INFORMATION SYSTEMS IN SMALL BUSINESS IN BANGLADESH:

AN EXPLORATORY STUDY

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Dedicated to:

My Father Late **Panchanan Biswas**

&

Mother **Nisha Rani Biswas**

Certificate from Supervisor

This is to certify that the thesis entitled *"INFORMATION SYSTEMS IN SMALL BUSINESS IN BANGLADESH: AN EXPLORATORY STUDY"* submitted by **Vhokto Kumar Biswas** for the award of the degree of doctor of philosophy is done under my supervision and guidance. I certify that the work is original and has not been submitted for the award of any degree or diploma. This thesis represents entirely an independent work on the part of the candidate, no portion of thesis is a reproduction from any other sources, published or unpublished without proper acknowledgement.

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ABSTRACT OF THE STUDY

This study is an attempt to examine the impact of information system/information technology (IS/IT) on the performance of small and medium enterprises in our country. Entire sectors of the economy are nearly unthinkable without substantial investments in information systems. Information system is significant to build and sustain competitive advantages in producing and distributing goods and services. Information technology is acknowledged as a foundation for a firm doing business in the 21st century.

Small business (SB) or small & medium enterprise (SME) may be considered as the backbone of the national economy of Bangladesh. The SMEs account for over 96% of the private sector industrial establishments, providing employment opportunities up to 80% of the non-agricultural labor force, and contribute about 30% to the country's GDP.

The aim of the study is to apply the IS/IT based effective manufacturing and distribution system in small and medium enterprises (SMEs) of Bangladesh. In this study, the choice of personal interview, observation, etc. strategies for data collection were stated. Here 68 owner-managers, key persons, senior employees from 68 small firms were successfully interviewed. The study coded and processed the data collected using a special data entry and analysis through statistical package for social sciences (SPSS). The major statistical tools include, among other, mainly the descriptive statistics and Cronbach's Alpha Test.

The study has evaluated the overall performance of 68 small firms of different categories in Dhaka city. The evidence, obtained from the field visits, is presented in details in this study. On the basis of this evidence and observation made during the field survey, the effectiveness of IS/IT adoption in production, distribution and other major processes is assessed. The study has found some basic determinants or factors that affect information technology (IT) adoption in small businesses in Bangladesh. The knowledge developed in this study will not only help the academics but also help the practicing owner-manager or key persons to improve the productivity of small and medium enterprises (SMEs).

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ACRONYMS

ADB	Asian Development Bank
AIS	Accounting Information System
Apps	Application Software
ATM	Automated Teller Machine
BASIS	Bangladesh Association for Software and Information Services
BB	Bangladesh Bank
BBBF	Bangladesh Better Business Forum
BBS	Bangladesh Bureau of Statistics
BER	Bangladesh Economic Review
BIDS	Bangladesh Institute of Development Studies
BIM	Bangladesh Institute of Management
BIP	Business Improvement Program
BISNET	Business Information Services Network
BPM	Business Process Model
BPOC	Business Process Outsourcing Center
BPR	Bangladesh Progress Report
BSCIC	Bangladesh Small and Cottage Industry Corporations
CED	Centre for Entrepreneurship Development
CSR	Corporate Social Responsibilities
CSIO	Central Small Industries Organization

DSS	Decision Support System
EEF	Equity Entrepreneurship Fund
EFT	Electronic Fund Transfer
ERP	Enterprise Resource Planning
FFYP	Fourth Five Year Plan
FYP	Fifth Five Year Plan
GDP	Gross Domestic Production
GED	General Economic Division
GNP	Gross National Product
GOB	Government of Bangladesh
HR	Human Resources
HRD	Human Resource Development/Human Resource Department
HRDP	Human Resource Development Program
HRIS	Human Resource Information System
HRM	Human Resource Management
IaaS	Infrastructure as a Service
I&O	Information and Organization
ICT	Information and Communication Technology
iDEA	Innovation Design and Entrepreneurship Academy
IIPA	International Intellectual Property Alliance
IRM	Information Resource Management
IRS	Information Resource System
IS	Information System (s)

