds great interest to design this present research study. Students, scholars and academicians of finance and economics will be benefited from the present study. SMEs will get the highest priority from policymakers of any state as well as around the world due to their already proven multidimensional contribution to the socioeconomic environment of the countries of the world.

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

This study mainly focuses on SMEs of Bangladesh focusing on the three sectors namely service, trade and manufacturing sector. All these sectors mentioned above are very important for the economic development of Bangladesh. All financing issues of SMEs of our country are not the subject matter of this study. The most important issues relating to financing are included in this research work. The study covers the current status of SMEs, government policy towards financing of SMEs and the problems militating towards successful financing of commercial banks in Bangladesh. Besides these administrative reforms, investment climate will also be addressed in this present research study.

This study discloses the insight into SMEs to help the key shareholders to understand the causes of debt inaccessibility. To get debt smoothly, the borrower firms are required to shorten the information asymmetry issue with bank. In spite of high risk and financing cost, SMEs sector are a

large and profitable market for the banks due to number of SMEs. So, it is the way to gain large profit for the banks by developing different mechanism and techniques of SMEs loan.

It offers insights into the economic development of a country through the development of SME sector. The importance of the study is that it will be helpful for policy makers to formulate new policy for the SMEs. The outcomes of the study can assist as a reference to solve SMEs' financial inaccessibility.

### **1.7 Chapter Plan of the Study**

**Chapter 1:** The first chapter is introductory in nature containing prelude, statement of the problem, justification of the study, objectives of the study, scope of the study and hypothesis of the study that are addressed in subsequent chapters.

**Chapter 2:** The second chapter reveals the review of related literatures related to SME financing by banks, credit rationing, factors affecting access to finance, entrepreneurship development, relationship lending, role of commercial banks, effect of firm's and owner's characteristics, constraints and challenges in SME financing.

**Chapter 3:** The third chapter deals with conceptual framework of the study. Thus, it reviews the relevant theoretical literature relating to bank financing for SMEs from both a demand perspective as well as a supply perspective. In addition, some specific aspects of bank financing for SMEs, which are of particular interest in this study, are also included. In so doing, the chapter serves as guidance for the methodological choices subsequently employed in the thesis.

**Chapter 4:** The fourth chapter deals with the research methodology. This chapter includes the development of the conceptual framework, model

and hypothesis of the study. In this chapter, and in light of the study's objectives, we discuss the use of qualitative and quantitative methods. The chapter also provides a description of the data sources and the different tools used to gather the required data, along with the various stages of the actual data collection process.

**Chapter 5:** The fifth chapter examines the present scenario of SMEs in Bangladesh and practices by the sample commercial banks regarding SMEs in Bangladesh.

**Chapter 6:** Chapter six reveals the descriptive statistics of the data of SME owners situated in different cities in Bangladesh. The description of SME firms and its financial position is prescribed in this chapter. The description of the SMEs' owners is also included here. The outcomes are systematically put forward and their significance is described to read between the lines of the data. The chapter expresses the empirical analysis of the quantitative data collected through questionnaire survey using SPSS 20 in the form of multiple linear regression. The chapter measures relationship between debt accessibility and the different independent variables. The multicollinearity, heteroscedasticity, normality and model misspecification assumptions will be diagnosed and accordingly will be address with remedial measures.

**Chapter 7:** The chapter seven expresses the impact of SMEs financing on financial performance of the sample commercial banks in Bangladesh.

**Chapter 8:** This chapter covers the respondent's opinion regarding influencing factors of SMEs financing. Here the respondent includes loan officer of the sample commercial banks, professional accountants and academicians.

**Chapter 9:** This chapter provides suggestions highlighting the SME financing gap from the SMEs' and banks' point of view through the addressing of outcomes from the analysis. This chapter also provides some remedial suggestions for proper SMEs financing in the different sectors by the sample commercial banks in Bangladesh. It also covers the research limitations and future scope of research in the area.

## **CHAPTER TWO**

### **Review of Related Literatures**

#### **2.1 Introduction**

Worldwide, in last two decades a big number of researchers have shown their interest in SME sector, and have drawn together their endeavor to investigate the SME due to contribution in promoting innovation, reducing poverty and overall economic development of the country. Accessibility to bank credit was the most important factor for success of SMEs. This chapter expressed the literature on the financing of SMEs to afford the essential support for this research.

#### **2.2 Literature on SME financing by banks**

**Abor and Biekpe** in 2006 have done a study on “Small Business Reliance on Bank Financing in Ghana”. The objectives of the study are: (a) to identify the determinants of bank financing and debt among Ghanaian SMEs (b) to show the relation between the determinants and bank debt ratio by a panel regression model. The findings of the study are: (a) there is growing recognition of the importance of small and medium sized enterprises (b) there is a inconsistency between the demand of bank loan by SMEs and the supply of bank loan in Ghana (c) the age, the goodwill of a firm built up over the years and well known by the market, is positively related to debt (d) firm size, which the model measures as the logarithm to total assets, represents either the largeness or smallness of the firm and it is related to greater diversification, availability of collateral and commercial success (e) the higher a firm’s profitability, the lower the probability of default, and the higher the probability of successfully obtaining a bank loan (f) growth is measured by diversification through exports and it has a positive relation to bank

loan (g) the microeconomic variables – the inflation and interest rates- are expected to have negative relations with bank finance. The limitations of the study are: (a) the authors have taken the firms with only less than 100 employees; so, the sample size is very small (b) the type of questionnaire has not been mentioned here (c) the sampling method used for data collection has not been mentioned here (d) the authors have not included the SME firms with more than 100 employees so they have not followed standard definition of SMEs.

**Barth, Lin & Yost (2011)** have studied on the topic entitled “Small and Medium Enterprise Financing in Transition Economy”. The objectives of the study are (a) to identify the financing status of small and medium enterprises in transition economies (b) to identify the factors causing financing obstacles (c) to determine their influences over financing pattern (d) to identify the bank access to SMEs and their influence over loan structure. The findings of the study are that (a) SMEs promote market diversification, innovation and provide many employment opportunities (b) SMEs suffer from credit insufficiency and vulnerable to credit crunches during financial crises (c) both demand and supply side factors influence SMEs financing condition in transition economies (d) financial consolidation, financial liberalization, financial regulatory reform and institutional development are relevant to small business lending. The limitations of the study are: (a) the sample size is very much limited (b) the nature of questionnaire has not been mentioned in the study (c) the scale used by the authors has not been mentioned (d) the authors have not stated the reliability and validity of the result.

**Ghatak (2012)** has done a study on “A study on the bank financing of SMEs in India”. The objectives of the study are (a) to identify the

different financing options available for financing SMEs (b) to identify the factors which act as the drivers for financing decisions of the bank, while financing SMEs and (c) to analyze the impact of the identified factors on the financial decisions by bank. The findings about the Drivers of the Bank financing for SMEs are (a) bank respondents have a mixed preference for SME financing (b) bank considers following factors about an SME while financing it (i) Profit earning of SME (ii) Legal formation of the firm (iii) Stages of development of the firm (iv) No of default firm made in previous loans (v) Availability of collateral (vi) Payment history of firm (vii) Preparation of financial statements (viii) Feasibility of the proposed project (ix) Experience of management in business (c) Among these factors, it is found that bank give least importance for the financial feasibility of the project (d) there are mainly 5 categories for formation of the company (e) among these categories bank prefer partnership firms and limited. Company (f) bank prefer to finance firms in a growth stage, either slow growth or fast growth stages (h) respondents say that financing SMEs are highly risk associated. The limitations of the study are (a) the sample size is very much limited (b) the interview method which the author used for data collection, has not been mentioned here (c) the author has not stated the validity of the result.

**Emine (2012)** has done a study on “Financial Challenges that Impede Increasing the Productivity of SME in Arab Region”. The purposes of the study are: (a) to look into the restrictions that SMEs face in Arab region countries (b) to reveal the significant role that SMEs can play in the expansion of Arab region States. The findings of the study are: (a) if the necessary supporting facilities are provided to SMEs, it would assist the SMEs in sustainable development (b) Government financing supports are influential factors on every growth or development (c) due to shortage of

finance, technological advancement, skilled human resource and valuable Government financial support (GFS), the growth rate of SME is lower (d) the credit information has been improved recently and the exposure of credit reporting systems is very limited (e) the relationships between GFS and private banks credit to SMEs are positively significant from the development side of SMEs. The limitations of the study are: (a) the author has prepared a questionnaire for data collection but she has not mentioned whether it is personally administered or mail questionnaire (b) She used two set of standard errors: white robust and robust but did not mentioned type i and type ii errors (c) She used coverage ratio but other ratios has not been mentioned (d) the author has not stated the validity of the result.

**Ngoc and Thang** (2009) have done a study entitled ‘The Impact of Networking on Bank Financing: The Case of Small and Medium Sized Enterprises in Vietnam’. The objective of the study is to examine the net effect of different network ties influencing SMEs’ use of bank loans in different ways. The findings of the study are: (a) networking helps the SMEs to improve their legitimacy to enhance their accessibility to bank loans (b) networking also helps SMEs’ loan accessibility from the other sources (c) official networks, network with suppliers and social organization networks are significant in SMEs to get access in bank credit in logistic regression and (d) network with customers and network with relatives and friends are significant in ordinary least square regression for SMEs to get access to bank credit. The limitations of the study are (a) as the manufacturing firms are considered as sample; the generalization of result is not possible for all the sectors of the country (b) the manufacturing firms located in three cities are considered as sample



**Garcia (2005)** has done a study entitled “Small and Medium Enterprises Financing in China”. The objectives of the study are: (a) to identify the present situation of SMEs in China and (b) the main issues concerning the financing of SMEs. The findings of the study are (a) SME financing is targeted to specific sector and of limited duration (b) future business plan and accounting procedures as per rules are crucial to enhance the prospects of financing (c) financing help cannot be sighted as an isolated effort to generate employment and decrease scarcity but as a part of formation of a sufficient and competitive business atmosphere. The limitations of the study are (a) the sample size is unknown for the study (b) the interview method, the author used for data collection, has not been mentioned here (c) ) the author has not stated the validity of the result.

**Cassar & Holmes (2003)** have done a study entitled “Capital structure and financing of SMEs: Australian evidence”. The objective of the study is the determinant of capital structure and use of financing for the small and medium sized enterprises. The findings of the study are (a) structure of the assets, growth and profitability have crucial influences upon SME financing and capital structure (b) the theories developed to clarify capital structure alternative within the firm, including static trade off arguments utilizing bankruptcy, agency and tax costs and pecking order arguments which depend on asymmetric information (c) the relationship between size of the firm and leverage differs among the three capital structure and financing variables (d) financing nature such as duration may affect upon capital structure (d) bank financing plays more importance upon capital structure of the firm (e) long term debt structure is positively related to long term asset structure. The limitations of the study are: (a) all the variables used in the study must have values for each of four years, otherwise the firm will be excluded (c) all the firms have

positive sales over the four years, otherwise the firm will be excluded (d) there were limited data which permit for the use of such theories to SMEs

**Wahab and Hasan** in 2012 have done a study entitled “Small and Medium Enterprises (SMEs) Financing Practice and Accessing Bank Loan Issues- The Case of Libya”. The purposes of the study are: (a) to examine the financial sources of SME in Libya and (b) to identify the causes of not applying for the bank loan by the SME firms. The findings of the study are that (a) the SMEs use the funds at two different stage of business life cycle namely start up and matured stages (b) informal financing source at startup (82.9%) and which prefer owner’s personal saving (60.5%), family loan (3.9%), friend loan (9.2%), partner loan (7.9%) and others (c) only 17 percent respondents use formal financing at start up stage (d) SME owners are not willing to apply for bank loan at after start up stage because of collateral required by the banks, high interest (the most pressing problem, interest is the religious factor) and poor relationship. The limitations of the study are (1) the sample size (76 respondents) is very small (2) the selection of the sample is in the limited areas ( Tripoli and Sabha) (3) as statistical tools they use only mean, median and standard deviation.

### **2.3 SME financing and credit rationing**

**Hoque, Sultana and Thalil** (2016) have written an article namely “Credit rationing’s determinants of Small and Medium Enterprises (SMEs) in Chittagong, Bangladesh”. The objectives of the study are (a) to help reduce the SMEs’ limited accessibility to credit (b) to identify the determinants of credit rationing (c) to find the major sources of credit for the SMEs. The findings of the study are (a) the major sources of finance are: 33 percent from friends and family, 32 percent from owners’ savings,

21.5 percent from bank, 5 percent from loan organizations, 4 percent from micro financial institutions, 2 percent from money lenders, 2.5 percent from selling assets (c) the age, gender of the owners, status of the house, heads of the household and workplace, household size have effect on credit rationing (d) education, firm age, marital status, initial outlay and number of employee do not have effect on credit rationing (e) interest rate, application cost, paper documents, rules and regulations, loan disbursement procedures, loan amount and duration, collateral, financial statements, project feasibility risk management techniques and risky business also have impact on credit rationing. The limitations of the study are (a) as the study is done based on only Chittagong city, the generalization of the result is questionable (b) the sample is collected from the urban area and excluded rural area (c) the study is done in Chittagong city within time and resources problems.

#### **2.4 Factors affecting access to finance**

**Chowdhury and Alam (2017)** have examined the effect of factors that determine the access to finance in their paper entitled “Factors Affecting Access to Finance of Small and Medium Enterprises (SMEs) of Bangladesh”. The objectives of the study are: (a) to examine the characteristics of the firms affecting SMEs’ accessibility to bank credit (b) to investigate the financial characteristics influencing SMEs’ availability of funding (c) to recognize the characteristics of the entrepreneur affecting the SMEs’ access to bank loan. The findings of the study are: (a) firms’ financial and owners’ characteristics have a significant influence on access to finance (b) collateral, size and age of the firm were found as an influencing factors in access to bank loan (c) financial characteristics, such as starting and current position of capital, rate of interest and business plan have impact on getting access to bank

loan by SMES (d) unfavorable provisions and conditions, duration of the loan, lengthy process, and dishonesty of the officials of banks have also impact on access to finance. The limitations of the study are: (a) the study is done in Chittagong city within time and resources problems (b) the size of the sample is very limited and not representative of the population.

**Beck & Kunt (2006)** have examined the accessibility to bank finance by the small and medium enterprises in their article entitled “Small and medium-size enterprises: Access to Finance as a Growth Constraint”. The objective of the study is to identify the accessibility of bank credit by the SMEs which comprises the major portion of business organizations in developing and developed countries. The findings are: (a) limited access to bank finance is a vital growth constraint for SMEs and the constraint can be relaxed through playing significant role by the financial and legal institutions, (b) innovative monetary instruments can be used to assist to access to finance (c) an attention on advancement of competitive business atmosphere, accessibility to bank loan is most crucial component and helps entrance, departure and development, is essential compared to improving a large SME sector (d) SME provides a significant portion of total employment but their contribution to economic development is not up to mark due to growth obstacles and limited access to credit (e) without legal system, external investor and financial market, SME firms are not capable of growing to their optimal size and (f) by cross-country data analysis, a causal link between SMEs contribution and economic development expresses that small organizations suffer larger expansion restriction compared to large organizations and have less accessibility to external finance. The limitations of the research are (a) only secondary data have been used for analysis (b) as statistical tools only correlation

has been used (c) data used for research relate to only one year period (d) there is no theoretical contribution in the study.

**Alhassan and Sakara (2014)** have done a study on ‘Socio-Economic Determinants of Small and Medium Enterprises’ (SMEs) Access to Credit from the Barclays Bank in Tamale-Ghana’. The objectives of the study are: (a) to identify the socio economic determinants of SMEs credit accessibility from bank (b) to determine constraints faced by the bank. The findings of the study are: (a) sometimes education qualification is one of the important factors in granting loan (b) proper business operating capability is barely observed (c) lack of collateral, shortage of well business plan, inability to collect personal guarantor, delay loan application process, unsuitable repayment period are the causes of not taking the loan by the SME firms (d) the age, gender, number of business development training of the entrepreneur are the influencing factors in determining accessibility to bank loan (e) number of employees, experience, fixed asset amount, risk taking attitude of entrepreneurs, business size, form of business and sector of business are also important factors in determining credit (f) bank management faces risky factors such as high default rate in approving credit to SMEs. The limitations of the study are that (a) the study done on only one city fails the concept of generalizations (b) there is no theoretical contribution in the study (c) way of determining sample size is not mention here.

## **2.5 Entrepreneurship development and SME financing**

**Chowdhury (2007)** has done a study on ‘Overcoming entrepreneurship development constraints: The Case of Bangladesh’. The objectives of the study are: (a) to identify the constraints faced by the SME entrepreneurs and (b) to find out the ways to eliminate the entrepreneurship

development constraints. The findings of the study are: (a) feasible measures and helpful policy decisions with Government incentives contributed sufficiently to the entrepreneurial development (b) suitable entrepreneurial climate for the growth of SMEs should be arranged (c) launch entrepreneur development school for entrepreneurship development and (d) rooting out corruption to sustain democratic values and enforcement of laws. The limitations are that (a) the study does not give attention on particular company type (b) the study is limited to one city (c) the sample size is very limited (d) rural entrepreneurship is not included in the research.

**Ogbo and Agu** have done a study on “The Role of Entrepreneurship in Economic Development: The Nigerian Perspective” in 2012. The objectives of the paper are (a) to analyze the assistance of employment generation through SME development and to establish and sustain the vibrancy for Nigerian SMEs as the engine of growth in the economic development efforts (b) to identify the main restriction between accessibility to bank loan and managerial capacity for the growth of SMEs and (c) to identify the major problems or constraints that militates against the growth and development of SMEs in the country. The major findings of this study include the following (a) SMEs have played and continued to play significant roles in the growth, development and industrialization of many economies the world over (b) SMEs have performed below expectation due to a combination of problems which ranges from attitude and habits of SMEs themselves through environmental related factors, instability of Governments and frequent Government policy changes etc (c) there is a difference between theoretical and operational definition of SMEs (d) SMEs promote competition and hinder monopoly. The limitations of the study are (a) the

number of samples selected from some state of Nigeria seems to be smaller in relation to those of the developing countries. So the sample limits may not be representative of the population. (b) The researchers have not mentioned the period of study.

**Quadir and Jahur (2011)** have done a study on “Determinants of Success and Failure of Entrepreneurs of SMEs in Bangladesh- An Explorative Study”. The objectives of the study are: (a) to identify factors influencing the success of entrepreneurship (b) to identify the factors responsible for the failure of entrepreneurs of SMEs (c) to identify the factors contributing to the success of entrepreneurs of SMEs. The findings of the study are: (a) entrepreneurs and entrepreneurship are significantly correlated with the economic development of a country (b) 18 variables are responsible for failure of entrepreneurs (c) 10 variables are contributing to success of entrepreneurs. The limitations of the study are (a) the sampling method for determining the sampling size has not been mentioned here (b) the authors do not mention here whether the questionnaire is structured or unstructured (c) the method used for data collection has not been mentioned here (d) the sample size is very small (e) the statistical tools used for data analysis have not been mentioned here.

## **2.6 SME financing and relationship lending**

**Berger and Udell (2002)** have done a study on ‘Small Business Credit Availability and Relationship Lending: The Importance of Bank Organizational Structure’. The objectives of the study are the inner working relationship lending, the implication for bank organizational structure and the effects of shocks to the economic environment on the accessibility of relationship lending to small organization. The findings are that (a) small business organizations have asymmetric information problem and relationship lending is the one of the important technologies

of extending credit to small business with information asymmetry (b) small businesses have very few alternative sources of external finance compared to those of large organizations and they are highly dependent on banks for external credit (c) technology of relationship lending is formed based on collection of information of firm, owner, local community from different point of views of several years (d) relationship lending is different from transaction based lending that is formed of 'hard' information that can be collected, proved and conveyed easily (e) transaction based lending technologies, asset based lending and credit scoring are based on financial ratios, collateral ratios where as relationship lending agrees informational asymmetric small business depending on only soft information rather than credit scoring, collateral (f) the research also identifies the three characteristics: (i) soft information on firm, owner and community (ii) the loan officer is the key repository of the soft information and (iii) the agency problem arises between the loan officer and bank management due to the soft nature of relationship information. The limitations of the study are that (a) the study includes few sector of SMMEs. (b) sample size is unknown (c) rural entrepreneurship is not included in the research.

**Muhammad, Ahmad and Shahnou (2011)** have done a study on "SME Lending of the Northern Corridor Economic Region: Access And Needs". The objectives of the study are (a) to find out the availability and accessibility of external financing for SME business growth (b) to build consciousness for value of external financing institutions' support for SME business growth financing. The findings of the study are (a) the largest ratio of respondents of SME managers are from 40-49 years age group (35.2 percent), are male (62.1 percent), are higher secondary school level qualifications (41.9 percent) and are less than 20 years of



experience ( 90.3 percent) (b) 37.1, 29.8 and 17.7 percent SMEs are doing business in Trade Service and Manufacturing sector (c) very small portion firm is engaged in research and development and majority of the SME firms are at maturity phase of the business cycle (d) 91.1 percent SME firms use local bank for daily financial operations (e) the most important problem facing SME firms is shortage of working capital, sluggish loan disbursement, difficult procedures, high rate of interest and high service charge. The limitations of the study are that (a) the sample size is small b) the problems are mostly related to data and the respondents are not willing to provide financial information (c) there is no theoretical contribution in the research.

### **2.7 Effect of owner's characteristics in SME financing**

**Ogubazghi and Muturi (2014)** have done a study on the influencing factors of accessibility to bank credit in their article entitled 'The Effect of Age and Educational Level of Owner/Managers on SMMEs' Access to Bank Loan in Eritrea: Evidence from Asmara City'. The objective of the study is to identify the influencing factors of owner or manager characteristics on getting access to bank credit. The findings of the study are: (a) the age of the owner or manager has significant influence on SMMEs' accessibility to bank credit (b) the education qualifications of the owner or manager does not have significant influence on SMMEs' accessibility to bank credit (c) the age and educational level have positive effect on SMMEs' accessibility to bank loan. The limitation of the study are: (a) the study is limited to very few influencing factors (b) the area is only limited to a single city (c) the research is limited to cross sectional data rather than time series data (d) the sample is very poor (e) the study includes few sector of SMMEs.

**Scott and David (2007)** in their research paper entitled “How SMEs Owners’ Characteristics Influences External Advice and Access to Finance” have examined different types of advice used by business and how these differ by gender, ethnicity and education. The objective of this research paper is (a) to examine the relation between the use of outsider suggestion and accessibility to get finance for SMEs in the UK, with considering affecting variables such as gender, education and ethnicity. The survey found that (a) accountants works as advisor followed by family and friends (b) the market continues to give sources of external advice for businesses. The limitations of the study are: (a) the nature of questionnaire has not been mentioned in the study (b) the scale used by the authors has not been mentioned (c) the authors have not tested the reliability and validity of the results.

## **2.8 Role of commercial banks in SME financing**

**Ahamed and Brown (2016)** have done a study entitled “Exploring the Role of Private Commercial Banks in Increasing Small and Medium Size Enterprises’ Financing Accessibility in Developing Countries: A Study in Bangladesh”. The objectives of the study are (a) to find out critically the influencing factors affecting financing decisions of private commercial banks to SMEs (b) to recommend some theoretical perspectives on how such hazards could be condensed to enhance SME financing. The findings of the study are: (a) information asymmetry is based mostly on the attitude of the owner- managers than business position and prospects (b) mortgage is the precondition of SME financing (c) kinds of collateral are also considered in accessibility to bank credit (d) the credit officer is the key decision maker in SME credit and (e) poor mortgage asset and loan officer’s attitude lead to ‘SME financing trap’. The limitations of the study are: (a) the study is an empirical study done in Bangladesh within

time and resources problems (b) as the study is operated by ADB on its members, the outcomes may differ from those of other countries because of political, social and cultural changes (c) the participants of the research is selected giving priority to articulating constructs and (d) the concept of private commercial bank's contribution was supported by participants but not justified by employing grounded theory.

**Roy, Sarker and Shawnewaz** have done a study on “SME Banking in Bangladesh: A Social, Economic Analysis” in 2010. The objectives of the study are (a) to find out the major problems of SMEs loan management of Jamuna Bank Ltd, Asulia, Savar (b) to identify the problems in designing proper financial product for the SMEs and (c) to suggest the means of overcoming the problems related to SME loan management. The findings of the study are: (a) lack of upgraded technology affects SMEs' ability to repay the loan (b) shortage of promotional measures for the product like overdraft and time loan are also the drawback of SMEs loan (c) inability to design appropriate financial products for SMEs segment (d) shortage of accurate credit rating information in determining lower interest rates (e) non-preparation of financial statement and absence of maintaining proper licensing by SMEs and (f) lack of interconnection between individuals and banks. The limitations of the study are: (a) the study covers very specific and limited areas (b) the sample size is very small (c) the time for collecting data is very short (d) types of questionnaire are not mentioned here and restrictions have been raised to ask the clients (e) the authors have not mentioned about reliability and validity of the result (f) the respondents have aborted some questions and rendered only positive information. So, the result of study seems to be biased.

## **2.9 Constraints and challenges in SME financing**

**Khandker (2014)** has done a study on “Constraints and Challenges of SME Development in the Developing Countries: A Case Study of India, Pakistan and Bangladesh”. The objectives of the study are (a) to identify the main obstacles and challenges in SME development in three South Asian countries (b) to identify challenges, blockades, limitations and prospective for SME development. The findings are that (a) shortage of electricity and limited access to finance are the common problems in these south Asian countries (b) these problems are hampering the development of SMEs as well as affect negatively on trade of SMEs (c) tax rate and political instability are another obstacles for Bangladeshi SMEs (d) corruption is the big problem in the countries under the study but does not have harsh impact on SMEs (e) customs and trade guidelines in Pakistan and India have negatively significant effect on SMEs. The limitations of the study are that (a) the study is based on survey data of World bank (b) the study use the definition SME by World bank in conducting research in south Asian countries (c) shortage of sufficient data is another problem of this study.

**Taslim in 2014** has done a study entitled “A study on the financing of SMEs in Bangladesh”. The objectives of the study are: (a) to highlight SME financing policies in Bangladesh (b) to identify the present situation of SMEs in Bangladesh (c) to identify the problems in SMEs financing. The findings of the study are: (a) bank and other financial institutions set a specific limit for SME so it creates shortage of fund (b) owners of the SME firms do not prepare a formal project proposal (c) the cost of financing is very high (d) without collateral security banks do not provide credit (e) lack of combined standard format and policy for SME by Government and Bangladesh Bank (f) SMEs also face the obstacle of

infrastructure advanced technology entrepreneurial skill. The limitations of the study are: (a) no primary data has been used in the study (b) the study has not mentioned specific time and areas of the study (c) total population and the sample size have not been mentioned here (d) the authors have not tested reliability and validity of the result. (f) the methods of data analysis have not been mentioned (g) the author has not prepared any questionnaire for data collection.

**Jain, Gupta and Mittal in 2011** have done a study entitled “Logistic Predictive Model for SMEs Financing in India” The objectives of the study are (a) to find an urgent need for internal credit scoring model in Indian context (b) to develop a default prediction model especially for SMEs in lieu of classification of borrowers (c) to examine the behavior of relevant measures of default risk and (d) to explore the variables of the financial package to build a model for SMEs by pertaining multinomial logistic regression technique. The findings of the study are (a) the credit default can be projected based on loan parameter in absence of balance sheet and credit worthy profile of the borrower (b) loan payment to microenterprises in two perspectives; (i) human factor and (ii) ability to pay (c) the default predictors classify the loan applications into three: good risk, bad risk and loan closed account. The limitations of the study are (a) the time period (two years) is so much limited (b) the nature of questionnaire arranged for data collection has not been mentioned (c) the scale used by the authors is not mentioned here (d) the study is limited to the use of logistic regression model only for analysis since data set is complex and since it does not include the ‘ability to pay’ parameters of borrower in consonance with objectives of the study.

**Carbo-Valverde, Rodriguez-Fernandez and Udell (2009)** have done a study on “Bank Market Power and SME Financing Constraints’. The objectives of the study are (a) to utilize a structural competition indicator in a firm level analysis of market power and firm financing constraints (b) to identify the connection between banking competition and industrial development (c) to evaluate the results acquired using the Lerner Index versus the Herfindahl-Hirschman Index (HHI). The findings of the study are (a) the relationship between bank competition and firm financing has been described from market power view and information hypothesis view (b) concentrated banking markets are formed with less loan availability and a higher cost for loan (c) as per information hypothesis higher bank market power decreases firm financing constraints (d) According to HHI, market power is formed with lower financial constraints and as per Lerner index, market power is formed with higher financial constraints. The limitations of the study are (a) the panel data used for analysis is very earlier (b) the study is based on survey data of Bureau- Van-Dijk.

**Chowdhury, Azam and Islam (2013)** have made a study on “Problems and Prospects of SME Financing in Bangladesh”. The objectives of the study are: (a) to examine the contribution of SMEs in the economy in respect of the GDP (b) to detect the constraints of SME financing. The findings of the study are: (a) SMEs are found to borrow fund for their initial set up and procurement of raw material but an average of 3- 4 months period is required (b) SMEs are deliberated to low-tech, traditional and agro based industries (c) the authors have discussed four types of SMEs, 70% of them registered under Sole Proprietorship Act, 30% Partnership Act, and 0% public and private limited company (d) initial investment of 30% SMEs is below 3 lakh and other 70% are between 3 lakh and 1 crore (e) less than 25 full time employees are

working in 60% SMEs (f) almost half of the total SMEs get loan at the 14% rate and about 80% loan from private commercial bank (g) about 80% of the SMEs clients are dependent on BASIC, BSRs, BSB and RAKUB for low interest rate. The limitations of the study are: (a) the authors do not mention here whether the questionnaire is personally administered or mail questionnaire (b) data collection method is not mentioned here (c) the authors do not mention about scale, reliability and validity of the result (d) as statistical tools they use only mean and percentage but other important tools such as regression, correlations, standard deviation are not used (e) the sampling method has not been mentioned here.

**Akteruzzaman (2010)** has done a study entitled “Problems and Prospects of SME Loan Management: A Study on Mercantile Bank Ltd., Khulna Branch”. The objectives of the study are: (a) to investigate the reason for unwillingness to provide advance to the SMEs (b) to find out the problems and prospects in designing suitable financial offers for the small firms. The findings of the article are (a) there is a problem of information asymmetry (b) banks have not offered suitable financial plan for SMEs (c) technological advancement makes the SMEs inability to repay loan (d) Mercantile Bank Limited considers promotional offers for the product like over draft, time loan and term loan (e) bank is ready to grant loan to SMEs as a cluster loan (f) accurate credit rating information will improve the quality of SME loan offering. The limitations of the study are (a) scarcity of respondents is found in the study (b) non-probability Sampling method has been used in data collection (c) as the researcher has used the structured questionnaire, respondent is not free to express his views and the ideas.

## **2.10 Performance evaluation of SME financing**

**Kasfia and Tanbir** have done a study on “Performance Evaluation of SMEs of Bangladesh” in July 2009. The specific objectives are (1) to identify the problems of SMEs in Bangladesh (2) to identify the influencing factors of development and growth of the SME sectors of Bangladesh (3) to identify the present situation of SME (4) to recommend the solution to overcome the problems. The findings of the study are: (1) scarcity of the raw materials hinder the ability of SME to be export oriented (2) due to limited growth of SME most of the skilled employees leave SME (3) adoption of modern technology has not been possible (4) supply of electricity, water, gas, roads were limited (5) Bangladeshi bank considers SMEs as high risk borrowers because of their inability to comply with bank’s collateral requirements (6) absence of uniform definition makes the formulation and implementation of SME policy (8) government does not provide adequate institutional assistance for women entrepreneurs (9) unnecessary layers of bureaucracy and red tape reduce the competitiveness of SME (10) the absence of an effective and transparent legal system discourages SMEs in exploring into risky venture of business (12) SMEs have failed to ensure the quality of their products and service both in local and international market (13) investment in research and development is still negligible in SMEs (14) fierce competition with the cheaper foreign goods also pose threat to SME. The limitations of the study are (1) the authors have used secondary data that have no information regarding the auditing of accounts (2) statistical analytical tools such as hypothesis test, regression, correlation, standard deviation have not been used (3) the sample size used in research is not mentioned here (4) data of the limited period have been analyzed (5) data collection method is not mentioned here.



**Zaman and Islam** have stated in their article “Small and Medium Enterprises Development in Bangladesh: Problems and Prospects” that SMEs are contributing crucial role as engine of economic development in many developing countries like Bangladesh. The objectives of the study are: (a) to show the current scenario of SMEs and problems faced by them (b) to observe the contribution of SMEs in Bangladesh economy (c) to examine the present situation of SMEs in Bangladesh and their accessibility to finance by banks (d) to identify the major financing constraints to SMEs development. The major findings are (a) lack of initial investment and working capital (b) lack of enabling environment for trade and business (c) barriers in access to finance for women entrepreneurs (d) inability to market SME product and maintaining product quality (e) lack of skilled technicians and workers. The limitations of the study are (a) collected data have been processed manually (b) the statistical tools used have not been mentioned here (c) the methods of data analysis have not been mentioned. So the reliability and validity of the data can be questioned.

**Sebaptian, Uremadu, Ani and Odili** in 2014 have done a study entitled “Banking System Credit to Small and Medium Scale Enterprises (SMEs) and Economic Growth in Nigeria: A Co-integration Approach”. The objectives of the study are (a) to ascertain the effect of banking system credit to SMEs on Nigerian economy (b) to ascertain whether the bank credit to private sector, positively influences the growth of economic activities in Nigeria (c) to assess the implications of high bank lending rates on Nigeria’s economic growth over the year. The findings of the study reveal that (a) the report estimates of t- value of 0.097757 and p-value of 0.9229 indicates that credit to SMEs by banks has no meaningfully significant effect on economic growth in Nigeria at both 5%

and 10% level of significance. This implies that SMEs are not adequately funded in Nigeria (b) bank credit to private sector has a t-value of 2.3371 and a p-value of 0.0274. This indicates that bank credit to private sector has positive and significant relationship with economic growth at 5% level of significance. (c) the report estimates of t- value of -1.7722 and p-value of 0.0486 indicates that the lending rate has negative and significant relationship with economic growth in Nigeria. This implies that high lending rate discourages entrepreneurship and reduces investment. The limitations of the study are (a) the authors do not mention whether the data is primary or secondary (b) the types of the questionnaire used by the authors to collect the data have not been mentioned here (c) since the source of data and questionnaire are not mentioned here, reliability and validity of the result is questionable (d) sample size (representative of population) of the study has not been mentioned.

**Dixit and Pandey (2011)** in their study entitled “SMEs and Economic Growth in India: Co integration Analysis”. The objective of the study is to find out the casual relationship among various variables of SMEs such as SMEs output, exports, employment, numbers of SMEs and their fixed investment and Indian’s GDP, total exports, employment for a specific period, e.g., during the period 1973-74 to 2006-07. The findings of the study are that (a) SMEs provide immediate large scale employment and equitable distribution of the national income with lower investment (b) the sector has contributed much to the national economy by meeting the challenge of large industry including multinational company (c) there is a positive causality between SMEs output and Indian’s GDP (d) independent variables positively affect the dependent variable in the long run (e) SMEs output and GDP of India, GDP of India and fixed investment in SMEs, numbers of SMEs and total exports of India, SMEs

fixed investment and total export of India, number of SMEs and their output and vice versa, SMEs export and their fixed investment and vice versa are co integrated, thus showing the existence of long term equilibrium relationship between them. The limitations of the study are (a) the research data used for analysis are collected from secondary source (b) whether the type of questionnaire is structured or unstructured has not been mentioned here (c) the sample size of the study has not been mentioned (d) the method used for data collection has not been mentioned here.

**KESKIN, SENTURK, SUNGUR and KIRIS (2010)** having done a study entitled “The Importance of SMEs in Developing Economies”. The objectives of the study are: (a) to find out the importance of SMEs in the developing countries (b) to find out the advantages and disadvantages of SMEs (c) to find out the importance of SMEs in terms of their economic share in developed and developing economies (d) to explain that the new ideology of neo-liberalism and globalization accentuates the importance of SMEs as entrepreneur of a healthy business climate. The findings of the study are: (a) SMEs become advantageous being economic enterprises having the ability of rapid adjustment, running with less capital, more labor and cheap production (b) economic crises does not affect SMEs due to their ability to keep up with changed conditions (c) SMEs contribute to over 55% of GDP and over 65% of total employment in high income countries (d) SMEs also contribute 95% of GDP and 70% of total employment and about 70% of GDP and 60% of total employment in middle income countries and low income countries respectively (e) SMEs play a major role in enhancing innovation, competitiveness, entrepreneurship. The limitations of the study are: (a) whether the research data are collected from secondary source or primary

source have not been mentioned here (b) the authors do not state whether the type of questionnaire is structured or unstructured (c) the sample size and population are not clear (d) as the source of data is not clear, the reliability and validity of the result are questionable (e) the authors do not mention the sampling method (f) the authors do not mention the statistical methods used for data analysis.

**Mondol (2014)** has studied on the topic “Performance Evaluation of SMEs loan of BRAC Bank Ltd.: An Analysis”. The objectives of the study are: (1) to recognize the SME credit process and operation of respective sample bank (2) to show up SME credit utilization guide (c) to observe the performance of SME credit of respective sample Bank. The findings of the study are: (a) SME loan is used not only for capital expenditure but also for working capital (b) due to SME loan the overall performance of the respondents has been developed (c) 53 percent of the respondents were agree with the increasing profit of the firm for using the SME loan (d) most of the respondents use the SME loan for purchasing raw material and asset for the firm (e) the respondents are satisfied with loan processing procedures and interest rate on SME loan of the respective sample bank. The limitations of the study are (a) the sample size is very limited (b) no statistical tools have been used here (c) no theoretical contribution is advanced in the study.

### **2.11 Effect of firm’s characteristics in SME financing**

**Rahman, Rahman and Belas (2017)** have done a study on “Determinants of SME Finance: Evidence from Three Central European Countries”. The objectives of the study are (a) to identify the influencing factors for access to bank credit for SMEs in three central European countries (b) to analyze the data not only from the SMEs point of view

but also disclose analysis for micro, small and medium enterprise separately. The findings of the study are (a) firm size and interest rate have positive relationship with accessibility to bank loan for SMEs but not for micro firm (b) firm age has positive relationship in accessibility to bank loan for micro firm but not for SMEs (c) gender discrimination has been disclosed in credit market in developed European countries (d) innovation and collateral have a positive relationship in accessibility to bank loan (e) theft or crime has negatively relationship with access to bank loan. The limitation of the study is that the study is done on BEEPS survey data conducted by World Bank.

**Khalid & Kalsom** in 2014 have published their article entitled “Financing of small and medium enterprises (SMEs): Determinants of bank loan application”. The objectives of the study are: (a) to develop a bank role model based on applicability (b) to find out the factors that determine a SME to apply for a bank loan The findings of the study are: (a) the business experience and the educational background of the owner, the firm’s size, collaterals and interest do not have a significant relationship with the firm’s tendency to apply for a bank loan (b) the firm’s business strategy and relationship with bankers were found to be positively related to the firm’s applying for a bank loan. The limitations of the study are that (a) the authors have used primary data collected by email survey but the response rate is 68 percent (b) the type of questionnaire (structured, unstructured, open ended, close ended, mixed) has not been mentioned here (c) the authors have not mentioned the statistical methods used for data analysis (d) the authors have not mentioned the period of study.

## **2.12 Literature gap**

SMEs are the crucial drivers of economic development, generating of innovation and creating of employment. The accessibility to bank finance is repeatedly recognized as a serious obstacle to development for SMEs. Generating of innovation and creating of employment in emerging markets is a key approach to move ahead economic growth and diminish scarcity.

SMEs generally use internal fund over loan from external sources because internal finance is not sufficient for all time. The firm has to submit proposal for loan but the financial institutions are reluctant to give loan to the firm in spite of high risk along with firm's information asymmetry. So, the financing gap is originated due to the dissimilarities between financing needs to the firm and the insufficient finance provision from the commercial banks. The SMEs financing gap is created by a series of issues from the both the demand and supply sector. The previous studies indicate that SMEs' dependence on owner's capital is not solely motivated by SMEs' preference but also by difficulties in accessing bank loans. The financing behavior of SMEs is practiced by the unwillingness of commercial bank to expand credit to SMEs and undeveloped capital markets in the developing countries.

The studies on the problem in SME financing have been operated in the developed economies of the world (Rajan & Zingales 1995; Cassar & Holmes 2003; Johnsen & McMahon 2005). These researches on the problem in SME financing are done in highly industrialized and matured economies of the world and hence the constructive and pragmatic appropriateness to underdeveloped and developing countries with lower

levels of economic growth is doubtful. Furthermore, these researches are concentrated to the upper range of the SME.

Most of the review has concluded that fund for SMEs are plentiful; however, there is a shortage of bank financing to them because of lack of qualified demand.

One of the main problems faced by SMEs is the attitude of financial institutions towards such businesses. Banks treat the SME as inherently risky for a number of reasons. For this reason banks are at a distance position from lending to SMEs because of the lack of adequate information they are able to provide and SMEs' level of informality and their inability to provide adequate security.

### **2.13 Conclusion**

The foundation for understanding constraints of SME financing is from the information asymmetry theory, agency theory and POT from the point of view of the two main key stakeholders. This chapter shows that there is a gap between the fund needs of SMEs and the supply of fund from the banks.

This section has reviewed the various related research articles in the different aspects of SME financing. From the above mentioned related literatures it is easy to say that there is enough scope to conduct a research study on Small and Medium Enterprises' Financing of Commercial Banks in Bangladesh: An Evaluation and this research study has considered the weaknesses of the related literatures.



## **CHAPTER THREE**

### **Conceptual Framework**

#### **3.1 Introduction**

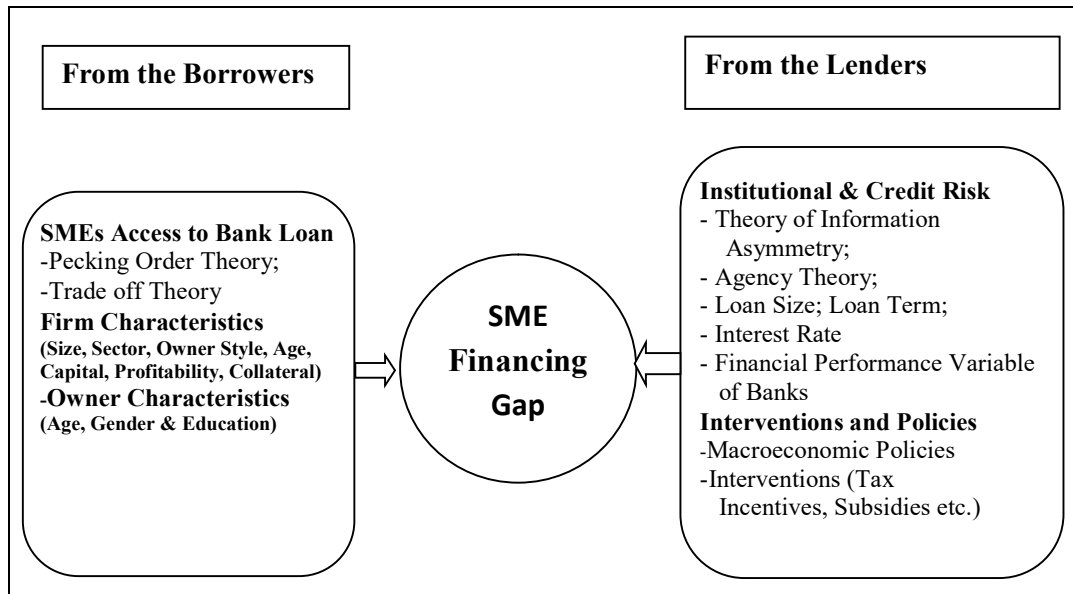
A conceptual framework is what the researcher understands of how the particular variables in his study connect with each other. The expansion of a firm is stimulated by outside prospect, such as promising demand forecast for the firm's manufactured goods and internal encouragement (Dong & Men 2015). The internal expansion aspects contain the characteristics of the firm (size and age of the firm), the features of the firm's owners and the firm's strategic choices. Penrose (1959) argues that the firm and entrepreneur features determine the accessibility of level to get access to external finance from banks.

Influencing factors affect SMEs' accessibility to external finance which determines the capital structure of the firm. The conceptual framework of this research is originated from the study of Sunder and Myers (1999) on capital structure in connection with the literature and information asymmetry theory and agency theory. The research structure is the base to scrutinize the present scenario and reasons of the SME financing gap in Bangladesh.

The Modigliani–Miller theorem (1958) is the basis for recent thinking on capital structure. The basic theorem states where market is efficient and the required information is available, each firm is equal in size and has same chance to raise fund from the financial market. But this statement is not true, the previous study relating to SMEs have found that the smaller firms are facing more obstacles than the larger firms ( Beck, Demirguc-Kunt & Singer 2006).

The conceptual framework scathes the financing obstacle faced by the SMEs' financing and was built in literature review. It shows the detailed result on SME financing problem by considering the different features of SMEs, the fund borrowers and the commercial banks, the finance supplier of the SME financing gap. It integrates the credit risk of SMEs from the banks' point of view as well as borrowers' point of view. The interacting factors of SMEs and the banks are significant to understand and alleviate the financing gap of SME. SMEs' features such as age, sector, size and the harsh information asymmetry are the constraints from the bank's point of view and the strict lending rules maintained by the fund suppliers are the key to finance to SMEs.

### 3.2 Conceptual Framework of the Study



#### 3.2.1 From the borrower of the loan (SME) perspective

The components that affect SMEs' financing are presented in the conceptual framework. The optimal capital structure of SME is highlighted in the conceptual framework as presented by Myers' (1984)

work on POT. According to the POT, SMEs' capital structure is influenced by the outsider finance.

Financing status for both corporate and firm is a cornerstone for the development. It enables investments in innovation and development, which contributes to job opportunities and growth. The demographic features of a firm and its owners are presented in the framework of SME component. Owner characteristics, educational level and gender are very much crucial factors in influencing the access to credit followed by SMEs relationship with banks and customers. With these the interest rate of the loan, collateral, firm's characteristics variables are also significant (Nguye; Gan; Hu 2015). In case of SME financing the characteristics of the firm in terms of age, size and sector have an influence on external financing (Bhaired & Lucey 2010; Bradley, Jarrell & Kim 1984; Mira 2005).