ISC	Industrial Support Centre
ISPs	Internet Service Providers
ISS	Information System Strategy
IST	Information System Technology
IT	Information Technology
LAN	Local Area Network
LSIs	Large Scale Industries
MAN	Metropolitan Area Network
MCSMEs	Micro, Cottage, Small and Medium Enterprises
MSMEs	Micro, Small and Medium Enterprises
MCSs	Micro, Cottage, and Small Enterprises
MDG	Millennium Development Goal
MIDAS	Micro Industries Development Assistance & Services
MIS	Management Information System
MoC	Ministry of Commerce
MoI	Ministry of Industry
MPI	Multi-dimensional Poverty Index
MSEs	Micro and Small Enterprises
NOSs	Nice Office Applications
PPP	Public Private Partnership
SaaS	Software as a Service
SB	Small Business
SBA	Small Business Administration

SBM	Small Business Management
SNS	Social Networking Services
SCI	Small and Cottage Industries
SECP	Small Enterprise Computerization Program
SDG	Sustainable Development Goals
SDLC	System Development Life Cycle
SFYP	Sixth Five Year Plan
SMA	Strategic Management Approach
SMEF	Small & Medium Enterprises Foundation
SMEs	Small & Medium Enterprises
SPSS	Statistical Package for Social Sciences
SSEs	Small Scale Enterprises
7FYP	Seventh Five Year Plan
UNDP	United Nation Development Program
VMI	Vendor managed Inventory
WAN	Wide Area Network
WEF	World Economic Forum

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CHAPTER – ONE: INTRODUCTION

1.0 Background of the Study

Land, labor, capital and entrepreneur are traditionally considered as the four factors of production. According to the economists, these four factors are essential for producing and distributing goods and services. But in today's business world, information system (IS) is being considered as a strategic resource for a commercial unit to survive successfully in a competitive market in the long run. So information system is taken now as an indispensable factor (5^{th} factor) of production. An information system (**IS**) is a structured system which is used to collect, organize, store, and allocate information to the relevant person (s) to assist decision making. More precisely**,** information technology **(IT)** is the study of harmonizing networks that people and organizations use to collect, filter, process, create and disseminate data to the concerned persons so that they can take decisions smoothly and execute their assigned jobs successfully. Further, an information system (**IS**) is a group of components that interact to produce information. Information technology **(IT)** is nevertheless significant for all businesses from a cost-benefit point of view (Katia and Karen, 2012). In 21^{st} century, nobody can survive successfully in the long run without ensuring a minimum application of IT. IT makes our business operations easy and much faster. In the modern day, information technology is providing not only the proper infrastructure but also assisting the business people to respond quickly to customers and suppliers.

The world is becoming global increasingly. More and more firms are engaged in business operations locally, nationally, and internationally. They are different in sizes, shapes, and activities. The globalization of trade and the growth of information technologies have a

significant role in the progress of business and management in large, medium and small scale industries (Cavusgil and Yeniyurt, 2006). The great advances in information system/information technology (IS/IT) attained in present day enabled a vivid growth in efficiency of large scale corporations as well as medium scale or small scale businesses (Yan et al., 2004).

The globalization of trade and the growth of IS/IT have an energetic role in the progress of business and management in all classes of organizations. IS/IT and firm's profitability is substantially related one with another (Kim and Morikawa, 2006) and IS/IT has a great impact on innovation. As a result, managers, at a large scale, spend more money for information technology because it provides tangible economic worth to the business. If a firm invests more in information system, it will get healthier return on investment (ROI) than other investments like in building, machines, or other assets (Laudon& Laudon, 2017). The application of information system/information technology (IS/IT) have a significant impact on the organizations whether it is large scale, medium, small or micro scale enterprises in anywhere in the globe (Ward and Griffiths, 1996). Information technology may be used in streamlining professional activities in refining workers' co-ordination and interactive affairs and in reinforcement of the competitive position of the firm (Turner, 1998).