Owner characteristics, in particular, educational level, gender and age play the most important role in debt accessibility. The dissimilarities are in the funding preferences across firms and owner features and information, the key of financing practices. SMEs desire trade credit followed by financing from family and money suppliers from the informal sources. The next chosen source of financing is credit from banks. The study contributes to the extant literature on SME financing by comparing the financing preferences and practices of SMEs and identifying a financing gap (Baker; Kumar; Rao 2017). The composition of capital from various sources formed the firm's capital structure and is one of the most important ingredient to the firm's access to get finance (Bhaired & Lucey 2011). In this way the framework try to show the influencing effect of the factors that are constraints to SMEs' financing. It carries the drawbacks in SMEs that cause funding problems in SME.

### **3.2.1.1 The Pecking Order Theory (POT)**

The POT known as the Pecking Order Model, narrates the capital structure of company. The POT is developed by Donaldson in 1984 and later it has been modified by Stewart Myers and Nicolas Majluf in 1991. According to the theory, the management considers a hierarchy in using the sources of financing. POT affirms that management gives a preference to use its funds as: first to use the retained earnings, then to use debt, and equity capital as a last source. The POT simply expresses that the cost of financing increases with asymmetric information.

In SMEs, POT expresses a firm's hierarchy of finance in using its internal capital provided by the owner of the firm over its debt capital and it is the capital structure of the firms (Beck, Demirguc-Kunt & Singer 2013). The sources of internal capital of the SMEs are formed owner's financing and financing from friends and family. The financing from the external sources are long term, mid-term and short term debt financing from banks. By using financial leverage, proportion usage of equity capital and debt capital, the cost of capital is the lower for the SMEs. Here firms use internal capital first and then looking for the external funds (Cassar 2004). Because of information asymmetry, SME firms get more problems in accessibility to bank loan (Beck 2013; Gregory et al. 2005).

SMEs' features such as size, sector, asset tangibility, owner's characteristics such as gender, age, educational quality and interest rate and duration of the loan are the crucial determinant of either start up or continuous business (Osei-Assibey, Bokpin and Twerefou 2012).

### **3.2.1.2 Trade-off Theory (TOT)**

The TOT is the way that how much equity capital and how much debt capital will be profitable for the firms by calculating the cost and benefits. In classical version of TOT, a balance has been identified between the dead-weight costs of bankruptcy and the tax saving benefits of debt. This

theory is a competitive theory of POT. The static TOT is a theory based on the contribution of economists Modigliani and Miller. In the static TOT, when a firm pays debt, this cost is tax deductible. So, from this point of view taking debt is less risky because it is initially cheaper than equity financing. In this way a company can minimize its weighted average cost of capital (WACC) with a capital structure of debt over equity. But by increasing the amount of debt, it increases the risk of the company. Therefore, the static TOT calculates a proper mix of debt and equity by which the maximum gain can be achieved.

Banks offer funds by considering the company's experience in managing initial capital and the measures of its investors' defense (Nofsinger and Wang 2011).

In spite of TOT's fame in identifying capital structure, its application in SMEs is doubtful due to SMEs' shortage of financial complexity. The financial information necessary for computation of financial strength is absent (Bhaird & Lucey 2010). The benefits (tax saving) emphasized by TOT are typically lower for SMEs in comparison to those of large firms.

### **3.2.2 Factors relating to SME and SME financing Gap**

The contribution of SMEs in development economy has been renowned universally. Now the most important challenge for the SME to support fully is the limited accessibility to get finance in developing countries. Restricted access to credit for SMEs has been considered as a major bottleneck limiting their size, growth, profits, activations, liquidations and scope of business operations (Alexander MN, 2003). Owner's finance were the main source of funding for more than 75 percent of SMEs (Okura 2008). The SMEs' growth cycle expressed failure position and growth stagnation in the later phase due to the inability to access to finance in their start-up stage (Berger and Udell 1998).

### **3.2.2.1 SME Characteristics**

Barkham et al., (1996) proposed that there are three potentially significant pressure on firm expansion on the basis of theory and research point of view, they are firm size (Jovanovic, 1982), taxation of the firm (Storey, 1994) and its sector (Storey 1994). Corroborating on this, Storey (1994) recognized seven features of the firm which other researchers (Wangmo, 2016; Wikrom, Prombutr 2017) have over and over again investigated relating to their effect on small firm expansion. These include firm capital, profitability, age, sector, financial information, ownership and size.

### **3.2.2.2 Internal financing**

Internal financing is defined as the capital of the owner, retained earnings and depreciation fund which is the most important part of the survival and growth of the firms. As per POT, internal capital is the first option, a main source to acquire capital (Eniola & Entebang, 2015; Wangmo, 2016). Considering the risk of principal amount and interest, the commercial banks provided loan to the SME firms which is financially able to repay the loan. Loan repayment capacity depends on internal capital, profitability and cash flows of the firm (Beck & Demirguc-Kunt, 2006; Wangmo, 2016).

### **3.2.2.3 Firm size**

According to the author Rajan & Zingales (1995) large organizations experienced low bankruptcy risk because of their more stability in profits and cash flows than those of SMEs. Therefore, bankruptcy costs for large firms are lower than those of small firms (Warner, 1977). On the basis of work of Kounouwewa and Chao (2011) bank considers firm size and ownership as the first important factors for loan sanction. Trade-off

theorists posit that large firms are incentivized to increase their leverage (Frank & Goyal, 2003). Therefore, a positive relation between firm size and leverage is predicted. Larger firms pose more information problems because they are more complex than small firms. A negative relation between firm size and leverage is expected. However, the empirical literature widely supports the positive relation between firm size and leverage (Hall et al., 2004; Michaelas, Chittenden, & Poutziouris, 1999). Thus, there is a positive impact of firm size on leverage.

Since, SMEs have high risk of bankruptcy; their accessibility to long-term financing might be harshly constrained. Therefore, it is expected that large organizations use a major proportion of long-term external financing, SMEs use more short-term debt. Consequently, the impact of firm size on long term external finance is positive but negatively influences on short-term debt.

#### **3.2.2.4 Firm age**

According to the TOT, the older firms have less information asymmetry problems, more visibility on the market and their competitive position is more stable. So, older firms with lower bankruptcy cost create a positive relation between firm age and leverage. However, according to POT, an inverse relation between firm age and leverage exists because of their ability to accumulate funds. The empirical literature highlights results consistent with POT (Mac an Bhaird & Lucey, 2010; Michaelas et al., 1999). So, a negative relationship exists between age and both long-term and short-term debt.

### **3.2.2.5 Firm Taxation**

The firm uses bank loan for not only to meet financial demand but also as a shield of tax. Due to the tax benefit, firms also may encourage to use debt finance from banks (Fosberg 2004).

### **3.2.2.6 Firm Sector**

The firm sector means the firm operates its business in service, trade or manufacturing sector. There is a relationship between firm sector and the financial leverage because industry classification is related to the business risk (Barbosa and Moraes, 2004). The firms working in the same industry experience the similar economic conditions and can expect to earn similar profit and sales with respect to same size. SMEs in the agricultural sector show the highest capital structure and asset structure or collateral value, while the wholesale and retail trade industry has the lowest debt ratio and asset structure (Abor 2007).

### **3.2.2.7 Profitability of the firm**

Profitability is the ability of the business enterprises to make revenue in excess of their expenses on their invested resources. The commercial banks provide loan with a view to earning revenue and getting return the principal amount (Erdogan, 2019; Atieno, 2009). So, the SME firms' loan accessibility and profitability of the firms have positive relationship.

### **3.2.2.8 Owner characteristics**

The entrepreneur features have a positive effect on getting accessibility to bank loan by SMEs. Whether the SME owners are interested to provide collateral, attend seminars and training programs to improve their managerial competence, can get easily access to bank loan (Fatoki, asah 2011). Small firm's loan accessibility is considered by strong social ties, owner's self-efficacy, and owner's education (Slavec, Prodan 2012). The



educational qualification, gender, managerial experience and age are the factors to influence a firm's accessibility to external finance (Cassar & Holmes 2003; Coleman 2000; Neeley & Auken 2009).

#### **3.2.2.8.1 Owner's age**

Kira (2012) expressed the factors of owner effect on the accessibility to bank loan. Apart from other determinants, ownership style of the firm is influential factor in determining the demand for the debt in the firms. There is a positive relation between the ownership concentration and the debt financing (Haron 2017). Age of the owner/manager has significant effect on SMEs' access to bank loan (Ogubazghi, Muturi 2014). The age and experience of SME owners and debt accessibility were positively correlated because of high value of these traits (Neeley & Auken 2009). The age of the owner was correlated with maturity level and experience creating more value to the firm's financial credibility by getting its access to bank loan (Kira & He 2012; Paul, Whittam & Wyper 2007).

#### **3.2.2.8.2 Educational qualification**

Entrepreneurial characteristics have a positive impact on access to debt finance by SMEs. The owners / managers of SME firm are very much interested to attend seminar and training program to improve their managerial competence (Fatoki, asah 2011). The owner with higher educational qualification had the basic knowledge of accounts and others (Lopez-Gracia & Sogorb-Mira 2008). The higher education of the owner added additional importance and financial credibility to the firms (Altman, Sabato and Wilson 2010). The owners with higher formal educational correspond to better knowledge to run the organization and finances enhanced their possibility of getting outsider loan.

### **3.2.2.8.3 Owner gender**

The owner' gender has been pointed out as the influencing factor to get accessibility to bank loan (Wangmo. C, 2016). Even in the developed countries like U.S, U.K, German and Europe the discrimination has been identified in small firms finance (Beck & Demirguc-Kunt, 2006; Audretsch, & Elston, 1997; Minniti, & Naude, 2010). The rate of taking bank loan in case of woman entrepreneur is lower than those of male entrepreneurs. Woman entrepreneurs are less interested to get bank finance and try to rely more on internal finance (Morris, et. Al 2006; Singh & Belwal, 2008). Previous studies have identified that men entrepreneurs seek higher external finance for their business than women entrepreneurs (Storey 2004, Wangmo. C, 2016). The gender of the owner does not influence either credit interest rate or loan application rate. But gender difference is seen in the length of lender-borrower relationships. There is a significantly positive relationship between the male SME owners and lenders. The male owners can take benefit due to relationships with their lenders than do female entrepreneurs (Madill, Riding, George 2012).

### **3.2.3 Lender (Banks) Perspective**

The lender deems that the lack of financial information and the weak financial structure of SMEs are the main influencing factors in considering loan. The theory of microeconomics also addresses the problem which is the key against the modernization of microfinance theory (Abdelhafid; Mohammed 2019). Financial information of SMEs is rare. So, relationship banking is the perfect lending technique (Baas and Schrooten, 2006). A 'finance gap' exists between small firms and the lenders due to their underprivileged situation in the market. The basic ground of the gap is the information asymmetry between the loan provider and the borrower of finance (Lean; Tucker 2001). Informal

forms of finance might play a significant role in overcoming both information asymmetry and the finance gap. The status of SMEs worldwide provides theoretical information and explores issues regarding their growth, development, constraints and credit risk (Abdullah 2001). The risk associated with SMEs' high information asymmetry and the agency issue is faced by the lender of SME financing.

In addition, another major risk is credit risk (Beck, Demirguc-Kunt & Peria 2008). Credit risk means the borrowers inability to pay the loan with interest as it becomes due. In the first stage, the risk is the loss of interest and principal. In the second stage, the flow of cash can be disturbed and can increase the collection cost. The most important reason of credit risk in financing is that information is incomplete (information asymmetry) because it is delayed for all agents, and it is asymmetrically distributed between debt holders and equity holders (Lindset; Lund; Persson 2014).

### **3.2.3.1 The Theory of Information Asymmetry (TIA)**

The main concept of TIA is that one party is better informed than the other (Stiglitz and Weiss's 1981). Asymmetric information, well-known as "information failure", happens when borrower to an economic matter holds better absolute knowledge than the other party. The TIA takes place when the management of the company is more aware of the financial prospects than the investors of the external side (Lopez-Gracia & Sogorb-Mira 2008).

In SME financing, the owner of the firm is greater informed about the financial prospect of the firm, but the same information is not provided to the external investor. So, the information gap between the two parties is created (Holmes et al. 2003). Asymmetric information happens from

lender and borrower's different views about the nature of risk related to finance, which guides to adverse selection and moral hazard (Denis 2004). The latter is reduced through more effective use of 'soft' information, as small institutions are better suited to relationship-based lending than large institutions, whose structures require hard information to flow to a centralized decision making centre (Ely and Robinson 2009).

The lenders of the SME firms rely on the materiality of firm's financial information which is base for assessing the loan (Liberti & Mian, 2009). The other lenders sketch on relationship lending which is assumed as complementing base lending procedures (Udell, 2008; Vos, Yeh, Carter, & Tagg, 2007).

Qualitative information or "soft" information is usually expressed in the form of a personal character, management capability, social character, cultural, environmental, business and marketing (Petersen, 2004 and Udell, 2007). In addition, "hard" quantitative information is borrower's financial information, whether obtained through the financial statements, as well as collecting information directly related to financial condition of the borrower e.g., collateral, condition of assets, capital, profitability and others (Petersen, 2004 and Udell, 2007).

### **3.2.3.2 Agency Theory**

Agency theory developed by Jensen and Meckling in 1976 is used to solve the issues originated among business owners and their agents. The relationship is among shareholders, the owners of the company as principals, and company's executive, as agents. The agent working in favor of the principal in a business is estimated to provide the benefit of the principal devoid of self-interest. There may be cause of conflict due to dissimilar demand of principals and agents. So, the conflict between principals and agents may generate various problems and may spoil working environment within the company. This creates principal- agent problem. This problems between the owner and manager is generally less rigorous in SMEs since both the parties are the same person (Cassar 2004). Since agents and principals are different persons, the problem arises in corporate governance and selection of capital structure in the larger organizations. But this problem is not related to SMEs. However, SMEs with different structure and information asymmetry among firms and banks create a special type of agency issue (Caneghem & Campenhout 2012).

### **3.3 SME financing Gap for Bank Component**

In developing countries, financial market includes both formal and informal credit (Gine, X. 2011). In this research only formal credit is the external source of finance. For this reason banks are considered the major source of external finance in developing countries (Cobham & Subramaniam 1998; Beck & Demirguc 2006). The researcher has developed the question of uneasy participation in the finance market. The banks are at high risk as well as have to incur high transaction cost due to unavailable information called information asymmetry (Abereijo & Fayomi 2017; Ang, J., 1991). The banks consider the SMEs loan as yielding high risk because of scrutinizing and monitoring cost. The

transaction cost is also high for the SMEs compared to those of large organizations due to some fixed cost and small loan amount. (Voordeckers & Steijvers 2006). So, at the time of lending, the bank considers cost ineffectiveness, information asymmetry and transaction cost. Considering these banks are at high risk in SMEs financing.

### **3.3.1 SME financing risk**

At the time of SMEs lending, banks consider systematic risk included in legal environment, rate of interest, natural calamities, exchange rate and unsystematic risk included liquidity risk (Ishtiaq 2015). The high default rate of SMEs loan is another SME financing risk (Yeung 2009). To measure the financial risk bank uses value at risk and capital asset pricing model.

### **3.3.2 Financial Performance Variables of Banks**

Financial performance variables are the measure of how well a firm can use properties from its primary mode of business activities and make profits. The researcher and investors apply financial performance variables to evaluate firms across the same industry. Considering the performance variables of the banks, the management of the banks decides whether to invest their deposited money for earning profit. There is a positive relationship between financial performance variables of banks and loan accessibility to SME firms (Akhigbe & McNulty, 2005; Adofu & Audu, 2010).

### **3.3.3 Lending technologies used by bank**

Bank uses various kinds of lending technologies depending on its betterment to alleviate the financial risk and information asymmetry from SME investment (Gozman et al. 2018; Wu, et al. 201). Among these collateral based lending, relationship lending and different strategy related to loan are very common. Different strategy includes high interest rate and short duration loan.

### **3.3.3.1 Collateral based lending:**

Collateral is the mortgaged property which the borrower gives to the lender as security. If the borrower is unable to repay the loan on maturity, the lender can sell the property to collect the loan with interest. In many developing countries, bank takes collateral with many times higher value of the loan because the value of foreclosing a property can surpass the value of the asset itself. In Mexico and Thailand, the value of the collateral is three to nine times the loan size (La Porta et al, 2001). It also provides signal information to the bank about the riskiness of the project for which the loan is applied for. The borrower offers security as a means of considering the project out of risk class. Credit contract for most commercial bank obliges collateral as security (Leeth and Scott 1989; Berger and Udell 1990).

### **3.3.3.2 Relationship Lending**

A SME with intimate nexus to a bank gets assistance to mitigate asymmetric information (Cheng et al. 2014). Small bank can effortlessly use relationship lending technique in compared to large banks. The loan officer works crucial character in gathering information from suppliers, customers. So, this technique is suitable for the developing countries with small financial market and small banks (Torre et al. 2010).

## **3.4 Conclusion**

The earlier described theories (IAT, POT, AT and TOT) move forward the cornerstone for appreciation of the financing problem from the both point of view of stakeholders. Information asymmetry is one of the most important constraints for SME financing. Due to the shortage of information SMEs are the risky sector for investment. The credit risk associated with high transaction cost makes the SME investment more risky. To avoid the risk, banks have taken a number of initiatives such as high interest rate, asset based lending and short term loan.

Firm's features and characteristics of the owner are the crucial determinants for the SMEs' accessibility to bank credit. The size of the firm along with age is more important due to its contribution in creating real asset and financial permanence.



## **CHAPTER FOUR**

### **Methodology of the Study**

#### **4.1 Introduction**

The research methodology chapter explains measures to be taken to examine a research problem and the rationale for the application of specific measures or techniques used to identify, select, process, and examine information applied to understanding the problem, thereby allowing the reader to critically evaluate a study's overall validity and reliability. The methodology section of this research paper answers two main questions: How was the data collected or generated? And, how was it analyzed?

#### **4.2 Research Paradigm**

Research paradigm consists of ontology, epistemology, theoretical framework and methodology. A research paradigm is a construction of principles and it helps continue a research study. It is formed on the basis of ontology (what is the reality?), epistemology (how do we know something?) and methodology (How does researcher go about finding it out) (Veal 2005). Ontology includes the problem of research while epistemology is a way of adoption of research problem. Positivist and interpretivist paradigms are two main research paradigms (Veal 2005).

Positivist paradigm forms the groundwork of the quantitative methodology which consists of objective, deductive and confirmatory (Michell, J. 2003). In quantitative method, a theory is conducted to test by developing and empirically examining hypotheses by using numerical data to reply the research questions. Positivist paradigm has been used in this research.

### **4.3 Nature of research**

The research is **empirical in nature**. **Quantitative approach** has been drawn on to operate this study. Research reasoning approach of the present study is **deductive**.

### **4.4 Selection of the Sample units**

In quantitative research, using random sampling, a large number of SME owners have been selected to symbolize a part of the population so that each SME owner has the possibility to be selected (Witold, 2016; Antonio, 2018). A random sampling method is used in this research. The sample of the population also wrapped up firms encompassing industries consisting of retail, manufacturing, construction and service industries. Our sample of respondents consists of SME owners, credit officers, professional accountants and academicians. The sample size has been calculated using a formula advanced by Cochran (1963 & 75)

The banking sector of Bangladesh consists of Bangladesh Bank as the central bank, fifty nine scheduled banks and five non-scheduled banks. The scheduled banks comprised of six (06) state-owned commercial banks, three (03) specialized banks, (33) thirty three conventional private commercial banks, eight (08) Islami Shariah-based private commercial banks, nine (09) foreign commercial banks and five (05) non-scheduled banks in Bangladesh. Private conventional commercial banks grasp a major portion of the banking functions which are the main players to meet the credit needs of small and medium enterprises (SMEs) financing. The sample size represented ten (10) conventional private commercial banks such as Brac Bank Limited (here in after Sample\_ One), Mercantile Bank Limited (here in after Sample\_ Two), Prime Bank Limited (here in after Sample\_ Three), Eastern Bank Limited (here in after Sample\_ Four), Dutch-Bangla Bank Limited (here in after Sample\_ Five), IFIC Bank Limited (here in after Sample\_ Six), Mutual Trust Bank Limited (here in

after Sample\_ Seven), Southeast Bank Limited (here in after Sample\_ Eight), United Commercial Bank Limited (here in after Sample\_ Nine) as well as Bank Asia Limited (here in after Sample\_ Ten) and all sample banks are listed under Dhaka and Chittagong Stock Exchanges. The sample banks were selected on the basis of purposive sampling method and on the basis of highest SME loan distributed to the SME firms among the banks.

#### **4.5 Sample Size and Selection of the SMEs Respondents**

The determination of the number of sample size is a regular task for any researcher. Size of the sample is one of the most important among the four inter-related features of a study design that can influence the detection of significant differences, relationships or interactions (Peers, 1996). Inappropriate, inadequate, or excessive sample sizes continue to influence the quality and accuracy of research (Creswell & Stick 2006). The sample size must be exact to obtain statistical values with acceptable confidence intervals. The sample size has a positive effect to predict the population. In multiple regression analysis the suitable size of the sample is calculated by using confidence intervals and sampling error formulas (Wangmo 2014). By using of these formulas, both of too small and too large sample sizes are possible to evade. Cochran's formula is considered especially appropriate in situations with **large populations** (Bartlett, J. et al. 2001).

The Cochran formula is:

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where:

e is the desired level of precision (i.e. the margin of error),

p is the (estimated) proportion of the population which has the attribute in question,

q is 1 – p.

n<sub>0</sub> means sample size

95% confidence level is used for the social-science studies. The corresponding  $Z$  value is 1.96. The provision for 5% margin of error ( $e$ ) is satisfactory in the research (Hopkins & Ferguson 2014). Using statistical formulae for calculating sample size, the sample size was calculated to be about 385 SME firms. The estimated variance of 0.5; precision level of 5%; 95% of confidence level with  $Z$  value at 1.96 are used.

This section considered the different types of respondents for collection of the opinion by using structured questionnaire. For the purpose of this research study, relevant respondents have been selected on the basis of random sampling method. The respondents represent the three broad categories of SMEs namely; Service Sector, Trade Sector and Manufacturing Sector. The respondents comprised of SMEs owners and key persons of the firm. A total number of 400 questionnaires were sent to the respondents for this study.

#### **4.6 Selection of the Study Period**

The present research study has covered a period of ten years starting from 2008 to 2017 and this period has been selected on considering share market scam, deposit crisis period of the commercial bank and normal economy period.

#### **4.7 Types of Data and their sources**

In order to accomplish the research study, researcher has gathered necessary information from both primary and secondary sources.

##### **4.7.1 Primary Sources**

Primary data play an important role in research work. The primary data have been collected by interview method through semi-structured

questionnaire distributed to SME owners, credit officers of sample banks, academicians and accounting experts.

#### **4.7.2 Secondary Sources**

Secondary data are relevant for the present research study which has been obtained from the audited annual reports of the sample private conventional commercial banks in Bangladesh. In addition, the relevant secondary data also have been collected from different sources like journals, magazines, newspapers, the publications of Bangladesh Bank, Bangladesh Bureau of Statistics, Ministry of Industries, SME foundation, MIDAS, Financial institutions, Bangladesh Economic Review, Bangladesh Economic Survey, Bangladesh Bank Bulletin, Statistical Year books, Economic Advisor's Wing, Ministry of Finance and from other SME related organizations. Secondary data source can also include annual reports of concerned institutions such as Bangladesh Economic Survey, BBS, Financial Institutions, and SMEs. Internet, electric media have been used as secondary sources of data.

#### **4.8 Methods of Data Collection**

Researcher has followed interview method to collect necessary primary information. The secondary data have been collected from websites of respective financial institutions.

#### **4.9 Pilot survey and Questionnaire Development**

Firstly the researcher has prepared a draft Semi-structured questionnaire for the SME owners or managers. The investigator personally collected three sample units to validate the draft questionnaire. Then the questionnaire has been confirmed. The semi-structured questionnaire for the SMEs owner or manager was divided into three parts. The first section comprised of profile information of the respondents. The next

section comprised of profile information of the SME firms. The last section is related to the financial information of the SME firms. Researcher embraced different questions in the questionnaire on the basis of objectives and hypotheses of the study.

The another set of draft questionnaire was prepared for collecting the expert's opinions regarding the influencing factors of SMEs financing in the different sectors by the sample commercial banks in Bangladesh. The questionnaire has been confirmed after pilot survey of five sample units. The questionnaire was divided into two parts. The first section comprised of profile information of the respondents. The next section comprised evaluation of the different influencing factors of SME financing. Likert type five-point rating scales used in this questionnaire for measuring the opinions of the selected respondents regarding the different aspects of SME financing where 5 stands for strongly agree, 4 stands for I agree, 3 stands for I am neutral, 2 stands for I disagree and 1 stands for I strongly disagree.

#### **4.10 Hypothesis development**

A research hypothesis is a exact, clear, and testable proposal about the probable result of a research study based on a particular feature of a population. Hypotheses permit us to decide whether our theory is correct or not. In this research, the researcher is typically looking for some types of dissimilarities or changes among groups. In our study, we are testing the difference between credit accessibility and different influencing factors. A study prefers to apply hypotheses to point out different types of association among the different variables selected from the various literatures (Creswell and Plano-Clark, 2007). The hypotheses formed are based on the literature in the forms of different or directional hypotheses,

a potential aftermath is prognosticated in the appearance of null hypotheses that express that there is no relationship between the variables (Wangmo 2015).

### **Hypothesis 1: Loan Repayment Capacity**

The term loan Repayment Capacity refers to the borrower's ability to refund the debt on time. Specifically, the phrase "ability to repay" was used in the 2010 Dodd-frank Wall Street Reform and Consumer Protection act to describe the requirement that mortgage originators substantiate that potential borrower can afford the mortgage they are applying for. The objective of financial organizations is to earn profit and their main apprehensiveness with the investment in SME financing is the recovery of loan though inadequate financial information is supplied by the SMEs. Whether the SME firms will be able to take loan from any financial institution is related to the repayment capacity of the firm which is measured in terms of firm's asset tangibility (Bester 1987; Steijvers, Voordeckers & Vanhoof 2010; Uchida 2011). The firm's growth, development and their profitability are the significant measurement for investment decision (Gondzik 2015). The financial institutions use collateral as pledge widely taken up as a risk management strategy against the loan (Jimenez, Salas & Saurina 2006; Ono & Uesugi 2009). Due to Basel the financial organizations have selected the SME as client from risk point of view for lower requirements in capital, efficiency and profitability gains (Altman, Saboto and Wilson, 2009). So, the commercial banks did not provide credit to the SME firms in the absence of information asymmetry and credit risk (Carpenter & Petersen 2002).

Hence, the effect of internal finance and collateral on getting loan is examined as hypothesis 1:

H<sub>1</sub> – The access to get bank loan is interconnected to the loan payment ability of the borrower SME firms (Internal finance, Collateral and Profit)

### **Hypothesis 2: SME Financial Information**

The shortage of information is one of the major problems in SMEs firm. The advantage of financial information is a great accessibility to credit (Allee and Yohn, 2009). Incomplete information has a negative effect on accessibility to bank loan and the information of financial statement is positively related to bank loan (Caneghem and Campenhout, 2012). The information asymmetry is the largest problem in SMEs for the lack of SMEs' inappreciable practices in accounting. It is evident that the banks correlate financial information opacity of SMEs directly with high threat in loan accessibility (Caneghem & Campenhout 2012). Different authors like Brent and Addo (2012) restated the significance of the financial information to prospective investors to make credit suitability. Information based lending allows the commercial banks to estimate and supervise SME financial activities and achievement, minimizing their hazard and charge.

So, the impression of a firm's accounting records on its ability to get to bank loans is examined by hypothesis 2:

H<sub>2</sub> – The ability to get bank loan is interrelated to the quality of the financial information maintained by the firm.

### **Hypothesis 3: Loan Characteristics**

Denoted from previous studies, the banks way out to rigid lending terms (such as asset structure and high rate of interest) and to downsize the risk of lending to SMEs (Chittenden, Hall & Hutchinson 1996). SMEs' insufficient financial information and high rate force the financial



institutions at high level. (Liu, Margaritis & Tourani-Rad 2011; Allee & Yohn 2009). However, features of loan for limited access to bank credit have been identified.

So, the association between the loan characteristics in respect to rate of interest and duration of loan and SMEs' ability to get access to loan is hypothesized as:

H<sub>3</sub> – The ability to get access to bank loan is associated to the characteristics of the proposed loan (rate of interest and term of bank loan)

#### **Hypothesis 4 and 5: SME and Owner Characteristics**

A significant relationship exists between financial structure and profitability, asset structure, size, age (Chittenden, Hall & Hutchinson 1996; Hyytinen & Vaananen 2006). The pecking order theory illustrates the capital structure of an organization in terms of its preference and accessibility to owner's capital and financing from the external sources (Beck, Demirguc-Kunt & Singer 2013). From the past studies it has been recognized that the firm's sector, age, size and its owner's features are significant in getting accessibility to external debt from bank (Neeley & Auken 2009; Romano, Tanewski & Smyrniotis 2001). The owner's characteristics include gender, educational qualification and age of the owner (Beck, Demirguc-Kunt & Peria 2008). These firm's features and owner's features pressured firm's accessibility to get access to external finance. Hence, hypothesis 4 and 5 examine the association between firm and owner related attributes and accessibility to bank loan.

H<sub>4</sub> – The ability to get access to bank loan is associated to the firm's attributes (size, age and sector).

H<sub>5</sub> – The ability to get access to bank loan is correlated to the firm owner's characteristics (age, gender and educational qualification).

#### **Hypothesis 6: Financial Performance Variables of Banks**

There is a significant relationship between financial performance of the banks and accessibility to bank loan. The financial organizations have to enclose against the recognition of default loans to enhance the performance and to access to bank loan. The percent of default loan is lower in case of SMEs as compared to that of large organizations (Fredriksson & Moro 2014; Asantey & Tengey 2014).

H<sub>6</sub> – The accessibility to bank loan is correlated to the bank's financial performance.

#### **4.11 Multiple Linear Regression Model**

An econometric model specifies the statistical and mathematical relationship that is believed to hold between the various economic quantities pertaining to a particular economic phenomenon. In the simplest terms, econometricians measure past relationships among such variables. Multiple linear regression (MLR) uses numerous independent variables to forecast the results of a response variable. The objective of MLR is to model the linear relationship between the independent variables and dependent variable. MLR is a widely used statistical tool for examining the relationships among various dependent and explanatory variables of the study (Cohen, Cohen, West & Aiken 2013).

#### **4.12 Analysis of Data by Using Different Statistical Tools**

After editing and processing collected data have been analyzed by using mean, frequency distribution, Standard deviation (SD), Coefficients of Variance (CV), Ramsey's Tests for Model Specification Error, Linktest for Model Misspecification Error, Growth Rate (GR), Simple and Multiple Regression, T-test, Chi square test and ANOVA test. Researcher has used SPSS programme in tabulating and processing data.

#### **4.13 Reliability and Validity Test**

The data that have been collected for the particular study are not always free from doubts. To ensure the right result of the research, the reliability test has to be done. The researcher has used Cronbach Alpha test for ensuring the reliability and validity of collected data.

#### **4.14 Development of the Research Model**

The academicians and professionals are much worried in the areas of monetary theory about debt policy decisions in companies. The researchers have taken their attention to the small firms recently. The researchers such as Van der Wijst (1989) or Michaelas et al. (1999) have started the base for the research development line on capital structure of SMEs. But development is in its initial phases. Some researchers like Ocana et al. (1994), Boedo and Calvo (1997) and Lopez and Aybar (2000) have done some work in this sense.

The monetary theory on corporate capital structure is gigantic. Considering the capital structure as a base SMEs' capital structure is examined. (Leary & Roberts 2010; Mateev, Poutziouris & Ivanov 2013). This research is targeted on firm's capital structure by examining the financial leverage (debt ratio) on POT or TOT theories. The work done by Sunder and Myers in 1999 is based as groundwork for the research on

capital structure. The measurement of capital structure is done by the factors such as profitability, tangibility and growth on the leverage of SMEs. So the capital structure of the firm developed by Sunder-Myer's model is presented as:

$$DA = \beta_0 + \beta_1 \text{ Size} + \beta_2 \text{ Profitability} + \beta_3 \text{ Asset Tangibility} + \beta_4 \text{ Growth Rate} + \beta_5 \text{ Liquidity} + \beta_6 \text{ Dividend Payout} + \varepsilon$$

A customized edition of POT has been recommended for the shortage of information essential to measure risk (Mac an Bhaird & Lucey 2009; Van Caneghem & Van Campenhout 2010). With the help of this model, the researcher has developed a model considering firm level quantitative variable.

$$DA = \beta_0 + \beta_1 (\text{Ability to Pay the Loan}) + \beta_2 (\text{Profitability}) + \beta_3 (\text{Firm's Financial Information}) + \beta_4 (\text{Loan Attributes}) + \beta_5 (\text{Firm Attributes}) + \beta_6 (\text{Owner Attributes}) + \beta_7 (\text{firm taxation}) + \varepsilon \dots \dots \dots \text{Equation 1}$$

Where:  $DA = FL = TD/TA$

DA = Debt Accessibility

FL = Financial Leverage

TD = Total Debt

TA = Total Asset

$$DA = \beta_0 + \beta_1 (\text{Internal Finance or Owner's Capital} + \text{Collateral of the loan}) + \beta_2 (\text{Financial Information of the firm}) + \beta_3 (\text{Interest rate of the Loan} + \text{Duration of the loan or Loan Term}) + \beta_4 (\text{Age of the Firm} + \text{Size of the Firm} + \text{Firm Sector}) + \beta_5 (\text{Age of the Owner} + \text{Gender of the Owner} + \text{Educational Qualification of the Owner} + \text{Ownership Style of the Firm}) + \beta_6 (\text{firm taxation}) + \varepsilon \dots \dots \dots \text{Equation 2}$$

On the basis of equations 1 and 2, the MLR research model for the study considering the SMEs and banks factors is prescribed as:

$$DA = \alpha + \beta_1 INTFIN + \beta_2 COLL + \beta_3 PROFIT + \beta_4 FININFO + \beta_5 INT + \beta_6 TERM + \beta_7 AGEF + \beta_8 SIZEF + \beta_9 SECF + \beta_{10} AGE0 + \beta_{11} GENO + \beta_{12} EDUO + \beta_{13} TYPEO + \beta_{14} TAXATION + \varepsilon$$

#### 4.15 Dependent Variable Definition

In mathematical modeling, statistical modeling and experimental sciences, the values of dependent variable depend on the values of explanatory variables. The dependent variable expresses the result or outcome whose variation is being studied, tested and measured. These variables are expected to change as a result of an experimental manipulation of the independent variable or variables. The debt accessibility (DA) is the dependent variable used for the research model. Debt accessibility is the financial leverage. It is determined by the total loan or credit of the firm divided by the total asset of the firm. The size of the total loan amount taken from the banks or any other financial institutions is called Total debt of the firm. Total non-current assets and total current assets are called the total assets. In the study financial leverage i.e., total debt divided by the total asset is the measurer of SMEs' ability to get debt accessibility (Michaelas et al. 1999; Abor & Biekpe 2009).

#### 4.16 Independent Variables Definition

An independent variable is a variable that is changed or controlled in a scientific experiment. It represents the basis or grounds for an outcome. Independent variables are the variables that the experimenter changes to test the variability of their dependent variable. A change in the independent variable directly causes a change in the dependent variable. Independent Variables are defined as a characteristic that the researcher

can manipulate to identify a particular factor. Independent variables are also known as factor or prediction variable. The fact about the independent variable is that the participants of the experiment do not change it. Only the researchers who are conducting the experiment are allowed to control and change it. Multiple levels can arise in an experiment due to independent variables. Having at least two levels in an experiment is necessary. In any experiment, there must be at least one independent variable. It is advisable to have at least two independent variables in an experiment. This is because independent variables can start interacting with each other, giving rise to complex behavior. Some independent variables have been identified from literature review and conceptual framework to identify the ability of debt financing in SME firm.

The independent variables identified from literature review and conceptual framework are INTFIN, COLL, PROFIT, FININFO, INT, TERM, AGEF, SIZEF, SECF, AGEO, EDUO, TYPEO AND TAXATION.

The explanation is given below:

INTFIN	= Owner's Capital
COLL	= Collateral Size
FININFO	= Financial Information of the firm
PROFIT	= Firm's ability to earn profit
INT	= Interest rate of the loan
TERM	= Duration to pay the loan
AGEF	= Firm's Age
SIZEF	= Firm's Size
SECF	= Firm's Sector
AGEO	= Owner's Age
GENO	= Owner's Gender

EDUO	= Owner's Educational qualification
TYPEO	= Type of owner of the firm
TAXATION	= Tax paid to Govt. by the firm
$\alpha$	= Slope (intercept term)
$\beta$	= Slope (regression coefficient)
$\varepsilon$	= The Unobserved Error Component

According to the trade-off theory, the older firms with more visibility on the market and more stable competitive position with less information asymmetry problems to external investors. So, older firms have less bankruptcy probability compared to younger firms. As a result, firm age and leverage have a positive relation. But, according to the pecking order theory firm age and leverage have an opposite relation. Because older firms have had time to accumulate funds and, hence, they have less need of external resources. The empirical literature highlights results consistent with Pecking Order Theory (Mac an Bhaird & Lucey, 2010; Michaelas et al., 1999). Firm age has a positive effect on firm performance and this special issue offers an exhaustive review of the literature and a novel collection of evidence on the effects of firm age on performance, including a special focus of interest on innovation performance, financial performance, exports, survival and growth. (Coad, Holmb, Krafft, Quattrarocde2015). The business organization's age is elementary in the study of SMEs' capital structure (Bhaird, 2010). For these reasons, the finance providers such as banks assess the ability to get credit and status of the SMEs over sometime. According to Berger and Udell (1998), life cycle of the business demands different types of financing. When the banks examine the ability to take credit, they consider whether the firm is in developing or maturing stage. The initial capital for the start-up firms generally comes through owner's capital, friends and relatives (Faridah &

Madeline, 2004). At growth and maturity stage of the companies, various kinds of debt requirement become important until the company is prepared to go to the capital market and acquire external financing (Berger & Udell, 1998; Wijst & Thurik, 1993). The age of the firm is measured by the number of years the firms was in operation (Esperança, Gama, & Gulamhussen, 2003; Abor, 2007; Ramlall, 2009).

**The INTFIN** is the amount that a person or firm raises fund to begin or expand operations. The internal funds often form a firm's seed money; that is, one may start a firm with one's own funding, from family and friends rather than with a loan or an IPO without any extra cost involved.

The **COLL** is the asset that a borrower gives to lender as security for a loan. If the borrower is not able to repay the lent amount including interest, the lender can seize the collateral and sell it to recover the whole amount. The collateral that is precious property owned by borrower is mortgaged to the lender agreeing that the asset will be sold if the debt is not paid back. Loan with longer time maturity are more likely to be collateralized than short term loans (Rahman, Belas, Kliestik and Tyll 2017).

The **FININFO** is the financial statement prepared by the organization. The firms retain financial statements namely 'statement of financial position', 'profit and loss statement', 'Statement of Cash Flow'. The SME firm faces stringent credit conditions from the commercial banks because it is contended that the firm's financial information are not transparent and usually cannot produce audited financial statement (Berge, Udell 2002).



The **INT** is the interest rate charged by the banks on the borrowed amount taken by the firm.

The **TERM** is defined as the time the loan taken. For this research, loan term has been classified into three categories such as short term loan of 1-3 years, mid-term 3-5 years and long term loan of more than 5 years.

The **Size** among the factors has influence on financing decisions. It means whether the firm is small or medium enterprises. Size of the firm is among the significant variables (Romano, Tanewski, and Smyrnios 2001).

The **Liquidity** is a significant variable used to determine a firm's financial ability to settle the current debt obligations without any external debt. Liquidity ratios measure a company's ability to pay debt obligations and its margin of safety through the calculation of metrics including the current ratio, quick ratio, and operating cash flows (Kenton, Hayes 2019). The relationship between the profitability and liquidity is negative (Brealey and Myers, 1988). According to Kila and Mansor (2009), the relationship between liquidity and capital structure need to be considered in the view that liquidity has a significant impact on debt ratios.

As per Pecking Order Theory, **profitability** will show the stage of cash sufficiency and less dependence on debt. Therefore, this theory predicts that relationship between profitability and financial leverage is negative (Myers, 1984). However if the market is efficient, the relationship will be positive (Jensen, 1986).

According to Modigliani and Miller (1963), company would prefer to take debt financing for the **tax** deduction of interest payment. Despite the broad consensus among the previous researchers regarding the positive impact of tax on leverage the empirical evidence stay uncertain. In fact

Myers (1984) claimed that there were no studies that clearly showed on how company tax status affects the company debt policy.

#### **4.17 Small and Medium Enterprises (SMEs)**

The definition of SMEs varies widely in South Asia. Some countries define the SMEs in terms of asset value excluding cost of land and building or only land, others define them in terms of number of employees. A number of countries recognize micro category of enterprise. India, Bhutan and Nepal are more delicate towards smallest players in the market and developed a category of tiny or micro enterprise. The maximum limit of asset for tiny enterprise in India is only Rs. 2.5 million which is progressive in terms of ensuring access to industrial policy 1982, industrial policy (revised) 1986, industrial policy 1991, industrial policy 1999, industrial policy 2001, and industrial policy 2005 to provide special support. Such special categorizations within the SMEs create scope of facilitating this important cluster of the economy with more care.

The latest update definition of SMEs by Bangladesh Bank (BB) is in consistence with the National Industrial Policy 2016 and set a limit to the amount of credit they can avail. In addition, banks must provide for SMEs 20 percent of the loans they have given out in 2017 and will raise it to 25 percent by 2021.

##### **4.17.1 Manufacturing Enterprise**

**Small enterprise:** An enterprise is small enterprise, if the cost of fixed asset in current market prices is between 75 lakh to 15 crore and total number of employees are between 31-120. The total loan limit is up to 20 crore.

**Medium enterprise:** An enterprise would be treated as medium, if the cost of fixed asset in current market prices is between 15 crore to 50 crore and total number of employees are between 121-300 (garments 1000 minimum). The total loan limit is up to 75 crore.

#### 4.17.2 Service Enterprise

**Small enterprise:** An enterprise is small enterprise, if the cost of fixed asset in current market prices is between 10 lakh to 2 crore and total number of employees are between 16-50. The total loan limit is up to 5 crore.

**Medium enterprise:** An enterprise is small enterprise, if the cost of fixed asset in current market prices is between 2 crore to 30 crore and total number of employees are between 51-120. The total loan limit is up to 50 crore

#### 4.17.3 Trading sector

An enterprise is small enterprise, if the cost of fixed asset in current market prices is between 10 lakh to 2 crore and total number of employees are between 16-50. The total loan limit is up to 5 crore.

Enterprise	Fixed assets excluding land and building	Total number of employees	Loan limit
Small	Tk. 75 lakh-15 crore (Manufacturing)	31-120	20 crore
	Tk. 10 lakh-2 crore (service)	16-50	5 crore
Medium	Tk. 15 crore-50 crore (Manufacturing)	121-300 (Garments 1000 min)	75 crore
	Tk. 2 crore-30 crore (Service)	51-120	50 crore

(Source: Bangladesh Bank)

#### **4.19 Financing**

Finance is a field that deals with the study of investments. It includes the dynamics of assets and liabilities over time under conditions of different degrees of uncertainties and risks. Finance can also be defined as the science of money management. Market participants aim at pricing assets based on their risk level, fundamental value, and their expected rate of return. Finance can be broken into three sub-categories: public finance, corporate finance and personal finance.

#### **4.20 Conclusion**

This chapter includes research methodology based on the research paradigm. The research is **empirical in nature**. **Quantitative approach** has been drawn on to conduct this study. Research reasoning approach of the present study is **deductive**. Since it is quantitative in nature, statistical and mathematical techniques form an integral part of the positivist research paradigm. Positivist paradigm has been used in this research.

The research model was developed from the conceptual framework in accordance with multiple linear regression equation with the dependant variable, debt accessibility and independent variables related to the firms, owners and the banks. The explanatory variables are Owner's Capital, Collateral Size, Financial Information of the firm, Firm's ability to earn profit, Interest rate of the loan, Duration to pay the loan, Firm's Age, Firm's Size, Firm's Sector, Owner's Age, Owner's Gender, Owner's Educational qualification, Type of owner of the firm, Tax paid to Govt. by the firm. The definition of SME by Bangladesh bank has been used here.

The research has been conducted using primary population which is SME owners. The sample survey considering three industrial sector namely trade, manufacturing and service sector is carried out on 400 SME

owners. The questionnaire is prepared reviewing various literatures and met the necessities of the validity and reliability of the questions to collect free from bias.

## **CHAPTER FIVE**

### **Present Scenario of SMEs in Bangladesh and the financing Practices of Sample Banks**

#### **5.1 Introduction**

In most of the developing countries, the private sector economy totally is full of SMEs and the contribution of SMEs has contributed a very significant proportion to GDP and employment generation in the national economy. SMEs play a major role in economic development in every county (Chowdhury, Azam and Islam, 2013). SMEs universally have been contributing a significant role in encouraging economic growth as well as industrial production. In developing countries, SMEs are believed as strength for long term economic growth because of their contribution to creating employment, developing local technology, increasing entrepreneurship and promoting amalgamation with large-scale industries. SMEs are the leading form of business organization in all developing countries and SMEs are known as engine of economic development and employment creation for long term industrialization (Quamruzzaman, 2015). By meeting the local demand, SMEs export surpluses of commodities. SMEs sector is a crucial one for local value additions and generation of employment facilities. Due to the potential contribution and creation of employment facilities, the SME firms have drawn concentration to the policy makers. At present, banks are interested to supply fund in this sector. The central bank is maintaining several funds such as Bangladesh Bank fund, IDA fund, ADB fund, JICA fund, Refinance Scheme for Agro Based Product Processing Industries, Refinance Scheme for New Entrepreneurs and Islamic Shariah Based Refinance fund. These funds are being used as revolving fund. In order to

avail themselves of the refinancing facilities, participatory agreement has already been signed between Bangladesh Bank and 22 Banks and 24 financial institutions. At present, 21 banks and 22 financial institutions are availing of this refinancing facility. The following Tables provide the SME financing by the financial institutions in Bangladesh.

**Table No. - 5.1**

Table showing the target and achievement of SME financing by the financial institutions in Bangladesh during the years from 2008 to 2017

(BDT in Crore)

Year	Target	Different Sectors			Total	Achievement (%)
		Trading	Manufacturing	Service		
2008	-	16895.12	11256.52	3376.01	31,527.65	-
2009	-	45920.56	25689.88	4160.22	75,770.66	-
2010	38858.12	35040.53	15147.72	3355.68	53543.93	138
2011	56940.13	34382.64	15805.95	3530.85	53719.44	94
2012	59012.78	44225.19	21897.33	3630.90	69753.42	118
2013	74186.87	56703.72	24016.64	4602.89	85323.25	115
2014	89030.94	62767.18	30246.20	7896.77	100910.15	113
2015	104586.49	73551.78	30462.02	11856.68	115870.48	111
2016	113503.00	90547.57	35168.63	16219.19	141935.39	125
2017	133853.59	26580.45	9626.84	4413.25	202410.85	151
Avg.	83746.49	48661.47	21931.77	6304.24	93076.52	120.63
SD	32282.44	22486.79	8721.00	4407.65	50250.22	17.49
CV	38.55	46.21	39.76	69.92	53.99	14.50

(Source: Bangladesh Bank)

Table No. 5.1 shows the target and achievement of SME financing in the different sectors by the financial institutions in Bangladesh in respective years from 2008 to 2017. The average target is 83746.49 crore and the financial institutions did not have any target of giving SME loan in case of years 2008 and 2009 over the study period. The Table reveals that the



achievement rate is higher than that of target of giving SMEs loans in the different sectors by the financial institutions in Bangladesh over the study period. The Table also reveals that the total SMEs financing in the different sectors have shown mixed tendency during the study period. From the above discussion it is evident that the financial institutions in Bangladesh have given more concentration of SMEs financing in different sectors.

## **5.2 Measures taken by Bangladesh Bank for SME Development**

Several schemes and programmes have already been introduced by Bangladesh Bank to thrive and enlarge SMEs. Bangladesh Bank, International Development Association (IDA) and Asian Development Bank (ADB) have funded to facilitate for the expansion of SME. With these, BB has arranged institutional facilities, 'SME Dedicated Desk' and 'SME Service Centre'. BB has also arranged extraordinary services for women entrepreneurs. For the actual economic development, it is urgently necessary to encircle all sectors of people through credit facility. But the reality is that SMEs sector has not been helped properly.

For this reason BB has launched a new department 'SME and Special Programmes Department' only accountable for preparing policy, making easy fund, supervision and promoting of private enterprise in this sector. Some guidelines developed by the new department are as follows:

1. For the development of the SMEs sector, SME loan disbursement target has been fixed for 2010, the first time in Bangladesh. Based on the target the loan has been distributed to SMEs sector.
2. Maintaining 'Area Approach Method' the banks have distributed their target in different regions, branches and sectors to achieve the ultimate goal.

3. Every bank will disburse its target loan by maintaining its own business strategy and following minimum documentation formalities to make sure simple and quick loan authorization.
4. Small firms will be given priority.
5. Small firms will get loan from Tk. 50,000 to Tk. 50, 00,000.
6. To enhance the contribution of women in the overall economic development and to enlarge the participation of women in trade, manufacturing and service sector, potential women will be given priority in SMEs loan disbursement sector.
7. Priority will be given in obtaining application form from SMEs and resolve the distribution within rational time.
8. ‘Women Entrepreneurs’ Dedicated Desk’ will be set in every bank with appropriate manpower. A SME financing trained lady officer will be appointed in the desk as chief. The list of ‘Women Entrepreneurs’ Dedicated Desk’ will be sent to the ‘SME and Special Programmes Department’ of Bangladesh Bank.
9. Banks can approve up to Tk. twenty five lakh to women entrepreneurs against individual pledge.
10. If the bank can fulfill the target of SMEs loan disbursement, it will be figured out as dipstick for sanction of fresh branch of the bank. Approval for the new branch will be authorized as ‘SME/Agriculture Branch’ in lieu of ‘SME Service Centre’.
11. The interest rate of SMEs loan will be fixed sector-wise by the bank and it will be notified to the BB and will be confirmed disbursement of refinanced fund.
12. BB will arrange different types of training program.

### **5.3 Monitoring of SME loan**

Bangladesh Bank has developed three stage monitoring systems. They are Bangladesh Bank Head office, Bangladesh Bank Branch office and respective bank.

### **5.4 Objective of SME loan Monitoring**

- ❖ To attain the target of distribution of SME credit;
- ❖ To attain the development of manufacturing, service and trade sector.
- ❖ To enhance women entrepreneurs and employment creation;
- ❖ To supply the necessary loan to SMEs without vexation;
- ❖ women Entrepreneurs are in Special care in funding;
- ❖ To make certain in cluster-based loan distribution,;
- ❖ To attain significant collection of the distributed loan;

### **5.5 Techniques of SME Loan Monitoring**

**5.5.1 Monitoring in Bangladesh Bank Head office:** Extensive supervision strategies have been taken by the Bangladesh Bank to observe the exclusive SME loan disbursement. For this reason, ‘SME Loan Monitoring Cell’ has been established in the central bank’s department namely ‘SME and Special Programmes Department’. The off-site & on-site supervision have also been launched.

**5.5.2 Presentation of Statements:** To supervise the development progress, the banks will present the statement in format ‘Annexure-D & E’ related to SME loan. The statement will be presented quarterly basis to the central bank within fifteen days of the next month.

**5.5.3 Supervision in Bangladesh bank's Branch Offices:** Like Head office, Monitoring Cell has been set up in different branches of central bank to supervise credit allocation and to collect disbursed loan.

**5.5.4 Branch Level Monitoring of Respective Bank:** Effective system of SMEs loan monitoring has also been set up in the branch level of the respective bank. The monitoring system ensures to supply credit to the entrepreneurs in time as per prescribed SME credit rules.

**5.5.5 Supervision by the commercial bank's head office:**

- a) The higher authorities of the commercial bank must set their vision regarding SMEs loan.
- b) Generally, SME loan is distributed to the SME customer by taken into consideration of customer's credit worthiness. With the prevailing loan procedures, banks will consider the following matters:
  - To make Application Form easier;
  - To guide properly for submitting the application form to stay away from delay;
  - All necessary documents in one instance;
  - To fix the appropriate time line for credit disbursement;
  - The Credit Information Bureau (CIB) issued by the central bank to confirm the present status of applicants should be sent on priority;
- c) The committee is to be set up to supervise SME loan distribution and to settle field level problems quickly.
- d) SME concerning issues would be incorporated in the upcoming meeting to solve quickly.
- e) The SME credit officer may be awarded on performance basis.
- f) Necessary training program can be organized for the SME credit officer.

### **5.5.6 Monitoring System of Regional Offices:**

- a. A committee or unit can be formed to supervise SME loan at regional office. The committee member will look over SME loan project to supervise the loan distribution and recovery progress.
- b. The zonal office will play as coordinator between head office of the bank and the branches.
- c. The regional committee may organize meeting with the respective officer to make sure that no potential applicant will get any vexation.

**5.5.7 Works at the Bank Branches:** The progress of the SME loan distribution mainly depends on the perfection of the branches. Branches will execute the activities as below:

- a. The manager will identify the actual demand for SME credit and make arrange to distribute to the appropriate sector.
- b. To convince the entrepreneurs through publicity;
- c. To arrange suitable SME credit applicant by diaphanous procedure and within a short period;
- d. To supervise the appropriate usage of credit;
- e. To accelerate the deliverance function of SME credit.

### **5.6 Target Based Lending**

For the first time in the history of the financial sector of Bangladesh, the central bank has taken initiative of target based SME lending in 2010. The most important thing is that the target is not set by the Bangladesh Bank. The bank itself has to set the target. The Alliance for Financial Inclusion (AFI) has recognized this target based lending initiatives as “best practices” of SME financing globally.

### **5.7 Bangladesh Bank's refinancing support to provide low cost funding to SMEs**

The main problem for the development of SMEs is shortage of sufficient fund. Therefore, the central Bank is promised to get credit easily reachable. With a view to solve the fund crisis, refinance facilities to commercial banks and non bank financial institutions have been developed by Bangladesh Bank. For the development of SME sector, Bangladesh Bank is providing refinance facilities to banks and NBFIs against their disbursed SME credit from its own fund along with the assistance of ADB, IDA, and JICA. At present, refinancing from five funds is running e.g., Bangladesh Bank Fund, JICA FSPDSME Fund, New Entrepreneurs Fund, Agro Fund, and Islamic Shariah Fund.

### **5.8 Documents required by SMEs for getting loan from the banks**

Getting SME loan or any kind of Bank loan is, in a word, complicated. In a sense it's okay to be complicated because giving money is not a good feeling for anyone but banks. Wherever applicant goes to a bank for loan the banker just behaves like they are not willing to give the applicant loan but in hindsight they actually love to give loan but they love documents more. The applicant doubts whether bankers love anything more than papers named by documents. In Bangladesh it's more than true that applicant needs a bunch of documents to get loan. To take SME loan from any Bank or financial institution applicants need numbers of documents that many of SME loan seekers don't know. Here goes a checklist of documents applicant needs to get SME loan from a bank or Financial Institution:

1. Trade license issued by local Government.
2. Current bank account in the name of Business organization.

3. National Identity Card of the entrepreneur.
4. Drug License for drug business.
5. Certificate of Bangladesh Standard and Testing Institute for food producing companies.
6. Permission letter from Deputy Comptroller for Diesel and Acid Business.
7. Certificate of Petro Bangla for Diesel and Octane Business.
8. Bank statement.
9. Agreement of shop.
10. Tax identification number certificate.
12. Value added tax certificate.
13. Electricity Bill of the owner.
14. Telephone Bill of the owner.
15. Educational qualification certificate.
16. Import Registration Certificate and Export Registration Certificate for Export & Import business.
18. List and total price of fixed asset of the organization.
19. Description of present loan from anywhere (if any)
23. Credit Information Bureau report of Bangladesh Bank
24. Passport size photo of Loan applicant and guarantor
25. Trade License and CIB report of guarantor if guarantor is a businessman.

The prescribed documents are ordinary documents for various types of bank loans. New documents may be necessary depending on bank's demand.

### 5.9 Contribution to GDP by SMEs Financing

The SMEs sector is called the growth engine of economic development in Bangladesh as it is the centric point in economic growth and development. This sector has significant capacity to generate employment opportunity. Today, SME remains the engine of economic growth. Considering the population of the country, SMEs offer large scale employment and income generation opportunities at comparatively low costs and sight investment especially in the remote areas (Maniruzzaman, 2017). The following Table provides the contributions of different sectors to GDP and its growth rate by SMEs financing by the banks in Bangladesh.

**Table No. – 5.2**

Table showing the Contribution of Crops and Horticulture Sector to GDP by SMEs financing and its growth rate in the respective years from 2008 to 2017

(Taka in Million)

Year	Loan Amount	Contribution to GDP (%)	Growth Rate of Loan	T values	SL
2008	542415	9.94		10.330	0.000
2009	642510	10.50	18.45		
2010	682514	8.56	6.23		
2011	919028	10.00	34.65		
2012	1008993	9.56	9.79		
2013	1067941	8.91	5.84		
2014	1179029	8.77	10.40		
2015	1261209	8.32	6.97		
2016	1343222	7.75	6.50		
2017	1437045	7.27	6.99		
Average	1008390.60	8.96	11.76		
SD	308692.76	1.04	9.44		
CV	30.61	11.59	80.32		

(Source: Bangladesh Bureau of Statistics)



Table 5.2 discloses the contributions of crops and horticulture sector in GDP of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of crops and horticulture sector to GDP is 1008390.60 million and its percentage is 8.96 during the study period. The Table also portrays that the average growth rate of contributions of crops and horticulture sector to GDP is 11.76 over the study period. From the aforesaid Table it is evident that the contribution of crops and horticulture sector to GDP is increasing from year to year during the period under study. With a view to seeing whether there is any significant difference between the contributions of crops and horticulture sector in GDP in different years over the study period researcher has conducted one sample t test using SPSS and the null hypothesis is  $H_{0.5.1}$ : There is no significant difference between the contributions of crops and horticulture sector to GDP in different years of financial sectors in Bangladesh. The result shows that t value is 10.330 which is significant at 0.000 level and it indicates that there is significant difference between the contributions of crops and horticulture sector to GDP in different years of financial sectors in Bangladesh over the study period.

**Table No. 5.3**

Table showing the Contribution of Animal Farming Sector to GDP by SMEs financing and its growth rate in the respective years from 2008 to 2017

(Taka in Million)

Year	Amount	Contribution to GDP percentage	Growth Rate of loan amount	T values	SL
2008	124822	2.29		9.639	0.000
2009	142548	2.32	14.20		
2010	179904	2.26	26.21		
2011	201707	2.20	12.12		
2012	229987	2.18	14.02		
2013	253588	2.12	10.26		
2014	276668	2.06	9.10		
2015	298845	1.97	8.02		
2016	331653	1.91	10.98		
2017	360262	1.82	8.63		
Average	239998.40	2.11	12.62		
SD	78737.35	0.17	5.56		
CV	32.81	8.02	44.06		

(Source: Bangladesh Bureau of Statistics)

Table 5.3 presents the contributions of animal farming sector in GDP of financial sectors in Bangladesh during the study period from 2008 to 2017. The average contribution of animal farming sector in GDP is 239998.40 million and its percentage is 2.11 over the study period. The Table also reveals that the average growth rate of contributions of animal farming sector to GDP is 12.62 during the study period. From the previous discussion it can be concluded that the contribution of animal farming sector to GDP is increasing from year to year over the period under study. In order to see whether there is any significant difference between the contributions of animal farming sector to GDP in different years over the study period researcher has conducted one sample t test using SPSS and the null hypothesis is  $H_{05.2}$ : There is no significant

difference between the contributions of animal farming sector to GDP in different years of financial sectors in Bangladesh. The result shows that t value is 9.639 which is significant at 0.000 level. So, the null hypothesis is rejected which means that there is significant difference between the contributions of animal farming sector to GDP in different years of financial sectors in Bangladesh during the period under study.

**Table No. – 5.4**

Table showing the Contribution of Forest and Related Sector to GDP by SMEs financing and its growth rate in the respective years from 2008 to 2017

(Taka in Million)

Year	Amount	Contribution to GDP in percentage	Growth Rate of amount	T values	SL
2008	88524	1.62		8.964	0.000
2009	92584	1.51	4.59		
2010	112549	1.41	21.56		
2011	133952	1.46	19.02		
2012	149810	1.42	11.84		
2013	166050	1.38	10.84		
2014	183985	1.37	10.80		
2015	204942	1.35	11.39		
2016	228271	1.32	11.38		
2017	256676	1.30	12.44		
Average	161734.30	1.41	12.65		
SD	57054.00	0.10	4.94		
CV	35.28	6.78	39.09		

(Source: Bangladesh Bureau of Statistics)

Table 5.4 explains that the contributions of forest and related sector to GDP of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of forest and related sector to GDP is 161734.30 million and its percentage is 1.41 during the study period. The Table also reveals that the average growth rate of contributions of forest and related sector to GDP is 12.65 over the study period. From the above

discussion it is apparent that the contribution of forest and related sector to GDP is increasing from year to year during the period under study. Researcher has conducted t test using SPSS to see whether there is any significant difference between the contributions of forest and related sector to GDP in different years over the study period and the null hypothesis is  $H_{0.5.3}$ : There is no significant difference between the contributions of forest and related sector in GDP in different years of financial sectors in Bangladesh. The result shows that t value is 8.964 and it is significant at 0.000 level which means that there is significant difference between the contributions of forest and related sector to GDP in different years of financial sectors in Bangladesh during the study period.

**Table No. – 5.5**

Table showing the Contribution of Manufacturing Sector to GDP by SMEs financing and its growth rate in the respective years from 2008 to 2017

(Taka in Million)

Year	Amount	Contribution to GDP in percent	Growth Rate of amount	T values	SL
2008	875960	16.00		3.055	0.014
2009	964590	15.70	10.12		
2010	996710	12.50	3.33		
2011	1465027	16.00	46.99		
2012	141894	1.34	-90.30		
2013	163812	1.37	15.45		
2014	184006	1.37	12.33		
2015	198682	1.31	7.98		
2016	2951110	17.00	1385.34		
2017	3418287	17.30	15.83		
Average	1136007.80	9.99	156.34		
SD	1175980.67	7.55	462.27		
CV	103.52	75.54	295.75		

(Source: Bangladesh Bureau of Statistics)

Table 5.5 shows the contributions of manufacturing sector to GDP of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of manufacturing sector to GDP is 1136007.80 million and its percentage is 9.99 during the study period. The Table also portrays that the average growth rate of contributions of manufacturing sector to GDP is 156.34 over the study period. From the aforesaid Table it is evident that the contribution of manufacturing sector to GDP is increasing and decreasing during the period under study. With a view to seeing whether there is any significant difference between the contributions of manufacturing sector to GDP in different years over the study period researcher has conducted one sample t test using SPSS and the null hypothesis is  $H_{05.4}$ : There is no significant difference between the contributions of manufacturing sector to GDP in different years of financial sectors in Bangladesh. The result shows that t value is 3.055 which is significant at 0.014 level and it indicates that there is significant difference between the contributions of manufacturing sector to GDP in different years of financial sectors in Bangladesh over the study period.

**Table No. – 5.6**

Table showing the Contribution of Construction Sector to GDP by SMEs financing and its growth rate in the respective years from 2008 to 2017

(Taka in Million)

Year	Amount	Contribution to GDP in percent	Growth Rate of amount	T values	SL
2008	377420	6.91		6.453	0.000
2009	359620	5.85	-4.72		
2010	385540	4.83	7.21		
2011	570716	6.23	48.03		
2012	683044	6.47	19.68		
2013	824321	6.88	20.68		
2014	908336	6.76	10.19		
2015	1084839	7.16	19.43		
2016	1263532	7.29	16.47		
2017	1461073	7.39	15.63		
Average	791844.10	6.58	16.96		
SD	388045.11	0.78	14.17		
CV	49.01	11.84	83.55		

(Source: Bangladesh Bureau of Statistics)

Table 5.6 describes the contributions of construction sector to GDP of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of construction sector to GDP is 791844.10 million and its average percentage is 6.58 during the study period. The Table also portrays that the average growth rate of contributions of construction sector to GDP is 16.96 over the study period. From the aforesaid discussion it is visible that the contribution of construction sector to GDP is increasing year to year during the period under study. With a view to seeing whether there is any significant difference between the contributions of construction sector to GDP in different years over the study period researcher has conducted one sample t test using SPSS and the null hypothesis is  $H_{05.5}$ : There is no significant difference between the contributions of construction sector in GDP in different years of financial

sectors in Bangladesh. The result shows that t value is 6.453 which is significant at 0.000 level and it indicates that our null hypothesis is rejected which means that there is significant difference between the contributions of construction sector to GDP in different years of financial sectors in Bangladesh over the study period.

**Table No. – 5.7**

Table showing the Contribution of Wholesale and Retail Trade Sector to GDP by SMEs financing and its growth rate in the respective years from 2008 to 2017

(Taka in Million)

Year	Amount	Contribution to GDP in percentage	Growth Rate of amount	T values	SL
2008	881255	16.1		9.452	0.000
2009	1004720	16.3	14.01		
2010	1125424	14.1	12.01		
2011	1213319	13.2	7.81		
2012	1373962	13.0	13.24		
2013	1545974	12.9	12.52		
2014	1725752	12.8	11.63		
2015	1925854	12.7	11.60		
2016	2142574	12.4	11.25		
2017	2439581	12.3	13.86		
Average	1537841.50	13.58	11.99		
SD	514495.40	1.47	1.86		
CV	33.46	10.80	15.52		

(Source: Bangladesh Bureau of Statistics)

Table 5.7 portrays the contributions of wholesale and retail trade sector to GDP of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of wholesale and retail trade sector to GDP is 1537841.50 million and its average percentage is 13.58 during the study period. The Table also presents that the average growth rate of contributions of wholesale and retail trade sector in GDP is 11.99 over

the study period. From the aforesaid Table it is clear that the total contribution of wholesale and retail trade sector to GDP is increasing year to year during the period under study but in percentage it has been decreasing since 2010. With a view to seeing whether there is any significant difference between the contributions of wholesale and retail trade sector to GDP in different years over the study period researcher has conducted one sample t test using SPSS and the null hypothesis is  $H_{0.5.6}$ : There is no significant difference between the contributions of wholesale and retail trade sector to GDP in different years of financial sectors in Bangladesh. The result shows that t value is 9.452 which is significant at 0.000 level and it indicates that there is significant difference between the contributions of wholesale and retail trade sector to GDP in different years of financial sectors in Bangladesh over the study period.

**Table No. – 5.8**

Table showing the Contribution of Finishing Sector to GDP by SMEs financing and its growth rate in the respective years from 2008 to 2017

(Taka in Million)

Year	Contribution	Contribution to GDP in percent	Growth Rate of contribution	T values	SL
2008	198125	3.63		8.576	0.000
2009	227152	3.69	14.65		
2010	250184	3.14	10.14		
2011	284820	3.11	13.84		
2012	318273	3.02	11.75		
2013	369946	3.09	16.24		
2014	423076	3.15	14.36		
2015	475813	3.14	12.47		
2016	530756	3.06	11.55		
2017	596270	3.02	12.34		
Average	367441.50	3.21	13.04		
SD	135491.84	0.24	1.88		
CV	36.87	7.64	14.43		

(Source: Bangladesh Bureau of Statistics)



Table 5.8 expresses the contributions of finishing sector to GDP of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of crops and horticulture sector to GDP is 367441.50 million and its average percentage is 3.21 during the study period. The Table also exhibit that the average growth rate of contributions of finishing sector to GDP is 13.04 over the study period. From the aforesaid Table it is shown that the contribution of finishing sector to GDP is increasing from year to year during the period under study. With a view to seeing whether there is any significant difference between the contributions of finishing sector to GDP in different years over the study period researcher has conducted one sample t test using SPSS and the null hypothesis is  $H_{05.7}$ : There is no significant difference between the contributions of finishing sector to GDP in different years of financial sectors in Bangladesh. The result shows that t value is 8.576 which is significant at 0.000 level and it indicates that there is significant difference between the contributions of finishing sector to GDP in different years of financial sectors in Bangladesh over the study period.

**Table No. – 5.9**

Table showing the Contribution of Hotel and Restaurants Sector to GDP by SMEs financing and its growth rate in the respective years from 2008 to 2017

(Taka in Million)

Year	Contribution	Contribution to GDP in percent	Growth Rate of contribution	T values	SL
2008	64125	1.17		8.067	0.000
2009	69421	1.13	8.26		
2010	76298	0.96	9.91		
2011	82283	0.90	7.84		
2012	97551	0.92	18.56		
2013	112634	0.94	15.46		
2014	130353	0.97	15.73		
2015	149279	0.98	14.52		
2016	170583	0.98	14.27		
2017	193182	0.98	13.25		
Average	114570.90	0.99	13.09		
SD	44913.30	0.09	3.66		
CV	39.20	8.82	27.94		

(Source: Bangladesh Bureau of Statistics)

The Table 5.9 discloses the contributions of hotel and restaurants sector to GDP of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of hotel and restaurants sector in GDP is 114570.90 million and its average percentage is 0.99 during the study period. The Table also portrays that the average growth rate of contributions of hotel and restaurants sector to GDP is 13.09 over the study period. From the aforesaid Table it is evident that the contribution of hotel and restaurants sector to GDP is increasing year to year during the period under study but the contribution is below one percent. With a view to seeing whether there is any significant difference between the contributions of hotel and restaurants sector to GDP in different years over the study period researcher has conducted one sample t test using

SPSS and the null hypothesis is  $H_{05.8}$ : There is no significant difference between the contributions of hotel and restaurants sector in GDP to different years of financial sectors in Bangladesh. The result shows that t value is 8.067 which is significant at 0.000 level and it indicates that there is significant difference between the contributions of hotel and restaurants sector to GDP in different years of financial sectors in Bangladesh over the study period.

**Table No. – 5.10**

Table showing the Contribution of Transport Sector to GDP by SMEs financing and its growth rate in the respective years from 2008 to 2017

(Taka in Million)

Year	Contribution	Contribution to GDP in percent	Growth Rate of contribution	T values	SL
2008	595130	9.68	8.05	7.952	0.000
2009	640020	8.02	7.54		
2010	945711	10.3	47.76		
2011	1127023	10.7	19.17		
2012	1242805	10.4	10.27		
2013	1343166	10	8.08		
2014	1500253	9.9	11.70		
2015	1691650	9.76	12.76		
2016	1870755	9.47	10.59		
2017	595130	9.68	8.05		
Average	1155164.30	9.79	15.10		
SD	459385.07	0.73	12.75		
CV	39.77	7.44	84.41		

(Source: Bangladesh Bureau of Statistics)

Table 5.10 displays the contributions of transport sector to GDP of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of transport sector to GDP is 1155164.30 million and its average percentage is 9.79 during the study period. The Table also shows that the average growth rate of contributions of

transport sector in GDP is 15.10 over the study period. From the aforesaid Table it is evident that the contribution of transport sector to GDP is increasing year to year during the period under study. With a view to seeing whether there is any significant difference between the contributions of transport sector to GDP to different years over the study period researcher has conducted one sample t test using SPSS and the null hypothesis is  $H_{0.9}$ : There is no significant difference between the contributions of transport sector to GDP in different years of financial sectors in Bangladesh. The result shows that t value is 7.952 which is significant at 0.000 level and it indicates that there is significant difference between the contributions of transport sector in GDP to different years of financial sectors in Bangladesh over the study period.

**Table No. – 5.11**

Table showing the Contribution of Real Estate Sector to GDP by SMEs financing and its growth rate in the respective years from 2008 to 2017

(Taka in Million)

Year	Contribution	Contribution to GDP in percent	Growth Rate of contribution	T values	SL
2008	321540	5.89		6.963	0.000
2009	432150	7.03	34.40		
2010	512450	6.43	18.58		
2011	601190	6.56	17.32		
2012	687147	6.51	14.30		
2013	788200	6.57	14.71		
2014	912291	6.79	15.74		
2015	1060609	7	16.26		
2016	1237395	7.14	16.67		
2017	1445392	7.32	16.81		
Average	799836.40	6.72	18.31		
SD	363271.30	0.42	6.17		
CV	45.42	6.23	33.71		

(Source: Bangladesh Bureau of Statistics)

Table 5.11 shows the contributions of real estate sector to GDP of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of real estate sector to GDP is 799836.40 million and its percentage is 6.72 during the study period. The Table also portrays that the average growth rate of contributions of real estate sector in GDP is 18.31 over the study period. From the aforesaid Table it is evident that the contribution of real estate sector to GDP is increasing year to year during the period under study. With a view to seeing whether there is any significant difference between the contributions of real estate sector to GDP in different years over the study period researcher has conducted one sample t test using SPSS and the null hypothesis is  $H_{0.10}$ : There is no significant difference between the contributions of real estate sector to GDP in different years of financial sectors in Bangladesh. The result shows that t value is 6.963 which is significant at 0.000 level and it indicates that there is significant difference between the contributions of real estate sector to GDP in different years of financial sectors in Bangladesh over the study period.

**Table No. – 5.12**

Table showing the Contribution of Auricular Sector to GDP by SMEs financing and its growth rate in the respective years from 2008 to 2017

(Taka in Million)

Year	Contribution	Contribution to GDP in percent	Growth Rate of contribution	T values	SL
2008	755761	13.8		10.061	0.000
2009	877642	14.3	16.13		
2010	974967	12.2	11.09		
2011	1254687	13.7	28.69		
2012	1388790	13.2	10.69		
2013	1487579	12.4	7.11		
2014	1639682	12.2	10.22		
2015	1764996	11.6	7.64		
2016	1903146	11.00	7.83		
2017	2053983	10.40	7.93		
Average	1410123.30	12.48	11.93		
SD	443215.63	1.27	6.88		
CV	31.43	10.18	57.65		

(Source: Bangladesh Bureau of Statistics)

Table 5.12 reveals the contributions of auricular sector to GDP of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of auricular sector to GDP is 1410123.30 million and its average percentage is 12.48 during the study period. The Table also shows that the average growth rate of contributions of auricular sector to GDP is 11.93 over the study period. From the aforesaid Table it is evident that the contribution of auricular sector to GDP is increasing year to year during the period under study. With a view to seeing whether there is any significant difference between the contributions of auricular sector to GDP in different years over the study period researcher has conducted one sample t test using SPSS and the null hypothesis is  $H_{05.11}$ : There is no significant difference between the

contributions of auricular sector to GDP in different years of financial sectors in Bangladesh. The result shows that t value is 10.061 which is significant at 0.000 level and it indicates that there is significant difference between the contributions of auricular sector in GDP in different years of financial sectors in Bangladesh during the study period.

**Table No. – 5.13**

Table showing the Contribution of Industry Sector in GDP by SMEs financing and its growth rate in the respective years from 2008 to 2017

(Figure Taka in Million)

Year	Contribution	Contribution to GDP	Growth Rate of contribution	T values	SL
2008	1013710	16.12		7.746	0.000
2009	1161970	16.48	14.62		
2010	1285730	16.12	10.65		
2011	1465030	16.00	13.95		
2012	1679270	15.91	14.62		
2013	1971270	16.44	17.39		
2014	2232210	16.61	13.24		
2015	2544830	16.79	14.01		
2016	2951110	17.03	15.96		
2017	3418290	17.3	15.83		
Average	1972342	16.48	14.47		
SD	805150	0.46	1.91		
CV	40.82203	2.789	13.2		

(Source: Bangladesh Bureau of Statistics)

Table 5.13 discloses the contributions of industry sector to GDP of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of industry sector to GDP is 1972342 million and its average percentage is 16.48 during the study period. The Table also portrays that the average growth rate of contributions of industry sector to GDP is 14.47 over the study period. From the previous discussion it is evident that the contribution of industry sector to GDP is

increasing year to year during the period under study. In order to see whether there is any significant difference between the contributions of industry sector to GDP in different years over the study period researcher has conducted one sample t test using SPSS and the null hypothesis is  $H_{0.12}$ : There is no significant difference between the contributions of industry sector to GDP in different years of financial sectors in Bangladesh. The result shows that t value is 7.746 which is significant at 0.000 level and it indicates that there is significant difference between the contributions of industry sector to GDP in different years of financial sectors in Bangladesh over the study period.

**Table No. – 5.14**

Table showing the Contribution of Service and Other Sector to GDP by SMEs financing and its growth rate in the respective years from 2008 to 2017

(Figure Taka in Million)

Year	Contribution	Contribution to GDP	Growth Rate of contribution	T values	SL
2008	936455	17.20		7.510	0.000
2009	1096701	17.80	17.11		
2010	1228768	15.40	12.04		
2011	1629184	17.80	32.59		
2012	1911721	18.10	17.34		
2013	2143639	17.90	12.13		
2014	2385810	17.80	11.30		
2015	2710141	17.90	13.59		
2016	3099628	17.90	14.37		
2017	3509329	17.80	13.22		
Average	2065137.60	17.56	15.97		
SD	869596.46	0.79	6.59		
CV	42.11	4.52	41.26		

(Source: Bangladesh Bureau of Statistics)



Table 5.14 discloses the contributions of service and other sector to GDP of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of service and other sector to GDP is 2065137.60 million and its average percentage is 17.56 during the study period. The Table also portrays that the average growth rate of contributions of service and other sector to GDP is 15.97 over the study period. From the aforesaid Table it is revealed that the contribution of crops and horticulture sector to GDP is increasing year to year during the period under study. With a view to examining whether there is any significant difference between the contributions of service and other sector to GDP in different years over the study period researcher has conducted one sample t test using SPSS and the null hypothesis is  $H_{05.13}$ : There is no significant difference between the contributions of service and other sectors to GDP in different years of financial sectors in Bangladesh. The result shows that t value is 7.510 which is significant at 0.000 level and it indicates that there is significant difference between the contributions of service and other sector to GDP in different years of financial sectors in Bangladesh over the study period.

**Table No. – 5.15**

Table showing the Contribution of Service Sector to Employment Generation by SMEs financing and its growth rate in the respective years from 2008 to 2017

Year	Male	Growth Rate	Female	Growth Rate	T values	SL
2008	6876		896		-4.534	0.001
2009	9765	42.02	988	10.27		
2010	14738	50.93	1295	31.07		
2011	10765	-26.96	1199	-7.41		
2012	13640	26.71	1082	-9.76		
2013	22350	63.86	3408	214.97		
2014	34614	54.87	4567	34.01		
2015	35237	1.80	3678	-19.47		
2016	45983	30.50	7167	94.87		
2017	62053	34.95	8730	21.81		
Average	25602.10	30.96	3301.00	41.15		
SD	18292.11	28.32	2802.32	73.49		
CV	71.45	91.45	84.89	178.58		

(Source: Bangladesh Bank)

This Table 5.15 discloses that the contributions of service sector for employment generation by SMEs financing of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of service sector for employment generation is 25602.10 and 3301.00 in case of male and female over the study period. The average growth rate is 30.96 and 41.15 during the study period. The Table also shows that the contributions of service sector for employment generation is increasing and decreasing in case of male and female over the study period. From the aforesaid Table it is apparent that the average contribution of service sector for employment generation by male is higher than that of female during the period under study. With a view to

seeing whether there is any significant difference between the contributions of service sector for employment generation in case of male and female by SMEs financing of the financial sectors over the study period researcher has conducted paired sample t test using SPSS and the null hypothesis is  $H_{05.14}$ : There is no significant difference between the contributions of service sector for employment generation in case of male and female of financial sectors in Bangladesh. The result shows that t value is -4.534 which is significant at 0.001 levels and it indicates that there is significant difference between the contributions of service sector for employment generation by SMEs financing in case of male and female of financial sectors in Bangladesh over the study period.

**Table No. – 5.16**

Table showing the Contribution of Trade Sector for Employment Generation by SMEs financing and its growth rate in the respective years from 2008 to 2017

Year	Male	Growth Rate	Female	Growth Rate	T values	SL
2008	10654		5426		-4.895	0.001
2009	14890	39.76	7651	41.01		
2010	219829	1376.36	9630	25.87		
2011	231959	5.52	11936	23.95		
2012	281012	21.15	9023	-24.41		
2013	596506	112.27	33603	272.41		
2014	406566	-31.84	33890	0.85		
2015	445052	9.47	18970	-44.02		
2016	488642	9.79	28657	51.07		
2017	547410	12.03	31982	11.60		
Average	32425200	172.72	19076.80	39.81		
SD	207539.68	453.03	11770.88	92.29		
CV	64.01	262.29	61.70	231.81		

(Source: Bangladesh Bank)

This Table 5.16 discloses that the contributions of trade sector for employment generation by SMEs financing of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of trade sector for employment generation is 324252.00 and 19076.80 in case of male and female over the study period. The average growth rate is 172.72 and 39.81 during the study period. The Table also shows that the contributions of trade sector for employment generation is increasing and decreasing in case of male and female over the study period. From the previous discussion it can be concluded that the average contribution of trade sector for employment generation by male is higher than that of female during the period under study. With a view to seeing whether there is any significant difference between the contributions of trade sector for employment generation in case of male and female by SMEs financing of the financial sectors over the study period researcher has conducted paired sample t test using SPSS and the null hypothesis is  $H_{0.15}$ : There is no significant difference between the contributions of trade sector for employment generation in case of male and female of financial sectors in Bangladesh. The result shows that t value is -4.895 which is significant at 0.001 levels and it indicates that there is significant difference between the contributions of trade sector for employment generation by SMEs financing in case of male and female of financial sectors in Bangladesh over the study period.

**Table No. – 5.17**

Table showing the Contribution of Manufacturing Sector for Employment Generation by SMEs financing and its growth rate in the respective years from 2008 to 2017

Year	Male	Growth Rate	Female	Growth Rate	T values	SL
2008	10654		1508		-2.135	0.061
2009	45912	18.22	2056	36.34		
2010	54279	11.33	2805	36.43		
2011	60429	-0.84	3562	26.99		
2012	59920	151.20	7257	103.73		
2013	150499	-42.83	4708	-35.12		
2014	86035	-32.88	4273	-9.24		
2015	57746	-2.36	165585	3775.10		
2016	56381	3.36	5851	-96.47		
2017	58274	39.35	13162	124.95		
Average	64012.90	16.06	21076.70	440.30		
SD	35581.57	56.44	50885.20	1252.35		
CV	55.58	351.41	241.43	284.43		

(Source: Bangladesh Bank)

This Table 5.17 portrays the contributions of manufacturing sector for employment generation by SMEs financing of financial sectors in Bangladesh in the respective years from 2008 to 2017. The average contribution of manufacturing sector for employment generation is 64012.90 and 21076.70 in case of male and female over the study period. The average growth rate is 16.06 and 440.30 during the study period. The Table also shows that the contributions of manufacturing sector for employment generation is increasing and decreasing in case of male and female over the study period. From the previous discussion it is evident that the average contribution of manufacturing sector for employment generation by male is higher than that of female during the period under

study. In order to see whether there is any significant difference between the contributions of manufacturing sector for employment generation in case of male and female by SMEs financing of the financial sectors over the study period researcher has conducted paired sample t test using SPSS and the null hypothesis is  $H_{05.16}$ : There is no significant difference between the contributions of manufacturing sector for employment generation in case of male and female of financial sectors in Bangladesh. The result shows that t value is -2.135 which is significant at 0.061 levels and it indicates that there is no significant difference between the contributions of manufacturing sector for employment generation by SMEs financing in case of male and female of financial sectors in Bangladesh over the study period.

#### **5.10 SMEs Financing Practices by the Sample Commercial Banks in Bangladesh**

In Bangladesh SME loans are given by the commercial banks according to the guidelines issued by Bangladesh Bank. However, the SME loans are distributed by commercial banks according to their own target. SME loans are the way of development of SMEs. Commercial banks credit plays a crucial role in the development of an economy and they influence positively the economic activities of any country (Joseph and Nnanyeluge, 2015). The following Table provides the total loan and SME loan and its growth rate of the sample banks in Bangladesh.

**Table No. – 5.18**

Table showing the total loan and SME loan and its growth rate of the Sample Bank (Brac Bank) in the respective years from 2008 to 2017

(Figure in Million)

Years	Total loan	SME Loan	Percent of SME loan to total loan	Growth rate of SME loan	T Values	SL
2008	52676.717	33019.1	62.68	--	11.639	0.000
2009	64150.835	35972.1	56.07	8.94		
2010	86573.914	41738.9	48.21	16.03		
2011	97478.365	50038.6	51.30	19.88		
2012	114086.28	56892.0	49.87	13.70		
2013	119514.55	46844.4	39.20	-17.66		
2014	121940.55	47624.6	39.06	1.67		
2015	147433.61	52884.2	35.87	11.04		
2016	175841.42	61185.5	34.80	15.70		
2017	203431.02	81064.2	39.85	32.49		
Average	118312.73	50726.36	45.69	11.31		
SD	47279.53	13782.53	9.36	13.73		
CV	39.96	27.17	20.47	121.50		

(Source: Annual Report of Sample Bank)

Table 5.18 explains the total loan and SME loan of the sample\_one bank in the respective years from 2008 to 2017. The average total loan and SME loan is 118312.73 million and 50726.36 million respectively during the study period. The Table also portrays the percentage of SME loan to total loan and its growth rate over the study period. The average percentage of SME loan to total loan and growth rate is 45.69 and 11.31 respectively over the study period. From the aforesaid Table it is evident that the percentage of SME loan to total loan is moderately satisfactory regarding sample\_one bank during the period under study. In order to see whether there is any significant difference of SME loan over the study period of the sample\_one bank, the researcher conducted one sample t test by using SPSS and the null hypothesis is  $H_{05.17}$ : There is no significant difference of SME loan over the study period of the

sample\_one bank. The result shows that t value is 11.639 which is significant at 0.000 level and the null hypothesis is rejected which means that there is significant difference of SME loan over the study period of the sample\_one bank.

**Table No. – 5.19**

Table showing the total loan and SME loan and its growth rate of the Sample Bank (Mercantile Bank) in the respective years from 2008 to 2017

(Figure in Million)

Years	Total loan	SME Loan	Percent of SME loan to total loan	Growth rate of SME loan	T Values	SL
2008	43419.362	681.084	1.57	-	3.210	0.011
2009	48295.547	983.393	2.04	44.39		
2010	66377.697	3386.33	5.10	244.35		
2011	79728.025	3833.56	4.81	13.21		
2012	93384.292	4553.06	4.88	18.77		
2013	97582.383	7893.73	8.09	73.37		
2014	117241.1	9068.66	7.74	14.88		
2015	126624.05	11656.9	9.21	28.54		
2016	154116.15	14543	9.44	24.76		
2017	202940.41	28663.4	14.12	97.09		
Average	102970.90	8526.31	6.70	62.15		
SD	49338.81	8398.87	3.79	74.08		
CV	47.92	98.51	56.54	119.20		

(Source: Annual Report of Sample Bank)

Table 5.19 discloses the total loan and SME loan of the sample\_two bank in the respective years from 2008 to 2017. The average total loan and SME loan is 102970.90 million and 8526.31 million respectively during the study period. The Table also portrays the percentage of SME loan to total loan and its growth rate over the study period. The average percentage of SME loan of total loan and growth rate is 6.70 million and 62.15 respectively over the study period. From the above discussion it is evident that the percentage of SME loan to total loan is not satisfactory of



sample\_two bank during the period under study. In order to see whether there is any significant difference of SME loan over the study period of the sample\_two bank, the researcher conducted one sample t test by using SPSS and the null hypothesis is  $H_{05.18}$ : There is no significant difference of SME loan over the study period of the sample\_two bank. The result shows that t value is 3.210 which is significant at 0.011 levels and the null hypothesis is rejected which means that there is significant difference of SME loan over the study period of the sample\_two bank.

**Table No. – 5.20**

Table showing the total loan and SME loan and its growth rate of the Sample Bank (Prime Bank) in the respective years from 2008 to 2017

(Figure in Million)

Years	Total loan	SME Loan	Percent of SME loan to total loan	Growth rate of SME loan	T Values	SL
2008	75156.207	2163.84	2.88	-	5.561	0.000
2009	89252.222	3593.92	4.03	66.09		
2010	118837.29	5757.28	4.84	60.2		
2011	141801.65	9429.39	6.65	63.78		
2012	165042.33	12230.8	7.41	29.71		
2013	159009.72	19532.4	12.28	59.70		
2014	152719.24	20054.8	13.13	2.68		
2015	154871.13	17821.2	11.51	-11.14		
2016	172489.85	18190.5	10.55	2.072		
2017	200619.18	22231.6	11.08	22.22		
Average	142979.88	13100.57	8.44	32.81		
SD	38360.94	7449.41	3.73	30.51		
CV	26.83	56.86	44.18	92.95		

(Source: Annual Report of Sample Bank)

Table 5.20 reveals the total loan and SME loan of the sample\_three bank in the respective years from 2008 to 2017. The average total loan and SME loan is 142979.88 million and 13100.57 million respectively during the study period. The Table also portrays the percentage of SME loan to

total loan and its growth rate over the study period. The average percentage of SME loan to total loan and growth rate is 8.44 million and 32.81 respectively over the study period. From the previous discussion it is evident that the percentage of SME loan of total loan is not satisfactory of sample\_three bank during the period under study. In order to see whether there is any significant difference of SME loan over the study period of the sample\_three bank, the researcher has conducted one sample t test by using SPSS and the null hypothesis is  $H_{0.19}$ : There is no significant difference of SME loan over the study period of the sample\_three bank. The result shows that t value is 5.561 which is significant at 0.000 level and the null hypothesis is rejected which means that there is significant difference of SME loan over the study period of the sample\_three bank.

**Table No. – 5.21**

Table showing the total loan and SME loan and its growth rate of the Sample Bank (Eastern Bank) in the respective years from 2008 to 2017

(Figure in Million)

Years	Total loan	SME Loan	Percent of SME loan to total loan	Growth rate of SME loan	T Values	SL
2008	39662.163	0	0	--	3.856	0.004
2009	47667.987	0	0	0		
2010	58607.086	6270.4	10.70	0		
2011	81057.923	10577.6	13.05	68.69		
2012	96894.171	13448.3	13.88	27.14		
2013	103330.82	16640.4	16.10	23.74		
2014	120012.34	18279.4	15.23	9.85		
2015	134449.42	19518	14.52	6.78		
2016	156371.33	3281.73	2.10	-83.19		
2017	191684.54	3618.7	1.89	10.27		
Average	102973.78	9163.45	8.75	7.03		
SD	48938.53	7514.64	6.85	39.91		
CV	47.53	82.01	78.31	567.79		

(Source: Annual Report of Sample Bank)

Table 5.21 discloses the total loan and SME loan of the sample\_four bank in the respective years from 2008 to 2017. The average total loan and SME loan is 102973.78 million and 9163.45 million respectively during the study period. The Table also portrays the percentage of SME loan to total loan and its growth rate over the study period. The average percentage of SME loan to total loan and growth rate is 8.75 million and 7.03 respectively over the study period. From the previous discussion it is evident that the percentage of SME loan of total loan is not satisfactory of sample\_four bank during the period under study. In order to see whether there is any significant difference of SME loan over the study period of the sample\_four bank, the researcher has conducted one sample t test by using SPSS and the null hypothesis is  $H_{0.20}$ : There is no significant difference of SME loan over the study period of the sample\_four bank. The result shows that t value is 3.856 which is significant at 0.004 level and the null hypothesis is rejected which means that there is significant difference of SME loan over the study period of the sample\_four bank.