Very recently, Bangladesh has achieved a status of *'Developing Country'* (March 17, 2018). Bangladesh is also striving hard to emerge as a middle-income country by the year 2021 (*Vision Twenty Twenty First).* In this heavily populated country (more than one thousand people per square kilometer, Bangladesh Economic Review-2017), the small businesses (SBs) or small & medium enterprises (SMEs) may also be considered as the backbone of the national economy.

Facing the challenges of creating large-scale employment opportunities, increasing per-capita income, reducing poverty, and social inequality; government of People's Republic of Bangladesh has taken initiatives to establish and develop small and medium enterprises (SMEs) as a pro-poor development strategy for achieving a vision 2021. There is a very high density of SME inhabitants in Bangladesh industrial economy. The small businesses account for over 96% of the private sector industrial establishments, provide employment opportunities to nearly 78% of the non-agricultural labor force, and contribute to nearly 30% of the country's GDP (Industrial Policy – 2016). In the latest industrial policy (Industrial Policy, 2016), the small business sector is declared as a priority sector that is playing a significant role in employment creation, entrepreneurship development, poverty alleviation and national economic growth (SME Foundation, 2017).

In fact, all segments of an economy are almost unthinkable without significant investments in information systems in 21st century. Electronic business (e-business) or e-commerce does not work without information technology/information system (IT/IS). Today's service industries cannot do anything without effective information systems (IS). Similarly, service oriented retail businesses and production oriented large corporations need information systems to stay alive and make sure their prosperity. There is an emerging inter-dependence between a firm's capacity to introduce information technology and its ability to attain business strategies and achieve business goals. Growing market share, being a high quality or low-cost producer, innovating new goods and services, ensuring employee efficiency, etc. depend more and more on the kinds and excellence of information systems in a business firm. As a manager, someone should acknowledge the relationship between IS/IT and productivity, otherwise s/he will not be a

successful one in his/her business field. Specifically, business firms invest profoundly in information systems to attain competitive advantages than others (Laudon & Laudon, 2017). It is important to note that there has been no research on the relationship between IT and firm size, as in the *'Schumpeterian'* literature on whether the returns from R & D is related to firm size (Cohen and Levin – 1989). This study seeks to fill up this gap.

The globalization of trade and the growth of IS/IT have a vibrant role in the progress of business and management in all classes of organizations (Katia and Karen, 2012). Introducing information systems and make ensure its proper utilization are not an easy task. Making its application fruitful, we need a lot of supports from the government, and professionals in this field. If a business house wants to survive in the long run successfully, it has no way but relying on information systems in its domain (Alam and Noor, 2009). There are a lot of prospects of information systems in small business management in Bangladesh. Until now, academician has given little attention in this vital area and my attempt will not only fill this gap but also help the practitioners to find out the easy way of introducing information system/technology (IST). So my focus is to find out the prospects of IS/IT in small business in our country and how we can overcome the problems relating to adopt IS/IT gradually from our small businesses.

1.1 Statement of the Problem

Small and medium enterprises (SMEs) are essential part of all economy all over the world. It is undoubtedly acknowledged that small scale industry is an essential part in the economic progress of Bangladesh and they ensure economic stability over a given period of time. Reduction of poverty is considered as a vital indicator for the socio-economic progress of Bangladesh. Since,

her independence, Bangladesh has given the highest priority on poverty alleviation especially on the reduction of hardcore poverty. The Millennium Development Goal (MDG) has already been achieved by 2012, three years prior to the ending time 2015 (Source: Bangladesh Economic Review, 2015). Bangladesh Progress Report (BPR)-2015 reveals that the target of MDG is to improve the status of hard up people who are living under the poverty line. There is remarkable success in this regard. In 1980, 58.5 percent people in Bangladesh lived under poverty line; now it was 21.8 percent in 2018. It is also said that at the end of 2019, the percentage of people below poverty line will be 20 percent (Source: The Daily Prothom Alo, November 07, 2019; and MDG Report of General Economic Division). Gradually, the government of Peoples' Republic of Bangladeshis has profoundly determined to turn Bangladesh a middle income country by 2021. According to the UNDP Human Development Report (HDR) – 2014, the position of Bangladesh has been recorded as 142nd among 187 countries. Furthermore, the report states that Bangladesh's Multidimensional Poverty Index (MPI) has been changed over the time that stood at 11.3 percent in 2018 from 41 percent in 1980 (Source: The Daily Prothom Alo, November 07, 2019).