**Table No. – 5.22**

Table showing the total loan and SME loan and its growth rate of the Sample Bank (Dutch Bangla Bank) in the respective years from 2008 to 2017

(Figure in Million)

Years	Total loan	SME Loan	Percent of SME loan to total loan	Growth rate of SME loan	T Values	SL
2008	41016.623	9149.83	22.31	-	10.703	0.000
2009	48410.99	9694.79	20.03	5.96		
2010	67657.666	18879.6	27.90	94.74		
2011	79660.698	19815.7	24.88	4.96		
2012	91648.947	22648.6	24.71	14.30		
2013	105936.99	23435	22.12	3.47		
2014	123618.64	22478.8	18.18	-4.08		
2015	152270	22719	14.92	1.07		
2016	173397.8	23720.5	13.68	4.41		
2017	207257.38	26268.3	12.67	10.74		
Average	109087.57	19881.01	20.14	15.06		
SD	54833.79	5874.21	5.17	30.34		
CV	50.27	29.55	25.65	201.41		

(Source: Annual Report of Sample Bank)

Table 5.22 portrays the total loan and SME loan of the sample\_five bank in the respective years from 2008 to 2017. The average total loan and SME loan is 109087.57 million and 19881.01 million respectively during the study period. The Table also portrays the percentage of SME loan to total loan and its growth rate over the study period. The average percentage of SME loan to total loan and growth rate is 20.14 million and 15.06 respectively over the study period. From the previous discussion it is evident that the percentage of SME loan to total loan is partially satisfactory regarding sample five bank during the period under study. In order to see whether there is any significant difference of SME loan over the study period of the sample\_five bank, the researcher has conducted

one sample t test by using SPSS and the null hypothesis is  $H_{0.5.21}$ : There is no significant difference of SME loan over the study period of the sample\_five bank. The result shows that t value is 10.703 which is significant at 0.000 level and the null hypothesis is rejected which means that there is significant difference of SME loan over the study period of the sample\_five bank.

**Table No. – 5.23**

Table showing the total loan and SME loan and its growth rate of the Sample Bank (IFIC bank) in the respective years from 2008 to 2017

(Figure in Million)

Years	Total loan	SME Loan	Percent of SME loan to total loan	Growth rate of SME loan	T Values	SL
2008	33018.385	00	0	-	3.877	0.004
2009	37793.887	8096.48	21.42			
2010	47563.428	10841.8	22.79	33.91		
2011	64641.173	747.976	1.16	-93.10		
2012	77159.762	388.083	0.50	-48.12		
2013	86020.74	21428.4	24.91	5422.60		
2014	104419.4	19054.5	18.25	-11.08		
2015	125668.04	20741.6	16.51	8.85		
2016	141258.76	28067.8	19.87	35.32		
2017	183296.11	28689.6	15.65	2.22		
Average	90083.97	13805.62	14.11	594.40		
SD	48772.38	11260.62	9.75	1810.65		
CV	54.14	81.57	69.12	287.26		

(Source: Annual Report of Sample Bank)

Table 5.23 discloses the total loan and SME loan of the sample\_six bank in the respective years from 2008 to 2017. The average total loan and SME loan is 90083.97 million and 13805.62 million respectively during the study period. The Table also represents the percentage of SME loan to total loan and its growth rate over the study period. The average

percentage of SME loan to total loan and growth rate is 14.11 million and 594.40 respectively over the study period. From the previous discussion it is evident that the percentage of SME loan of total loan is not satisfactory of sample\_six bank during the period under study. In order to see whether there is any significant of SME loan over the study period of the sample\_six bank, the researcher has conducted one sample t test by using SPSS and the null hypothesis is  $H_{05.22}$ : There is no significant difference of SME loan over the study period of the sample\_six bank. The result shows that t value is 3.877 which is significant at 0.004 level and the null hypothesis is rejected which means that there is significant difference of SME loan over the study period of the sample\_six bank.

**Table No. – 5.24**

Table showing the total loan and SME loan and its growth rate of the Sample Bank (Mutual Trust Bank) in the respective years from 2008 to 2017

(Figure in Million)

Years	Total loan	SME Loan	Percent of SME loan to total loan	Growth rate of SME loan	T Values	SL
2008	28529.346	301.472	1.06	-	3.245	0.010
2009	33883.924	549.995	1.62	82.44		
2010	39676.121	2646.76	6.67	381.23		
2011	47005.48	2941.89	6.26	11.15		
2012	56511.077	3322.99	5.88	12.95		
2013	59548.363	4868.94	8.18	46.52		
2014	75707.232	7027.54	9.28	44.33		
2015	96259.013	9277.77	9.64	32.02		
2016	114355.76	15260.8	13.35	64.49		
2017	145606.99	19576.9	13.45	28.28		
Average	69708.33	6577.51	7.54	78.16		
SD	38251.75	6409.86	4.20	115.95		
CV	54.87	97.45	55.57	148.35		

(Source: Annual Report of Sample Bank)

Table 5.24 discloses the total loan and SME loan of the sample\_seven bank in the respective years from 2008 to 2017. The average total loan and SME loan is 69708.33 million and 6577.51 million respectively during the study period. The Table also represents the percentage of SME loan to total loan and its growth rate over the study period. The average percentage of SME loan to total loan and growth rate is 7.54 million and 78.16 respectively over the study period. From the previous discussion it is evident that the percentage of SME loan to total loan is not satisfactory of sample\_seven bank during the period under study. In order to see whether there is any significant difference of SME loan over the study period of the sample\_seven bank, the researcher has conducted one sample t test by using SPSS and the null hypothesis is  $H_{05.23}$ : There is no significant difference of SME loan over the study period of the sample\_seven bank. The result shows that t value is 3.245 which is significant at 0.010 level and the null hypothesis is rejected which means that there is significant difference of SME loan of the sample\_seven bank over the study period.

**Table No. – 5.25**

Table showing the total loan and SME loan and its growth rate of the Sample Bank (Southeast Bank) in the respective years from 2008 to 2017

(Figure in Million)

Years	Total loan	SME Loan	Percent of SME loan to total loan	Growth rate of SME loan	T Values	SL
2008	60281.26	6595.21	10.94	-	5.655	0.000
2009	77497.573	8884.3	11.46	34.71		
2010	93981.202	13060.7	13.90	47.01		
2011	107288.56	14429.7	13.45	10.48		
2012	126968.97	17818.6	14.03	23.49		
2013	134863.82	21494	15.94	20.63		
2014	147070.81	28946.7	19.68	34.67		
2015	168878.46	34514.2	20.44	19.23		
2016	191865.59	41287.1	21.52	19.62		
2017	234316.72	39555.2	16.88	-4.19		
Average	134301.30	22658.57	15.82	22.85		
SD	53531.38	12671.02	3.73	14.91		
CV	39.86	55.92	23.59	65.23		

(Source: Annual Report of Sample Bank)

Table 5.25 presents the total loan and SME loan of the sample\_eight bank in the respective years from 2008 to 2017. The average total loan and SME loan is 134301.30 million and 22658.57 million respectively during the study period. The Table also represents the percentage of SME loan to total loan and its growth rate over the study period. The average percentage of SME loan to total loan and growth rate is 15.82 million and 22.85 respectively over the study period. From the previous discussion it is evident that the percentage of SME loan to total loan is not satisfactory regarding sample\_eight bank during the period under study. In order to see whether there is any significant difference of SME loan of the sample\_eight bank over the study period researcher conducted one



sample t test by using SPSS and the null hypothesis is  $H_{0.5.24}$ : There is no significant difference of SME loan of the sample\_eight bank over the study period. The result shows that t value is 5.655 which is significant at 0.000 level and the null hypothesis is rejected which means that there is significant difference of SME loan of the sample\_eight bank over the study period.

**Table No. – 5.26**

Table showing the total loan and SME loan and its growth rate of the Sample Bank (United Commercial Bank) in the respective years from 2008 to 2017

(Figure in Million)

Years	Total loan	SME Loan	Percent of SME loan to total loan	Growth rate of SME loan	T Values	SL
2008	44446.333	10248.3	23.06	-	6.766	0.000
2009	61692.218	13920.4	22.56	35.83		
2010	93560.702	37840.5	40.44	171.83		
2011	115506.33	42986.9	37.22	13.60		
2012	136071.65	55435	40.74	28.96		
2013	148677.35	64157.1	43.15	15.73		
2014	174205.1	65192.8	37.42	1.61		
2015	197493.63	71190.7	36.05	9.20		
2016	224337.82	70853.5	31.58	-0.47		
2017	262582.32	75212.70	28.64	6.15		
Average	145857.35	50703.79	34.09	31.38		
SD	70223.14	23698.09	7.32	54.02		
CV	48.15	46.74	21.43	172.11		

(Source: Annual Report of Sample Bank)

Table 5.26 describes the total loan and SME loan of the sample\_nine bank in the respective years from 2008 to 2017. The average total loan and SME loan is 145857.35 million and 50703.79 million respectively during the study period. The Table also represents the percentage of SME loan to total loan and its growth rate over the study period. The average

percentage of SME loan to total loan and growth rate is 34.09 million and 31.38 respectively over the study period. From the previous discussion it is evident that the percentage of SME loan of total loan is not satisfactory of sample\_nine bank during the period under study. In order to see whether there is any significant difference of SME loan of the sample\_eight bank over the study period researcher conducted one sample t test by using SPSS and the null hypothesis is  $H_{0.25}$ : There is no significant difference of SME loan of the sample\_nine bank over the study period. The result shows that t value is 6.766 which is significant at 0.000 level and the null hypothesis is rejected which means that there is significant difference of SME loan of the sample\_nine bank over the study period.

**Table No. – 5.27**

Table showing the total loan and SME loan and its growth rate of the Sample Bank (Bank Asia) in the respective years from 2008 to 2017

(Figure in Million)

Years	Total loan	SME Loan	Percent of SME loan to total loan	Growth rate of SME loan	T Values	SL
2008	39974.999	152.408	0.38	-	5.760	0.000
2009	50267.917	745.509	1.48	389.15		
2010	79504.233	2142.22	2.69	187.35		
2011	83343.069	2404.88	2.89	12.26		
2012	92328.819	2487.98	2.69	3.46		
2013	104911.26	2605.57	2.48	4.73		
2014	116808.85	2675.51	2.29	2.68		
2015	136396.34	3414.66	2.5	27.63		
2016	166539.92	3957.23	2.38	15.89		
2017	200328.42	4945.19	2.47	24.97		
Average	107040.38	2553.12	2.23	74.23		
SD	49957.42	1401.56	0.75	131.71		
CV	46.67	54.90	33.71	177.42		

(Source: Annual Report of Sample Bank)

Table 5.27 discloses the total loan and SME loan of the sample\_ten bank in the respective years from 2008 to 2017. The average total loan and SME loan is 107040.38 million and 2553.12 million respectively during the study period. The Table also represents the percentage of SME loan to total loan and its growth rate over the study period. The average percentage of SME loan to total loan and growth rate is 2.23 million and 74.23 respectively over the study period. From the previous discussion it is evident that the percentage of SME loan to total loan is not satisfactory of sample\_ten bank during the period under study. In order to see whether there is any significant difference of SME loan of the sample\_ten bank over the study period researcher has conducted one sample t test by using SPSS and the null hypothesis is  $H_{05.26}$ : There is no significant difference of SME loan of the sample\_ten bank over the study period. The result shows that t value is 5.760 which is significant at 0.000 level and the null hypothesis is rejected which means that there is significant difference of SME loan of the sample\_ten bank over the study period.

**Table No. – 5.28**

Table showing the bank to bank variation of SME loan of the Sample Banks over the study period

Sample bank	T value	Sig level	Accepted/ Rejected
Sample Bank one vs two	19.273	0.000	Rejected
Sample Bank one vs three	12.412	0.000	Rejected
Sample Bank one vs four	8.710	0.000	Rejected
Sample Bank one vs five	10.031	0.000	Rejected
Sample Bank one vs six	10.337	0.000	Rejected
Sample Bank one vs seven	16.412	0.000	Rejected
Sample Bank one vs eight	10.702	0.000	Rejected
Sample Bank one vs nine	0.005	0.996	Accepted
Sample Bank one vs ten	12.192	0.000	Rejected
Sample Bank two vs three	-2.775	0.000	Rejected

Sample Bank two vs four	-0.182	0.860	Accepted
Sample Bank two vs five	-6.070	0.000	Rejected
Sample Bank two vs six	-2.494	0.034	Rejected
Sample Bank two vs seven	2.254	0.051	Accepted
Sample Bank two vs eight	-6.554	0.000	Rejected
Sample Bank two vs nine	-7.335	0.000	Rejected
Sample Bank two vs ten	2.634	0.027	Rejected
Sample Bank three vs four	1.763	0.112	Accepted
Sample Bank three vs five	-6.223	0.000	Rejected
Sample Bank three vs six	-0.329	0.750	Accepted
Sample Bank three vs seven	4.470	0.002	Rejected
Sample Bank three vs eight	-4.329	0.002	Rejected
Sample Bank three vs nine	-7.118	0.000	Rejected
Sample Bank three vs ten	5.314	0.000	Rejected
Sample Bank four vs five	-5.338	0.000	Rejected
Sample Bank four vs six	-1.174	0.270	Accepted
Sample Bank four vs seven	0.829	0.429	Accepted
Sample Bank four vs eight	-3.329	0.009	Rejected
Sample Bank four vs nine	-6.502	0.000	Rejected
Sample Bank four vs ten	2.894	0.018	Rejected
Sample Bank five vs six	2.202	0.055	Accepted
Sample Bank five vs seven	9.055	0.000	Rejected
Sample Bank five vs eight	-1.006	0.341	Accepted
Sample Bank five vs nine	-5.393	0.000	Rejected
Sample Bank five vs ten	11.858	0.000	Rejected
Sample Bank six vs seven	3.376	0.008	Rejected
Sample Bank six vs eight	-4.577	0.001	Rejected
Sample Bank six vs nine	-6.916	0.000	Rejected
Sample Bank six vs ten	3.484	0.007	Rejected
Sample Bank seven vs eight	-7.242	0.000	Rejected
Sample Bank seven vs nine	-7.308	0.000	Rejected
Sample Bank seven vs ten	2.466	0.036	Rejected
Sample Bank eight vs nine	-6.565	0.000	Rejected
Sample Bank eight vs ten	5.577	0.000	Rejected
Sample Bank nine vs ten	6.796	0.000	Rejected

From the Table 5.18 - 5.27 discloses the total loan and SME loan of the sample banks in the respective years from 2008 to 2017. From the previous discussion it is evident that the percent of SME loan to total loan

is not satisfactory of sample banks and the percent of SME loan to total loan of the sample bank is different from bank to bank during the period under study. In order to see whether there is any significant difference of SME loan among the sample banks over the study period researcher has conducted paired sample t test by using SPSS and the null hypothesis is  $H_{05.27}$ : There is no bank to bank variation of SME loan of the sample bank over the study period. The result shows that the null hypothesis is rejected in 80 percent cases meaning that there is a bank to bank variation of SME loan of the sample banks. The rest 20 percent accepted the null hypothesis meaning that there is no bank to bank variation of SME loan of the sample banks.

### **5.11 Conclusion**

Bangladesh Bank has been instrumental in designing and implementing SME sector development initiatives as part of its development financing agenda. The Bangladesh Bank has taken a number of initiatives to ensure increased flow of institutional credits to SMEs by encouraging scheduled banks to participate in the process. This research is a modest attempt to explore and analyze the impact of these policy initiatives towards enhancing bank functioning to SMEs in Bangladesh. At present small and medium enterprises (SMEs) is the priority sector due to enhance the economic development of Bangladesh. The study revealed that the average target of total SME loan is 83746.49 cores and the average achievement is 120.63 percent which means that the banks have invested more loan than that of their target amount and it is very significant to develop the economy of Bangladesh through creating employment and reduce poverty. The study also revealed that the SME financing by the financial institutions affect the employment generation in case of service

and trade sector but does not affect the manufacturing sector in case of employment generation on the basis of regression results over the study period. In addition, the sample banks have invested 16.35 (average of all sample banks' SME loan percent of total loan) in SME financing but their investment were not significant because only the investment of sample\_one bank was above forty five percent in SME financing of total loan and the investment of maximum sample banks were less than ten percent in SME financing to their total loan. The results of one sample t test show that there is significant difference of SME loan of the sample banks over the study period. The result also supports that there is a bank to bank variation of SME loan among the sample banks over the study period except sample bank \_one and sample bank \_nine, sample bank \_two and sample bank \_four, sample bank \_two and sample bank \_seven, sample bank \_three and sample bank \_four, sample bank \_three and sample bank \_six, sample bank \_four and sample bank \_six, sample bank \_four and sample bank \_seven, sample bank \_five and sample bank \_six, sample bank \_five and sample bank \_eight.

# CHAPTER SIX

## QUESTIONNAIRE ANALYSIS OF SME FIRMS

### Part 1

#### DESCRIPTIVE STATISTICS

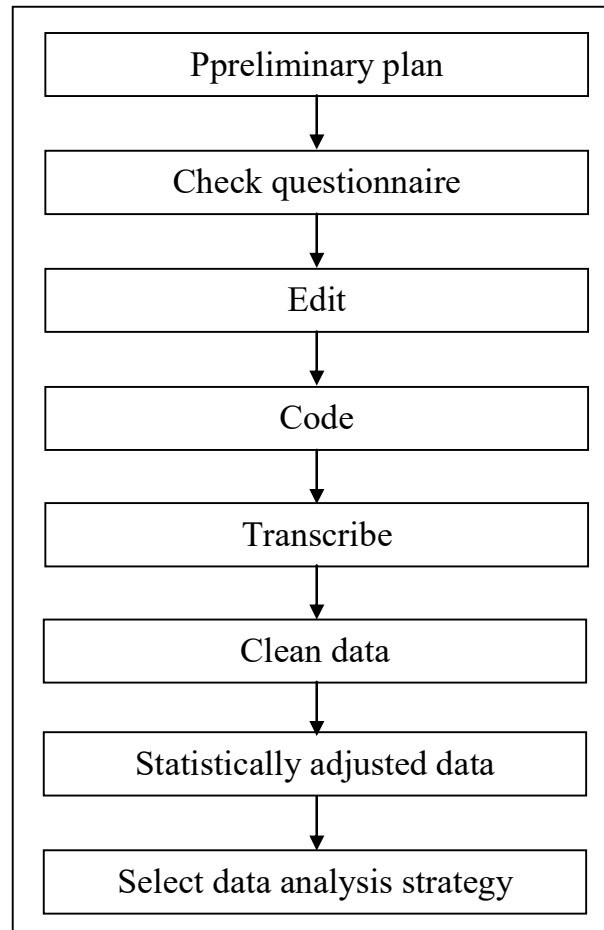
##### 6.1.1 Introduction

Descriptive statistics of questionnaire analysis provides the results of responses to questionnaire targeting the SME firms and owners operating in different cities of Bangladesh. Descriptive statistics is a summary of collected data, which can be either a representation of the entire or a sample of a population. Inferential statistics try to find out about the population from the sample. The objectives of inductive statistics are also the same. But Descriptive statistics aspires at shortening the sample data collected through questionnaire. Measures of central tendency and measures of dispersion have been used here. The mean (called the average) is the most likely the measure of central tendency. The others are the median and the mode. Measures of variability comprise of the standard deviation (SD), the minimum value and maximum value of the data set (Dodge, Y. 2003).

This chapter covers the features of SMEs in terms of age, size and sectoral particulars. This chapter also encompasses the financial and loan related information with respect to advance size, interest rate and guarantee. IBM SPSS Statistics 20.0 has been used for this purpose.

## Data preparation procedure

Figure : data preparation process



Source –Malhotra, 1999

The way of data preparation has several stages such as preliminary plan, check questionnaire, edit, code, transcribe, clean data, statistically adjusted data, and select data analysis strategy. The flowchart of the data preparation and selection process followed by this study includes different types of data management procedures starting from data gathering through questionnaire and arrangement of data to explore to reply the objectives of the study. First the collected data were comprehensively checked to find out the usable form of questionnaires.



To uphold the privacy and anonymity of the respondents the forms were coded. In the later stage the data from the forms were entered into Excel for analysis using the statistical analysis software package SPSS. Any missing data, or wrong entry and existence of any extreme data have been cleaned through cross-checking. And lastly two main techniques, descriptive analysis and regression analysis were carried out in sequence.

### **6.1.2 Descriptive statistics of SME survey:**

The questionnaire surveyed initial information of the SMEs. The survey was conducted with the aim of exploring the views, experiences, and perceptions of sample SMEs representing the demand-side and supply side of bank finance.

### **6.1.3 Survey questionnaire**

The questionnaire survey was administered in different cities of Bangladesh targeting the population of SMEs within the city and covering the three main business sectors namely trade, services, and manufacturing. As mentioned earlier in this thesis, a total of 400 sets of questionnaire were distributed. This resulted in 385 returned questionnaires of which 366 were completed and usable making a response rate of 91.5 percent. The remaining 19 returned questionnaires were deemed invalid and unusable since they were poorly or inadequately completed creating difficulty in understanding. Thus, they were considered unsuitable as the objectives of the research were not completely served.

**Table: 6.1 Classification of SME owner questionnaire**

Category	Frequency	Percent
Borrower SMEs	159	43.44
Non Borrower SMEs	204	55.74
Loan proposal rejected SMEs	03	.008
Total	366	100

Source: Survey data

The collected sets of questionnaire were divided into three groups namely borrower of SME loan, non borrower of SME loan and loan proposal rejected SMEs. Among the questionnaire there are 159 respondents who have taken SME loan from commercial banks. 55.74 percent respondents have not taken SME loan from any financial institutions. There are about 0.82 percent respondents whose loan proposal has been rejected due to various reasons.

**Table: 6.2 Causes of rejection of SME loan application**

Reasons for rejection	Frequency	Percent
Insufficient collateral	02	66.67
Too risky	01	33.33
Total	03	100

Source: Survey data

The above Table shows the reasons for rejection of SME loan application. From the 162 respondents who applied for bank loan only 03 loan proposals were rejected. Two proposals were rejected due to insufficient collateral and one proposal was rejected due to high risk.

#### **6.1.4 Classification of Borrower and Non-Borrower SMEs**

Among the total collected questionnaire, 159 borrowers had taken the SME loan from different commercial banks. The borrower SME firms

have been classified SME sector wise. The non borrower SME firms have also been classified SME sector-wise. The descriptive statistics consists of information of the gender, age, educational qualification of the owner and location, ownership, sector, financial information of the firm and loan characteristics using frequency distributions, frequency tables, cross tabulations, charts and graphs.

**Table: 6.3 Sector-wise classification of borrower SME loan**

Category	Business classification	Sector			Total	Percent
		Trade	Service	Manufacturing		
Borrower SMEs	Small	59	22	40	121	76.10
	Medium	33	02	03	38	23.90
	Total	92	24	43	159	100
Non Borrower SMEs	Small	84	46	63	193	94.61
	Medium	06	03	02	11	5.39
	Total	90	49	65	204	100

Source: Survey data

From the above Table it can be said that majority of the SME loan borrowers are small organization (76.10) and medium enterprises are 23.90 percent. In the same way the majority of the non borrower organizations are small organizations (94.61 percent) and only 5.39 percent are medium enterprises. The collected questionnaire represents that small organizations dominate the sample. It can also be said that among the sample the trade sector dominates the other sectors.

**Table: 6.4 Ownership-wise classification of borrower SME loan**

Category	Business classification	Ownership		Total	Percent
		Individual	Partnership		
Borrower SMEs	Small	111	08	119	74.84
	Medium	38	02	40	25.16
	Total	149	10	159	100
Non Borrower SMEs	Small	188	01	189	92.64
	Medium	11	04	15	7.36
	Total	199	5	204	100

Source: Survey data

The Table shows that the ownership style of the SME organization is dominated by the sole proprietorship (348 firms) of which 111 small organizations from borrower SME and 188 from non borrower SME organizations. There are 38 medium enterprises owned by sole proprietorship in the borrower SME loan group. A total of 15 sample organizations which are included in the partnership style, are very small in size as compared to sole proprietorship.

**Table: 6.6 The Table showing Current Assets of SMEs:**

Category	Current Assets	Frequency	Percent
Borrower SMEs	Less than Tk. 500000	43	27.04
	500001-1000000	62	38.99
	1000001-1500000	46	28.93
	1500001-2000000	7	.04
	More than 2000000	1	.006
Non Borrower SMEs	Less than Tk. 500000	41	20.1
	500000-1000000	88	43.14
	1000000-1500000	51	25
	1500000-2000000	13	6.373
	More than 2000000	11	5.392

Source: Survey data

From the above Table it can be said that there are a total number of 43 SME firms of the borrower group (27.04 percent of the borrower SMEs) hold current asset, less than Tk. 5 lakh. 38.99 percent of the borrower

SMEs hold current asset in the range of 5 lakh to 10 lakh. 94.96 percent of the borrower SMEs and 88.24 percent of the non-borrower SME firms belong to the first three ranges of current assets. The current asset holding of more than 20 lakh by the SME firms in the both category is few in number (approximately 7 percent).

**Table: 6.7 The Table showing Current liability of SMEs**

Category	Current liability	Frequency	Percent
Borrower SMEs	Less than Tk. 200000	81	50.94
	200000-500000	69	43.40
	500000-800000	08	5.03
	800000-1100000	01	0.63
	More than 1100000	00	0.00
Non Borrower SMEs	Less than Tk. 200000	56	27.45
	200000-500000	104	50.98
	500000-800000	25	12.25
	800000-1100000	11	5.39
	More than 1100000	08	3.92

Source: Survey data

From the above Table it can be said that there are a total number of 81 SME firms of the borrower group (50.94 percent of the borrower SMEs) hold current liability, less than Tk. 2 lakh. 43.40 percent of the borrowers SMEs loan belong to the range of 2 lakh to 5 lakh. 98.98 percent of the borrowers SME firms and 90.68 percent of the non borrower SME firms belong to the first three ranges (below 8 lakh) of the current liability. The current Liability, more than 11 lakh held by the SME firms in the both category is few in number (approximately 4 percent) of SME firms.

**Table: 6.8 The Table showing Amount of fixed assets**

Category	Business classification	Frequency		
		Trade (Small 10lakh – 2 crore. Medium 2 crore -30crore)	Service (Small 10lakh – 2 crore. Medium 2 crore -30crore)	Manufacture (Small 75 lakh – 15 crore. Medium 15 crore -50crore)
Borrower SMEs	Small	59	22	38
	Medium	33	02	5
	Total	92	24	43
Non Borrower SMEs	Small	81	45	61
	Medium	10	04	03
	Total	91	49	64

Source: Survey data

From the Table, we observe that 59 SME firms in borrower group show the highest frequency, which means that trade sector of SMEs is the highest number of firms among the SMEs borrower group. In case of non borrower SMEs group, highest numbers of organization are small size trading firms. Among the borrower of SMEs, medium size service firms is the lowest number; it means that the number of medium size service organization is the lowest in the sample.

**Table: 6.9 The Table showing the Age of SMEs organization**

Category	Business classification	Range of Age of SMEs				Total
		1-7	8-14	15-21	Above 21	
Borrower SMEs	Small	23	53	37	6	119
	Medium	9	22	9	0	40
	Total	32	75	46	6	159
	Percent	20.13	47.17	28.93	3.7	100
Non Borrower SMEs	Small	68	58	46	20	192
	Medium	6	3	2	1	12
	Total	74	61	48	21	204
	Percent	36.27	29.9	23.53	10.29	100

Source : Survey data

The age of the SME organizations is classified into different ranges. The age of the SME firm is important variable because of its relationship to firm stability, feasibility and continuous existence (Wangmo, 2016). 20.13 percent borrower firms were of 1-7 years and 47.17 percent firms belong to the 8-14 age group. Another 28.93 percent borrower firms' age was between 15-21 years; 3.7 percent in the age group of above 21 years. In the same way, 36.27 percent of non-borrower firms were of 1-7 years and 29.9 percent in the age range of 8-14 years. There is only 10.29 percent of SMEs organization of the non borrower-firms of which the age range is above 21 years.

**Table: 6.10 The Table showing Number of employees of SMEs**

Category	Business sector	Range				Total
		16-50	31-120	51-120	121-300	
Borrower SMEs	Trade	59		33		92
	Service	22		02		24
	Manufacture		38		05	43
	Total	81	38	35	05	159
	Percent	50.94	23.90	22.01	3.15	100
Non Borrower SMEs	Trade	85		06		91
	Service	46		03		49
	Manufacture		61		03	64
	Total	131	61	9	3	204
	Percent	64.22	29.90	4.41	1.47	100

Source: Survey data

The total number of the employees of the SME organizations is classified into different ranges according to the definition of SMEs. 74.84 percent of SME borrowers engaged 16-50 and 31-120 workers, falling under the category of small enterprise as per definition of SME on the basis of number of employees. 22.01 percent and 3.15 percent of SMEs loan borrower fall in different range of employees such as 51-120, 121-300 respectively. As for non-borrower SMEs 94.12 percent fall in the small

enterprise category. Only 5.88 percent organization fall into medium enterprise category according to the employee based definition of SMEs.

### 6.1.5 Characteristics of the SME owners

**Table: 6.11 The Table showing the Age of the owner**

Category	Owner's age range	Frequency	Percent
Borrower SMEs	Below 35	<b>76</b>	47.80
	36-45	<b>36</b>	22.64
	46-55	<b>24</b>	15.09
	Over 55	<b>23</b>	14.47
Non Borrower SMEs	Below 35	<b>88</b>	<b>43.13</b>
	36-45	<b>83</b>	<b>40.69</b>
	46-55	<b>27</b>	<b>13.24</b>
	Over 55	<b>06</b>	<b>2.94</b>

Source: Survey data

As the Table shows most of the borrowers (47.80 percent) and non-borrowers (43.13 percent) were in the age group of below 35 years. Between 36-45 years age group, 22.64 percent are borrowers and 40.69 percent are non-borrowers. The lowest 14.47 percent borrowers were classified under the age group of over 55 years. The lowest 2.94 percent non borrowers were classified under the age group of over 55 years. In Bhutan, 47.73% of small business owners are in the age between 25-30 years and 5.11 percent owners are in the age over 55 years which is nearly same of our research (Wangmo, 2016).



**Table: 6.12 The Table showing the Gender of owners**

Category	Gender	Frequency Total	Percent
Borrower SMEs	Male	153	96.22
	Female	06	3.78
	Total	159	100
Non Borrower SMEs	Male	193	94.61
	Female	11	5.39
	Total	204	100

Source: Survey data

It is evident from the Table that most of the borrowers (96.22 percent) and non-borrowers (96.61 percent) were in the male category. It was followed by 3.77 percent of the borrowers and 5.39 percent of non-borrowers in the female category. Hence it can be said that about 95 percent SME organizations are held by male ownership.

**Table: 6.13 The Table showing the education qualification of SME owners**

Category	Educational qualification	Total	Percent
Borrower SMEs	Secondary School	21	13.20
	Higher Secondary School	36	22.65
	Bachelor Degree	99	62.26
	Others	03	1.89
Non Borrower SMEs	Secondary School	40	19.61
	Higher Secondary School	145	71.08
	Bachelor Degree	10	4.90
	Others	09	4.41

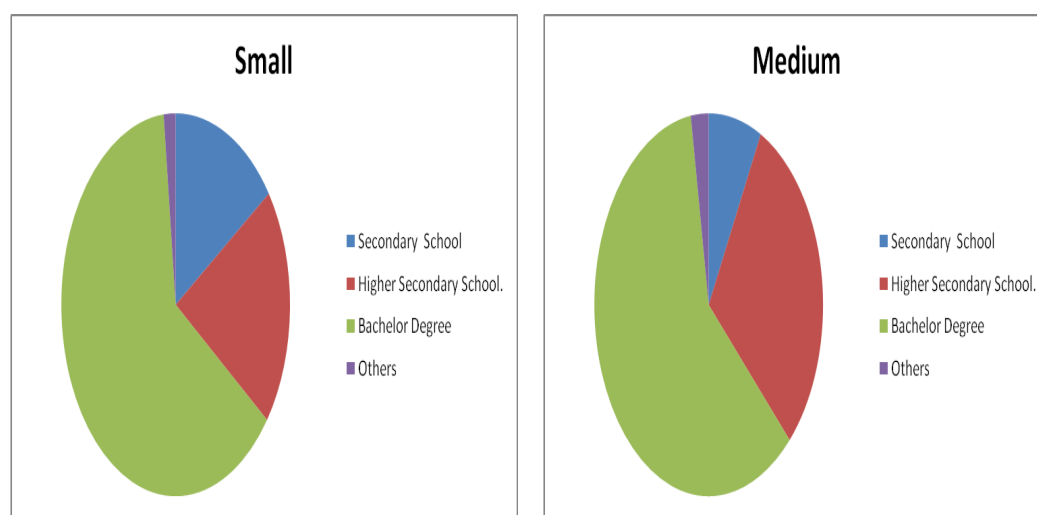
Source: Survey data

Table 6.13 shows that majority of the borrowers (62.26 percent) are graduate followed by 22.65 percent with higher secondary level, 13.20 percent with secondary school level and 1.89 percent with other degrees. On the other hand, majority of the non borrower; i.e, 71.08 had higher secondary school level education followed by 19.61 percent with secondary school level, 4.90 percent with bachelor degree and 4.41 percent with other degrees.

**Table: 6.14 The Table showing the educational qualification of borrower SME owners**

Firm size	Owner's educational qualification				Total
	Secondary School	Higher Secondary School.	Bachelor Degree	Others	
Small	18	24	75	02	119
Medium	3	12	24	01	40
Total	21	36	99	03	159

Source: Survey data



Among the borrower of SME loan, 99 owners (largest number) are graduate in bachelor degree, 36 owners with higher secondary school level, 21 owners with secondary school level and 03 owners with other degrees. On the other hand, there are 12 medium enterprises' owners with higher secondary school level.

**Table: 6.15 The Table showing the financial information of the SMEs**

Category	Financial information	Total
Borrower SMEs	Profit & Loss Statement	132
	Profit & Loss Statement + Balance Sheet	19
	Profit & Loss Statement + Balance Sheet + Cash Flow Bank statements	08
	Profit & Loss Statement + Balance Sheet + Cash Flow Bank statements + Owners equity statement	00
	None	00
Non Borrower SMEs	Profit & Loss Statement	163
	Profit & Loss Statement + Balance Sheet	24
	Profit & Loss Statement + Balance Sheet + Cash Flow statements	04
	Profit & Loss Statement + Balance Sheet + Cash Flow statements + Owners equity statement	00
	None	13

Source: Survey data

With regard to the types of financial information maintained by SMEs, the Table shows that the highest number of borrower SMEs organization (132 firms) maintained only profit and loss statement, followed by 19 firms providing profit & loss statement and balance sheet. On the other hand, 163 non borrower firms, maintained profit and loss statement followed by 24 firms maintaining profit and loss statement and balance sheet.

**Table: 6.16 The Table showing the internal source of Finance**

Category	Sources of fund	frequency	Percent
Borrower SMEs	Personal	113	89.93
	Family and friends	43	27.04
	Others	03	1.89
Non Borrower SMEs	Personal	186	91.18
	Family and friends	15	7.353
	Others	03	1.471

Source: Survey data

The highest amount of capital of borrower SMEs which is 89.93 percent comes from personal fund. It means that 89.93 percent of borrower uses their personal fund and 91.18 percent non borrower uses their personal saving. Personal saving for both borrower and non-borrower SME is the most leading source of internal finance. Dependence on internal funds points out SMEs' inaccessibility to bank credit in developing countries.

**Table: 6.17 The Table showing the amount of internal fund of SMEs**

Category	Internal finance	Frequency	Percent
Borrower SMEs	Less than Tk. 10,00,000	38	23.90
	10 lakh – 60 Lakh	80	50.31
	60 lakh -110 lakh	<b>26</b>	16.35
	110 lakh to 160 lakh	<b>02</b>	1.25
	More than 160 lakh	<b>13</b>	8.18
Non Borrower SMEs	Less than Tk. 10,00,000	<b>01</b>	0.49
	10 lakh – 60 Lakh	<b>122</b>	59.80
	60 lakh -110 lakh	<b>43</b>	21.07
	110 lakh to 160 lakh	<b>18</b>	8.82
	More than 160 lakh	<b>20</b>	9.80

Source: Survey data

On the basis of data collected from SMEs owners through questionnaire, it reveals that among SME organizations internal finance size (less than 10lakh) of borrower firms is 23.90 percent along with majority 50.31 percent in the 10lakh to 60 lakh range. Likewise, majority (59.80 percent) of non-borrower firms' internal finance was also under 10lakh to 60 lakh range. Similarly, 16.35 percent of borrower and 21.07 percent of non-borrower firms' internal finance size is 60lakh to 110 lakh range. The internal finance size of more than 160 lakh is accounted for by 8.18 percent borrower and 9.80 percent non-borrower firms.

**Table: 6.18 The Table showing preparation and maintenance of accounts**

Category	Preparation of Accounts	Frequency	Percent
Borrower SMEs	Professional accountant	14	8.80
	Owner	145	91.19
Non Borrower SMEs	Professional accountant	<b>06</b>	2.941
	Owner	<b>198</b>	97.06
	Total	<b>363</b>	

Source: Survey data

From the above Table it can be said that a poor level of financial accounts has been prepared and maintained within the SME sector. The accounts of only 8.80 percent borrower firms were prepared by professional accountants on the other side the accounts of 91.19 percent of firms were prepared by the owners or managers themselves. In case of non borrower of SME loan, 2.94 percent firms maintain their financial information by professional accountant while the finance of 97.06 percent of firms is maintained by the owners or managers themselves.

### 6.1.6 External finance of SMEs

**Table: 5.19 The Table showing the reasons for not applying for bank loan**

Reasons for not applying	Frequency	Percent
Sufficient internal funds	17	9.31
Difficult loan procedure	14	6.86
High interest rate	57	27.94
Lack of collateral	114	55.89

Source: Survey data

The non-borrower SMEs loan depends on internal funds encompassing of personal funds. The other source of internal finance is funds from family and friends. The 204 SME firms which did not apply for bank credit, were questioned the causes for not looking for bank credit. The main

reasons for not seeking loan from the banks were lack of collateral (55.89 percent) and high interest rate (27.94 percent). The last two points are sufficiency internal fund and difficulty loan procedure were mentioned by 9.31 percent and 6.86 percent non-borrowers respectively.

**Table: 6.20 The Table showing the interest rate charged to SMEs loan**

Interest rate charged on SME loan	Frequency	Percent
9%	03	1.9
10%	10	6.3
11%	01	.6
12%	20	12.6
13%	125	78.6
Mean: 12.60		
Standard Deviation : .929		
Minimum value: 9	Maximum Value : 13	

Source: Survey data

From the Table, the average interest rate is 12.60 and standard deviation is .929 with minimum and maximum rate of interest 9 and 13 respectively. In Bhutan, the interest rate was 12-16 percent (Wangmo, 2016). A survey of SMEs in Kenya exposed that the rate of interest charged against SME loans were higher to rates charged to larger firms (World Bank 2015).

**Table: 6.21 The Table showing the loan term of SMEs**

Duration of loan	Frequency	Percent
Less than 1 year	05	3.1
1-2 years	96	61.4
3-5 years	58	36.5
More than 5 years	00	0

Source: Survey data

From the Table, the highest loan distribution (61.4 percent) is in the term of one to two years while three to five years loan distribution rate is 36.5 percent. The survey statistics point out that short term loans (1-2 years) have been given priority to SME.

**Table: 6.22 The Table showing the collateral used against loan by SMEs**

<b>Types of collateral</b>	<b>frequency</b>	<b>Percent</b>
Social	<b>01</b>	<b>.6</b>
Personal	<b>03</b>	<b>1.9</b>
Assets	<b>155</b>	<b>97.5</b>
Others	<b>00</b>	<b>0</b>

Source: Survey data

About 97.5 percent of respondents used their assets as collateral to secure bank loans while social and personal collateral rate is very low in compared to assets. So, it can be said that collateral based lending is highly established in Bangladesh.

**Table: 6. 23 The Table showing the proportion of collateral size to loan amount**

<b>Proportion of collateral to loan amount</b>	<b>Frequency</b>	<b>Percent</b>
Double	150	94.34
Equal	9	5.66
Half	00	0
None	00	0

Source: Survey data

The size of collateral provided by SME firm in proportion to loan amount taken by banks was relatively higher. The mortgage rate was double in case of 94.34 percent respondents against the SME credit. 5.66 percent firms pledged the equal amount of the loan amount. So, the high rate of interest and collateral requirement is measured as the key inaccessibility to bank loan.

### **6.1.7 Conclusion**

This chapter covers the descriptive information of the SME survey in terms of its demographic characteristics, financing information and accessibility to bank loans. A total of 159 SME firms that have taken SME loan from different commercial banks, 204 SME firms have not taken any external finance and only 03 SME firms tried to collected SME loan but due to some reasons they were not able to take the loan.

To achieve the objectives of the study, a sample of 159 borrower firms was selected. The demographic characteristics of the firms and their owners have revealed the picture of SME firm in the developing economy like Bangladesh. The major portions of sample firms are small in nature while the medium sized firms were less in number. In our country the SME firms are mostly involved in trade sector and a small number of firms are engaged in service and manufacturing sectors.

In developing country like Bangladesh, the ownership and management of the SME firms are dominated by the male gender with 95.31 percent while female gender of the sample is only 4.68 percent. The educational qualification is bachelor degree in most cases of the borrowers (62.26 percent) while the age range of most owners and managers is from 26 to 35. The accounts are maintained in SME firms by the owners or managers in most of the cases. The rate of interest charged on loan is on an average 12.60 percent with standard deviation .929 and its minimum and maximum rate is 9 and 13 respectively. In most cases the value of the mortgage pledged against bank credit was double the loan amount.

Depending on only internal source of finance, the internal finance of non-borrower firms was comparatively small. This reinforced the need for external finance for its growth.



**CHAPTER SIX**  
**PART 2**  
**DATA ANALYSIS**

**6.2.1 Introduction**

The objective of this study is to gain a knowledgeable understanding of the status of bank financing to SMEs in Bangladesh. Multiple linear regression models have been used to examine the hypotheses. With the target of exploring the opinion, expectation, experiences and perceptions of Bangladeshi SMEs representing from the demand side on bank finance, the survey was operated. SMEs' debt accessibility related with the others factors is the subject matter of findings. The other factors consisted of the features of the firm and owner, financial information and loan characteristics. As reported in descriptive part of chapter 6, among the respondents only 3 loan applicants were rejected to give loan by the banks. But 159 respondents fruitfully got bank loans. As the rejection rate of loan application was very limited, assessment of SMEs' loan accessibility from the point of success and failure was impossible. SMEs' debt accessibility (DA), also called financial leverage ratio, was the dependent variable in the regression model.

**Table: 6.24 Descriptive Statistics of Numerical Variables**

	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
Debt accessibility	159	.26	.66	.4220	.11757
Age of owner	159	23	75	40.43	13.085
Taxation	159	0	10	.45	1.119
Profit	159	5	1000	38.58	86.244
Internal fund	159	5	1300	94.81	232.896
Interest rate of loan	159	9	13	12.60	.929
Amount of loan	159	5	850	66.09	147.061
Age of the firm	159	2	31	11.96	5.341
Valid N (listwise)	159				

Source: Survey data

This can be referred from the Table of descriptive statistics of numerical dependent variable and numerical independent variable of the model. The average age of the owners is 40.43. The maximum value of the age of the owner is 75 and the minimum value of the age of the owner is 23. The standard deviation of the age of owner is 13.085. So the range is large. The average age of the firm is 11.96 with maximum and minimum value 31 and 2 respectively. The standard deviation of the age of the firm is 5.341 so the range is high. The highest internal fund provided by the owner is 1300 and the lowest internal finance is 5. So, the mean of the internal fund (INTFIN) is 94.81, so it means that the range is very high. The highest value of the debt accessibility is .66 and the lowest is .26. The mean value is .42 and the standard deviation is .12. The mean of profit is 38.58 with minimum and maximum value 5 and 1000 respectively. The standard deviation of the profit is 86.24. The average value of the independent variable, tax is .45 with minimum and maximum value is 0 and 10 respectively.

### **6.2.2 Multiple Linear Regression**

Multiple Linear Regression (the term was first used by Pearson, 1908) is the most common form of linear regression analysis, also known simply as multiple regression, is a statistical technique that uses several explanatory (independent) variables and response (dependent) variables to predict the outcome of a response variable. The goal of multiple linear regression (MLR) is to model the linear relationship between the explanatory variables. The independent variables can be continuous or categorical (dummy coded as appropriate).

Here, multiple linear regression model is established to estimate the relationship between SMEs' debt accessibility and the influencing factors arising from SMEs' internal and external environment. To estimate MLR model and hypotheses of the study the ordinary least square was applied to the cross sectional data. The validation of the model is calculated by the corresponding p values,  $R^2$  and t-test statistics. The strength of relationship between the dependent and independent variables was considered by  $\beta$  coefficient. (Gujarati 2005, 2011).

### **6.2.3 Initial Examination of SME Survey Data**

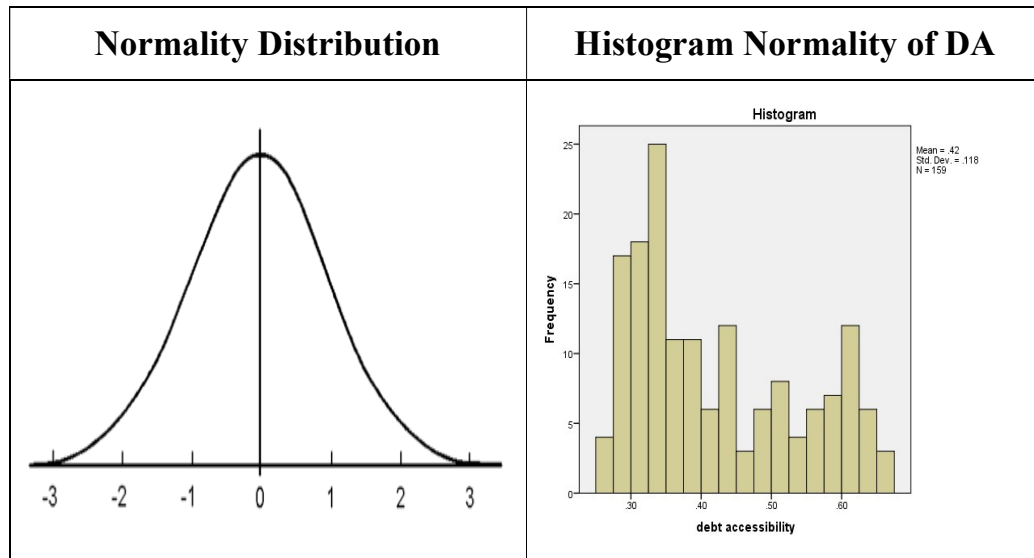
Initial Examination of Data (abbreviated IDA) is a valuable stage of most statistical investigations that consist of process of inspecting, cleansing, transforming and modeling data with the goal of discovering useful information, informing conclusions, and supporting decision-making. In today's business world, data analysis plays a crucial role in making decisions more scientific and helping businesses operate more effectively (Xia & Gong, 2015). IDA analyses are an important first step in research (Chatfield, 1985; Behrens, 1997). The data both quantitative (numerical) and categorical was collected by questionnaire survey of firms and firm's owners in Bangladesh data. Several authors (Hoang 2017; Wangmo 2016) have suggested that to identify abnormality of the data, the graphical presentation has been considered. Exploratory analyses provide a first understanding of the relationships between items and variables included in a study, which enables researchers to better understand the data before opting for more complicated and sophisticated analyses. Chatfield (1985) identified the need for the use of techniques to carry out an IDA. He argued that the objective of IDA is to clarify the

structure of the data, obtain a simple descriptive summary, and also to plan a more sophisticated analysis. Hence, following preliminary inspection steps were taken for questionnaire survey data before using multiple regression analysis.

### **6.2.3.1 Normality of Numerical Variables**

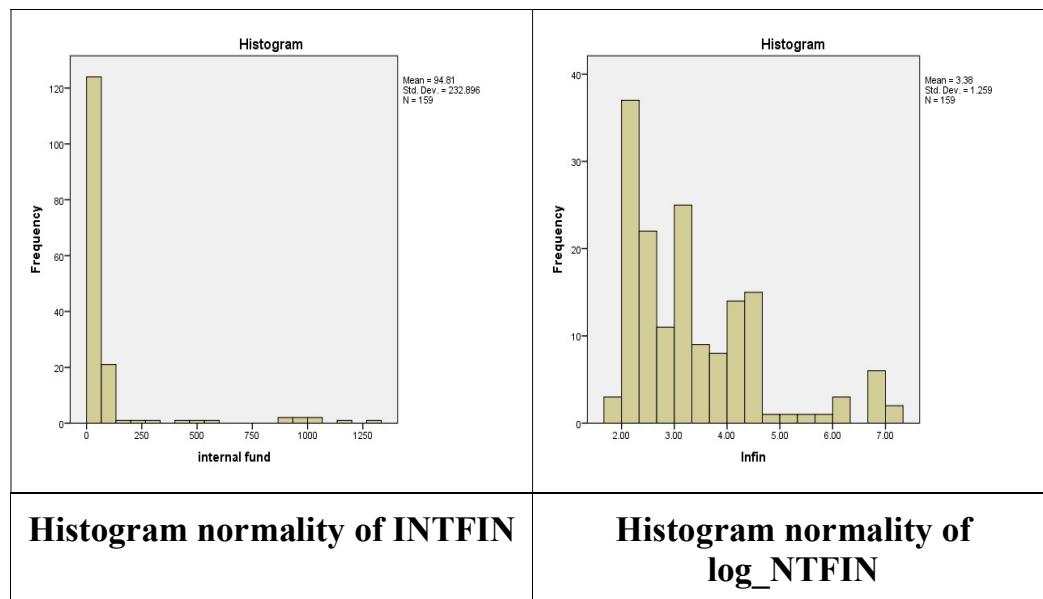
The larger frequency of scores in the centre and smaller frequencies at the extreme ends is the shape of normal frequency distribution (Gujarati 2010). The normality assumption is one of the most important topics to avoid the bias free analysis result. It is not necessary to be absolutely perfect normality but the dependent variable should not be adequately deviated from normality (Hair et al. 2006). In statistics, normality tests are used to determine if a data set is well-modeled by a normal distribution and to compute how likely it is for a random variable underlying the data set to be normally distributed (Razali, Nornadiah, Wah, Bee 2011). In case of the independent variables mixture of continuous variables and categorical variables, the normality assumption is not harshly appropriate (Hair et al. 2006). On the other hand, statistical result will be invalid by using the variable deviated from normality and with the result hypothesis testing will be critical. Perhaps the misunderstanding about this assumption derives from difficulty of understanding what this disturbance term refers to simply put, it is the random error in the relationship between the independent variables and the dependent variable in a regression model (Statistics Solutions, 2013). Before empirical analysis, the normality check was to be done. For this reason graphical and statistical normality checks were carried out.

**Figure: 6.1 Graphical Normality Test of Debt Accessibility (DA)**



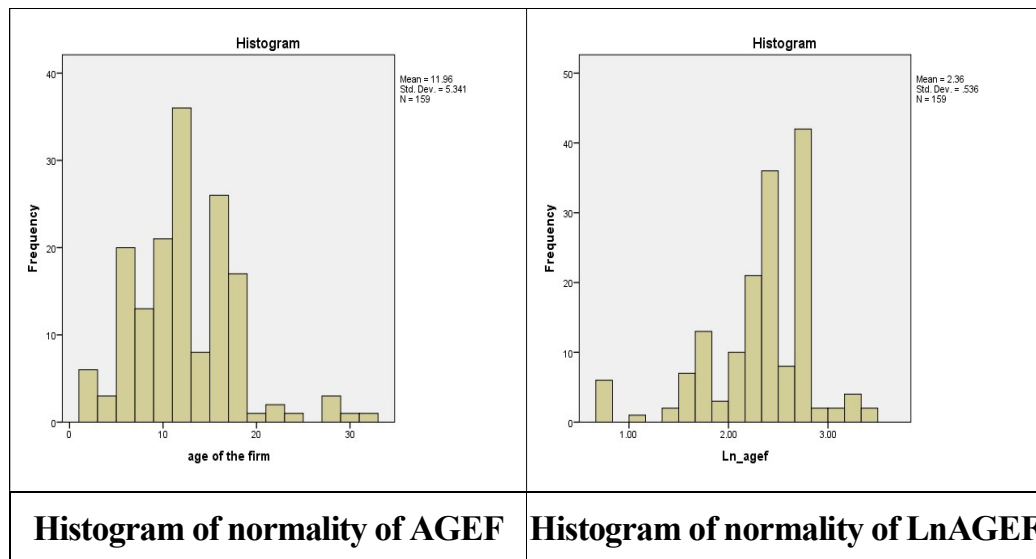
The graph shows the normality assumption of the dependent variable, DA, checked by graphical representation of histogram. Debt accessibility is the financial leverage which is the ratio of total debt to total asset of the organization. DA is the dependent variable in the model. Due to small deviation, conversion of the values of DA is not necessary.

**Figure: 6.2 Graphical Normality Test of Internal Finance (INTFIN)**



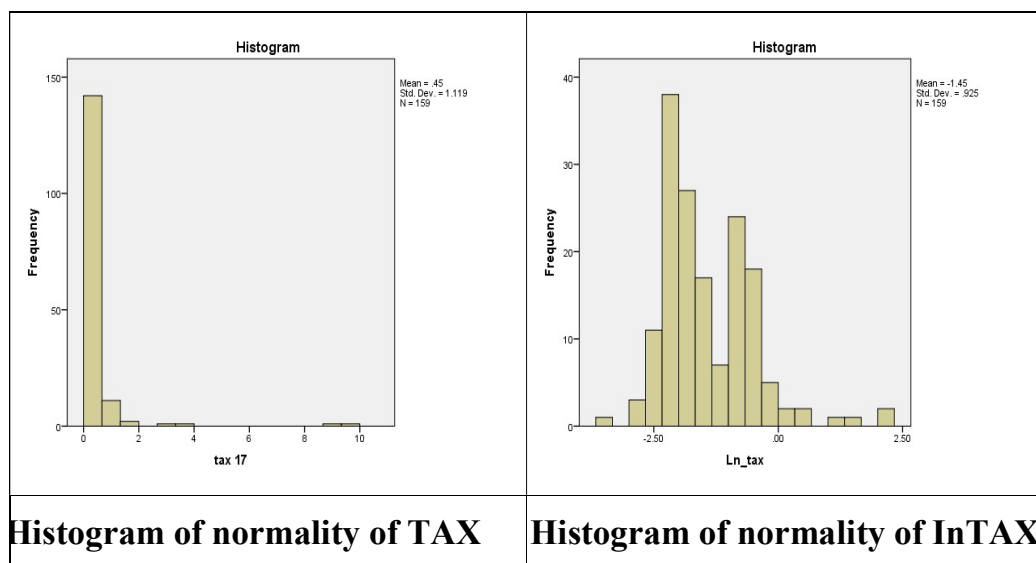
The histogram graph represents the independent variable, INTFIN which shows extremely positively skewed in comparison to normal shape distribution. Hence it is transformed to overcome positive skewedness.

**Figure: 6.3 Graphical Normality Test of Firm Age (AGEF)**



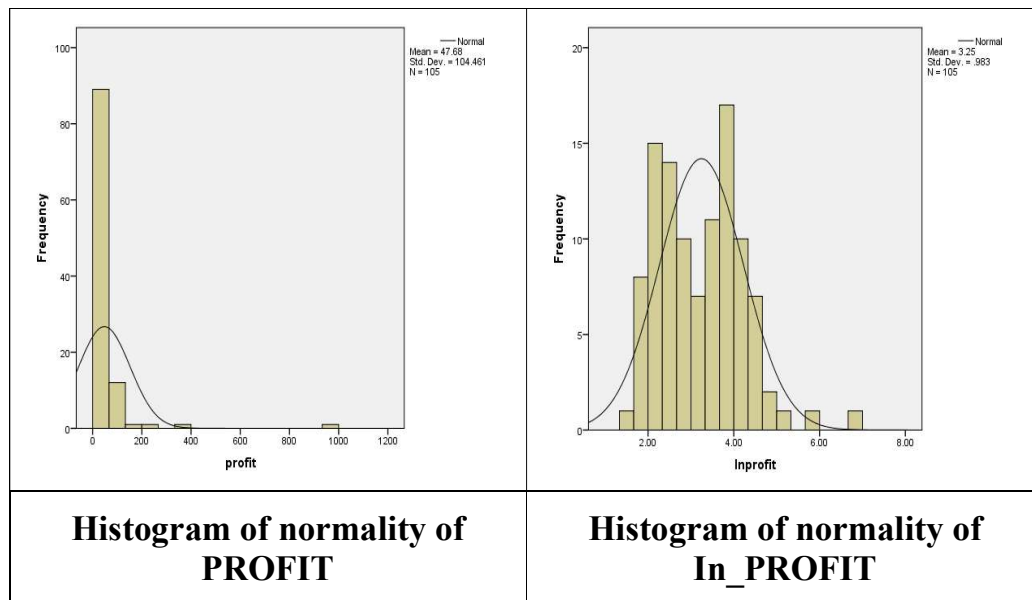
Histogram graphically represents normality of independent variable, AGEF which shows significant deviation from normal distribution. Hence it is transformed to overcome the positive skewness.

**Figure: 6.4 Graphical Normality Test of tax (TAX)**



The histogram graph represents the independent variable, TAX which shows extremely positively skewed in comparison to normal shape distribution. Hence it is transformed to overcome positive skewedness.

**Figure: 6.5 Graphical Normality Test of profit (PROFIT)**



The histogram graph represents the independent variable, profit which shows extremely positively skewed in comparison to normal shape distribution. Hence it is transformed to overcome positive skewed.

### 6.2.3.2 Variables Transformation: Natural Logarithm function of Variables

Data transformation is the application of a deterministic arithmetical function to each point in a data set that is, each data point  $z_i$  is replaced with the transformed value  $y_i = f(z_i)$ , where  $f$  is a function. The larger value is rescaled down, smaller value is added so that the range is narrowed down and sensitiveness of outliers is minimized by the log function of a variable (Davidson and Mackinnon 2004). Transformations are usually functional so that the data appear to more closely meet the assumptions of a statistical inference procedure that is to be applied, or to

improve the interpretability or appearance of graphs. Logarithms are one of the most important mathematical tools in the toolkit of statistical modeling, so you need to be very familiar with their properties and uses.

Since the dependent variable DA shows the normality, there is no need to transform the variable of DA. The histogram graph of INTFIN, AGEF, Tax and profit shows the huge deviation and slight deviation respectively. Hence to solve the issue of extreme positive skewness of these variables, natural logarithm functions are taken for these variables.

**Table: 6.25 Statistical Normality Test for DA, INTFIN, PROFIT, AGEF, TAX**

	N	Minimum	Maxi	Mean	Std. Dev	Variance	Skewness	Kurtosis
Internal fund	159	5.45	1300.00	94.806	232.895	54240.45	3.731	13.320
Ln_intfinan	159	1.70	7.17	3.380	1.259	1.585	1.298	1.354
profit 17	159	5.00	1000.00	38.578	86.243	7438.009	9.275	99.889
Ln_profit	159	1.61	6.91	3.071	.949	.902	.674	.691
tax 17	159	.03	10.00	.451	1.119	1.252	7.104	54.920
Ln_tax	159	-3.46	2.30	-1.451	.925	.856	1.182	2.416
Agef	159	2.00	3100	11.96	5.341	28.53	.711	1.55
Ln_Agef	159	.69	3.43	2.362	.536	.287	-1.162	1.89

The descriptive statistical results of the variables Internal fund, Profit, Tax and Agef (age of the firm) along with their log functions required for transformation of the independent variables. The Table presents the statistical test of normal distribution results of Internal fund, Ln\_intfinan, Profit, Ln\_profit, Tax, Ln\_tax, Agef, Ln\_agef with their skewness and kurtosis values. The departure of distribution of a random variable from symmetry is measured by skewness of a variable where skewness value is (-1, 1) (Groeneveld & Meeden 1984 ).) The value of Kurtosis is 3 for a normally distributed variable (Joanes & Gill 1998; Pedace 2013).

The normal value of skewness was -1, 1. But the skewness of INTFIN as shown in Table 6.25 is 3.731. Therefore, taking log function of



INTFIN has been reduced skewness from 3.731 to 1.298 which is closer to normal value of skewness value of a normal distribution.

The kurtosis value of INTFIN at 13.320 indicates more deviation from normal kurtosis value than  $\ln\_INTFIN$  at 1.354. Also, the skewness of profit was reduced to 0.674 from 9.275 when transformed to  $\ln\_profit$ . Likewise,  $\ln\_tax$  recorded skewness value of 1.182, which is nearer to normal value. The graphical presentation and statistical normality tests verify that  $\ln\_INTFIN$ ,  $\ln\_profit$  and  $\ln\_tax$  present the closer behavior to normal distribution as compared to internal fund, profit and tax.

The log approximation of internal fund, profit and tax were more appropriate for MLR model to attain legal and bias free outcome with unambiguous explanation of the coefficients. So,  $\log\_Intfin$ ,  $\log\_profit$  and  $\ln\_tax$  were used in MLR model to resolve the tremendous difference from ordinariness. It also resolves the existence of any outlier characteristics in the data series.

### **6.2.3.3 Validity and Reliability of the data**

As a means of measuring the possibility of researcher's outcomes, being perplexing, some procedures have been developed to express the likelihoods and correctness of outcomes. The accuracy of the outcomes is attained through the measurement of reliability and validity. In this research, Cronbach's Alpha test has been used for ensuring the reliability and validity of collected data. The acceptable value of Cronbach's Alpha test is ranging from 0.70 to 0.95 (Bland & Altman 1997; Feldt 1980). In this research, internal consistency reliability for the 15 items is judged based on average inter-item correlation and Cronbach's alpha. The value of average inter-item correlation is 0.19 and Cronbach's Alpha is 0.787. So the outcome of this research is reliable and valid.

#### **6.2.3.4 Generation of Dummy Variable for Categorical Independent Variables**

A dummy variable also known as indicator variable, design variable, one hot encoding, Boolean indicator, binary variable, or qualitative variable is a numerical variable used in regression analysis to represent subgroups of the sample in a study (Draper & Smith, 1998). The dummy coding is a process of transforming from qualitative information to parameters to get the result by using regression model (Wooldridge 2009). The dummy variable is one that takes the value 0 or 1 to indicate the absence or presence of some categorical effect that may be expected to shift the outcome. Dummy variables are used as devices to sort data into mutually exclusive categories (Wooldridge, Jeffrey 2009). Dummy variables are "proxy" variables or numeric stand-ins for qualitative facts in a regression model. In regression analysis, the dependent variable may be influenced not only by quantitative variables (income, output, prices, etc.), but also by qualitative variables (gender, religion, geographic region, etc.). A dummy independent variable (also called a dummy explanatory variable) which for some observation has a value of 0 will cause that variable's coefficient to have no role in influencing the dependent variable, while when the dummy takes on a value of 1 its coefficient acts to alter the intercept). A dummy independent variable (also called a dummy explanatory variable) which for some observation has a value of 0 will cause that variable's coefficient to have no role in influencing the dependent variable, while when the dummy takes on a value 1 its coefficient acts to alter the intercept. In research design, a dummy variable is often used to distinguish different treatment groups. In the simplest case, we would use a 0, 1 dummy variable where a person is given a value of 0 if they are in the control group or a 1 if they are in the

treated group. Dummy variables are useful because they enable us to use a single regression equation to represent multiple groups. This means that we don't need to write out separate equation models for each subgroup. The dummy variables act like '**switches**' that turn various parameters on and off in an equation. Another advantage of a 0, 1 dummy-coded variable is that even though it is a nominal-level variable you can treat it statistically like an interval-level variable.

#### **6.2.3.5 Check for Missing Data**

Missing data, or missing values, occur when no data value is stored for the variable in an observation. Missing data are a common occurrence and can have a significant effect on the conclusions that can be drawn from the data. The missing data can be resolved in several ways: first by deleting all data from any participant with missing values, secondly contacting the participants and ask them to fill out the missing values, thirdly by imputing the missing data with a substitute value, fourthly using the middle point or most commonly chosen value (Jeff Sauro, 2015; Burgette, L. F., & Reiter, J. P. 2010; Yuan, K.-H., Lambert, P. L., & Fouladi, R. T. 2004). For this deleting is not possible due to size of the sample. Thus the imputation method using mean value was used to resolve the problem of missing data.

#### **6.2.3.6 Check for Significant Outliers**

An outlier is a data point that differs drastically from other observations.

An outlier may be due to variability in the measurement or it may indicate experimental error; the latter is sometimes excluded from the data set (Grubbs 1969; Stevens, J. P. 1984). An outlier can cause serious problems in statistical analyses. The outlier in the observation is checked by scatter plots by which each variable is regressed against others. Any

outlier in the data is unraveled at the time of metamorphosis of numerical data through log function.

### 6.2.3.7 Model Specification Error

The number of independent variables is too much or too fewer in the model, may create model specification errors (Wangmo 2016). Prophetic accuracy of the model is increased by the enhancement of number of independent variables increases but it may create multicollinearity (Wangmo 2016). When the number of variables was numerous, they encumber the appropriate assessment of variable coefficients producing wrong variance. A model specification error is associated with the statement that there is no correlation between the error term and the explanatory variables ( $E(e/X)=0$ ) (Evans, M. G. 1985; Wangmo 2016).

#### 6.2.3.7.1 Ramsey's RESET Tests for Model Specification Error

**Table 6.26: Ramsey's Reset Tests for omitted variables**

$H_0$ : The model suffers from no omitted variable

T value	0.282
Beta	2.802
Prob>F =	0.779

The regression specification error test (RESET) which was recommended by Ramsey (1969) and which is planned to identify a nonzero mean of the disturbance in a model of linear regression (Thursby, J. G., & Schmidt, P. 1977). By using powers of the fitted values of the Debt Accessibility, RESET test is run to ensure that the model do not endure any variable omission bias. Here t value is 0.282 and p value (Prob > F) is 0.779. So, the null hypothesis is accepted. So the model has no omitted variables. The null hypothesis affirms that the model has no missing variables. As the value of p is larger than the regular value of 0.05 at 95% level of

confidence, it normally accepts null hypothesis. So, the answer of this test affirms that the model does not bear any omitted variable.

#### **6.2.4 Diagnostic Tests**

In statistics the Gauss–Markov theorem, named after Carl Friedrich Gauss and Andrey Markov, states that the correctness of a regression model is dependent on the five principal assumptions of homoscedasticity; linearity; zero conditional mean; no multicollinearity; and random sampling (Hopkins & Ferguson 2014). All assumptions said above were taken to get the actual and reliable result.

##### **6.2.4.1 Linearity in Parameters**

Linearity is a linear approach to modeling the relationship between a scalar response or dependent variable and one or more explanatory variables. The relationship between dependent and independent variable is linear with error term in accordance with linearity with assumption (Samuelson, P. A. 1947). Here the behavior of dependent variable is predicted and explained by the dependence nature of regression model. DA (debt accessibility) is dependent variable and the term ‘e’ is the disturbance in the regression equation containing missing factors which affect DA. Debt accessibility is identified as linear function of one or more independent variables plus an error term.

$$DA = \alpha + \beta_1 INTFIN + \beta_2 COLL + \beta_3 PROFIT + \beta_4 FININFO + \beta_5 INT + \beta_6 TER \\ M + \beta_7 AGEF + \beta_8 SIZEF + \beta_9 SECF + \beta_{10} SOLF + \beta_{11} AGEO + \beta_{12} GENO + \\ \beta_{13} EDUO + \beta_{14} TYPEO + \beta_{15} TAXATION + \varepsilon$$

##### **6.2.4.2 Random sampling**

Random sampling is a way of selecting a sample of observations from a population in order to make inferences about the population (Tim Bock,

2015). A simple random sample is a subset of individual chosen from a larger set (a population). Each individual is chosen randomly and entirely by chance, such that each individual has the same probability of being chosen at any stage during the sampling process, and each subset of  $k$  individuals has the same probability of being chosen for the sample as any other subset of  $k$  individuals (Yates; David; Moore; Starnes, 2008). In methodology chapter the sample was chosen from the different cities of Bangladesh.

#### **6.2.4.3 No Multi-Collinearity**

Multi-collinearity is the occurrences of high inter correlation among independent variables in a multiple regression model. Multicollinearity can guide to misleading outcome when a researcher attempts to establish how well each independent variable can be used most effectively to predict or understand the dependent variable in a statistical model (Mansfield & Helms 1982). The Pearson correlation matrix and variation inflation factor (VIF) were exercised in Table 7.4 to identify the existence of multicollinearity in the model.

**Table: 6.27 Pearson Correlation Matrix**

	Mort gage	Age F	Gend er	Sect or	Durat ion	Educ a	Infor mat.	Intere st	Ln_t ax	Size	Ln_pr ofit	Ln_a gef	Ln_intf inan	Debt acces	Own.
Mortgage	<b>1.00</b>	.017	-.049	-.042	-.051	-.064	.112	.107	.234	.419	.429	.037	.429	.180	.385
Age F		<b>1.00</b>	.039	.089	.177	.051	.109	.216	.238	.230	.283	.926	.256	.199	.065
Gender			<b>1.00</b>	.025	.062	.126	-.078	.015	-.063	-.089	-.060	.037	-.122	.042	-.051
Sector				<b>1.00</b>	.042	-.127	.231	.300	.334	.266	.338	.103	.185	.010	.165
Duration					<b>1.00</b>	.079	.075	.182	-.038	.024	-.006	.125	-.019	.053	.081
Edu						<b>1.00</b>	.209	.145	.129	.070	.024	-.050	.123	.020	.060
Information							<b>1.00</b>	.342	.109	.144	.106	.032	.214	.062	-.071
Interest								<b>1.00</b>	.326	.289	.422	.186	.310	.335	.055
Ln_tax									<b>1.00</b>	.746	.776	.252	.764	.346	.039
Size										<b>1.00</b>	.833	.222	.919	.485	.246
Ln_profit											<b>1.00</b>	.278	.825	.459	.257
Ln_agef												<b>1.00</b>	.255	.301	.059
Ln_intfinan													<b>1.00</b>	.412	.252
Debt Acc.														<b>1.00</b>	.148
Own.															<b>1.00</b>

\

The degree of association among variables by ratio and interval scale is measured by the Pearson correlation matrix and coefficient (Wooldridge 2009, 2010). The presence of multicollinearity depends on the value of correlation exceeding 0.9 (Dormann, et. al 2012; Yu, et al. 2010). Large correlation coefficient between the variables indicates the existence of multicollinearity. The value recorded in Table 6.27 presents that the value of all correlation is below 0.9 ensuring the presence of no multicollinearity in the model.

#### **6.2.4.4 Variance Inflation Factor (VIF)**

The Variance Inflation Factor (VIF) measures the impact of collinearity among the variables in a regression model. The Variance Inflation Factor (VIF) lies between 1 -10. If the VIF value  $<1$  or  $>10$ , then there is multicollinearity (Jeffrey W. Braunstein, 2012). Values of VIF that exceed 10 are often regarded as indicating multicollinearity. In many statistics programs, the results are shown both as an individual  $R^2$  value (distinct from the overall  $R^2$  of the model) and a Variance Inflation Factor (VIF). When those  $R^2$  and VIF values are high for any of the variables in your model, multicollinearity is probably an issue. When VIF is high there is high multicollinearity and instability of the beta coefficients. It is often difficult to sort this out.



**Table: 6.28 Variance of inflation factor**

Variable	Tolerance	VIF
Ln_intfinan	.112	8.933
Ln_profit	.144	6.960
Ln_tax	.258	3.883
Collateral		
Equal	.474	2.109
Double	.378	2.646
Fininfo		
Profit and loss account	.220	4.552
Profit and loss account+ Balance sheet	.230	4.348
Profit and loss account+ Balance sheet+ cash flow statement	.330	3.029
Term of loan		
less one year	.382	2.618
1-2 years	.130	7.677
3-5 years	.124	8.077
SizeF		
Dummy small	.202	4.939
SECF		
Dummy trade	.311	3.211
Dummy manu	.218	4.587
ProF		
Dummy sole	.441	2.266
Dummy part	.393	2.545
EDUO		
Dummy Secondary School Level	.147	6.821
Dummy Higher Secondary Level	.119	8.416
Dummy Hon's	.116	8.652
AGEO		
Dummy be35	.178	5.621
Dummy 36-45	.252	3.965
Dummy 46-55	.392	2.548
Interest rate of loan	.683	1.465
Gender		
Male	.860	1.163
Age of the firm	.729	1.372

#### 6.2.4.5 Zero Conditional Mean

Zero conditional mean means that the average value of the error term 'e' must have a mean of 0 for any value of the independent variables (Hong, et al. 2005; Guadagnini, et al. 1999). The real value of dependent

variable and the value from the population regression function show any dissimilarity; it is called the error term (Hong, et al. 2005). So, whether the value of independent variables is any, the average value for the 'e' is zero for all time. Absence of this assumption means regression coefficients are prejudiced and is accounted by model misspecification (Hausman, et al. 1998; Hainmueller and Hazlett 2014). The model misspecification is confirmed (6.26 Ramsey's Tests for Model Specification Error) and DA is resulted not to qualitative or limited dependent variable. Hence, the model is perfect with 'e' with zero conditional mean.

#### **6.2.4.6 Homoscedasticity**

The homoscedasticity states a situation in which the error term (that is, random disturbance in the association between the independent and dependent variables) is the identical across all values of the independent variables. The assumption of equal variance of the population error E (where E is estimated from e) is critical to the proper application of many multivariate techniques. Heteroscedasticity (the violation of homoscedasticity) is subsistent with the difference of size of the error term across values of an independent variable (Cook & Weisberg 1983). Heteroscedasticity creates biased standard errors offering the invalid statistical test. Breusch-Pagan and Koenker test statistics is one of the statistical tests to identify heteroscedasticity (Waldman 1983).

#### **Breusch-Pagan and Koenker test statistics and sig-values**

$H_0$ : Heteroscedasticity not present (homoscedasticity).

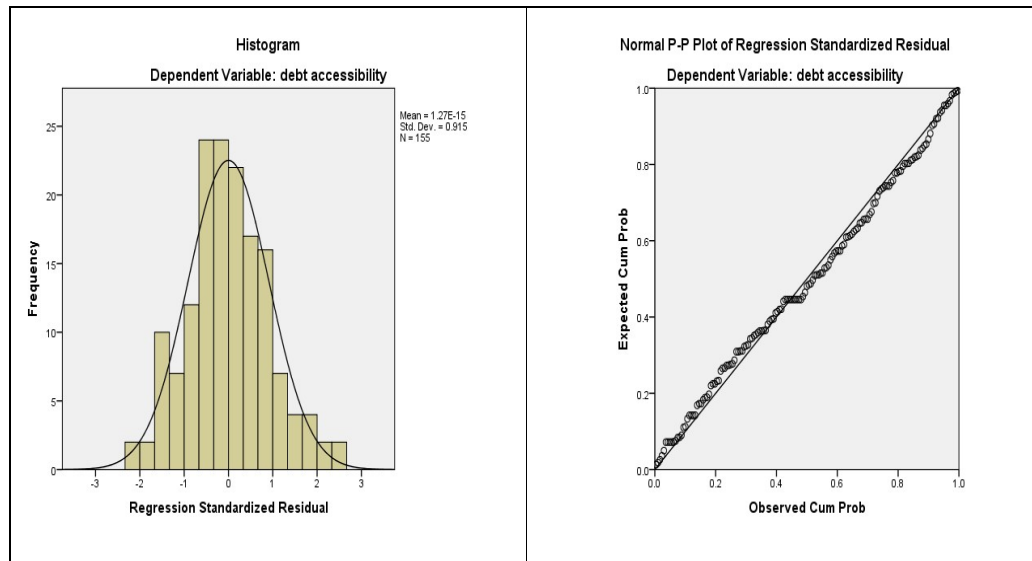
	LM	Sig
BP	37.388	0.069
Koenker	34.505	.123

The result of Breusch-Pagan and Koenker indicates that the residuals to be normally distributed. The model does not suffer from heteroscedasticity.

#### **6.2.4.6 Normality of Residuals**

Portion of a dependent variable is not explained by a multivariate technique. Associated with dependent methods that attempt to predict the dependent variable, the residual represents the unexplained portion of the dependent variable. Residuals can be used in diagnostic procedures to identify problems in the estimation technique or to identify unspecified relationships (Bera, et al. 1981; Jarque, et al. 1987; Hair et al. 2014). The variation between the observed (Y) and the forecasted (Yhat) dependent variable value is to be normally distributed. This is the residual score 'e' (Wooldridge 2009). The residual value ( $e = Y - \hat{Y}$ ) is graphically symbolized in a straight line with homogeneous variance for all forecasted scores. If this concept fails, there is an influence in validity and reliability of regression analysis results. Previous research (Jarque, et al. 1987; Hair et al. 2014) favored to use graphical examination. Thus, the normality of residual 'e' is ensured by probability plots namely Histogram, and pnorm (p-p plot).

**Figure 6.6 Histogram normality and probability normality plot**



The histogram normality plot discloses that the residual ‘e’ is normal in shape. The histogram plot also reveals the normal distribution with mean closer to zero.

The probability plot (p-p) is just off the normal line but very much closer to normal line. Thus graphical position proves the normality of residual.

### 6.2.5 Interpretation of the Regression Analysis Output

R-Squared ( $R^2$ ) and adjusted R-squared work as intended in a simple linear regression model with one explanatory variable and with a multiple regression made up of several independent variables respectively (Israeli, 2006). In this study the result of the regression analysis is interpreted by the multiple the coefficient of determination ( $R^2$  and adjusted  $R^2$ ); standard error of estimate (F-test); significance tests (t-test and p-value statistics) and the standard regression coefficients ( $\beta$ ) (Wangmo, 2016).

<b>Table: 6.29 Multiple Linear regression Analysis Output</b>					
Number of Obs =					159
F( 25, 133)					= 4.721
Prob > F					= 0.000
R-squared					= 0.670
Model	Un. Co. B	Std. Error	St. Co. Beta	t.	Sig.
Ln_intfinan	.017	.018	.182	.966	.000
Ln_profit	.006	.021	.052	.311	.007
Ln_tax	.004	.016	.034	.272	.002
Collateral					
Dummy equal	.029	.033	.079	.861	.005
Dummy double	.018	.052	.035	.337	.000
Fininfo					
Dummy fin PL	.001	.038	.002	.013	.006
Dummy fin pl+bs	.044	.048	.122	.927	.004
Dummy fin pl+bs+cf	.114	.059	.212	1.934	.050
Term of loan					
Dummy less one year	.014	.069	.021	.204	.839
Dummy 1-2	.007	.041	.029	.166	.869
Dummy 3-5	.031	.044	.128	.716	.476
SizeF					
Dummy Small	.094	.037	.357	2.547	.012
Sector F					
Dummy Trade	.070	.027	.295	2.608	.010
Dummy Manu	.126	.036	.476	3.524	.001
Typeo					
Dummy Sole	.044	.034	.122	1.284	.201
Dummy Part	.005	.049	.011	.108	.914
EduO					
Dummy SSC	-.104	.045	-.380	-2.305	.063
Dummy HSC	-.142	.045	-.573	-2.128	.062
Dummy Hon's	-.120	.044	-.503	-2.707	.068
AgeO					
Dummy below 35	.016	.035	.067	.448	.655
Dummy 36-45	.026	.035	.094	.750	.469
Dummy 46-55	.018	.033	.055	.548	.585
Interest rate of loan	.040	.010	.313	.092	.000
Gender					
Male	.021	.042	.034	.498	.019
Age of the firm	.000	.002	.022	.300	.050

### **6.2.5.1 Goodness of Fit Statistics**

Traditional discussions of goodness-of-fit tests for multinomial data consider asymptotic chi-squared properties under the assumption that all expected cell frequencies become large. This condition is not always satisfied, however, and another asymptotic theory must be considered (Kenneth et al.1982; Gordon et al. 2009). Root Mean Square Residual (Root MSE), R-squared ( $R^2$ ), and F-statistics of the model (Significance Value) are well-known to determine the goodness of fit of the regression model using OLS estimation (Wangmo, 2014).

#### **a. $R^2$ and Adjusted $R^2$ value of the Model**

In regression analysis, the measures of goodness of fit are calculated by the coefficient of determination (say  $R^2$ ) and the adjusted coefficient of determination (say adjusted  $R^2$ ). Thus, the sampling properties of  $R^2$  and adjusted  $R^2$  have been examined by many researchers (Cramer, 1987; Koerts et.al. 1970; Rencher & Pun 1980; Cramer 1987; Carrodus & Giles 1992; Meepagala 1992; Ohtani & Hasegawa 1993; Ohtani 1994; and Srivastava & Ullah 1995). Although there are many studies on the sampling properties of  $R^2$  and adjusted  $R^2$ , the confidence intervals of  $R^2$  and adjusted  $R^2$  have not been examined, except for Helland 1987 who proposed a simple approximate confidence interval. As is stated in Press and Zellner 1978,  $R^2$  is rarely, if ever, accompanied by a measure of precision. The reason is that since the distributions of  $R^2$  and adjusted  $R^2$  are difficult and depend on anonymous parameters, it is complicated to compute precision (Cramer, 1987).

The overall regression correctness of the model and percent of variance produced in the output or dependent variable by the independent variables are measured by  $R^2$ . The significant relationship of dependent and

independent variables can be measured by the value of  $R^2$ . Since too many observations bring in additional noise and a retrenchment in suitable predictions, the idea of adjusted  $R^2$  was initiated (Hair, Tatham, Anderson, & Black, 2006).

Adjusted  $R^2$  overcomes the shortcomings of extra independent variables in the model by incorporating the model's degree of freedom and introduced as adjustment of the  $R^2$  in terms of the number of variables and sample size (Gujarati & Porter 2009).

When the sample size is large, the value of  $R^2$  slightly differs from the value adjusted  $R^2$ . Another cause of difference is small number of quantity of variable. So, the model's goodness of fit is identified with the value of  $R^2$ . The standard value of  $R^2$  is between 0 and 1. The inferior values of  $R^2$  is related to less variations and higher value of  $R^2$  is related to more variations in the dependent variable (Hill, et al. 2011). If the value of  $R^2$  is 1.0 assuming 100% variability of the dependent variable explained by the independent variable. It means that a significant linear relationship exists between the dependent variable and independent variables of a regression equation.

The value of  $R^2$  is 0.670 indicating that 67% of the variability in the debt accessibility is counted for the explanatory variables mentioned in the model. In the same way the value of adjusted  $R^2$  is .596 indicating 59.6% of the variability in the debt accessibility is enumerated in the model. The difference between  $R^2$  and adjusted  $R^2$  is very low. It indicates that the deviation in DA is for variable in reality not for independent variable of the model. It gives sufficient proofs to authenticate the general goodness of fit statistics.

### **b. F statistics and p-value**

F-statistics justifies the difference of  $R^2$  from zero, which is the possibility that the result of the regression test is not achieved by chance. If the result of  $R^2$  is unlike from zero with a smaller p value it identifies the greater importance of the model and there is a larger possibility that the regression test result is not by chance (Ioannidis, et al. 2007). The F value (25, 133) has 25 variables and 133 degrees of freedom with value 4.721. Whether the explanatory variables have any significant relationship with the dependent variable can be measured by p value. So with the presented F and P value the dependability of the explanatory variable to forecast DA is sufficient.

### **6.2.5.2 Measurement of the Econometric Model**

The measurement of the econometric model is made up of the calculation and evaluation of perfect measures of relationship and statistical significance tests. The regression results are used to identify the truth or false of hypotheses.

#### **a. Description of Null and Alternative hypotheses**

Generally a random sample is taken to understand some characteristic of the general population by studying the corresponding property of the sample. Then we have to decide about the sample that represents the population.

By selecting an estimator function for the feature of the population, the researcher applied the function to the sample to attain an estimate.

A hypothesis which states that there is no difference between the assumed and actual value of the parameter is the null hypothesis and the hypothesis that differs from the null hypothesis is the alternative hypothesis. The null hypothesis is typically condensed as  $H_0$  and the



alternative hypothesis as  $H_a$ . As these two are opposite in position (if  $H_0$  is right, if  $H_a$  is false), it is enough to characterize the null hypothesis.

Since the sample usually only contains a subset of the data in the population, the researcher cannot be absolutely certain as to whether the null hypothesis is true or not. The researcher can merely gather information (via statistical tests) to determine whether it is likely or not. The researcher therefore speaks about rejecting or not rejecting the null hypothesis on the basis of some test, but not of accepting the null hypothesis or the alternative hypothesis. Often in an experiment we are actually testing the validity of the alternative hypothesis by testing whether to reject the null hypothesis.

When performing such tests, there are some chances that we will reach the wrong conclusion. There are two types of errors:

- Type I –  $H_0$  is rejected even though it is true (false positive)
- Type II –  $H_0$  is not rejected even though it is false (false negative)

The acceptable level of a Type I error is designated by alpha ( $\alpha$ ), while the acceptable level of a Type II error is designated beta ( $\beta$ ).

We use the following terminology:

Significance level is the acceptable level of type I error, denoted by  $\alpha$ . Typically, a significance level of  $\alpha = .05$  is used (although sometimes other levels such as  $\alpha = .01$  may be employed). This means that the researcher is willing to tolerate up to 5% of type I errors, i.e. we are willing to accept the fact that in 1 out of every 20 samples we reject the null hypothesis even though it is true.

**b. T-test and p-value**

The t-test and P-value approach involves determining "likely" or "unlikely" by determining the probability assuming the null hypothesis were true of observing a more extreme test statistic in the direction of the alternative hypothesis than the one observed. If the P-value is small, say less than (or equal to)  $\alpha$ , then it is "unlikely." And, if the P-value is large, say more than  $\alpha$ , then it is "likely." If the P-value is less than (or equal to)  $\alpha$ , then the null hypothesis is rejected in favor of the alternative hypothesis. And, if the P-value is greater than  $\alpha$ , then the null hypothesis is not rejected.

At the appropriate significance level of 1%, 5% or 10%, the t-test and p value report the measurer of accepting or rejecting the null hypothesis. The t-test and p-value of each variable confirmed that the output is not gained by chance.

**c. Variable coefficient ( $\beta$ )**

The beta coefficient is the estimator of strength of the relationship between the dependent and independent variable (McKelvey, R. D., & Zavoina, W. 2010). If the beta coefficient is not statistically significant (i.e., the t-value is not significant), the variable does not significantly predict the outcome. If the beta coefficient is significant, examine the sign of the beta. If the beta coefficient is positive, the interpretation is that for every 1-unit increase in the predictor variable, the outcome variable will increase by the beta coefficient value. If the beta coefficient is negative, the interpretation is that for every 1-unit increase in the predictor variable, the outcome variable will decrease by the beta coefficient value.

### **6.2.5.3 Hypotheses Testing**

#### **6.2.5.3.1 Internal Finance and Debt Accessibility**

Ho<sub>6.1</sub>: There is no influence of internal finance (lnINTFIN) on access to bank loan (DA).

The p-value of internal finance is 0.000 and the value of t-test was .966. P value is very much smaller than the alpha value of 0.05. The value of t-test is very much smaller than the critical 1.96. So, the influence of internal finance is significant at 95% confidence interval. The regression results show confirmation to uphold Ho<sub>6.1</sub> 'there is no influence of internal finance (lnINTFIN) on access to bank loans (DA)'. So, the hypothesis is rejected. Internal finance has the influence on access to get bank loan. The  $\beta$  of lnINTFIN was .182. If one unit of internal capital increases 18.2 percent SMEs access to bank credit.

#### **6.2.5.3.2 Collateral Size and Debt Accessibility**

Ho<sub>6.2</sub>: There is no influence of size of the collateral (COLL) on access to bank loans (DA).

The collateral variable was divided into two dummy variables: equal to the loan amount (Dummy equal); double of the loan amount (Dummy double). The p-value of dummy equal and dummy double is 0.005 and 0.000 respectively. The value of t-test are .861 and .337 respectively. P value is very much smaller than the alpha value of 0.05. The value of t-test is very much smaller than the critical 1.96. Regression results shows that variable 'dummy equal' and variable 'dummy double' are significant at 95% confidence interval. The null hypotheses 'there is no influence of size of the collateral (COLL) on access to the bank loans (DA)' is

rejected in case of both dummy variables. So, size of collateral has influence on access to bank loan.

### **6.2.5.3.3 Financial Information prepared by the Firm**

Ho<sub>6.3</sub>: There is no influence of the quantity of the firm financial information (FININFO) on access to bank loans (DA).

The financial information variable was divided into three dummy variables: only profit and loss account (Dummy PL); profit and loss account and balance sheet (Dummy PL+BS) and profit and loss account, balance sheet and cash flows (Dummy PL+BS+CF). Regression results showed that, in relation to the reference variable Dummy PL and Dummy PL+BS is statistically significant at 95% confidence interval with p values of 0.006 and .004. The variable Dummy PL+BS+CF is statistically significant at 95% confidence interval with p values of 0.050. The t values is 0.13, .927 and 1.934 respectively.

So, our null hypotheses ‘there is no influence of firm financial information on access to the bank loans (DA)’ is rejected in all Dummy variables PL, Dummy PL+BS and Dummy PL+BS+CF.

### **6.2.5.3.4 Loan Characteristics**

#### **6.2.5.3.4.1 Rate of Interest on loan and Debt Accessibility**

Ho<sub>6.4</sub>: There is no influence of the rate of interest on loan (INT) on access to bank loans (DA)

The p-value of internal finance is 0.000 and the value of t-test was 0.092. P value is very much smaller than the alpha value of 0.05. The value of t-test is very much higher than the critical 1.96. So the influence of rate of interest is significant at 95% confidence interval. The regression result rejects the null hypothesis ‘Ho<sub>6.4</sub> ‘there is no influence of rate of interest

on loan (INT) on access to bank loans (DA)'. So rate of interest on loan has the influence on access to bank loan. The  $\beta$  of INT was .313. If single unit of rate of interest changes 31.3 percent SMEs access to bank credit changes.

#### **6.2.5.3.4.2 Duration of loan and Debt Accessibility**

Ho<sub>6.5</sub>: There is no influence of the duration of the loan (TERM) on access to bank loans (DA).

The duration of the loan variable was divided into three dummy variables: duration of the loan less than one (Dummy less one), duration of the loan 1-2 years (Dummy 1-2); duration of the loan 3-5 years (Dummy 3-5). Regression results showed that, in relation to the reference variable dummy less than one, dummy 1- 2 years and dummy 3-5 years are not statistically significant at 95% confidence interval with p values of 0.839, .869 and .476 respectively.

So, the null hypotheses was accepted indicating that size of the term loan is not an influencing factor.

#### **6.2.5.3.5 Firm Characteristics (Hypothesis 4)**

##### **6.2.5.3.5.1 Firm Age and Debt Accessibility**

Ho<sub>6.6</sub>: There is no influence of firm age (AGEF) on access to bank loans (DA)

The p-value of age of the firm is 0.050 and the value of t-test was .300. P value is equal to the alpha value of 0.05. The value of t-test is very much smaller than the critical 1.96. So, the influence of age of the firm is significant at 95% confidence interval. The regression results show that Ho<sub>6.6</sub> 'there is no influence of age of the firm (AGEF) on access to bank loans (DA)' is rejected. Thus age of the firm has influence on access to

bank loan. The  $\beta$  of AGEF was .022. It means that the age of the firm increased by one unit, 2.2 percent SMEs access to bank credit is increased.

#### **6.2.5.3.5.2 Firm size and Debt Accessibility**

Ho<sub>6.7</sub>: There is no influence of firm size (SIZEF) on access to bank loans (DA)

The size of the firm variable is Dummy S. The p-value of size of the firm is 0.012. P value is less than the alpha value of 0.05. The value of t-test is very much smaller than the critical 1.96. So the influence of size of the firm is significant at 95% confidence interval.

The null hypotheses, there is no influence of size of the firm on access to the bank loans (DA) is rejected in dummy variable. So, the size of the firm influences on access to bank loan.

#### **6.2.5.3.5.3 Firm Sector and Debt Accessibility**

Ho<sub>6.8</sub>: There is no influence of firm sector (SECF) on access to bank loans (DA)

The variable sector of the firm is divided into two dummy variables: trade (Dummy trade) and manufacturing (Dummy manu). Regression results showed that, in relation to the reference sector, Dummy trade, Dummy manu have a p-value of 0.010 and .001 respectively ( $< 0.05$ ) and t-value of the dummy variables are 2.608 and 3.524 respectively ( $> 1.96$ ). Thus null hypotheses, there is no influence of sector of the firm on access to the bank loans (DA), is rejected. So, the sector of the firm influences the access to bank loan.

### **6.2.5.3.6 Owner Characteristics (Hypothesis 5)**

#### **6.2.5.3.6.1 Age of the owner and Debt Accessibility**

Ho<sub>6.9</sub>:: There is no influence of firm owner's age (AGEO) on access to bank loans (DA)

The variable, age of the owner was divided into three dummy variables: the age of the owner below 35 (Dummy below 35); the age of the owner more than 35 years but less than 45 years (Dummy 35-45) and the age of the owner more than 45 years but less 55 years (Dummy 45-55). Regression results showed that, in relation to the reference variable Dummy below 35, Dummy 35-45 and dummy 45-55 are not statistically significant at 95% confidence interval with p values of 0.655, .469 and .585 respectively. P value is higher than the alpha value of 0.05. The value of t-test are less than t value 1.96 for the dummy variable Dummy below 35 (.448), Dummy 35-45 (.750) and dummy 46-55 (0.548). The null hypotheses, there is no influence of age of the owner on access to the bank loans (DA), is accepted in dummy variable Dummy below 35 and Dummy 35-45 and dummy 45-55.