Government rules & regulations and business strategy are strong influencers of small business's success. Tahir et al. (2011) recognized that a set of owner-manager attributes and features like sincerity, trustworthiness, firmness, and self-confidence contribute to the success of small businesses. However, Tahiret et al. (2011) have given the highest priority on personal characteristics of a small business owner associated with few non-personal aspects such as modern technology, good administrative capabilities, and appreciate accounting practices in their

study and finally stated that small business owners could minimize the failure of his/her firm by applying the latest information technology.

The owner-managers of small firms or entities are placing themselves in alarming position that are unable to apply sophisticated information technology into their regular business activities and they hardly enjoy competitive advantages (Alsaaty, 2012, Marston et al., 2011). According to the recent US government report, 48,000 small firms filed themselves in insolvency in 2011 compared to 39,201 firms in 2005 (Small Business Administration, USA, 2014). Edison et al. (2012) found that if a firm, small in nature, is very slow to adopt the innovative technology, this tendency of the firm often leads to business failure. Edison and his associates also stated that key persons or owner-managers of some small business owners do not realize the importance of introducing information technology. So, the main target of this study is to evaluate the effective implementation and use of IS/IT by small business owners in Bangladesh toward superior business success.

Review of literature shows the meaning of information systems (IS) or information technology (IT), small business or small & medium enterprises (SMEs); and the application of IS/IT in small businesses in Bangladesh. Few past studies undertaken were mostly centered on the IS or IT development in different organizations especially in large scale firms in Bangladesh how they excel their performance. But it is noted that hardly any study is conducted of information system on small scale firms in Bangladesh. Academicians in Bangladesh have given little attention in this vital area and my attempt will not only fill this gap but also help the practitioners to find out

the easy way of introducing information system/technology in SMEs and what factors may influence significantly the successful application of IS/IT in small business in Bangladesh.

Moreover, this study has identified that an owner-manager or a key person of a small firm in many cases is reluctant to introduce IT in his/her business processes; mainly, when s/he is an aged one. Most of the owners of small firm are not highly educated and their IT orientation is significantly inadequate. Many of them have ambiguous concept about information systems, and they do not realize properly the necessity of this modern technology. There is an insufficiency of required resources (knowledge, experience, financial, managerial). Inadequate government support and unfavorable rules & regulations discourage themselves not to move forward as fast as situation demands.

It is therefore essential to undertake a comprehensive study in this regard with an aim to find out the prospect of IS/IT in small businesses in Bangladesh and how the owner-managers of small firms can be highly benefited by the application of IS/IT in their day to day operations.

1.2 Research Questions:

This study has attempted to address the following main question:

- What are the factors affecting information system/information technology (IS/IT) adoption in small business in Bangladesh?

The other two potential research questions are:

- How do we evaluate the existing IS/IT application of small businesses in Bangladesh in terms of their efficiency and effectiveness?

- What is the scope for further improvement of existing IS/IT at the unit or entity level of small business in Bangladesh?

1.3 Objectives of the Study

Globalization of world economy is becoming fast. The development of information technology is faster than the organization can cope up with it. IT infrastructure in Bangladesh, a developing country, does not satisfy the users that they expect. But things are gradually improving. In this study, small business in Bangladesh faces problem to adopt information system effectively. Nevertheless, small businesses or small & medium enterprises are highly interested to apply latest technology in their basic operations and they want to enjoy competitive advantages in their filed. It is true that a small firm can hardly survive successfully in its competition in the long run without ensuring the minimum use of IS in its operations.

This research argues that information systems play a significant role in managing small and medium sized enterprises (SMEs). As a result, the firm can improve its performance through efficiency by applying IS/IT in its day to day activities. This argument has received relatively little attention by the academicians in our country in previous researches. Review of previous researches indicates that many studies have been conducted in a developed country on how IS/IT enriches performance of small firms; nevertheless, the role of information system in small businesses in Bangladesh has received inadequate attention.

The main objective of this study is to examine how small business enterprises in our country may come up with the information system/information technology (IS/IT) and they can be benefited by the application of information systems.

In summary, the specific objectives of this study are as follows:

i) To identify the factors affecting the successful adoption and the use of IS in small businesses (SB) in Bangladesh.

ii) To analyze the nature and characteristics of information systems (IS) applied by small enterprises (SEs) in Bangladesh.

iii) To develop a background or a guideline that enables the academicians and the practitioners in Bangladesh to understand the managerial requirements of successful IS/IT adoption and application in small businesses.

iv) To find out the relationship between the overall performance of small business and prevailing information system in our country.

v) To provide realistic suggestions by which the small-sized business can easily apply IS in their regular activities.

Moreover, my focus is to find out the prospects on IS/IT in Bangladesh and how we can overcome the problems faced by owner-managers from our small and medium enterprises. In a broader sense, establishing the relationship between the performance of small business and the application of information system/technology will be the main concern in this study. This theoretical development will not only help the academic world but also help the practicing owner-managers to ripen the benefits from information systems.

1.4 Scope of the Study

This study covers the application of information systems in small and medium enterprises (SMEs) in Bangladesh. A number of factors concerned with IS/IT application have been considered to evaluate the performance of small businesses in Bangladesh. Efforts have been given to identify the significant factors and their levels of integration for improving the application or adoption of IS in small firms in Bangladesh and develop a framework for small business sector of Bangladesh. In fine, the scope of the study would be limited within the management practices of small businesses and the usage of IS in small enterprises (SEs) in Bangladesh. The attention has been paid only on the small and medium-sized enterprises in Dhaka city & its adjacent areas.

1.5 Systematic Arrangement of the Study

This study is divided into seven chapters. **Chapter one** presents an introduction of information systems and/or information technology, the relation between information systems (IS) or information technology (IT) and the performance of a small firm. This chapter also includes the problems of the statement, arguments or objectives of the thesis, research questions, and the scope of the study. After the research objectives, the **chapter two** concentrates on literature reviews. It also provides basic functions of information systems, strategic benefits of IS, the usage of the mobile/smart phone, internet based tools and techniques. Having identified the gaps in previous research, in **chapter three**, the theoretical framework or conceptual framework and research framework on IS/IT and small businesses have been described. Research methodology has also been described in this chapter. After that **chapter four** concentrates on the scenario of small and medium enterprises in Bangladesh, the role of small business in economic

development of Bangladesh, contribution of BSCIC, SME Foundation, MIDAS and others in socio economic advancement of small businesses in Bangladesh. This chapter includes the significant role of the organizations in social progress of entrepreneurs of small firms etc. It also focuses on factors influencing information systems adaptation in small business in Bangladesh, owner-managers' view/attitudes relating to IS in Bangladesh, and Employees' IT Orientation in SMEs in Bangladesh, etc. In the **chapter five**, the thesis describes the IS/IT of 68 small firms with a heterogeneous characteristics in different areas in Dhaka city. This chapter also focuses on data analysis through statistical package for social sciences (SPSS). Having description and data analysis **chapter six** represents the major findings of the study. After the findings, **chapter seven** concentrates on summary, conclusion and implications of the study. The study also recommends few realistic suggestions for the practitioners, academicians, owner-managers, and concerned government authorities, policy makers and others relevant persons in the closing part. Lastly this study has included references and appendix.