#### **6.2.5.3.6.2 Gender of the owner and Debt Accessibility**

Ho<sub>6.10</sub>: There is no influence of gender of the owner (GENO) on access to bank loans (DA)

The p-value of gender of the firm is 0.019 and the value of t-test was .498. P value is very much less than the alpha value of 0.05. The value of t-test is very much smaller than the critical 1.96. So, the influence of gender of the owner is significant at 95% confidence interval. So, the null hypothesis, there is no influence of gender of the owner (AGEF) on access to bank loans (DA), is rejected. The gender of owner has the influence on access to bank loan.

### **6.2.5.3.6.3 Educational Qualification of the owner and Debt Accessibility**

Ho<sub>6.11</sub>: There is no influence of the firm owner's educational qualification (EDUO) on access to bank loans (DA)

The education of the owner variable is divided into three dummy variables: the education level below SSC (Dummy SSC); the education level HSC (Dummy HSC) and the education level in Honor's (Dummy Hon's). Regression results show that Dummy SSC, Dummy HSC and Dummy Hon's are not statistically significant at 95% confidence interval with p values of 0.063, 0.062 and .068 respectively. The null hypotheses, there is no influence of education of the owner on access to the bank loans (DA) is accepted. Thus it is approved that Dummy SSC, Dummy HSC and Dummy Hon's have no influence on bank loan.

### **6.2.5.3.7 Profitability of the firm and Debt Accessibility**

Ho<sub>6.12</sub>: There is no influence of the firm's profitability (PROFIT) on access to bank loans (DA)

The p-value of age of the firm is 0.007 and the value of t-test was 0.311. So, the influence of profitability of the firm is significant at 95% confidence interval. The regression results shows confirmation to uphold Ho<sub>6.12</sub>, that there is no influence of profitability of the firm (PROFIT) on access to bank loans (DA). So, the above hypothesis, there is no influence of profitability of the firm (PROFIT) on access to bank loans (DA) is rejected. The profitability of the firm (PROFIT) has the influence on access to bank loan.



### **6.2.5.3.8 Taxability of the firm and Debt Accessibility**

Ho<sub>6.13</sub>: There is no influence of the firm's taxation (TAXATION) on access to bank loans (DA)

The p-value of taxation of the firm is 0.002 and the value of t-test was .272. P value is very much less than the alpha value of 0.05. The value of t-test is very much smaller than the critical 1.96. So, the influence of the firm's taxation (TAXATION) is significant at 95% confidence interval. The regression results reject the null hypothesis, there is no influence of the firm's taxation (TAXATION) on access to bank loans (DA), is rejected. Thus it can be said that the firm's taxation (TAXATION) has the influence on access to bank loan.

### **6.2.5.3.9 Ownership style (TYPEO) of the firm and Debt Accessibility**

Ho<sub>6.14</sub>: There is no influence of the firm's ownership style (TYPEO) on access to bank loans (DA)

The duration of the loan variable is divided into two dummy variables: solo proprietorship firm (Dummy Sole); partnership firm (Dummy Part). Regression results show that Dummy sole and Dummy part are not statistically significant at 95% confidence interval with p values of 0.201 and .914 respectively.

The null hypotheses, therefore, is accepted which means that ownership style of the firms has no accessibility to bank loan (DA).

### **6.2.5.4 Validation of the Model (Robustness Testing)**

In multiple linear regression assumption, there are many ways such as heteroscedasticity, transformation of variables, bootstrapping and robust regression to diminish the violation of the MLR assumptions (Kropp, Koopman, & Siewiorek, ). Here heteroscedasticity are taken to present a

perfect model assessment. When there is a existence of heteroskedasticity, the outcome of ordinary least square inference of econometric analysis becomes doubtful (Wooldridge 2009). The existence of heteroscedasticity produces standard errors in an unfair means which results in incorrect model estimators, t-test and p-values (Sugimoto, et al. 2013; Wooldridge 2009). It gives the OLS estimator inefficient. So, statistical method was identified to notice the existence of heteroscedasticity and carry out remedial actions.

### **Breusch-Pagan and Koenker test statistics and sig-values**

**H<sub>0</sub>:** Heteroskedasticity not present (homoskedasticity).

	LM	Sig
BP	37.388	0.069
Koenker	34.505	.123

The result of Breusch-Pagan and Koenker indicate that the residuals are normally distributed. The model does not suffer from heteroscedasticity.

### **6.2.6 Additional investigation to authenticate experiential findings**

To authenticate experiential findings, there are some additional regression analysis which have been done. Here single linear regression analysis and multiple linear regression analysis are carried out to follow the study's main findings. The main purpose of the additional analysis is to cut the influence of group of independent variable on SME's access to get loan.

**Group 1:** In the first group, firm's ability to pay the loan allied variables, internal finance (ln\_INTFIN), collateral (COLL) and profitability were entered as Group 1 as independent variables.

**Group 2:** In group two, firm's financial information is presented as independent variable on SME's access to get loan from the financial institutions.

**Group 3:** The rate of interest and term of bank loan are included in the group three as independent variable on SME's debt accessibility.

**Group 4:** The number of years the firm engaged in business, size of the firm and the sector in which the firm is engaged in business are included in group four.

**Group 5:** The age of the owner of the firm, the gender of the owner and educational qualification of the owner are included in group five.

**Group 6:** The tax paid by the business organization and ownership are included in group six.

#### **6.2.6.1 Single Linear Regression Analysis (SLR)**

**Table: 6.30 Single Linear Regression Analysis**

Group	R square (R <sup>2</sup> )	Adjusted R square	F	df1	df2	p
1	.222	.201	10.963	4	154	.000
2	.130	.113	7.742	3	155	.000
3	.135	.113	6.029	4	154	.000
4	.315	.297	17.680	4	154	.000
5	.178	.140	4.670	7	151	.000
6	.072	.054	4.028	3	155	.009

For the extra investigation, the independent variables are classified into six groups (Wangmo, 2016). The SLR analysis is carried out in incorporating each group of independent variables and the dependent variable. The analysis calculates the effect of each group on access to bank loan. The influence of each group of independent variable on access to bank loan in respect to the value of R<sup>2</sup> and adjusted R<sup>2</sup> has been measured here.

As per the single linear regression analysis summary Group 1 contains the independent variables internal finance (INTFIN), collateral (COLL) and profitability of the firm (PROFIT) and R<sup>2</sup> (0.222) and Adjusted R<sup>2</sup> (0.201)

values. The values of  $R^2$  and adjusted  $R^2$  in Group 2 (firm's financial information) are 0.130 and 0.113 respectively. The p-values of Group 1(0.000) and Group 2 (0.000) are significant at 1% level. In the same manner, Groups 3, 4 and 5 related to firms, owner and loan characteristics have the  $R^2$  values .135, .315 and .178 respectively. The adjusted  $R^2$  values are .113, .297 and .140 respectively. The p values of the Group 3, Group 4 and Group 5 are (0.000) (0.000), (0.000) respectively. All the groups have statistically significant influence on access to bank loan.

From the Table **6.31**, we observe that the analysis of SLR of  $\ln\_INTFIN$  is statistically significant with p value (0.004) and t-test value (.266). Enhancement of single unit of the log value of internal finance increases the access to bank loans by 11percent. In the same way, the  $\ln\_profit$  has influence on DA. The significance level (p= .003; t-test=1.968 and coefficient =.277) means that the enhancement of each unit of  $\ln\_profit$  increases the accessibility of bank loan by 27.7 percent. In the same way the relationship between collateral (Coll) and DA is significant. The p value of equal mortgage of loan amount is .002 and t value 1.181. It indicates that 11.3 percent greater loan accessibility is associated with the firm's providing of equal collateral of the loan to the bank compared to loan accessibility of the firm provided half collateral of the loan provided by the bank. Similarly the firm given double mortgage the amount of loan value (p=0.000; t = .441) has 4.5 percent greater advance accessibility in compared to providing double collateral of the loan to the bank.

Also, In single linear regression analysis of group 2 variables, it was significant for the category 'profit & loss account, profit & loss account+ Balance sheet and profit & loss account+ Balance sheet + cash flows accounts' presenting the p value= .021, .015, .012 and t value=0.099, -1.794, 2.537respectively.

Likewise, the relationship between interest rate and debt accessibility is significant. It presents the p value .000, t value -4.459 and coefficient -.346 means the enhancement of each unit of interest decreases the accessibility of bank loan by 34.6 percent.

In case of term loan, the relationship 'three to five years' and debt accessibility is significant at 5 percent level of significance. In group 4, the relationship is significant. In the same way association among the size and sector of the firm, tax paid by firm and ownership (solo) and debt accessibility is significant.

The firm's volume of internal finance, collateral, financial information, interest rate, size, sector and tax conclude the SMEs' debt accessibility. The aspects associated with loan, age of the owners do not influence firm's access to bank loan. We bring to a close that a firm's admittance to loan is concluded by a firm's internal finance, collateral, financial information, interest rate, size, sector and tax, whereas the further issues do not have a strong influence on DA.

Table 6.31 Single Linear Regression Analysis

Variables	Group 1			Group 2			Group 3			Group 4			Group 5			Group 6			
	Coef.	t	p	Coef.	t	p	Coef.	t	p	Coef.	t	p	Coef.	t	p	Coef.	t	p	
In_Intfin	.110	.266	.004																
Ln_profit	.277	1.968	.003																
Coll																			
Equal	.113	1.181	.002																
Double	.045	.441	.000																
<b>Financial Info</b>																			
P/L a/c				.015	.099	.021													
P/L+B/S A/c				.243	-1.794	.015													
P/L+B/S+C/F A/c				.271	2.537	.012													
<b>Interest rate</b>																			
Term							-.346	4.459	.000										
Less than one year							.011	.107	.915										
One to two years							.225	1.141	.256										
Three to five years							.287	1.468	.044										
Ln_Agef										.216	3.162	.002							
Size																			
Small										.361	5.260	.000							
Sector																			
Trade										.284	2.950	.004							
Manufacture										.477	4.992	.000							
Age of owner													.326	2.896	.114				
Below 35													.123	1.253	.212				
Years 36-45													.408	3.898	.140				
Years 45 -55													.008	.105	.916				
Gender of owner																			
Education of owner																			
SSC													-.542	-3.124	.062				
HSC													-.784	-4.055	.070				
Hon's													-.673	-3.456	.401				
Tax paid by the firm																.223	2.874	.005	
Ownership																			
Solo																.056	.512	.009	
Partner																.098	.901	.369	

### 6.2.6.3 Hierarchical Multiple Linear Regression Analysis

Hierarchical multiple linear regression (HMLR) analysis is a way to examine the influence of the independent variable groups on the dependent variable by addition of independent variables one by one (Richter, T. 2006; Schriesheim, C. A. 1995; Petrocelli , J. V. 2003; Tabachnick & Fidell 2007). In this framework, the influence of first independent variable group on dependent variable is checked. In the second stage the second group is added to first group and checked the influence on the dependent group. In this way up to last group, the influence is checked on the dependent group. The objective is to identify the significant improvement in R square by adding new in dependent variables. The alteration in R square for adding next group of independent variables represents its influence on the dependent variable. A modification in R square clarifies the significance of newly added variables rather than overall  $R^2$  of the model.

**Table: 6.32 Hierarchical Multiple Linear Regression Analysis**

Model	R square	Adjusted R square	Change in R square	F	df1	df2	p
1	.222	.201		10.963	4	154	.000
2	.288	.268	.066	6.919	7	151	.000
3	.349	.312	.061	5.695	11	147	.000
4	.480	.390	.131	7.179	15	143	.000
5	.577	.483	.094	5.646	22	136	.000
6	.670	.596	.074	5.316	25	133	.000

Source: Survey Data

A hierarchical multiple regression consisting of six-steps was taken by accumulation of six clusters of variables in an order by the researcher based on the theoretical background (Lautenschlager, G. J., & Mendoza, J. L. (1986). The synopsis of HMLR analysis is the change in  $R^2$  on

adding new set of variable to the equation. In single linear regression R square and adjusted R square values are very low for the independent variable but in multiple linear regression  $R^2$  and adjusted R square values show an increasing trend in addition to the new variable. The value of R square is always more than or equal to adjusted R square. It is an indicator of good regression model. The small difference between the  $R^2$  and adjusted R square indicates variation in DA for the independent variable but not for number of independent variables. The effect of each group on the difference of debt accessibility (DA) is shown here.

**Model 1:**

From the Table 6.33 Capital of the owner ( $\ln\_INTFIN$ ), collateral (COLL) and profit ( $\ln\_profit$ ) variables interrelated to firm's ability to pay the loan come into in the first model as independent variables. With F value 10.963 and p value 0.000, the Model-1 is statistically significant and elucidates 22.2 percent variance in debt accessibility. In the analysis of SLR, the  $\ln\_INTFIN$  is statistically significant with p value (0.004) and t-test value (.266) (Table 6.33). In the same way, the association of  $\ln\_profit$  and DA is significant with p value (.003); t-test value (1.968) and coefficient value (.277). In the same way the relationship between collateral (Coll) and DA is significant. The p value of equal mortgage of loan amount is .002 and t value 1.181. It indicates that 11.3 percent greater loan accessibility in comparison to loan accessibility of the firm provided equal collateral of the loan provided by the bank. Similarly, the firm given double mortgage the amount of loan value ( $p=0.000$ ;  $t = .441$ ) has 4.5 percent greater advance accessibility in comparison to providing double collateral of the loan to the bank.



**Model 2:**

In model 2, financial information variables are penetrated into the model that is significant with 28.8 percent variance in debt accessibility. By adding the financial information variable in the model, it contributes 6.6 percent extra variance with the model 1 which is significant because F ratio is 6.919 with p value 0.000. So the increase in financial information is significant to forecast a firm's possibility to access to bank loans. The dummy variable 'profit and loss account' ( $p=.002$ ;  $t = .448$ ), 'profit and loss account + balance sheet' ( $p=0.000$ ;  $t = .653$ ), 'profit and loss account +balance sheet + cash flow account' ( $p=0.000$ ;  $t = .734$ ) are statistically significant. The beta coefficients of respective dummy variables are 6.5 percent, 8.7 percent and 8.1 percent.

**Model 3:**

In the phase model 3, some loan related characteristics (Int. and duration of the loan, term) are introduced into the model. Here dummy of the term loan are 'less than one year', 'one year to two years', 'three to five years'. The interest rate contributes 29.9 percent variance in DA. The rate of interest variable with p value (.006) and t-test value (2.769) makes a significant influence on DA. Paying higher interest rates increases its chances of securing bank loan by 21.9 percent. But in case of different dummy of term loan are not significant.

**Model 4:**

In the fourth phase, AGEF, SIZEF and SECF related to firm characteristics are entered to the model. It contributes 48.0 percent variance in DA. The totaling of a group 4 of variables enlarged the variance in DA by 13.1 percent. With the value ( $p = .006$ ;  $t = 2.806$ ), the Age of the firm is significant in the way that an enlargement in age of the

firm amplifies its accessibility to bank loans by 19.3 percent. In the same way, there is a positive relationship between firm size and DA supported by the value ( $p = 0.002$  and  $t = 3.230$ ). Likewise, there is a positive relationship between firm sector and DA supported by the value ( $p = 0.000$ ,  $.000$  and  $t = 4.206$ ,  $4.958$  respectively).

#### **Model 5:**

In the phase five, the firm owner's characteristics related variables (AGEO, EDUO and GENO) are introduced in the model five. By adding the owner characteristics the variance is enhanced by 9.4 percent from model 4. At a confidence level of 95%, the firm owner's characteristics related variables (AGEO, EDUO and GENO) are not significant. But male owners with  $p$  value (0.026) and  $t$ -test value (2.248) has significant influence on accessibility to bank loan. The female owners have 41.3% less access to bank loans compared to male owners.

#### **Model 6:**

In the final and sixth phase, by adding the tax paid by owners and ownership style, the variance is enhanced by 7.4 percent from model 5. At a confidence level of 95%, the tax paid by owner and the ownership style are not significant.

#### **6.2.6.4 Additional Discussion:**

The supplementary regression analyses give **robust** statistical indication to sustain the conclusion of the research model. The  $\ln\_INTFIN$ ,  $\ln\_profit$ , COLL and FININFO have significant influence on DA on their own. Likewise, the rate of interest,  $\ln\_age$  of the firm, size of the firm, sector of the firm and gender of the owners have significant influence on DA on their own at a confidence level of 95%. The other independent variables except above mentioned independent variables

have no significant influence on DA on their own at a confidence level of 95%. The results support that the debt accessibility of the firm measured in terms of COLL, ln\_INTFIN, ln\_profit, financial information, the rate of interest, firm's age, firm's size, firm's sector and gender have the maximum influence on access to bank loans.

The result is statistically substantiated highlighting the crucial role of COLL, ln\_INTFIN, ln\_profit, financial information, the rate of interest, age of the firm, size of the form, sector of the firm and gender of the owner in deciding firm access to bank loan. The alteration in R square and adjusted R square by adding new group of variables in the equation prove that a sharp influence is on the DA.

As Table 6.32, the value of adjusted R square enhances with the adding up new group in the model that shows the circumstances of this independent group. When there is a small difference between the values of  $R^2$  and adjusted  $R^2$  in six scale model, it does not means the enhancement in variation in DA for the number of predictor variables but it means by the real cause of variable groups on DA. Therefore, it can be said that the influence of the independent variables on the dependent variable is not affected by the number of the variables. The influence of the regression Model 6 is peak by the values of  $R^2$  (67.00%) and adjusted  $R^2$  (59.6%).

The additional analysis (Table 6.33) presents trustworthy statistical facts to maintain the most crucial results of the study that the size of owner's equity, Ln\_profit of the firm, collateral for the loan and financial information of the firm has the highest prediction capability of a firm's accessibility to the bank loans.

**Table 6.33 : Hierarchical Multiple Linear Regression Analysis**

Variables	Model 1			Model 2			Model 3			Model 4			Model 5			Model 6			
	Coef.	t	p	Coef.	t	p	Coef.	t	p	Coef.	t	p	Coef.	t	p	Coef.	t	p	
<b>In_ Intfin</b>	.110	.266	.004	.138	.388	.004	.176	.730	.004	.225	.998	.004	.350	1.157	.004	.389	1.333	.004	
<b>Ln_ profit</b>	.277	1.968	.003	.326	1.085	.004	.462	1.877	.004	.414	1.763	.004	.487	.1854	.580	.340	1.247	.005	
<b>Coll</b>																			
<b>Equal</b>	.113	1.181	.002	.133	1.365	.002	.132	1.389	.002	.121	1.343	.002	.083	.918	.003	.180	1.172	.003	
<b>Double</b>	.045	.441	.000	.058	.462	.000	.130	.291	.000	.006	.065	.001	.009	.088	.001	.031	.300	.001	
<b>Financial Info</b>																			
<b>P/L a/c</b>				.065	.448	.002	.082	.573	.002	.031	.228	.003	.008	.062	.004	.062	.112	.004	
<b>P/L+B/S A/c</b>				.087	.653	.000	.145	1.081	.000	.122	.919	.001	.143	1.092	.001	.124	.937	.002	
<b>P/L+B/S+C/F A/c</b>				.081	.734	.000	.106	.967	.000	.175	1.639	.000	.193	1.790	.000	.209	1.805	.000	
<b>Interest rate</b>							.219	2.769	.006	.262	3.462	.006	.307	4.081	.006	.314	4.106	.006	
<b>Term</b>																			
<b>Less than one year</b>							.162	1.602	.111	.003	.027	.978	.011	.108	.914	.022	.217	.828	
<b>One to two years</b>							.198	1.071	.286	.120	.689	.492	.051	.296	.767	.025	.146	.884	
<b>Three to five years</b>							.326	1.768	.079	.185	1.045	.298	.136	.771	.442	.124	.691	.491	
<b>Age of the firm</b>										.193	2.806	.006	-.029	-.395	.693	-.158	-2.236	.027	
<b>Size</b>																			
<b>Small</b>										.443	3.230	.002	.339	2.438	.063	.399	2.902	.004	
<b>Sector</b>																			
<b>Trade</b>										.429	4.206	.000	.135	.055	.003	.319	-2.883	.005	
<b>Manufacture</b>										.625	4.958	.000	.462	3.435	.001	.513	-3.865	.000	
<b>Age of owner</b>																			
<b>Below 35</b>													-.034	-.235	.814	-.049	-.334	.739	
<b>Years 36-45</b>													.121	1.002	.318	.116	.941	.348	
<b>Years 45 -55</b>													-.037	-.382	.703	-.049	-.494	.622	
<b>Education of owner</b>																			
<b>SSC</b>													-.336	-2.090	.068	-.288	-1.779	.078	
<b>HSC</b>													-.492	-2.719	.077	-.463	-2.573	.122	
<b>Hons</b>													-.413	2.248	.096	.506	2.730	.087	
<b>Gender of owner</b>																			
<b>Male</b>													.413	2.248	.026	-.034	-.492	.623	
<b>Tax paid by the firm</b>																.043	.350	.727	
<b>Ownership</b>																			
<b>Solo</b>																.116	1.260	.210	
<b>Partner</b>																.005	.048	.962	

### **6.2.7 Conclusion:**

The quantitative analysis of the collected SMEs data has been done in this chapter. Different variables related to SME organization's characteristics, owner's characteristics, loan characteristics and financial information are scrutinized in relation to SME's accessibility to bank loan. The  $R^2$ , t-test and corresponding p-values are considered to conclude the confirmation of the model. To appraise the power of their association with the dependent variable the  $\beta$  coefficients of the independent variables are employed.

In relation with the part of preliminary assessment of data, the average value of that variable is used in case of missing data. Appropriate diagnostic tests related to heteroscedasticity, multicollinearity, normality and model misspecification are passed to determine a suitable multiple regression model. The  $R^2$  value 67.0 percent indicate the regression model to be a good fit.

The regression equation provides a positive influence among the SME firms' accessibility to bank credit and the variables: collateral and internal fund; financial information of the firm; rate of interest and duration of the loan; firm age and firm size; and education of the owners as predicted. Additional examination in respect to hierarchical regression is operated to justify the influence of individual groups on the DA. The owner's equity, profit and collateral, interest rate, firm's age, small size of the firm, sector of the firm and financial information (FININFO) are the most useful in determining firm's accessibility to debt financing.

## **CHAPTER SEVEN**

### **The Impact of Financial Performance Variables on SME financing**

#### **7.1 Introduction**

SMEs have become the engine of growth of Bangladesh and they are the best source of job creation and potent instrument in expanding the economic base of the country and have become a source of inspiration for the investors to invest. Inadequate access to finance has been one of the stumbling blocks for SMEs to realize their full potentials. It means that for the vast majority of SMEs in this country access to finance for investment and growth has become very limited and unpredictable, thus affecting the growth and success of SMEs in this country (Chowdhuary and Alam, 2017). One of the potential and dominating sectors in private enterprises is SME that helps solve unemployment problem through the creation of new innovative employment opportunities. Considering this fact, the SMEs sector contributes substantially in economic development by expanding business activities and in foreign currency earnings, Bangladesh Bank is continuing its effort to channeling loans to SMEs. The SMEs sector eventually helps improve the life style of marginal income group, empower women and thereby reduce disparity among men and women (Alauddin, Rahman and Rahman, 2015). At present, business organizations are faced with many difficulties and challenges due to operating their various business activities properly and the efficiency of any business is measured generally by the earning of profit. Thus, profits are the soul of the business concern without which it is lifeless. Banks play an important role by developing the economic growth of any country. At present, the financial institutions sector in Bangladesh

consists of the central bank, nationalized commercial banks, private commercial banks, foreign commercial banks, Islamic banks, other-banks, financial institutions and non bank financial institutions. This section provides the different financial variables such as net profit before tax, net profit after tax, interest income, non interest income, loan and advance, total investments, total assets, shareholders' equity, return on assets and return on equity and their impact on SMEs loan.

## 7.2 Descriptive Statistics

Descriptive statistics have been used to analyze the different financial performance variable and SMEs financing and the data have been collected from the annual reports of the sample banks in the respective years from 2008 to 2017 by using statistical package for the social sciences (SPSS). The results of descriptive statistics are given below:

**Table No.-7.1**

Table showing the results of descriptive statistics regarding the different variables of the sample bank (sample\_one) over the study period

(Figure in Million)

Variables	Range	Minimum	Maximum	Mean	Std. Deviation
Net Profit After Tax	2147.52	540.38	2687.90	1729.75	729.8284903
Net Profit Before Tax	5909.54	1987.93	7897.47	3893.80	2105.588334
Interest Income	12476.9	8021.10	20498.00	14854.37	4208.661014
Loan and Advance	149882	52677.00	202559.00	114201.00	47829.36453
Non Interest Income	3681.90	2880.20	6562.10	5031.82	1139.043579
Return on Assets	1.45	0.50	1.95	1.35	0.469402694
Return on Equity	17.41	5.47	22.88	16.87	5.487964205
Shareholders' Equity	20553.28	5437.53	25990.81	13835.26	6705.099849
SME Loan	48045.1	33019.1	81064.20	50726.36	13782.52823
Total Assets	217059	72442.00	289501.00	173029.20	69831.51316
Total Investment	17127.6	8245.40	25373.00	18407.64	6286.374246

(Source: Annual Report of Sample Bank)

Table 7.1 portrays the results of descriptive statistics of the sample banks during the years from 2008 to 2017. The different descriptive statistics like range, minimum value, maximum value, mean value and standard deviation obtained from the different dependent and independent variables are presented in the above Table. The average values of net profit before tax and net profit after tax of the sample bank are 3893.80 and 1729.75 million respectively while the average value of return on assets of the sample banks is 1.35 as well as the average value of return on equity of the sample banks is 16.87 respectively during the study period. The study reveals that the average values of total assets and total investment of the sample banks are 173029.20 million and 18407.64 respectively. The study also reveals that the average values of interest and non interest income of the sample bank are 14854.37 and 5031.82 million respectively during the study period. The average loan and advance of the sample bank is 114201.00 million and the average shareholders' equity of the sample bank is 13835.26 million over the study period. In addition, the mean value of SME loan of the sample bank is 50726.36 million during the study period. From the previous discussion it is evident that the average value of the return on assets of the sample bank is very poor during the study period.



**Table No.-7.2**

Table showing the results of descriptive statistics regarding the different variables of the sample bank (sample\_two) over the study period

Variables	Range	Minimum	Maximum	Mean	Std. Deviation
Net Profit After Tax	2400.81	616.89	3017.70	1577.11	702.7244223
Net Profit Before Tax	3036.03	1281.69	4317.72	2667.16	891.7806634
Interest Income	11175	5106.00	16281.00	11180.68	3942.254312
Loan and Advance	156242	43419.00	199661.00	102335.60	48197.54607
Non Interest Income	6699.60	1771.50	8471.10	4770.15	2128.500505
Return on Assets	1.10	0.76	1.86	1.24	0.370858613
Return on Equity	10.73	9.11	19.84	15.23	3.950755554
Shareholders' Equity	14113.93	3470.09	17584.02	11153.65	4989.487861
SME Loan	27982.316	681.084	28663.40	8526.31	8398.869152
Total Assets	204241.00	55929.00	260170	143886.00	64197.22736
Total Investment	35049.3	6264.70	41314	26017.24	12629.65212

(Source: Annual Report of Sample Bank)

Table 7.2 shows the results of descriptive statistics of the sample bank in the respective years from 2008 to 2017. The various descriptive statistics like range, minimum value, maximum value, mean value and standard deviation obtained from the different dependent and independent variables are presented in the above Table. The average value of net profit before tax and net profit after tax of the sample bank are 2667.16 million and 1577.11 million respectively while the average value of return on assets of the sample bank is 1.24 as well as the average value of return on equity of the sample banks is 15.23 respectively during the study period. The study reveals that the average values of total assets and total investment of the sample bank are 143886.00 million and 26017.24 respectively. The study also reveals that the average values of interest and non interest income of the sample bank are 11180.68 and 4770.15 million respectively during the study period. The average loan and advance of the sample bank is 102335.60 million and the average shareholders' equity of the sample bank is 11153.65 million over the study period. In addition the mean value of SME loan of the sample bank is 8526.31 million during the study period. From the previous discussion it can be concluded that the average value of the return on assets of the sample bank does not run at satisfactory level during the study period.

**Table No.-7.3**

Table showing the results of descriptive statistics regarding the different variables of the sample bank (sample\_three) over the study period

Variables	Range	Minimum	Maximum	Mean	Std. Deviation
Net Profit After Tax	2602.20	1060.00	3662.20	2309.60	805.2569459
Net Profit Before Tax	4985.03	1808.97	6794.00	3844.97	1655.211265
Interest Income	13726.10	9095.90	22822.00	15642.49	4507.379995
Loan and Advance	123167.0	75156.00	198323.00	140212.00	37243.5112
Non Interest Income	6970.80	3808.20	10779.00	7506.87	2020.049448
Return on Assets	1.99	0.38	2.37	1.30	0.684443001
Return on Equity	25.95	4.24	30.19	14.57	8.187838475
Shareholders' Equity	19718.03	6697.00	26415.03	19917.39	6466.06171
SME Loan	20067.76	2163.84	22231.60	13100.57	7449.411787
Total Assets	170838.0	110437.0	281275.00	213081.00	62261.44417
Total Investment	52708.00	19934.00	72642.00	40913.30	19194.58978

(Source: Annual Report of Sample Bank)

Table 7.3 presents the results of descriptive statistics of the sample banks during the study period from 2008 to 2017. The distinct descriptive statistics like range, minimum value, maximum value, mean value and standard deviation obtained from the different dependent and independent variable are presented in the above Table. The average values of net profit before tax and net profit after tax of the sample bank are 3844.97 million and 2309.60 million respectively while the average value of return on assets of the sample bank is 1.30 as well as the average value of return on equity of the sample bank is 14.57 respectively during the study period. The study reveals that the average values of total assets and total investment of the sample bank are 213081.00 million and 40913.30 million respectively. The study also reveals that the average values of interest and non interest income of the sample bank are 15642.49 and 7506.87 million respectively during the study period. The average loan and advance of the sample bank is 140212.00 million and the average shareholders' equity of the sample bank is 19917.39 million over the study period. In addition, the mean value of SME loan of the sample bank is 13100.57 million during the study period. From the above discussion it can be concluded that the average value of the return on assets of the sample bank is not at satisfactory level during the study period.

**Table No.-7.4**

Table showing the results of descriptive statistics regarding the different variables of the sample bank (sample\_four) over the study period

Variables	Range	Minimum	Maximum	Mean	Std. Deviation
Net Profit After Tax	1858.15	798.35	2656.5	2143.46	580.7675622
Net Profit Before Tax	2905.21	1930.54	4835.75	3765.84	861.417775
Interest Income	9582.6	5224.4	14807	11103.02	3717.555847
Loan and Advance	144600	39427	184027	101019.60	46722.48442
Non Interest Income	4503.4	2152.6	6656	4634.80	1647.126014
Return on Assets	2.15	1.04	3.19	1.80	0.680774885
Return on Equity	12.71	10.93	23.64	15.75	4.551206922
Shareholders' Equity	20301.55	1284.02	21585.57	14715.78	7326.00132
SME Loan	19518	0	19518	9163.45	7514.637893
Total Assets	199013	54352	253365	145362.50	64822.74532
Total Investment	20579.2	5324.8	25904	18229.03	7559.105026

(Source: Annual Report of Sample Bank)

Table 7.4 shows the results of descriptive statistics of the sample bank in the respective years from 2008 to 2017. The various descriptive statistics like range, minimum value, maximum value, mean value and standard deviation obtained from the different dependent and independent variables are presented in the above Table. The average values of net profit before tax and net profit after tax of the sample bank are 3765.84 million and 2143.46 million respectively while the average values of return on assets of the sample bank is 1.80 as well as the average value of return on equity of the sample bank is 15.75 respectively during the study period. The study reveals that the average values of total assets and total investment of the sample bank are 145362.50 million and 18229.03 million respectively. The study also reveals that the average value of interest and non interest income of the sample bank is 11103.02 and 4634.80 million respectively during the study period. The average loan and advance of the sample bank is 101019.60 million and the average shareholders' equity of the sample bank is 14715.78 million over the study period. In addition the mean value of SME loan of the sample bank is 9163.45 million during the study period. From the previous discussion it can be concluded that the average value of the return on assets of the sample bank is not satisfactory during the study period.

**Table No.-7.5**

Table showing the results of descriptive statistics regarding the different variables of the sample bank (sample\_five) over the study period

Variables	Range	Minimum	Maximum	Mean	Std. Deviation
Net Profit After Tax	5746.33	821.67	6568	2727.69	1903.91729
Net Profit Before Tax	4515.61	1776.08	6291.69	3851.67	1464.678472
Interest Income	10899.1	5453.9	16353	11866.29	4539.361112
Loan and Advance	156688	41017	197705	105652.80	52583.99181
Non Interest Income	5427.9	1586.2	7014.1	4460.35	1820.036666
Return on Assets	1.5	0.7	2.2	1.41	0.46055522
Return on Equity	25	10.3	35.3	22.19	8.26672715
Shareholders' Equity	16571	2911.2	19482.2	11481.45	5738.19123
SME Loan	17118.47	9149.83	26268.3	19881.01	5874.205818
Total Assets	249702	58921	308623	168746.50	88218.98819
Total Investment	29550.1	2228.9	31779	15031.45	9807.346422

(Source: Annual Report of Sample Bank)

Table 7.5 presents the results of descriptive statistics of the sample bank during the study period from 2008 to 2017. The distinct descriptive statistics like range, minimum value, maximum value, mean value and standard deviation obtained from the different dependent and independent variables are presented in the above Table. The average values of net profit before tax and net profit after tax of the sample bank are 3851.67 million and 2727.69 million respectively while the average value of return on assets of the sample bank is 1.41 as well as the average value of return on equity of the sample banks is 22.19 respectively during the study period. The study reveals that the average values of total assets and total investment of the sample bank are 168746.50 million and 15031.45 million respectively. The study also reveals that the average value of interest and non interest income of the sample bank is 11866.29 and 4460.35 million respectively during the study period. The average loan and advance of the sample bank is 105652.80 million and the average shareholders' equity of the sample bank is 11481.45 million over the study period. In addition, the mean value of SME loan of the sample bank is 19881.01 million during the study period. From the above discussion it can be concluded that the average value of the return on assets of the sample bank is not satisfactory during the study period.

**Table No.-7.6**

Table showing the results of descriptive statistics regarding the different variables of the sample bank (sample\_six) over the study period

Variables	Range	Minimum	Maximum	Mean	Std. Deviation
Net Profit After Tax	1679.62	388.08	2067.7	1139.90	516.7401558
Net Profit Before Tax	1849.8	1317.31	3167.11	2084.55	626.0259017
Interest Income	11408.5	3515.5	14924	9209.67	4168.695426
Loan and Advance	146146	33018	179164	88611.90	47169.52971
Non Interest Income	2279.9	2010.9	4290.8	3682.93	786.7618983
Return on Assets	2.37	0	2.37	0.86	0.671473504
Return on Equity	33.12	0	33.12	12.21	9.402345157
Shareholders' Equity	17338.38	3200.74	20539.12	9137.57	5109.704108
SME Loan	28689.6	0	28689.6	13805.62	11260.61964
Total Assets	207512	45737	253249	130077.60	66424.81592
Total Investment	23260.1	5237.9	28498	17740.26	8456.378144

(Source: Annual Report of Sample Bank)

Table 7.6 shows the results of descriptive statistics of the sample bank in the respective years from 2008 to 2017. The various descriptive statistics like range, minimum value, maximum value, mean value and standard deviation obtained from the different dependent and independent variable presented in the above Table. The average values of net profit before tax and net profit after tax of the sample bank are 2084.55 million and 1139.90 million respectively while the average values of return on assets of the sample bank is 0.86 as well as the average value of return on equity of the sample bank is 12.21 respectively during the study period. The study reveals that the average values of total assets and total investment of the sample bank are 130077.60 million and 17740.26 million respectively. The study also reveals that the average value of interest and non interest income of the sample bank is 9209.67 and 3682.93 million respectively during the study period. The average loan and advance of the sample bank is 88611.90 million and the average shareholders' equity of the sample bank is 9137.57 million over the study period. In addition, the mean value of SME loan of the sample bank is 13805.62 million during the study period. From the previous discussion it can be concluded that the average value of the return on assets of the sample bank is not satisfactory during the study period.

**Table No.-7.7**

Table showing the results of descriptive statistics regarding the different variables of the sample bank (sample\_seven) over the study period

Variables	Range	Minimum	Maximum	Mean	Std. Deviation
Net Profit After Tax	1611.17	305.03	1916.2	909.83	513.1762657
Net Profit Before Tax	1774.59	558.53	2333.12	1474.94	630.0540584
Interest Income	8573.3	3529.7	12103	7784.19	3123.793583
Loan and Advance	114291	28529	142820	68631.90	37404.57759
Non Interest Income	2715.6	1102.4	3818	2765.58	967.8736348
Return on Assets	1.4	0.39	1.79	0.997	0.46975289
Return on Equity	20.14	6.47	26.61	15.82	6.364275642
Shareholders' Equity	9184.45	2483.09	11667.54	6272.60	2965.065003
SME Loan	19275.428	301.472	19576.9	6577.51	6409.860693
Total Assets	162313	38965	201278	104628.30	52576.39545
Total Investment	20186.5	5606.5	25793	18510.05	7535.470141

(Source: Annual Report of Sample Bank)

Table 7.7 portrays the results of descriptive statistics of the sample bank during the years from 2008 to 2017. The different descriptive statistics like range, minimum value, maximum value, mean value and standard deviation obtained from the different dependent and independent variables are presented in the above Table. The average values of net profit before tax and net profit after tax of the sample bank are 1474.94 million and 909.83 million respectively while the average values of return on assets of the sample bank is 0.997 as well as the average value of return on equity of the sample bank is 15.82 respectively during the study period. The study reveals that the average values of total assets and total investment of the sample banks is 104628.30 million and 18510.05 million respectively. The study also reveals that the average values of interest and non interest income of the sample bank are 7784.19 million and 2765.58 million respectively during the study period. The average loan and advance of the sample bank is 68631.90 million and the average shareholders' equity of the sample bank is 6272.60 million over the study period. In addition, the mean value of SME loan of the sample bank is 6577.51 million during the study period. From the previous discussion it is evident that the average value of the return on assets of the sample banks is not satisfactory during the study period.

**Table No.-7.8**

Table showing the results of descriptive statistics regarding the different variables of the sample bank (sample\_eight) over the study period

Variables	Range	Minimum	Maximum	Mean	Std. Deviation
Net Profit After Tax	2932.77	887.23	3820	2290.47	963.3667264
Net Profit Before Tax	4585.14	2154.82	6739.96	4510.98	1372.630968
Interest Income	11687.3	7530.7	19218	14870.58	4410.480857
Loan and Advance	171570	60281	231851	133928.70	52902.0539
Non Interest Income	6948.3	2719.4	9667.7	6738.62	2121.511585
Return on Assets	1.89	0.37	2.26	1.30	0.530224271
Return on Equity	14.95	4.46	19.41	12.50	4.612107737
Shareholders' Equity	19867.65	7357.27	27224.92	20096.38	6629.373239
SME Loan	34691.89	6595.21	41287.1	22658.57	12671.01578
Total Assets	257727	81182	338909	202251.60	82529.69183
Total Investment	48023	12300	60323	40554.50	19001.25083

(Source: Annual Report of Sample Bank)

Table 7.8 discloses the results of descriptive statistics of the sample bank during the years from 2008 to 2017. The different descriptive statistics like range, minimum value, maximum value, mean value and standard deviation obtained from the different dependent and independent variable are presented in the above Table. The average values of net profit before tax and net profit after tax of the sample bank are 4510.98 million and 2290.47 million respectively while the average value of return on assets of the sample banks is 1.30 as well as the average value of return on equity of the sample banks is 12.50 respectively during the study period. The study reveals that the average values of total assets and total investment of the sample bank are 202251.60 million and 40554.50 million respectively. The study also reveals that the average values of interest and non interest income of the sample bank are 14870.58 million and 6738.62 million respectively during the study period. The average loan and advance of the sample bank is 133928.70 million and the average shareholders' equity of the sample bank is 20096.38 million over the study period. In addition, the mean value of SME loan of the sample banks is 22658.57 million during the study period. From the previous discussion it is evident that the average value of the return on assets of the sample bank is not satisfactory during the study period.

**Table No.-7.9**

Table showing the results of descriptive statistics regarding the different variables of the sample bank (sample\_nine) over the study period

Variables	Range	Minimum	Maximum	Mean	Std. Deviation
Net Profit After Tax	3212.55	764.75	3977.3	2418.59	1076.222347
Net Profit Before Tax	5789.33	1463.01	7252.34	4617.61	1999.311856
Interest Income	17249.7	5749.3	22999	16851.50	6915.140576
Loan and Advance	216558	44445	261003	145614.10	69843.44573
Non Interest Income	768296.1	2100.9	770397	81565.93	242040.4621
Return on Assets	1.04	0.7	1.74	1.23	0.37930492
Return on Equity	19.19	8.73	27.92	15.79	5.598507738
Shareholders' Equity	22126.02	4384.24	26510.26	17269.63	8562.191219
SME Loan	64964.4	10248.3	75212.7	50703.79	23698.09496
Total Assets	298520	64795	363315	214081.30	100885.5717
Total Investment	48275.3	7200.7	55476	29977.81	16852.35548

(Source: Annual Report of Sample Bank)

The Table 7.9 shows the results of descriptive statistics of the sample banks during the years from 2008 to 2017. The different descriptive statistics like range, minimum value, maximum value, mean value and standard deviation obtained from the different dependent and independent variables are presented in the above Table. The average values of net profit before tax and net profit after tax of the sample bank are 4617.61 million and 2418.59 million respectively while the average value of return on assets of the sample bank is 1.23 as well as the average value of return on equity of the sample bank is 15.79 respectively during the study period. The study reveals that the average values of total assets and total investment of the sample banks is 214081.30 million and 29977.81 million respectively. The study also reveals that the average value of interest and non interest income of the sample bank is 16851.50 and 81565.93 million respectively during the study period. The average loan and advance of the sample bank is 145614.10 million and the average shareholders' equity of the sample bank is 17269.63 million over the study period. In addition, the mean value of SME loan of the sample banks is 50703.79 million during the study period. From the previous discussion it is evident that the average value of the return on assets of the sample bank is not satisfactory during the study period.



**Table No.-7.10**

Table showing the results of descriptive statistics regarding the different variables of the sample bank (sample\_ten) over the study period

Variables	Range	Minimum	Maximum	Mean	Std. Deviation
Net Profit After Tax	1887.2	686.7	2573.9	1661.35	588.0751185
Net Profit Before Tax	2811.22	1405.74	4216.96	3263.26	892.7741113
Interest Income	11438.9	4973.1	16412	11693.70	3890.5893
Loan and Advance	157529	39975	197504	106412.60	49016.70016
Non Interest Income	5961.1	1658.4	7619.5	4826.44	1981.145083
Return on Assets	1.57	0.65	2.22	1.36	0.603489851
Return on Equity	25.01	7.11	32.12	17.12	9.290462792
Shareholders' Equity	17721.53	3332.96	21054.49	13142.56	6219.890163
SME Loan	4792.782	152.408	4945.19	2553.12	1401.564127
Total Assets	235626	53371	288997	159837.10	78091.78452
Total Investment	40809.2	6133.8	46943	25638.89	14048.41838

(Source: Annual Report of Sample Bank)

Table 7.10 presents the results of descriptive statistics of the sample banks during the years from 2008 to 2017. The different descriptive statistics like range, minimum value, maximum value, mean value and standard deviation obtained from the different dependent and independent variables are presented in the above Table. The average values of net profit before tax and net profit after tax of the sample bank are 3263.26million and 1661.35 million respectively while the average value of return on assets of the sample bank is 1.36 as well as the average value of return on equity of the sample bank is 17.12 respectively during the study period. The study reveals that the average values of total assets and total investment of the sample bank are 159837.10 million and 25638.89 million respectively. The study also reveals that the average values of interest and non interest income of the sample bank are 11693.70 million and 4826.44 million respectively during the study period. The average loan and advance of the sample bank is 106412.60 million and the average shareholders' equity of the sample bank is 13142.56 million over the study period. In addition, the mean value of SME loan of the sample bank is 2553.12 million during the study period. From the previous discussion it is evident that the average value of the return on assets of the sample bank is not satisfactory during the study period.

### **7.3 Regression Analysis**

Researcher has considered some variables such as SMEs loan as dependent variable as well as net profit before tax, net profit after tax, interest income, non interest income, loan and advance, total investments, total assets, shareholders' equity, return on assets and return on equity as independent variables to conduct regression study with a view to evaluating the impact of financial performance variable on SMEs loan of the sample banks in the respective years from 2008 to 2017. Here dependent and independent variables have been discussed below:

#### **7.3.1 Dependent variable**

##### **7.3.1.1 SME loan**

SME loan defines as financing provided by commercial banks and others financial institutions in SME sector. Financial institutions provide loans to SME sector for arrangement of working capital, business expansion and machinery procurement (Grunert & Norden, 2011).

#### **7.3.2 Independent variables**

##### **7.3.2.1 Net profit before tax (NPBT)**

NPBT is a financial term that looks at a bank's or company's profits before paying the corporate income tax (Harahap & Shafi 2002; Khaddafi & Heikal, 2014).

##### **7.3.2.2 Net profit after tax (NPAT)**

NIAT is a profit calculated after paying all taxes from NPBT (G. Colvin, 2010).

##### **7.3.2.3 Interest income**

Interest income is the income paid to an entity for lending its funds. Interest income is the amount earned by the banks' or financial institutions' money that they place in an investment (N.C. Shil, 2009).

#### **7.3.2.4 Non-interest income**

When commercial banks or other financial institutions earn from fees including deposit and transaction fees, annual fees, charge penalty fees, account service charges, check and deposit slip fees, and so on, it is called non- interest income (Nakhaei et al. 2012).

#### **7.3.2.5 Loans and advances**

The amount lent by the lender banks to the SME firms for a specific purpose like building construction, capital requirements, acquisition of equipment and so on, for a specific time period is known as Loans and advances (Khaddafi & Heikal, 2014).

#### **7.3.2.6 Total investments**

Total investments are the total invested amount in every investment vehicle (Eisner 1980)

#### **7.3.2.7 Total assets**

Total Assets, the resources owned by the enterprises and presented in the balance sheet, with an economic value provide benefits in the future (Nakhaei et al. 2012).

#### **7.3.2.8 Shareholders' equity**

Shareholders equity is owner's claim after subtracting total liabilities from total assets. It can also be how much the owners of a company have invested in the business in form of money or retained earnings.

#### **7.3.2.9 Return on assets (ROA)**

The ROA is a measure about how much profits are earned on average by each unit of assets. Therefore, the ROA is a pointer on how efficiently a bank is operated (Petersen M. A. & Schoeman L., 2008).

### 7.3.3.10 Return on equity (ROE)

The ROE is an indicator of equity holder returns and the possible development on their investment (Petersen M. A. & Schoeman L., 2008).

Here based on dependent and independent variables, the regression analysis has been conducted by using statistical package for the social sciences (SPSS) and the results of regression analysis are given below:

Ho<sub>7.1</sub>: There is no influence of net profit before tax on small and medium enterprises (SMEs) loan of the sample banks over the study period.

**Table No. – 7.11**

Table showing the results of Regression (SME Loan vs. Net Profit before Tax)

Sample Banks	R <sup>2</sup>	F ratio	Significance Level	Decisions
Sample Bank_One	0.685	17.386	0.003	Significant
Sample Bank_Two	0.719	20.516	0.002	Significant
Sample Bank_Three	0.247	2.621	0.144	Non Significant
Sample Bank_Four	0.252	2.702	0.139	Non Significant
Sample Bank_Five	0.595	11.765	0.009	Significant
Sample Bank_Six	0.239	2.516	0.151	Non Significant
Sample Bank_Seven	0.692	18.011	0.003	Significant
Sample Bank_Eight	0.367	4.646	0.063	Non Significant
Sample Bank_Nine	0.796	31.174	0.001	Significant
Sample Bank_Ten	0.626	13.394	0.006	Significant

(Source: Annual Reports of Sample Banks)

Table No. 7.11 shows the results of regression analysis of the sample banks between the study period from 2008 to 2017. From the above Table it is observed that the null hypothesis is accepted in case of four sample banks and rejected in case of six sample banks over the study period which mean that there is influence of net profit before tax on the SME loan of the maximum sample banks during the study period.

Ho<sub>7.2</sub>: There is no influence of net profit after tax on small and medium enterprises (SMEs) financing of the sample banks over the study period.

**Table No. – 7.12**

Table showing the results of Regression (SME Loan vs. Net Profit after Tax)

Sample Banks	R <sup>2</sup>	F ratio	Significance Level	Decisions
Sample Bank_One	0.343	4.181	0.075	Non Significant
Sample Bank_Two	0.751	24.156	0.001	Significant
Sample Bank_Three	0.126	1.151	0.315	Non Significant
Sample Bank_Four	0.211	2.143	0.181	Non Significant
Sample Bank_Five	0.275	3.035	0.120	Non Significant
Sample Bank_Six	0.542	9.454	0.015	Significant
Sample Bank_Seven	0.827	38.165	0.000	Significant
Sample Bank_Eight	0.075	0.646	0.445	Non Significant
Sample Bank_Nine	0.615	12.754	0.007	Significant
Sample Bank_Ten	0.360	4.499	0.067	Non Significant

(Source: Annual Reports of Sample Banks)

Table No. 7.12 presents the results of regression analysis of the sample banks in the respective years from 2008 to 2017. From the above Table it is evident that the null hypothesis is accepted in case of six sample banks and rejected in case of four sample banks over the study period which mean that there is no influence of net profit after tax on the SME loan of the maximum sample banks during the study period.

Ho<sub>7.3</sub>: There is no influence of interest income on small and medium enterprises (SMEs) financing of the sample banks over the study period.

**Table No. – 7.13**

Table showing the results of Regression (SME Loan vs. Interest Income)

Sample Banks	R <sup>2</sup>	F ratio	Significance Level	Decisions
Sample Bank_One	0.724	21.025	0.002	Significant
Sample Bank_Two	0.636	13.994	0.006	Significant
Sample Bank_Three	0.342	4.150	0.076	Non Significant
Sample Bank_Four	0.391	5.126	0.053	Significant
Sample Bank_Five	0.813	34.799	0.000	Significant
Sample Bank_Six	0.585	11.290	0.010	Significant
Sample Bank_Seven	0.805	33.047	0.000	Significant
Sample Bank_Eight	0.571	110.631	0.012	Significant
Sample Bank_Nine	0.901	72.950	0.000	Significant
Sample Bank_Ten	0.840	41.855	0.000	Significant

(Source: Annual Reports of Sample Banks)

Table No. 7.13 portrays the results of regression analysis of the sample banks during the study period from 2008 to 2017. From the above Table it is visible that the null hypothesis is accepted in case of sample bank\_three and rejected in case of remaining sample banks over the study period which mean that there is influence of interest income on the SME loan of the maximum sample banks during the study period.

Ho<sub>7.4</sub>: There is no influence of non interest income on small and medium enterprises (SMEs) financing of the sample banks over the study period.

**Table No. – 7.14**

Table showing the results of Regression (SME Loan vs. Non Interest Income)

Sample Banks	R <sup>2</sup>	F ratio	Significance Level	Decisions
Sample Bank_One	0.476	7.255	0.027	Significant
Sample Bank_Two	0.843	43.038	0.000	Significant
Sample Bank_Three	0.635	13.926	0.006	Significant
Sample Bank_Four	0.258	2.784	0.134	Non Significant
Sample Bank_Five	0.883	60.394	0.000	Significant
Sample Bank_Six	0.470	7.103	0.029	Significant
Sample Bank_Seven	0.582	11.142	0.010	Significant
Sample Bank_Eight	0.852	45.996	0.000	Significant
Sample Bank_Nine	0.094	0.829	0.389	Non Significant
Sample Bank_Ten	0.751	24.138	0.001	Significant

(Source: Annual Reports of Sample Banks)

Table No. 7.14 shows the results of regression analysis of the sample banks between the study periods from 2008 to 2017. From the above Table it is observed that the null hypothesis is accepted in case of sample bank\_four as well as sample bank\_nine and rejected in case of remaining eight sample banks over the study period which mean that there is influence of non interest income on the SME loan of the maximum sample banks during the study period.

Ho<sub>7.5</sub>: There is no influence of loan and advance on small and medium enterprises (SMEs) financing of the sample banks over the study period.

**Table No. – 7.15**

Table showing the results of Regression (SME Loan vs. Loan and Advance)

Sample Banks	R <sup>2</sup>	F ratio	Significance Level	Decisions
Sample Bank_One	0.846	44.079	0.000	Significant
Sample Bank_Two	0.940	125.507	0.000	Significant
Sample Bank_Three	0.799	31.864	0.000	Significant
Sample Bank_Four	0.491	7.720	0.024	Significant
Sample Bank_Five	0.691	17.878	0.003	Significant
Sample Bank_Six	0.687	17.590	0.003	Significant
Sample Bank_Seven	0.974	305.126	0.000	Significant
Sample Bank_Eight	0.925	98.296	0.000	Significant
Sample Bank_Nine	0.877	57.213	0.000	Significant
Sample Bank_Ten	0.947	142.928	0.000	Significant

(Source: Annual Reports of Sample Banks)

Table No. 7.15 presents the results of regression analysis of the sample banks during the study period from 2008 to 2017. From the above Table it is apparent that the null hypothesis is rejected in all cases which mean that there is influence of loan and advance on the SME loan of all the sample banks during the study period.

Ho<sub>7.6</sub>: There is no influence of total investment on small and medium enterprises (SMEs) financing of the sample banks over the study period.



**Table No. – 7.16**

Table showing the results of Regression (SME Loan vs. Total Investment)

Sample Banks	R <sup>2</sup>	F ratio	Significance Level	Decisions
Sample Bank_One	0.595	11.776	0.009	Significant
Sample Bank_Two	0.416	5.708	0.044	Significant
Sample Bank_Three	0.455	6.681	0.032	Significant
Sample Bank_Four	0.491	7.720	0.024	Significant
Sample Bank_Five	0.594	11.714	0.009	Significant
Sample Bank_Six	0.727	21.317	0.002	Significant
Sample Bank_Seven	0.370	4.701	0.062	Non Significant
Sample Bank_Eight	0.845	43.539	0.000	Significant
Sample Bank_Nine	0.866	51.754	0.000	Significant
Sample Bank_Ten	0.511	8.364	0.020	Significant

(Source: Annual Reports of Sample Banks)

Table No. 7.16 shows the results of regression analysis of the sample banks during the study period from 2008 to 2017. From the above Table it is observed that the null hypotheses are accepted in case of sample bank\_seven and rejected in case of the rest nine sample banks over the study period which mean that there is influence of total investments on the SME loan of the maximum sample banks during the study period.

Ho<sub>7.7</sub>: There is no influence of total assets on small and medium enterprises (SMEs) financing of the sample banks over the study period.

**Table No. – 7.17**

Table showing the results of Regression (SME Loan vs. Total Assets)

Sample Banks	R <sup>2</sup>	F ratio	Significance Level	Decisions
Sample Bank_One	0.813	34.877	0.000	Significant
Sample Bank_Two	0.860	49.114	0.000	Significant
Sample Bank_Three	0.926	100.725	0.000	Significant
Sample Bank_Four	0.117	1.061	0.333	Non Significant
Sample Bank_Five	0.725	21.079	0.002	Significant
Sample Bank_Six	0.723	20.836	0.002	Significant
Sample Bank_Seven	0.945	136.960	0.000	Significant
Sample Bank_Eight	0.942	129.632	0.000	Significant
Sample Bank_Nine	0.910	80.937	0.000	Significant
Sample Bank_Ten	0.928	103.306	0.000	Significant

(Source: Annual Reports of Sample Banks)

Table No. 7.17 discloses the results of regression analysis of the sample banks during the study period from 2008 to 2017. From the above Table it is visible that the null hypothesis is accepted in case of sample bank\_four and rejected in case of remaining nine sample banks over the study period which mean that there is influence of total assets on the SME loan of the maximum sample banks during the study period.

Ho<sub>7.8</sub>: There is no influence of shareholders' equity on small and medium enterprises (SMEs) financing of the sample banks over the study period.

**Table No. – 7.18**

Table showing the results of Regression (SME Loan vs. Shareholders' Equity)

Sample Banks	R <sup>2</sup>	F ratio	Significance Level	Decisions
Sample Bank_One	0.725	21.077	0.002	Significant
Sample Bank_Two	0.710	19.620	0.002	Significant
Sample Bank_Three	0.851	45.554	0.000	Significant
Sample Bank_Four	0.279	3.102	0.116	Non Significant
Sample Bank_Five	0.806	33.320	0.000	Significant
Sample Bank_Six	0.694	18.106	0.003	Significant
Sample Bank_Seven	0.953	161.054	0.000	Significant
Sample Bank_Eight	0.825	37.696	0.000	Significant
Sample Bank_Nine	0.942	129.480	0.000	Significant
Sample Bank_Ten	0.883	60.318	0.000	Significant

(Source: Annual Reports of Sample Banks)

Table No. 7.18 shows the results of regression analysis of the sample banks during the study period from 2008 to 2017. From the above Table it is observed that the null hypothesis is accepted in case of one sample bank such as sample bank\_four and rejected in case of the rest nine sample banks over the study period which mean that there is influence of shareholders' equity on the SME loan of the maximum sample banks during the study period.

Ho<sub>7.9</sub>: There is no influence of return on assets on small and medium enterprises (SMEs) financing of the sample banks over the study period.

**Table No. – 7.19**

Table showing the results of Regression (SME Loan vs. Return on Assets)

Sample Banks	R <sup>2</sup>	F ratio	Significance Level	Decisions
Sample Bank_One	0.036	0.303	0.597	Non Significant
Sample Bank_Two	0.188	1.620	0.244	Non Significant
Sample Bank_Three	0.696	18.301	0.003	Significant
Sample Bank_Four	0.065	0.558	0.476	Non Significant
Sample Bank_Five	0.196	1.946	0.201	Non Significant
Sample Bank_Six	0.012	0.100	0.760	Non Significant
Sample Bank_Seven	0.007	0.059	0.815	Non Significant
Sample Bank_Eight	0.267	2.909	0.126	Non Significant
Sample Bank_Nine	0.027	0.223	0.196	Non Significant
Sample Bank_Ten	0.545	9.579	0.015	Significant

(Source: Annual Reports of Sample Banks)

Table No. 7.19 presents the results of regression analysis of the sample banks over the study period from 2008 to 2017. From the above Table it is evident that the null hypothesis is rejected in case of two sample banks like sample bank\_three as well as sample bank\_ten and accepted in case of remaining eight sample banks over the study period which mean that there is no influence of return on assets on the SME loan of the maximum sample banks during the study period.

Ho<sub>7.10</sub>: There is no influence of return on equity on small and medium enterprises (SMEs) financing of the sample banks over the study period.

**Table No. – 7.20**

Table showing the results of Regression (SME Loan vs. Return on Equity)

Sample Banks	R <sup>2</sup>	F ratio	Significance Level	Decisions
Sample Bank_One	0.000	0.000	0.992	Non Significant
Sample Bank_Two	0.318	3.267	0.114	Non Significant
Sample Bank_Three	0.868	52.735	0.000	Significant
Sample Bank_Four	0.278	3.073	0.118	Non Significant
Sample Bank_Five	0.539	9.336	0.016	Significant
Sample Bank_Six	0.018	0.148	0.711	Non Significant
Sample Bank_Seven	0.002	0.013	0.913	Non Significant
Sample Bank_Eight	0.253	2.712	0.138	Non Significant
Sample Bank_Nine	0.199	1.993	0.196	Non Significant
Sample Bank_Ten	0.457	6.724	0.032	Significant

(Source: Annual Reports of Sample Banks)

Table No. 7.20 shows the results of regression analysis of the sample banks during the study period from 2008 to 2017. From the above Table it is visible that the null hypothesis is rejected in case of three sample banks like sample bank\_three, sample bank\_five and sample bank\_ten and accepted in case of the rest seven sample banks over the study period which mean that there is no influence of return on equity on the SME loan of the maximum sample banks during the study period.

Ho<sub>7.11</sub>: There is no influence of net profit before tax, net profit after tax, interest income, non interest income, loan and advance, total investments, total assets, shareholders' equity, return on assets and return on equity on small and medium enterprises (SMEs) financing of the sample banks over the study period.

**Table No. – 7.21**

Table showing the results of Multiple Regression (SME Loan vs. All Independent Variables)

Sample Banks	R <sup>2</sup>	F ratio	Significance Level	Decisions
Sample Bank_One	1.000	0.000	0.000	Significant
Sample Bank_Two	1.000	0.000	0.000	Significant
Sample Bank_Three	1.000	0.000	0.000	Significant
Sample Bank_Four	0.995	26.501	0.149	Non Significant
Sample Bank_Five	1.000	0.000	0.000	Significant
Sample Bank_Six	1.000	0.000	0.000	Significant
Sample Bank_Seven	1.000	0.000	0.000	Significant
Sample Bank_Eight	1.000	315.684	0.044	Significant
Sample Bank_Nine	1.000	0.000	0.000	Significant
Sample Bank_Ten	1.000	0.000	0.000	Significant

(Source: Annual Reports of Sample Banks)

Table No. 7.21 provides that the regression result of the sample banks for one dependent variable like SME loan and ten independent variables such net profit before tax, net profit after tax, interest income, non interest income, loan and advance, total investments, total assets, shareholders' equity, return on assets and return on equity in the respective years from 2008 to 2017. From the above Table it is evident that the null hypothesis is accepted in case of one sample bank such as sample bank\_four as well as rejected in case of remaining nine sample banks over the study period which mean that there is influence of the financial performance variables on the SME loan of the maximum sample banks during the study period.

#### **7.4 Conclusion**

Now a days, SMEs are considered as the key to economic growth because they provide employment and earning opportunity in the rural areas. They also strengthen the economic growth in sustainable way which is a precondition for alleviating poverty and living standard. The SMEs help

explore opportunity to do something new with relatively low investment. Their significance in developing employment opportunities and continues contribution to GDP is unforgettable. Considering the significant contributions of SMEs on overall development and sustainable growth, it is essential to obtain some essential steps that facilitate the growth of SMEs in Bangladesh (Maniruzzaman, 2017). SMEs collect their funds from various sources like personal savings, family and friends, loans and professional money lenders such as commercial banks and institutions like National Directorate of Employment, National Economic Reconstruction fund and other small and medium scale enterprise schemes. Despite all the above mentioned sources of finance, financial constraint is still put as the major problem of SMEs (Aliyu and Bello, 2013). The SMEs are worldwide recognized as engines of economic growth. The commonly perceived merits often emphasized for their promotion especially in the developing countries like Bangladesh include their relatively high labor intensity, dependence on indigenous skills and technology, contributions to entrepreneurship development and innovativeness and growth of industrial linkages (Nehereen, 2010). This sections has created attempt to evaluate the influence of different financial performance variables on SME loan of the sample commercial banks in Bangladesh. The sample banks have invested money in the different sectors such as trade, services and manufacturing sectors. On the basis of regressional results it is evident that there is significant influence of different financial performance variables on SME loan which means that the net profit before tax, net profit after tax, interest income, non interest income, loan and advance, total investments, total assets, shareholders' equity, return on assets and return on equity have influence on the SME loan of the sample banks in maximum cases over the study period.

## **CHAPTER EIGHT**

### **Respondent opinion on Influencing Factors of SMEs Financing**

#### **8.1 Introduction**

This chapter covers the respondent's opinion regarding influencing factors of SMEs financing. In the previous chapter the researcher has tried to find out the influencing factors relating to SME financing from borrowers point of view. But here the opinions of the bankers, professional accountants and academicians have been analyzed to examine the influencing factors relating to SME financing. The loan officers are directly related to the SME loan financing. The professional accountant are also related to the SME financing because asymmetric information is a big problem for SME financing (Cheng, When and Zhifei Liu 2014). Lastly academicians of business faculty are also included for the general opinion. This chapter also encompasses descriptive statistics of respondents. IBM SPSS Statistics 20.0 has been used for this purpose.

#### **8.2 Descriptive statistics**

Descriptive statistics aspires at shortening the sample data collected through questionnaire. Measures of central tendency and percent, ANOVA test, chi square test, variance and standard deviation have been used here. The mean (called the average) is the most likely the measure of central tendency.

##### **8.2.1 Questionnaire survey:**

The questionnaire survey was administered in different cities of Bangladesh targeting the loan officers of sample commercial banks, professional accountants and academicians. A total of 130 questionnaires were distributed. This resulted in 127 completed and usable questionnaires



**8.1 Table: Break up of respondents**

Category	Total	Percent
Banker	50	39.37
Academician	40	31.50
Accounting expert	37	29.13
Total	127	100

Source: Survey data

The collected questionnaire was divided into three groups namely banker, academician and accounting expert. Among the respondent, 50 respondents (39.37 percent) are sample commercial bank's loan officers who are directly related to the SME financing. 37 respondents (29.13 percent) are the accounting experts or professional accountants. 40 respondents (31.50 percent) are the academicians.

**8.2 Table: Respondents' Gender, Age and Length of Service**

Category		Banker	Percent	Academician	Percent	Acct. expert	Percent
Gender	Male	43	86	32	80	31	83.78
	Female	07	14	08	20	06	16.22
	Total	50	100	40	100	37	100
Age of the Respondent	Below 30 years	06	12	18	45	4	10.80
	30 – 35 years	27	54	16	40	8	21.60
	35-40 years	12	24	04	10	22	59.50
	40-45 years	05	10	02	5	3	8.10
	45-50 years	00	0	00	0	00	0
	Total	50	100	40	100	37	100
Length of Service	Below 5 years	06	12	20	50	05	13.50
	5-10 years	33	66	13	32.5	17	46
	10-15 years	08	16	05	12.5	15	40.50
	15-20 years	03	6	02	5	00	0
	Total	50	100	40	100	37	100

Source: Survey data

It is evident from the Table that most of the respondents (86 percent bankers, 80 percent academicians and 83.78 percent professional accountants) are in the male category. It is followed by 14 percent bankers, 20 percent of the academicians and 16.22 percent of professional accountants in the female category. Hence it can be said that most of the respondents are from the male category.

As the Table shows most of the respondent (54 percent bankers and 40 percent academicians) are in the 30-35 years age group. But in case of professional accountants 59.5 percent respondents are in 35-40 years age group whereas, 12 percent respondents from bankers, 45 percent respondent from academicians and 10.8 percent respondents from professional accountants are in ‘below 30’ age group.

It is also evident from the Table that most of the respondents (66 percent bankers, 32.5 percent academicians and 46 percent professional accountants) are in the length of service group ‘5-10’ years. It is followed by 16 percent bankers, 12.5 percent of the academicians and 40.5 percent of professional accountants are in the length of service group ‘10-15’ years. Hence it can be said that most of the respondents are in the length of service group ‘5-10’ years. .

### 8.3 Table: Respondents’ professional qualifications, Academic qualifications and Basic Discipline

Category		Banker	Percent	Academician	Percent	Accounting expert	Percent
Professional Qualifications	ACA	00	0	00	0	01	2.7
	FCA	00	0	00	0	05	13.5
	ACMA	00	0	00	0	26	70.3
	FCMA	00	0	00	0	05	13.5
	Others	12	24	06	14.3	00	0
	Total	12	24	06	14.3	37	100
Academic Qualifications	Bachelors	01	2	00	0	02	5.4
	Masters	46	92	30	75	35	94.6
	M. Phil	00	0	04	10	00	0
	Ph. D	00	0	06	15	00	0
	Others	03	6	00	0	00	0
	Total	50	100	40	100	37	100
Basic Discipline	Arts	06	12	02	5	01	2.7
	Commerce	29	58	33	82.5	34	91.89
	Science	14	28	05	12.5	02	5.4
	Engineering	01	2	00	0	00	0
	Others	00	0	00	0	00	0
Total	50	100	40	100	37	100	

Source: Survey data

It is evident from the Table 8.3 that professional qualifications among the bankers and academicians are only 24 percent and 14.3 percent respectively but among accounting expert it is 100 percent. Hence it can be said that most of the respondents in the professional qualification category are accounting experts.

As the Table shows most of the respondents (92 percent bankers, 75 percent academicians and 94.6 percent professional accountant) possess master's degree. It is followed by 2 percent bankers, 00 percent of the academicians and 5.4 percent of professional accountants are bachelor's graduate. Hence it can be said that most of the respondents in academic qualification category are master's graduates.

In case of basic discipline, it is evident from the Table most the respondent (58 percent bankers, 82.5 percent academicians and 91.89 percent professional accountant) are in commerce group. It is followed by 12 percent bankers, 5 percent of the academicians and 2.7 percent of professional accountants who belong to arts group. Hence it can be said that most of the respondents in basic discipline category are in commerce group.

### **8.3 Data analysis**

With the target of exploring the opinion and perceptions of Bangladeshi SMEs representing from supply side and general view on bank finance, the opinion survey was operated.

Initial examination of data is done through the process of inspection, cleaning, and transforming with the goal of discovering useful information, drawing conclusions, and supporting decision-making.

### **8.3.1 Validity and Reliability of the data**

As a means of measuring the possibility of researcher's outcomes, being perplexing, some procedures have been developed to express the likelihoods and correctness of outcomes. The accuracy of the outcomes is attained through the measurement of reliability and validity. In this research, internal consistency reliability for the 21 items is judged based on average inter-item correlation and Cronbach's Alpha test. The acceptable value of Cronbach's Alpha test is ranging from 0.70 to 0.95 (Bland & Altman 1997; Feldt 1980). In this research, value of Cronbach's Alpha is 0.941 and average inter-item correlation is 0.25. So, the outcomes of this research are reliable and valid.

### **8.3.2 Check for missing data**

Missing data occur when no data value is stored for the variable in an observation. Missing data are very common occurrence and may affect significantly on the conclusions. The missing data can be resolved in several ways: first by deleting all data from any participant with missing values, secondly contacting the participants and ask them to fill out the missing values, thirdly by imputing the missing data with a substitute value, fourthly using the middle point or most commonly chosen value (Jeff Sauro, 2015; Burgette, L. F., & Reiter, J. P. 2010; Yuan, K.-H., Lambert, P. L., & Fouladi, R. T. 2004). For this deleting is not possible due to size of the sample. Thus the imputation method using mean value was used to resolve the problem of missing data.

### **8.4 Hypotheses testing**

After taking above initiatives, now the opinion survey data is analyzed to draw the opinion of the respondents.

**8.4 Table for Question No. One (Serious inherent structural defeats make them high risky borrower)**

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	6	12	7	18.91	3	7.5	16	12.6	3.3150	.9815	.964
Moderately Agree	14	28	7	18.91	17	42.5	38	29.92			
Neutral	16	32	10	27.02	18	45	44	34.65			
Disagree	13	26	13	35.13	2	5	28	22.05			
Strongly Disagree	1	2	0	0	0	0	1	0.787			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test			$\chi^2$ value=17.687			Significance Level=0.024					
Results of ANOVA Test			F Ratio=1.344			Significance Level =0.265					

(Source: Survey Report)

The above Table No. 8.4 summarizes the response of the respondents regarding the ‘Serious inherent structural defeats make them high risky borrower’ of the sample banks. The Table shows that 12.60% of the respondents strongly agree, 29.92% of the respondents moderately agree and 34.65% of the respondents were neutral in this regard. The Table also shows that the 22.05% of the respondents disagree but 0.787% of the respondents strongly disagree on ‘Serious inherent structural defeats make them high risky borrower’. Considering the above discussion it is visible that the majority respondents were neutral in this regard. Referring to the descriptive statistics it is apparent that the mean value is 3.3150, standard deviation is 0.9815 and variance is 0.964 respectively and it is also apparent that the mean value of the respondents’ opinions indicates that it was positively significant due to the mean value greater than 3.00. The significant difference of opinions among the different respondents has been identified with the calculation of Chi-Square and ANOVA test through developing and testing the following null hypothesis and the null

hypothesis is  $H_{08.1}$ : There is no significant difference of opinions among the different respondents regarding the ‘Serious inherent structural defeats make them high risky borrower’ of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 17.6867 of 0.024 significance level which means that there is a significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 1.3443 and its significant level is 0.2645 which is higher than 5% level of significance which means that the null hypothesis is accepted and from the previous discussion it is known that that there is no significant difference of opinions among the different respondents regarding the ‘Serious inherent structural defeats make them high risky borrower’ of the sample banks.

### 8.5 Table for Question No. Two (Inadequate funding by the owner creates barrier to success)

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	28	56	20	54.05	19	47.50	67	52.76	4.448	.6388	.408
Moderately Agree	20	40	17	45.94	13	32.50	50	39.37			
Neutral	2	4	0	0	8	20	10	7.874			
Disagree	0	0	0	0	0	0	0	0			
Strongly Disagree	0	0	0	0	0	0	0	0			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=3.548			Significance Level=0.214				
Results of ANOVA Test				F Ratio=2.214			Significance Level =0.114				

(Source: Survey Report)

The above Table No. 8.5 summarizes the response of the respondents regarding the 'Inadequate funding by the owner creates barrier to success' of the sample banks. The Table shows that 52.76% of the respondents strongly agree, 39.37% of the respondents moderately agree and 7.874% of the respondents were neutral in this regard. Considering the above discussion it is visible that the majority respondents strongly agreed in this regard. Referring to the descriptive statistics it is apparent that the mean value is 4.448, standard deviation is 0.6388 and variance is 0.408 respectively and it is also apparent that the mean value of the respondents' opinions indicates that it was positively significant because the mean value is greater than 3.00. The following null hypothesis is  $H_{08.2}$ : There is no significant difference of opinions among the different respondents regarding the 'Inadequate funding by the owner creates barrier to success' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 3.548 with 0.214 significance level which means that there is no significant difference of opinions among the different respondents. In addition, the results of ANOVA test shows that the value of F is 2.214 and its significance level is 0.114 which is higher than 5% level of significance which means that the null hypothesis is accepted and from the discussion it is known that that there is no significant difference of opinions among the different respondents in this regards.

**8.6 Table for Question No. three** (Due to shortage of technical and technological infrastructures, the quality of products is lower compared to that of large organizations)

Opinions	Different Respondents								Descriptive Statistics		
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	10	20	1	2.70	17	42.5	28	22.05	3.504	1.126	1.268
Moderately Agree	6	12	20	54.05	18	45	44	34.65			
Neutral	1	2	14	37.83	4	10	19	14.96			
Disagree	33	66	2	5.40	1	2.5	36	28.35			
Strongly Disagree	0	0	0	0	0	0	0	0			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=87.146				Significance Level=0.000			
Results of ANOVA Test				F Ratio=23.987				Significance Level=0.000			

(Source: Survey Report)

The above Table No. 8.6 summarizes the response of the respondents regarding ‘Due to shortage of technical and technological infrastructures, the quality of products is lower compared to that of large organization’ of the sample banks. The Table shows that 22.05% of the respondents strongly agree, 34.65% of the respondents moderately agree and 14.96% of the respondents were neutral in this regard. The Table also shows that the 28.35% of the respondents do not agree in this regard. Referring to the descriptive statistics it is apparent that the mean value is 3.504, standard deviation is 1.126 and variance is 1.268 respectively and it is also apparent that the mean value of the respondents’ opinions indicates that it was positively significant because the mean value is greater than 3.00. To test whether there is significant difference of opinions among the different respondents, the following null hypotheses has been developed which is  $H_{08.3}$ : There is no significant difference of opinions among the



different respondents regarding the ‘Due to shortage of technical and technological infrastructures, the quality of products is lower compared to that of large organization’ of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 87.146 with 0.000 significance level which means that there is a significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 23.987 and its significant level is 0.000 which is lower than 5% level of significance which means that the null hypothesis is rejected and from the previous discussion it is known that that there is a significant difference of opinions among the different respondents regarding ‘Due to shortage of technical and technological infrastructures, the quality of products is lower compared to that of large organization’ of the sample banks.

**8.7 Table for Question No. four (Expanding distribution channels are another factor for growth and survival of SMEs)**

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	8	16	3	8.11	3	7.5	14	11.02	3.433	.956	.914
Moderately Agree	24	48	13	35.1	18	45	55	43.31			
Neutral	8	16	16	43.2	5	12.5	29	22.83			
Disagree	10	20	5	13.5	14	35	29	22.83			
Strongly Disagree	0	0	0	0	0	0	0	0			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=19.098			Significance Level=0.004				
Results of ANOVA Test				F Ratio=1.523			Significance Level =0.222				

(Source: Survey Report)

The above Table No. 8.7 summarizes the response of the respondents regarding 'Expanding distribution channels are another factor for growth and survival of SMEs' of the sample banks. The Table shows that 11.02% of the respondents strongly agree, 43.31% of the respondents moderately agree and 22.83% of the respondents were neutral in this regard. The Table also shows that the 22.83% of the respondents are disagree on this regard. Referring to the descriptive statistics it is apparent that the mean value is 3.433, standard deviation is 0.956 and variance is 0.914 respectively and it is also apparent that the mean value of the respondents' opinions indicates that it was positively significant because the mean value is greater than 3.00. The significant difference of opinions among the different respondents has been identified by Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{0.4}$ : There is no significant difference of opinions among the different respondents regarding about the 'Expanding distribution channels are another factor for growth and survival of SMEs' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 19.098 with 0.004 significance level which means that there is a significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 1.523 and its significance level is 0.222 which is higher than 5% level of significance which means that the null hypothesis is accepted. It means that there is no positive significant difference of opinions among the different respondents regarding the 'Expanding distribution channels are another factor for growth and survival of SMEs' of the sample banks.

**8.8 Table for Question No. Five (Government has developed mortgage and guarantee system for the loan disbursement)**

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	2	4	1	2.7	7	17.5	10	7.874	3.347	.938	.879
Moderately Agree	21	42	17	45.9	17	42.5	55	43.31			
Neutral	13	26	11	29.7	7	17.5	31	24.41			
Disagree	14	28	8	21.6	9	22.5	31	24.41			
Strongly Disagree	0	0	0	0	0	0	0	0			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=8.707			Significance Level=0.191				
Results of ANOVA Test				F Ratio=1.459			Significance Level=0.236				

(Source: Survey Report)

The above Table No. 8.8 summarizes the response of the respondents regarding the ‘Government has developed mortgage and guarantee system for the loan disbursement’ of the sample banks. The Table shows that 7.874% of the respondents strongly agree, 43.31% of the respondents moderately agree and 24.41% of the respondents were neutral in this regard. The Table also shows that the 24.41% of the respondents do not agree with this statement but 0.0% of the respondents strongly disagree in this regard. Considering the above discussion it is visible that the respondents strongly agree in this regard. Referring to the descriptive statistics it is apparent that the mean value is 3.347, standard deviation is 0.938 and variance is 0.879 respectively and it is also apparent that the mean value of the respondents’ opinions indicates that it was positively significant because the mean value is greater than 3.00. The significant difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through

developing and testing the following null hypothesis  $H_{0.5}$ : There are no significant difference of opinions among the different respondents regarding the statement ‘Government has developed mortgage and guarantee system for the loan disbursement’ of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 8.707 with 0.191 significance level which means that there are no significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 1.459 and its significant level is 0.236 which is higher than 5% level of significance which means that the null hypothesis is accepted and it means that that there are no significance difference of opinions among the different respondents regarding this.

**8.9 Table for Question No. six** (Financial incentive schemes (Such as grace period, easing loan installment and loan term) for SMEs through a ranking system are vital for their sound business growth.)

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	11	22	4	10.81	11	27.5	26	20.47	3.945	.749	.560
Moderately Agree	29	58	20	54.05	25	62.5	74	58.27			
Neutral	9	18	9	24.32	3	7.5	21	16.54			
Disagree	1	2	4	10.81	1	2.5	6	4.724			
Strongly Disagree	0	0	0	0	0	0	0	0			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=10.448			Significance Level =0.107				
Results of ANOVA Test				F Ratio=4.808			Significance Level =0.010				

(Source: Survey Report)

The above Table No. 8.9 summarizes the response of the respondents regarding the ‘Financial incentive schemes (Such as grace period, easing

loan installment and loan term) for SMEs through a ranking system are vital for their sound business growth' of the sample banks. The Table shows that 20.47% of the respondents strongly agree, 58.27% of the respondents moderately agree and 16.54% of the respondents were neutral in this regard. Considering the above discussion it is apparent that the respondents moderately agree in this regard. Referring to the descriptive statistics it is apparent that the mean value is 3.945, standard deviation is 0.749 and variance is 0.560 respectively and it is also apparent that the mean value of the respondents' opinions indicates that it was positively significant because the mean value is greater than 3.00. The significant difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{0.6}$ : There are no significant difference of opinions among the different respondents regarding about the 'Financial incentive schemes (Such as grace period, easing loan installment and loan term) for SMEs through a ranking system are vital for their sound business growth' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 10.448 with 0.107 significance level which means that there are no significant difference of opinions among the different respondents. In addition, the results of ANOVA test shows that the value of F is 4.808 and its significance level is 0.010 which is lower than 5% level of significance which means that the null hypothesis is rejected and it means that there are significant difference of opinions among the different respondents.

**8.10 Table for Question No. seven (Asymmetric information is the key to limited access to external fund)**

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	8	16	5	13.51	10	25	23	18.11	3.504	1.053	1.109
Moderately Agree	19	38	16	43.24	14	35	49	38.58			
Neutral	9	18	8	21.62	7	17.5	24	18.9			
Disagree	14	28	8	21.62	9	22.5	31	24.41			
Strongly Disagree	0	0	0	0	0	0	0	0			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=2.598			Significance Level=0.857				
Results of ANOVA Test				F Ratio=.424			Significance Level =0.655				

(Source: Survey Report)

The above Table No. 8.10 summarizes the response of the respondents regarding ‘Asymmetric information is the key to limited access to external fund’ of the sample banks. The Table shows that 18.11% of the respondents strongly agree, 38.58% of the respondents moderately agree and 18.90% of the respondents were neutral in this regard. Based on the above discussion it can be said that the majority respondents moderately agree in this regard. Referring to the descriptive statistics it is apparent that the mean value is 3.504, standard deviation is 1.053 and variance is 1.109 respectively and it is also apparent that the mean value of the respondents’ opinions indicates that it was positively significant because the mean value is greater than 3.00. The significant difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{0.7}$ : There are no significant difference of opinions among the different respondents regarding the ‘Asymmetric information is the key to limited access to external fund’ of the sample banks. On the

basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 2.598 with 0.857 significance level which means that there are no significant difference of opinions among the different respondents. In addition, the results of ANOVA test shows that the value of F is .424 and its significant level is 0.655 which is higher than 5% level of significant which means that the null hypothesis is accepted and it can be said that there are no significant difference of opinions among the different respondents.

**8.11 Table for Question No. eight (The firm's financial inability increases specialized employees turnover)**

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	0	0	0	0	6	15	6	4.724	3.142	.997	.996
Moderately Agree	29	58	13	35.1	11	27.5	53	41.73			
Neutral	15	30	0	0	8	20	23	18.11			
Disagree	5	10	23	62.2	15	37.5	43	33.86			
Strongly Disagree	1	2	1	2.7	0	0	2	1.575			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=47.534			Significance Level=0.000				
Results of ANOVA Test				F Ratio=6.935			Significance Level =0.001				

(Source: Survey Report)

The above Table No. 8.11 reviews the response of the respondents regarding 'The firm's financial inability increases specialized employees turnover' of the sample banks. The Table shows that 4.724% of the respondents strongly agree, 41.73% of the respondents moderately agree and 18.11% of the respondents were neutral in this regard. Based on the above discussion it can be said that the majority respondents moderately agree in this regard. Referring to the descriptive statistics it is apparent that the mean value is 3.142, standard deviation is 0.997 and variance is

0.996 respectively and it is also apparent that the mean value of the respondents' opinions indicates that it was positively significant because the mean value greater than 3.00. The significance difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{0.8}$ : There are no significant difference of opinions among the different respondents regarding the 'The firm's financial inability increases specialized employees turnover' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 47.534 with 0.000 significance level which means that there is a significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 6.935 and its significant level is 0.001 which is lower than 5% level of significant which means that the null hypothesis is rejected and it can be said that there are significance difference of opinions among the different respondents.

**8.12 Table for Question No. Nine (Cost of accessing fund (High interest rate) is another influencing factor)**

Opinions	Different Respondents							Descriptive Statistics			
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	32	64	21	56.8	22	55	75	59.06	4.543	.588	.345
Moderately Agree	17	34	15	40.5	14	35	46	36.22			
Neutral	1	2	1	2.7	4	10	6	4.724			
Disagree	0	0	0	0	0	0	0	0			
Strongly Disagree	0	0	0	0	0	0	0	0			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=4.089			Significance Level=0.394				
Results of ANOVA Test				F Ratio=0.929			Significance Level =0.398				

(Source: Survey Report)



The above Table No. 8.12 reviews the response of the respondents regarding the 'Cost of accessing fund (High interest rate) is another influencing factor' of the sample banks. The Table shows that 59.06% of the respondents strongly agree, 36.22% of the respondents moderately agree and 4.724% of the respondents were neutral in this regard. So, it is visible that the majority respondents strongly agree in this regard. Referring to the descriptive statistics it is apparent that the mean value is 4.543, standard deviation is 0.588 and variance is 0.345 respectively and it is also apparent that the mean value of the respondents' opinions indicates that it was positively significant because the mean value is greater than 3.00. The significant difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{08,9}$ : There are no significant difference of opinions among the different respondents regarding about the 'Cost of accessing fund (High interest rate) is another influencing factor' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 4.089 with 0.394 significance level which means that there are no significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 0.929 and its significant level is 0.398 which is higher than 5% level of significant which means that the null hypothesis is accepted and from the previous discussion it is known that that there are no significance difference of opinions among the different respondents regarding 'Cost of accessing fund (High interest rate) is another influencing factor' of the sample banks.

**8.13 Table for Question No. ten (Prior work experience of entrepreneur is vital for success)**

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	9	18	5	13.5	15	37.5	29	22.83	3.622	1.023	1.046
Moderately Agree	19	38	8	21.6	16	40	43	33.86			
Neutral	15	30	11	29.7	7	17.5	33	25.98			
Disagree	7	14	13	35.1	2	5	22	17.32			
Strongly Disagree	0	0	0	0	0	0	0	0			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=20.242			Significance Level=0.003				
Results of ANOVA Test				F Ratio=9.760			Significance Level=0.000				

(Source: Survey Report)

The above Table No. 8.13 conveys the response of the respondents regarding 'Prior work experience of entrepreneur is vital for success' of the sample banks. The Table shows that 22.83% of the respondents strongly agree, 33.86% of the respondents moderately agree and 25.98% of the respondents were neutral in this regard. The Table also shows that the 17.32% of the respondents are disagree. Referring to the descriptive statistics it is apparent that the mean value is 3.622, standard deviation is 1.023 and variance is 1.046 respectively and it is also apparent that the mean value of the respondents' opinions indicates that it was positively significant because the mean value is greater than 3.00. The significant difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{0.10}$ : There are no significant difference of opinions among the different respondents regarding 'Prior work experience of entrepreneur is vital for success' of the sample banks. On the basis of the results of Chi-Square test it is found

that the value of  $\chi^2$  is 20.242 with 0.003 significance level which means that there is a significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 9.760 and its significant level is 0.000 which is lower than 5% level of significant which means that the null hypothesis is rejected. So it can be said that there are a significant difference of opinions among the different respondents regarding prior work experience.

**8.14 Table for Question No. eleven (Owner's characteristics (age, education and gender) are important influencing factors in access to finance)**

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	15	30	4	10.8	6	15	25	19.69	3.519	1.045	1.093
Moderately Agree	18	36	19	51.4	9	22.5	46	36.22			
Neutral	9	18	11	29.7	10	25	30	23.62			
Disagree	8	16	2	5.41	15	37.5	25	19.69			
Strongly Disagree	0	0	1	2.7	0	0	1	0.787			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=21.847			Significance Level=0.005				
Results of ANOVA Test				F Ratio=3.966			Significance Level=0.021				

(Source: Survey Report)

The above Table No. 8.14 conveys the response of the respondents regarding 'Owner's characteristics (age, education and gender) are important influencing factors in access to finance' of the sample banks. The Table shows that 19.69% of the respondents strongly agree, 36.22% of the respondents moderately agree and 23.62% of the respondents were neutral in this regard. The Table also shows that the 19.69 % of the respondents do not agree. Referring to the descriptive statistics it is apparent that the mean value is 3.519, standard deviation is 1.045 and variance is 1.093 respectively and it is also apparent that the mean value

of the respondents' opinions indicates that it was positively significant because the mean value is greater than 3.00. The significant difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{08.11}$ : There are no significant difference of opinions among the different respondents regarding the 'Owner's characteristics (age, education and gender) are important influencing factors in access to finance' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 21.847 with 0.005 significance level which means that there are a significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 3.966 and its significant level is 0.021 which is lower than 5% level of significant which means that the null hypothesis is rejected. So, there are a significant difference of opinions among the different respondents.

**8.15 Table for Question No. twelve** (Time between loan application and disbursement of loan to SME entrepreneur including woman is somewhat lengthy.)

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	3	6	6	16.2	10	25	19	14.96	3.465	1.045	1.092
Moderately Agree	21	42	20	54.1	13	32.5	54	42.52			
Neutral	4	8	8	21.6	10	25	22	17.32			
Disagree	22	44	3	8.11	6	15	31	24.41			
Strongly Disagree	0	0	0	0	1	2.5	1	0.787			
Total	3	6	6	16.2	10	25	19	14.96			
Results of Chi-Square Test				$\chi^2$ value=27.302			Significance Level=0.001				
Results of ANOVA Test				F Ratio=5.625			Significance Level =0.005				

(Source: Survey Report)

The above Table No. 8.15 conveys the response of the respondents regarding 'Time between loan application and disbursement of loan of SME entrepreneur including woman is somewhat lengthy' of the sample banks. The Table shows that 14.96% of the respondents strongly agree, 42.52% of the respondents moderately agree and 17.32% of the respondents were neutral in this regard. Referring to the descriptive statistics it is apparent that the mean value is 3.465, standard deviation is 1.045 and variance is 1.092 respectively and it is also apparent that the mean value of the respondents' opinions indicates that it was positively significant because the mean value is greater than 3.00. The significance difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{08.12}$ : There are no significant difference of opinions among the different respondents regarding 'Time between loan application and disbursement of loan of SME entrepreneur including woman is somewhat lengthy' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 27.302 with 0.001 significance level which means that there is a significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 5.625 and its significant level is 0.005 which is lower than 5% level of significant which means that the null hypothesis is rejected. So, there are significant difference of opinions among the different respondents.

**8.16 Table for Question No. thirteen (Loan disbursement procedure is full of different formalities)**

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	1	2	5	13.5	17	42.5	23	18.11	3.512	1.083	1.172
Moderately Agree	24	48	14	37.8	14	35	52	40.94			
Neutral	5	10	9	24.3	7	17.5	21	16.54			
Disagree	20	40	8	21.6	1	2.5	29	22.83			
Strongly Disagree	0	0	1	2.7	1	2.5	2	1.575			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=39.470			Significance Level=0.000				
Results of ANOVA Test				F Ratio=11.654			Significance Level =0.000				

(Source: Survey Report)

The above Table No. 8.16 reviews the response of the respondents regarding the 'Loan disbursement procedure is full of different formalities' of the sample banks. The Table shows that 18.11% of the respondents strongly agree, 40.94% of the respondents moderately agree and 16.54% of the respondents were neutral in this regard. Referring to the descriptive statistics it is apparent that the mean value is 3.512, standard deviation is 1.083 and variance is 1.172 respectively and it is also apparent that the mean value of the respondents' opinions indicates that it was positively significant because the mean value greater than 3.00. The significant difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{0.13}$ : There are no significant difference of opinions among the different respondents regarding 'Loan disbursement procedure is full of different formalities' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 39.470 with 0.000 significance level which means that there are significant difference of opinions among the

different respondents. In addition the results of ANOVA test shows that the value of F is 11.654 and its significant level is 0.000 which is lower than 5% level of significance which means that the null hypothesis is rejected. So, there are significant difference of opinions among the different respondents.

**8.17 Table for Question No. fourteen (Govt. rules framed by Bangladesh Bank for financing SMEs are adequate and comprehensive)**

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	4	8	0	0	10	25	14	11.02	3.480	.844	.712
Moderately Agree	10	20	25	67.6	11	27.5	46	36.22			
Neutral	28	56	12	32.4	16	40	56	44.09			
Disagree	7	14	0	0	2	5	9	7.087			
Strongly Disagree	1	2	0	0	1	2.5	2	1.575			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=36.089			Significance Level=0.000				
Results of ANOVA Test				F Ratio=5.606			Significance Level =0.005				

(Source: Survey Report)

The above Table No. 8.17 reviews the response of the respondents regarding ‘Govt. rules framed by Bangladesh Bank for financing SMEs are adequate and comprehensive’ of the sample banks. The Table shows that 11.02% of the respondents strongly agree, 36.22% of the respondents moderately agree and 44.09% of the respondents were neutral in this regard. The Table also shows that the 7.087% of the respondents are disagree. Considering the above discussion it is visible that the majority respondents were neutral in this regard. Referring to the descriptive statistics it is apparent that the mean value is 3.480, standard deviation is 0.844 and variance is 0.712 respectively and it is also apparent that the mean value of the respondents’ opinions indicates that it was positively

significant because the mean value is greater than 3.00. The significant difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{08.14}$ : There are no significant difference of opinions among the different respondents regarding the ‘Govt. rules framed by Bangladesh Bank for financing SMEs are adequate and comprehensive’ of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 36.089 with 0.000 significance level which means that there are a significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 5.606 and its significant level is 0.005 which is lower than 5% level of significance which means that the null hypothesis is rejected. So, there are a significant difference of opinions among the different respondents regarding ‘Govt. rules framed by Bangladesh Bank for financing SMEs are adequate and comprehensive’ of the sample banks.

**8.18 Table for Question No. fifteen (Taxation is an influencing factor in SME financing)**

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	16	32	8	21.6	6	15	30	23.62	3.591	1.026	1.053
Moderately Agree	4	8	18	48.6	14	35	36	28.35			
Neutral	18	36	9	24.3	13	32.5	40	31.5			
Disagree	12	24	0	0	7	17.5	19	14.96			
Strongly Disagree	0	0	2	5.41	0	0	2	1.575			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=21.532			Significance Level=0.001				
Results of ANOVA Test				F Ratio=1.892			Significance Level =0.155				

(Source: Survey Report)



The above Table No. 8.18 conveys the response of the respondents regarding 'Taxation is an influencing factor in SME financing' of the sample banks. The Table shows that 23.62% of the respondents strongly agree, 28.35% of the respondents moderately agree and 31.50% of the respondents were neutral in this regard. Considering the above discussion it is visible that the majority respondents were neutral in this regard. Referring to the descriptive statistics it is apparent that the mean value is 3.591, standard deviation is 1.026 and variance is 1.053 respectively and it is also apparent that the mean value of the respondents' opinions indicates that it was positively significant because the mean value is greater than 3.00. The significant difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis is  $H_{0.15}$ : There are no significant difference of opinions among the different respondents regarding 'Taxation is an influencing factor in SME financing' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 21.532 with 0.001 significance level which means that there are no significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 1.892 and its significant level is 0.155 which is higher than 5% level of significance which means that the null hypothesis is accepted. So, there are no significant difference of opinions among the different respondents regarding 'Taxation is an influencing factor in SME financing' of the sample banks'.

**8.19 Table for Question No. sixteen (Location of the Business is influencing factor for financing)**

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	28	56	18	48.6	17	42.5	63	49.61	4.346	.759	.577
Moderately Agree	19	38	14	37.8	15	37.5	48	37.8			
Neutral	3	6	3	8.11	7	17.5	13	10.24			
Disagree	0	0	2	5.41	1	2.5	3	2.362			
Strongly Disagree	0	0	0	0	0	0	0	0			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=6.565			Significance Level=0.363				
Results of ANOVA Test				F Ratio=1.866			Significance Level=0.159				

(Source: Survey Report)

The above Table No. 8.19 reviews the response of the respondents regarding 'Location of the Business is influencing factor for financing' of the sample banks. The Table shows that 49.61% of the respondents strongly agree, 37.8% of the respondents moderately agree and 10.24% of the respondents were neutral in this regard. Referring to the descriptive statistics it is apparent that the mean value is 4.346, standard deviation is .759 and variance is .577 respectively and it is also apparent that the mean value of the respondents' opinions indicates that it was positively significant because the mean value is greater than 3.00. The significant difference of opinions among the different respondents has identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{08.16}$ : There are no significant difference of opinions among the different respondents regarding 'Location of the Business is influencing factor for financing' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 6.565 with 0.363 significance level which means that there are no

significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 1.866 and its significant level is 0.159 which is higher than 5% level of significant which means that the null hypothesis is accepted and from the previous discussion it is known that that there are no significant difference of opinions among the different respondents regarding 'Location of the Business is influencing factor for financing' of the sample banks.

**8.20 Table for Question No. seventeen (Profitable firms are encouraged to take loan from banks)**

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	26	52	16	43.2	19	47.5	61	48.03	4.401	.633	.401
Moderately Agree	22	44	16	43.2	18	45	56	44.09			
Neutral	2	4	5	13.5	3	7.5	10	7.874			
Disagree	0	0	0	0	0	0	0	0			
Strongly Disagree	0	0	0	0	0	0	0	0			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=2.811			Significance Level=0.590				
Results of ANOVA Test				F Ratio=0.884			Significance Level =0.416				

(Source: Survey Report)

The above Table No. 8.20 reviews the response of the respondents regarding the 'Profitable firms are encouraged to take loan from banks' of the sample banks. The Table shows that 48.03% of the respondents strongly agree, 44.09% of the respondents moderately agree and 7.874% of the respondents were neutral in this regard. Referring to the descriptive statistics it is apparent that the mean value is 4.401, standard deviation is 0.633 and variance is 0.401 respectively and it is also apparent that the mean value of the respondents' opinions indicates that it was positively

significant because the mean value greater than 3.00. The significant difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{08,17}$ : There are no significant difference of opinions among the different respondents regarding ‘Profitable firms are encouraged to take loan from banks’ of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 2.811 of 0.590 significance level which means that there are no significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is .884 and its significant level is 0.416 which is higher than 5% level of significance which means that the null hypothesis is accepted and from the previous discussion it is known that that there are no significant difference of opinions among the different respondents regarding ‘Profitable firms are encouraged to take loan from banks’ of the sample banks.

**8.21 Table for Question No. eighteen (Employee turnover rate is high for poor working environment)**

Opinions	Different Respondents							Descriptive Statistics			
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	34	68	7	18.9	22	55	63	49.61	4.189	.982	.964
Moderately Agree	15	30	10	27	12	30	37	29.13			
Neutral	1	2	8	21.6	6	15	15	11.81			
Disagree	0	0	12	32.4	0	0	12	9.449			
Strongly Disagree	0	0	0	0	0	0	0	0			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=47.372			Significance Level=0.000				
Results of ANOVA Test				F Ratio=31.055			Significance Level =0.000				

(Source: Survey Report)

The above Table No. 8.21 conveys the response of the respondents regarding the 'Employee turnover rate is high for poor working environment' of the sample banks. The Table shows that 49.61% of the respondents strongly agree, 29.13% of the respondents moderately agree and 11.81% of the respondents were neutral in this regard. Referring to the descriptive statistics it is apparent that the mean value is 4.189, standard deviation is 0.982 and variance is 0.964 respectively and it is also apparent that the mean value of the respondents' opinions indicates that it was positively significant because the mean value is greater than 3.00. The significance difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{08.18}$ : There are no significant difference of opinions among the different respondents regarding 'Employee turnover rate is high for poor working environment' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 47.372 with 0.000 significance level which means that there are significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 31.055 and its significant level is 0.000 which is lower than 5% level of significant which means that the null hypothesis is rejected and from the previous discussion it is known that that there are a significance difference of opinions among the different respondents regarding 'Employee turnover rate is high for poor working environment' of the sample banks.

**8.22 Table for Question No. nineteen** (The SME sector has usually been neglected in terms of access to government attention as compared with large enterprises)

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	7	14	5	13.5	8	20	20	15.75	3.339	1.099	1.210
Moderately Agree	11	22	14	37.8	15	37.5	40	31.5			
Neutral	8	16	15	40.5	12	30	35	27.56			
Disagree	24	48	1	2.7	2	5	27	21.26			
Strongly Disagree	0	0	2	5.41	3	7.5	5	3.937			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=39.054			Significance Level=0.000				
Results of ANOVA Test				F Ratio=3.635			Significance Level=0.029				

(Source: Survey Report)

The above Table No. 8.22 reviews the response of the respondents regarding the ‘The SME sector has usually been neglected in terms of access to government attention as compared with large enterprises’ of the sample banks. The Table shows that 15.75% of the respondents strongly agree, 31.5% of the respondents moderately agree and 27.56% of the respondents were neutral in this regard. From the descriptive statistics it is apparent that the mean value is 3.339, standard deviation is 1.099 and variance is 1.210 respectively and it is also apparent that the mean value of the respondents’ opinions indicates that it was positively significant because the mean value is greater than 3.00. The significant difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{08.19}$ : There are no significant difference of opinions among the different respondents regarding ‘The SME sector has usually been neglected in terms of access to government attention as

compared with large enterprises' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 39.054 with 0.000 significance level which means that there are no significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 1.635 and its significant level is 0.029 which is lower than 5% level of significant which means that the null hypothesis is rejected. So, there are a significant difference of opinions among the different respondents.

**8.23 Table for Question No. twenty (Nature of Business is another limiting factor for access to finance)**

Opinions	Different Respondents								Descriptive Statistics		
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	13	26	7	18.9	15	37.5	35	27.56	4.015	.797	.635
Moderately Agree	27	54	17	45.9	21	52.5	65	51.18			
Neutral	9	18	9	24.3	3	7.5	21	16.54			
Disagree	1	2	4	10.8	1	2.5	6	4.724			
Strongly Disagree	0	0	0	0	0	0	0	0			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test				$\chi^2$ value=10.273				Significance Level=0.114			
Results of ANOVA Test				F Ratio=4.357				Significance Level =0.015			

(Source: Survey Report)

The above Table No. 8.23 summarizes the response of the respondents regarding the 'Nature of Business is another limiting factor for access to finance' of the sample banks. The Table shows that 27.56% of the respondents strongly agree, 51.18% of the respondents moderately agree and 16.54% of the respondents were neutral in this regard. Referring to the descriptive statistics it is apparent that the mean value is 4.015, standard deviation is 0.797 and variance is 0.635 respectively and it is also apparent that the mean value of the respondents' opinions indicates

that it was positively significant because the mean value is greater than 3.00. The significant difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{0.20}$ : There are no significant difference of opinions among the different respondents regarding 'Nature of business is another limiting factor for access to finance' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 10.273 with 0.114 significance level which means that there are no significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 4.357 and its significant level is 0.015 which is lower than 5% level of significance which means that the null hypothesis is rejected. So, there are significant difference of opinions among the different respondents.

**8.24 Table for Question No. twenty One (Firm's features (sector, size and age of the firm) have positive influence in access to external fund)**

Opinions	Different Respondents						Descriptive Statistics				
	Banker		Accounting Expert		Academician		Total		Mean	SD	Variance
	No.	%	No.	%	No.	%	No.	%			
Strongly Agree	21	42	15	40.5	21	52.5	57	44.88	4.291	.747	.557
Moderately Agree	19	38	18	48.6	15	37.5	52	40.94			
Neutral	8	16	4	10.8	4	10	16	12.6			
Disagree	2	4	0	0	0	0	2	1.575			
Strongly Disagree	0	0	0	0	0	0	0	0			
Total	50	100	37	100	40	100	127	100			
Results of Chi-Square Test			$\chi^2$ value=5.371			Significance Level=0.497					
Results of ANOVA Test			F Ratio=1.202			Significance Level =0.304					

(Source: Survey Report)



The above Table No. 8.24 summarizes the response of the respondents regarding the 'Firm's features (sector, size and age of the firm) have positive influence in access to external fund' of the sample banks. The Table shows that 44.88% of the respondents strongly agree, 40.94% of the respondents moderately agree and 12.6% of the respondents were neutral in this regard. Referring to the descriptive statistics it is apparent that the mean value is 4.291, standard deviation is 0.747 and variance is 0.557 respectively and it is also apparent that the mean value of the respondents' opinions indicates that it was positively significant because the mean value greater than 3.00. The significant difference of opinions among the different respondents has been identified by conducting Chi-Square and ANOVA test through developing and testing the following null hypothesis  $H_{08.21}$ : There are no significant difference of opinions among the different respondents regarding 'Firm's features (sector, size and age of the firm) have positive influence in access to external fund' of the sample banks. On the basis of the results of Chi-Square test it is found that the value of  $\chi^2$  is 5.371 with 0.497 significance level which means that there are no significant difference of opinions among the different respondents. In addition the results of ANOVA test shows that the value of F is 1.202 and its significant level is 0.304 which is higher than 5% level of significance which means that the null hypothesis is accepted and from the previous discussion it is known that that there is no significant difference of opinions among the different respondents regarding the 'Firm's features (sector, size and age of the firm) have positive influence in access to external fund' of the sample banks.

#### **8.4 Conclusion:**

This chapter covers the descriptive and analytical information of the opinion of the respondents. A total of 127 respondents (50 credit officers of sample commercial banks, 37 professional accountants and 40 academicians) have been taken to confirm the result obtained from the questionnaire survey of SME owner or manager. From the opinion survey discussion it can be said that internal funding, mortgage system, financial information of the firm, rate of interest, location, profitability of the SME firms and firm's characteristics (sector, size and age of the firm) are the influencing factors in chi square and ANOVA test for obtaining mexternal finance. But structural defeats, distribution channels, financial incentive scheme, taxation and nature of business are partly acceptable influencing factor in external financing.

## **CHAPTER NINE**

### **Recommendation and conclusion**

#### **9.1 Introduction**

Accelerating economic development and alleviating poverty, eliminating income inequality and regional disparity are the overarching targets of the present advancement paradigm in Bangladesh. Nowadays, it is broadly admitted that SMEs have been contributing a fundamental role with regard to economic development, employment creation, poverty alleviation and overall industrialization by way of entrepreneurship development. Industrialization's relation to poverty alleviation is by way of enhancing the economic growth rate of the country, enrichment of the efficiency of the labor in employment, offering job opportunity to the unemployed people. As a result SMEs in Bangladesh obtains numerous strategies to raise themselves and economy of the country. Everywhere in the world, limited accessibility to bank finance is assumed a key constraint to the development of private sector growth especially for SMEs. The objectives of the study were to attain an informed understanding of the status of present SMEs financing for and influencing factors of limited accessibility to bank finance. For this the researcher examined both from the demand and supply sides to resolve the issues in terms of SMEs access to bank finance.

Accounting information is useful for its effectiveness. Effectiveness in turn depends on how the users can take various decisions on the basis of adequate and qualitative accounting information. In Bangladesh the SMEs cannot supply audited accounts to banks for obtaining loans from the banks which cannot rely on the unaudited information. There are also problems like employee turnover rate, quality assurance and allocation of fund which is significantly below that of international level.

It is in this perspective the present study of SME financing has merely tried to analyze and project the different aspects of SME financing practices followed in Bangladesh and the norms and practices prevailing there. Before we put forward any suggestive measures towards those ends we like to understand the nature of SME financing practices and constraints to access to finance and opinion of the experts regarding SME financing in Bangladesh.

### **9.2 SMEs Financing Analyzed –A Flash-back**

In the process of analyzing different relevant aspects of SME financing, an attempt has first been made to examine the contribution of sector-wise SMEs to GDP and the nature of financing practices by the sample commercial banks to SMEs in Bangladesh. Thirteen null hypotheses have been developed to see whether there are significant differences in contribution to GDP by the sample SMEs from year to year during the study period. Our analysis shows that the null hypotheses were rejected in 100% of the cases which means that there are significant differences in contribution to GDP by the sample SMEs from year to year during the study period (Appendix -3). Referring to the same Table it is apparent that there is significant difference between the contributions of service sector for employment generation in case of male and female of financial sector in Bangladesh ( $H_{05.14}$ ). In addition, we see that SME financing by the sample banks significantly affect the male and female employment generation in case of Trade and Service Sector ( $H_{05.15}$ ). A close scrutiny of the loan advancing practices of the sample banks exhibits that the average percentage of SME loan to total loan is not satisfactory and there are significant differences of the volume of SME loan over the study period by the sample banks. The present study has also investigated

whether there is bank to bank variation in advancing SME loan and our result of t test shows that null hypotheses are rejected in 80% of the cases and accepted in 20% of the cases which means that there are significant bank to bank variation in advancing SME loans.

To turn towards the reasons for financing restrictions imposed by commercial banks on the SMEs, certain independent variables have been selected on the basis of literature review and the review of Information Asymmetry Theory, Agency Theory and Pecking Order Theory. The independent variables are internal finance, collateral, financial information, interest rate on loan, term of the loan, age of firm, firm size, firm sector, owners' age, owners' gender, educational qualification of owners, profitability of SMEs, firm taxation and firm ownership style. Regression result shows that null hypotheses have been rejected in case of ln\_internalfinance, collateral, financial information, interest rate, size of firm, sector of the firm, profitability and firm taxation. So, these independent variables affect debt accessibility significantly whereas, term of loan, age of firm, age of firm owners, gender of owners, educational qualification of owners and firm ownership style do not affect debt accessibility significantly because the null hypotheses are accepted in those cases.

A close investigation on the impact of financial performance variables of sample commercial banks on SMEs financing in Bangladesh has been attempted in this study. The independent variables are net profit before tax, net profit after tax, interest income, non-interest income, loan and advance, total investment, total assets, shareholders' equity, return on assets and return on equity of sample commercial banks. The dependent variable is the volume of SME loan. The result of multiple regression

gives testimony to the fact that the independent variables of sample commercial banks taken together affect volume of SME loan significantly except for sample bank four.

Our attempt to get the opinion of the bankers, academicians and professional experts comprising of chartered accountants and cost and management accountants on influencing factors of the SMEs financing has revealed that the null hypotheses are rejected in case of both Chi-square test and ANOVA tests in 42.85% of the cases and accepted in case of both the tests in 33.33% of the cases.

It is also evident from the result of the tests that null hypotheses are rejected in case of Chi- square test in 57.14% of the cases and 52.38% of the cases in case of ANOVA test. 23.81% of the null hypotheses are accepted in either of the cases.

### **9.3 Recommendation**

#### **9.3.1 For SMEs**

Since there is highly significant positive relationship between financial information and accessibility to bank loan, SMEs are recommended to prepare and submit audited financial statements to increase the SMEs' accessibility to bank loan.

#### **9.3.2 For Banks**

As an alternative to mortgage based loan, relationship lending on the basis of financial information collected by physical communication with the owner of the SME for several years may be recommended for the banks as a technique to evaluate the financial ability of the SME borrower.

The banks should ask from the SME owners their tax return for evaluation purposes.

Banks should try to reduce bank to bank variation in the volume of loan amount.

Rate of interest on loan should be reduced.

### **9.3.3 For policy makers**

#### **9.3.3.1 Establish an independent investigation**

The key result of the research is that the collateral and internal capital are the biggest influencing factors to access in the bank loan. A strong relationship exists between collateral provided by the SME firm and internal capital and firm's accessibility to bank loan. The Government should establish an independent investigation team to evaluate lending procedures of banks to SMEs in line with the best practices in other developed and developing countries. The existing policies should be changed, if necessary. The key focuses should be on the percentage of collateral, internal finance and interest rate of the SMEs loan proper valuation of collaterals. The ownership of the collaterals should be scrutinized vigorously by at least three responsible officers of the bank including local manager. A close scrutiny should be made by the bank about previous record of transfer of ownership of collaterals for last fifteen years.

#### **9.3.3.2 Incentive of the banks**

The Government through the Bangladesh bank can persuade the Government and private commercial banks by the regulations of financial benefit scheme. The Government should create regulations for banks to form a perfect credit environment. The key players of credit environment, the SME and bank, have crucial influence to prolong financing environment. The coordination between the banks and SMEs must be maintained to trim down information asymmetry, interest rate and financial uncertainty. The regulations should be made considering the above factors including taxation benefits.

### **9.3.3.3 Alternative to bank loan**

The alternative decision to bank loan is creation of microfinance institutions to resolve the financial constraints of SMEs. Considering the capital market and SMEs, creation of large number of microfinance institutions may be costly. In this situation, with suitable regulatory assistance from the Government, substitute financing for SMEs will be supportive.

### **9.3.3.4 Obligatory SME financial Reporting**

Shortage of financial information for not following the standard accounting practices has been selected as the main influencing factor in accessibility to loan for the SME firm in Bangladesh. To diagnose the financial panorama of the borrowers, information of credit is crucial for the banks. So, in this case Government should take initiative to assist SMEs to take information management. The regulations relating to SME financial management is very much required to boost up information management. A proper training on standard accounting method and financial management will be helpful for the owner.

### **9.3.3.5 Direct Interventions for SMEs**

With the policy implementation, direct interventions for SMEs such as tax benefit, direct loan supervision by a division of Bangladesh Bank can be recommended. As SMEs are the beginning form of the large firms, direct intervention is the challenge for the Government for the economic development of the country.

### **9.3.3.6 Organizational Association and Central Database**

It is evident at the time of data collection that there is no central database for this financial sector. The Government should take initiative to coordinate among the owners to conquer the issues of financing



constraints. By greater organizational association and information sharing among all the stakeholders, a central information database will be possible. This will be helpful for the designer of SME policy, program, and regulations for the betterment of SME financing.

#### **9.3.3.7 Exploring market for the SME products in foreign countries:**

New market in foreign countries should be explored by both Government and private initiative to increase the salability of SME products.

#### **9.4 Limitations of the study**

1. Naturally, any human work may not be perfect and this thesis is not an exception to this. The explanation of the outcome is with some limitations. It is to be mentioned that the analysis of the firm's primary data is done for one year period. So, bearing on mind the fact, the result may lack generalizability.
2. Like other research study, there are some unapprehended factors emerged at the time of research work such as limited resource and time. The limitations may influence the results and explanation of the research outcomes.
3. Moreover, no information audited by the professional accountant is available about the significance of the financing instruments for the firms and the relative importance to each other. Another limitation is related to the firms' decision-making process to utilize specific financing instruments. The analysis cannot determine whether the financing patterns are based on an active choice by the firms or due to the accessibility of specific financing instruments.
4. In this study more banks could be included in the sample to increase generalization of the results.

### **9.5 Future Research**

SMEs' financing decisions, in general and particular, is to use bank loan. Large-scale qualitative research would be helpful. Likewise, depth studies are suggested to discover the cause of not choosing to apply for bank finance. Moreover, additional studies would be helpful to identify the issues relating to SMEs' financial access at the start-up stage.

When SME financing by the conventional banking system is taken off, SME financing by the Islamic banking system in Bangladesh are possible areas for further and future academic endeavors.

In addition, data from SMEs that failed due to financing problems can significantly expand knowledge of the influence of external finance on SME performance. Research into such SMEs might require multi-source interviews with key employees, entrepreneurs, financiers and regulators, amongst others.

Time series data could be collected over time period creating panel data that could be used in further analysis of SME financing using more sophisticated methods of econometric data analysis. Such a detailed and better analysis might provide a basis for better generalization of findings and results.

Finally, regarding constraints of financing, further research should examine its viability, performance, and impact on SME growth as more data should become available in the future.

### **9.6 Conclusion**

This chapter reviews the primary objectives of the research with the findings. The objectives of the research are to determine the contribution of SMEs to GDP, the constraint factors of SMEs' financing and influence of financial performance variables on SMEs financing. According to the

Pecking Order Theory, Information Asymmetry theory, Trade of Theory and Agency Theory, information opacity of the smaller firms and the risk are the constraint factors of SMEs financing in Bangladesh.

The findings confirm that the crops and horticulture sector, animal farming sector, forest and related sector, manufacturing sector, construction sector, wholesale and retail trade sector, finishing sector, hotel and restaurants sector, transport sector, real estate sector, auricular sector, industry sector, service and other sector, service sector to employment generation, trade sector to employment generation have significant contribution to GDP. In addition, the sample banks have invested 16.35 (average of all sample banks' SME loan percent of total loan) in SME financing.

The findings also confirm that the internal finance, collateral (Dummy equal and Dummy double), profitability, taxation, financial information, the rate of the interest, the size of the firm, sectors (Dummy Trade and Dummy Manufacturing), the age of the firm, gender of the owner, education qualification of the owner have significance influence on accessibility to bank credit.

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**APPENDICES-1**

**Questionnaire for the owners of SMEs**  
 Department of Accounting and Information Systems  
 University of Rajshahi

Serial No.-
-------------

Dear Sir/Madam,

I am conducting a research study leading to M.Phil degree from the Department of Accounting and information Systems, University of Rajshahi. The title of my research study is “SMALL AND MEDIUM ENTERPRISES’ FINANCING BY COMMERCIAL BANKS IN BANGLADESH: AN EVALUATION”. An interview schedule has been constructed consisting of Part A to Part C to achieve the objectives of the study. You are requested to indicate your opinion by putting **tick mark (√)** against each question in the box at the right side of the question. Your opinion has great value to us and will be kept confidential.

**Section-A: Profile of the Respondent**

1. Name of the Respondent:.....
2. Name of the Organization:.....
3. Designation of the Respondent:.....
4. Gender:      1. Male       2. Female
5. Age: 18-25 yrs     26-35 yrs     36-45 yrs     46-55 yrs     over 55 yrs
6. Academic Qualifications:
  - i) High School
  - ii) Vocational Edu
  - iii) Bachelor Degree
  - iv) Others (Specify)

**Section B: Profile of the firm**

7. Name of your Firm: \_\_\_\_\_  
 Location of Business: \_\_\_\_\_ Year of establishment: \_\_\_\_\_  
 Telephone: \_\_\_\_\_ email: \_\_\_\_\_
8. What best describes the ownership of your firm?  
 i) Sole ownership     ii) Partnership     iii) Cooperative     iv) Others (Specify)  \_\_\_\_\_
9. What best describes your core business sector?  
 i) Trade                   ii) Manufacturing                   iii) Service
10. In terms of development, at which stage would you say your business is:  
 i) Early start-up (Less than 1 yr)   
 ii) Young (1-5 yrs)   
 iii) Established (more than 5 yrs)

### Section C: Financial Information of the firm

#### 11. information regarding sales, profit, tax and number of employee of the firm

Year	Yearly sales in lac	Yearly profit in lac	Yearly tax paid to Government	number of employees			
				Small Enterprise		Medium Enterprise	
				Service	Manufacturing	Service	Manufacturing
				16-50	31-120	51-120	121-300
2016							
2017							

#### 12. Amount of fixed asset

Year Amount of Fixed asset	Small Enterprise		Medium Enterprise	
	Service	Manufacturing	Service	Manufacturing
	10 lakh - 2 crore	75 lakh – 15 crore	2 crore – 30 crore	15 crore -50 crore
2017				

13. a. What was the estimated value of the firm's current assets (cash, accounts receivables, deposit accounts, inventory value etc.) in the year 2017?

- i) Less than Tk. 500,000    ii) 500,000 - 750,000    iii) 750,000 - 1,000,000  
iv) 1,000,000 - 1,500,000    v) More than 1,500,000.

b. what was the estimated value of the firm's fixed assets

Tk. .... In lakh

14. a) What kinds of financial statements are maintained by your firm? a) Profit & Loss Statement b) Balance Sheet c) Cash Flow Bank statements d) Owners equity statement

- i) a    ii) a+b    iii) a+b+c    iv) a+b+c+d

b) The financial statements of your firms are compiled by:

- i) Professional Accountant    ii) Self Others (Specify) \_\_\_\_\_

15. a. Amount of Internal fund at present (Owners fund)

- i) Less than Tk.10,00,000    ii) 10,00,000 – 50,00,000    iii)50,00,000 – 250,00,000  
iv) 25000000 – 12,0000,000    v) More than 120,000,000.

15. b. What were the sources of internal funds?

- i) Personal    ii) Family & Friends    iii) Other (Specify) \_\_\_\_\_

16. Did you try to obtain external finance for your business?

- i) Yes    ii) No

17. If "NO", what was the main reason for not seeking external financing?

- i) Sufficient Internal Funds    ii) Difficult Loan Procedure    iii) High Interest rate  
iv) Lack of collateral

18. If "YES", what were the sources of external funds used for your business?

- i) Bank Loans    ii) Govt./NGO Grants/Schemes    iii) Private Moneylender  
iv) Others (Specify) \_\_\_\_\_

19. a) If you applied for Bank loan, what information did the banks ask for?

- i) Business plan    ii) Financial statements    iii) Business total assets  
iv) Owner's Equity    v) Security(collateral)

- b) What information did you provide to the banks while applying for loan?  
 i) Business plan ii) Financial statements iii) Business total assets  
 iv) Owner's Equity v) Security (collateral)
- c) What was the main purpose of the external finance sought for?  
 i) Working Capital ii) Fixed Cost (machineries/equipment)  
 iii) Debt consolidation iv) Business Expansion
- d) What was the duration of the bank loan (loan term)?  
 i) Less than 1 year ii) 1-2 years iii) 3-5 years iv) More than 5 years
- 20. a) What was the outcome of your bank loan application?**  
 i) Loan Approved ii) Loan Rejected
- b) i. Answer the following, if your bank loan was **APPROVED**, What is the rate of interest of the loan?  
 i) Less than 10% ii) 10-13% iii) 13-16% iv) Above 16%
- b) ii. What was the total amount of bank loan approved by the bank?  
 Tk. .... in lakh
- b) iii. What was the value of collateral required by the bank in proportion to the loan amount applied for?  
 i) None ii) Half iii) Equal iv) Double v) More than two times
- c) If your bank loan was **REJECTED**, What reasons were given as to why the loan was rejected?  
 i) No reason given ii) Insufficient collateral iii) No credit history iv) Too risky
- d) What collateral or security did you pledge if any?  
 i) Social ii) Personal iii) Assets iv) Others

\_\_\_\_\_  
 Signature of the respondent

Mobile No-

*Thanks for your patience and intelligent answer.*

Supervisor  
 \_\_\_\_\_

Prof. Dr. Subhash Chandra Sil  
 Dept. of AIS, R.U.

Researcher  
 \_\_\_\_\_

Raj Kumar Moulick

Co- Supervisor  
 \_\_\_\_\_

Ex-Prof. Dr. Madan Mohon Dey  
 Dept. of AIS, R.U.

## APPENDICES 2

### Questionnaire for the Respondent

Department of Accounting and Information Systems  
University of Rajshahi

Serial No.-
-------------

Dear Sir/Madam,

I am conducting a research study leading to PhD degree under the Department of Accounting and information Systems, University of Rajshahi. The title of my research study is “SMALL AND MEDIUM ENTERPRISES’ FINANCING BY COMMERCIAL BANKS IN BANGLADESH: AN EVALUATION”. An interview schedule has been planned consisting of Part A and Part B to achieve the objectives of the study. You are requested to indicate your opinion by putting **tick mark (√)** against each question in the box at the right side of the question. Your opinion has great value to us and will be kept confidential.

In the likert type question, various statements are weighted as follows:

5	4	3	2	1
I strongly agree	I agree	Neutral	I do not agree	No Response

#### Section-A: Profile of the Respondent

1. Name of the Respondent:.....

2. Name of the Organization:.....

3. Designation of the Respondent:.....

4. Gender:

1. Male

2. Female

5. Academic Qualifications:

1. Bachelors

2. Masters

3. M. Phil

4. Ph. D

5. Others (if any)

6. Basic Discipline:

1. Arts

2. Commerce

3. Science

4. Engineering

5. Others (if any)

7. Professional Qualifications:

1. ACA

2. FCA

3. ACMA

4. FCMA

5. Others (if any)

8. Age of the Respondent:

1. Below 30

5. 45 – 50

2. 30 – 35

6. 50 – 55

3. 35 – 40

7. 55 – 60

4. 40 – 45

8. Above 60

9. Service Length of the Respondent:

1. Below 5

5. 20 – 25

2. 5 – 10

6. 25 – 30

3. 10 – 15

7. 30 – 35

4. 15 – 20

8. Above 35



**Section-B: Evaluation of the different Influencing factors of SME Financing**

10. Please state your opinion regarding the different influencing factors of small and medium enterprises' (SMEs) financing.

Items	5	4	3	2	1
1. Serious inherent structural defeats make them high risky borrower					
2. Inadequate funding by the owner creates barrier to success.					
3. Due to shortage of technical and technological infrastructures, the quality of products is lower compared to that of large organization.					
4. Expanding distribution channels are another factor for growth and survival of SMEs					
5. Government has developed mortgage and guarantee system for the loan disbursement.					
6. Financial incentive schemes (Such as grace period, easing loan installment) for SMEs through a ranking system are vital for their sound business growth.					
7. Asymmetric information is the key to limited access to external fund.					
8. The firm's financial inability increases specialized employees turnover					
9. Cost of accessing fund (High interest rate) is another limiting factor					
10. Prior work experience of entrepreneur is vital for success					
11. Owner's characteristics (age, education and gender) are important influencing factors in access to finance.					
12. Time between loan application and disbursement of loan of SME entrepreneur including woman is somewhat lengthy.					
13. Loan disbursement procedure is full of different formalities.					
14. Govt. rules framed by Bangladesh Bank for financing SMEs are adequate and comprehensive.					
15. Taxation is an influencing factor in SME financing.					
16. Location of the Business is influencing factor for financing.					
17. Profitable firms are encouraged to take loan from financial institutions.					
18. Employee turnover rate is high for poor working environment					
19. The SME sector has usually been neglected in terms of access to government attention as compared with large enterprises					
20. Nature of Business is another limiting factor for access to finance.					
21. Firm's features (sector, size and age of the firm) have positive influence in access to external fund.					

\_\_\_\_\_  
Signature of the respondent  
Mobile No-

*Thanks for your patience and intelligent answer.*

Supervisor

\_\_\_\_\_  
Prof. Dr. Subhash Chandra Sil  
Dept. of AIS, R.U.

Researcher

\_\_\_\_\_  
Raj kumar Moulick  
Mob: 01734640224

Co- Supervisor

\_\_\_\_\_  
Ex-Prof. Dr. Madan Mohon Dey  
Dept. of AIS, R.U.

**APPENDICES-3****Summary result of objective one**

	Summary of analysis	F ratio	Sig. Level	Decision
Ho <sub>5.1</sub>	There is no significant difference between the contributions of crops and horticulture sector to GDP in different years of financial sectors in Bangladesh.	10.330	0.000	Rejected
Ho <sub>5.2</sub>	There is no significant difference between the contributions of animal farming sector in GDP in different years of financial sectors in Bangladesh.	9.639	0.000	Rejected
Ho <sub>5.3</sub>	There is no significant difference between the contributions of forest and related sector in GDP in different years of financial sectors in Bangladesh.	8.964	0.000	Rejected
Ho <sub>5.4</sub>	There is no significant difference between the contributions of manufacturing sector to GDP in different years of financial sectors in Bangladesh.	3.055	0.014	Rejected
Ho <sub>5.5</sub>	There is no significant difference between the contributions of construction sector in GDP in different years of financial sectors in Bangladesh.	6.453	0.000	Rejected
Ho <sub>5.6</sub>	There is no significant difference between the contributions of wholesale and retail trade sector to GDP in different years of financial sectors in Bangladesh.	9.452	0.000	Rejected
Ho <sub>5.7</sub>	There is no significant difference between the contributions of finishing sector to GDP in different years of financial sectors in Bangladesh.	8.576	0.000	Rejected
Ho <sub>5.8</sub>	There is no significant difference between the contributions of hotel and restaurants sector in GDP to different years of financial sectors in Bangladesh.	8.067	0.000	Rejected
Ho <sub>5.9</sub>	There is no significant difference between the contributions of transport sector to GDP in different years of financial sectors in Bangladesh.	7.952	0.000	Rejected

Ho <sub>5.10</sub>	There is no significant difference between the contributions of real estate sector to GDP in different years of financial sectors in Bangladesh.	6.963	0.000	Rejected
Ho <sub>5.11</sub>	There is no significant difference between the contributions of auricular sector to GDP in different years of financial sectors in Bangladesh.	10.061	0.000	Rejected
Ho <sub>5.12</sub>	There is no significant difference between the contributions of industry sector to GDP in different years of financial sectors in Bangladesh.	7.746	0.000	Rejected
Ho <sub>5.13</sub>	There is no significant difference between the contributions of service and other sector to GDP in different years of financial sectors in Bangladesh.	7.510	0.000	Rejected
Ho <sub>5.14</sub>	There is no significant difference between the contributions of service sector for employment generation in case of male and female of financial sectors in Bangladesh.	-4.534	0.001	Rejected
Ho <sub>5.15</sub>	There is no significant difference between the contributions of trade sector for employment generation in case of male and female of financial sectors in Bangladesh.	-4.895	0.001	Rejected
Ho <sub>5.16</sub>	There is no significant difference between the contributions of manufacturing sector for employment generation in case of male and female of financial sectors in Bangladesh.	-2.135	0.061	Accepted
Ho <sub>5.17</sub>	There is no significant difference of SME loan over the study period of the sample_one bank.	11.639	0.000	Rejected
Ho <sub>5.18</sub>	There is no significant difference of SME loan over the study period of the sample_two bank.	3.210	0.011	Rejected
Ho <sub>5.19</sub>	There is no significant difference of SME loan over the study period of the sample_three bank.	5.561	0.000	Rejected
Ho <sub>5.20</sub>	There is no significant difference of SME loan over the study period of the sample_four bank.	3.856	0.004	Rejected
Ho <sub>5.21</sub>	There is no significant difference of SME loan over the study period of the sample_five bank.	10.703	0.000	Rejected

Ho <sub>5.22</sub>	There is no significant difference of SME loan over the study period of the sample_six bank.	3.877	0.004	Rejected
Ho <sub>5.23</sub>	There is no significant difference of SME loan over the study period of the sample_seven bank.	3.245	0.010	Rejected
Ho <sub>5.24</sub>	There is no significant difference of SME loan of the sample_three bank over the study period.	5.655	0.000	Rejected
Ho <sub>5.25</sub>	There is no significant difference of SME loan of the sample_nine bank over the study period.	6.766	0.000	Rejected
Ho <sub>5.26</sub>	There is no significant difference of SME loan of the sample_ten bank over the study period.	5.760	0.000	Rejected

#### APPENDICES 4

The bank to bank variation of SME loan of the Sample Banks over the study period

Sample bank	T value	Sig level	Accepted/ Rejected
Sample Bank one vs two	19.273	0.000	Rejected
Sample Bank one vs three	12.412	0.000	Rejected
Sample Bank one vs four	8.710	0.000	Rejected
Sample Bank one vs five	10.031	0.000	Rejected
Sample Bank one vs six	10.337	0.000	Rejected
Sample Bank one vs seven	16.412	0.000	Rejected
Sample Bank one vs eight	10.702	0.000	Rejected
Sample Bank one vs nine	0.005	0.996	Accepted
Sample Bank one vs ten	12.192	0.000	Rejected
Sample Bank two vs three	-2.775	0.000	Rejected
Sample Bank two vs four	-0.182	0.860	Accepted
Sample Bank two vs five	-6.070	0.000	Rejected
Sample Bank two vs six	-2.494	0.034	Rejected
Sample Bank two vs seven	2.254	0.051	Accepted
Sample Bank two vs eight	-6.554	0.000	Rejected
Sample Bank two vs nine	-7.335	0.000	Rejected
Sample Bank two vs ten	2.634	0.027	Rejected
Sample Bank three vs four	1.763	0.112	Accepted
Sample Bank three vs five	-6.223	0.000	Rejected
Sample Bank three vs six	-0.329	0.750	Accepted
Sample Bank three vs seven	4.470	0.002	Rejected
Sample Bank three vs eight	-4.329	0.002	Rejected

Sample Bank three vs nine	-7.118	0.000	Rejected
Sample Bank three vs ten	5.314	0.000	Rejected
Sample Bank four vs five	-5.338	0.000	Rejected
Sample Bank four vs six	-1.174	0.270	Accepted
Sample Bank four vs seven	0.829	0.429	Accepted
Sample Bank four vs eight	-3.329	0.009	Rejected
Sample Bank four vs nine	-6.502	0.000	Rejected
Sample Bank four vs ten	2.894	0.018	Rejected
Sample Bank five vs six	2.202	0.055	Accepted
Sample Bank five vs seven	9.055	0.000	Rejected
Sample Bank five vs eight	-1.006	0.341	Accepted
Sample Bank five vs nine	-5.393	0.000	Rejected
Sample Bank five vs ten	11.858	0.000	Rejected
Sample Bank six vs seven	3.376	0.008	Rejected
Sample Bank six vs eight	-4.577	0.001	Rejected
Sample Bank six vs nine	-6.916	0.000	Rejected
Sample Bank six vs ten	3.484	0.007	Rejected
Sample Bank seven vs eight	-7.242	0.000	Rejected
Sample Bank seven vs nine	-7.308	0.000	Rejected
Sample Bank seven vs ten	2.466	0.036	Rejected
Sample Bank eight vs nine	-6.565	0.000	Rejected
Sample Bank eight vs ten	5.577	0.000	Rejected
Sample Bank nine vs ten	6.796	0.000	Rejected

## APPENDICES 5

### Summary Result of Objective Two

	Summary of analysis	Comments
Ho <sub>6.1</sub>	There is no influence of the size of internal finance (lnINTFIN) on access to bank loans (DA).	<b>Rejected</b>
Ho <sub>6.2</sub>	There is no influence of size of the collateral (COLL) on accessibility to the bank loans (DA)	<b>Rejected</b>
Ho <sub>6.3</sub>	There is no influence of the quantity of the firm financial information (FININFO) on access to bank loans (DA)	<b>Rejected</b>
Ho <sub>6.4</sub>	There is no influence of the rate of interest on loan (INT) on access to bank loans (DA)	<b>Rejected</b>
Ho <sub>6.4</sub>	There is no influence of the duration of the loan (TERM) on access to bank loans (DA)	<b>Accepted</b>
Ho <sub>6.5</sub>	There is no influence of firm age (AGEF) on access to bank loans (DA).	<b>Accepted</b>
Ho <sub>6.6</sub>	There is no influence of firm size (SIZEF) on access to bank loans (DA).	<b>Rejected</b>
Ho <sub>6.7</sub>	There is no influence of firm sector (SECF) on access to bank loans (DA).	<b>Rejected</b>

Ho <sub>6.8</sub>	There is no influence of firm owner's age (AGEO) on access to bank loans (DA)	<b>Accepted</b>
Ho <sub>6.9</sub>	There is no influence of firm owner gender (GENO) on access to bank loans (DA)	<b>Accepted</b>
Ho <sub>6.10</sub>	There is no influence of the firm owner's educational qualification (EDUO) on access to bank loans (DA)	<b>Accepted</b>
Ho <sub>6.11</sub>	There is no influence of the firm profitability on access to bank loans (DA).	<b>Rejected</b>
Ho <sub>6.12</sub>	There is no influence of the firm taxation on access to bank loans (DA)	<b>Rejected</b>
Ho <sub>6.13</sub>	There is no influence of the firm ownership on access to bank loans (DA)	<b>Accepted</b>

## APPENDICES 6

### Summary Result of Objective Three

<b>Sample Banks</b>	<b>R<sup>2</sup></b>	<b>F ratio</b>	<b>Significance Level</b>	<b>Decisions</b>
Sample Bank_One	1.000	0.000	0.000	Rejected
Sample Bank_Two	1.000	0.000	0.000	Rejected
Sample Bank_Three	1.000	0.000	0.000	Rejected
Sample Bank_Four	0.995	26.501	0.149	Accepted
Sample Bank_Five	1.000	0.000	0.000	Rejected
Sample Bank_Six	1.000	0.000	0.000	Rejected
Sample Bank_Seven	1.000	0.000	0.000	Rejected
Sample Bank_Eight	1.000	315.684	0.044	Rejected
Sample Bank_Nine	1.000	0.000	0.000	Rejected
Sample Bank_Ten	1.000	0.000	0.000	Rejected

## APPENDICES 7

### Respondents' Opinion Regarding Different Influencing Factors of SME Financing

	Summary of the Result				Comments
	Chi-Square Test	Significance	ANOVA Test	Significance	
Ho <sub>9.1</sub>	17.687	0.023	1.344	0.265	Accepted*
Ho <sub>9.2</sub>	3.548	0.214	2.214	0.114	Accepted
Ho <sub>9.3</sub>	87.146	0.000	23.987	0.000	Rejected
Ho <sub>9.4</sub>	19.098	0.004	1.523	0.222	Accepted*
Ho <sub>9.5</sub>	8.707	0.191	1.459	0.236	Accepted
Ho <sub>9.6</sub>	10.448	0.107	4.808	0.010	Accepted **
Ho <sub>9.7</sub>	2.598	0.857	0.424	0.655	Accepted
Ho <sub>9.8</sub>	47.534	0.000	6.935	0.001	Rejected
Ho <sub>9.9</sub>	4.089	0.394	0.929	0.398	Accepted
Ho <sub>9.10</sub>	20.242	0.003	9.760	0.000	Rejected
Ho <sub>9.11</sub>	21.847	0.005	3.966	0.021	Rejected
Ho <sub>9.12</sub>	27.302	0.001	5.625	0.005	Rejected
Ho <sub>9.13</sub>	39.470	0.000	11.654	0.000	Rejected
Ho <sub>9.14</sub>	36.089	0.000	5.606	0.005	Rejected
Ho <sub>9.15</sub>	21.532	0.001	1.892	0.155	Accepted*
Ho <sub>9.16</sub>	6.565	0.363	1.866	0.159	Accepted
Ho <sub>9.17</sub>	2.811	0.590	0.884	0.416	Accepted
Ho <sub>9.18</sub>	47.372	0.000	31.055	0.000	Rejected
Ho <sub>9.19</sub>	39.054	0.000	3.635	0.029	Rejected
Ho <sub>9.20</sub>	10.273	0.114	4.357	0.015	Accepted**
Ho <sub>9.21</sub>	5.371	0.497	1.202	0.304	Accepted

Accepted\*: The null hypothesis is accepted/ rejected based on ANOVA test.

Accepted\*\*: The null hypothesis is accepted/ rejected based on Chi square test.