CHAPTER TWO: REVIEW OF LITERATURE

2.0 Introduction:

This chapter represents the background of the study. Since the aim of this study is to put emphasis on IS/IT application and its success in small and medium enterprises (SMEs) in Bangladesh, it will evaluate those factors which can provide an appropriate outline for the understanding of the subject. The ideas of information systems or information technology or information system technology used in this study are defined and discussed. Here a widespread literature review on factors or issues affecting IST application in small business in Bangladesh is presented with a purpose of developing an outline that can be used to analyze the data collected from the field. Here all parts of this chapter are arranged according to review of previous literatures. Finally, this chapter is designed to identify the gaps in the previous researches on the IST application particularly in small businesses in a developing country like Bangladesh.

2.1 Review of Literature:

The terms information systems (IS) and information technology (IT) are very much popular in business arena. Theoretically, the term '*information technology' (IT)* differs from the term '*information systems*' *(IS).* But managers or business people use these two terms IS and IT interchangeably. They hardly differentiate IS from IT. Moreover, both the terms *information system* (IS) and *information technology* (IT) in this study can be expressed in an integrated term *'information system technology'* **(IST)**. In this research, it is very significant to define the term information systems (IS) or information technology (IT) to make our sense clear.

It is true that there is no generally accepted definition of IT/IS. Different authors and different researchers use different definitions of IT or IS in different contexts. IT is defined as *'the technologies used in the operation, collection, processing, retrieving, storing, accessing, presentation, and dissemination of information to attain desired results'* (Boar, 1997). Moreover, IT adoption can be defined by Tan et al. (2009) as *'application of Information and Communication Technologies (ICT) tools including computer hardware, software, and networks required for connecting to the Internet'*. Attaran (2003) has defined Information technology as *'proficiencies created by computer hardware, software applications, and communications to transport data or information, and knowledge to the users'*. According to Carr and Smeltzer (2002), IT may be defined as '*electronic procuring systems and electronic data interchange (EDI) system that links key supplier or merchant or vendor'*.

We know that an organization is a social system where good number of factors or aspects interact one with other in a complex way. We hardly get any organization or entity where there is no information arrangement (Rivas, 1989). He opines that any firm or enterprise can be taken as a house of information system, basically as it is an association of processing, storing, and distributing data or information for the purpose of taking decision. Rivas also states that information systems can be understood as an outlook of realizing organizational activities. According to Laudon & Laudon (2017), information system (IS) is *'a set of various interconnected devices or elements that are used for collecting or retrieving, processing, storing, and distributing information to make decision and regulate the organization'*. Moreover, information systems also assist the users or managers in exploring the problems or difficulties

with its exact solutions, envisioning the multifarious issues, and generating innovative goods and services.

In order to enjoy competitive advantages, IS/IT is a substantial tool for the organization in the upcoming days (Ciborra, 1994; Ward and Griffiths, 1996). Business prospects, in many business sectors, highly depend on the application of IST (Benjamin et al., 1984; Porter and Millar, 1985). Many experimental studies show that there is a cumulative strategic effect of IST in small and medium enterprises (Polland and Hayne, 1998). An economy ranging from developed to developing even in least developed or poor economy; we cannot ignore the vibrant role of cottage, micro, small, and medium enterprises. SMEs contribute a lot to ensure its smart growth. Large scale production centers with latest know-hows and huge investment are highly dependent on small businesses in their value chain. Keats and Bracker (1998) claim that 97% of the business entity firms are small in nature in the United States of America. These small scale entities employ more than 58% of the total labor-force and offered more than 87% of the new employment opportunities in the 70s and 90s.

Many scholars have recognized the importance the establishment of small business or small & medium enterprise (Birch, 1979; Birley and Westhead, 1990; Storey, 1994). The picture is very common in Europe. Most of the academics here think that a nation hardly ensures its overall socio-economic development without the formation of SB or SME. Felstead and Leighton (1992) confirm that more than 98% of the entire establishments in Europe have fewer than 200 workers. Additionally, in the previous thirty years, there has been an extensive growth in the figure and importance of SMEs in western economics (Sengenberger et al., 1991). In this study, we try to

define the small business or small and medium enterprise in details with its significant contribution to the economic progress of a developing country like Bangladesh in the **Chapter - Four**.

Small and medium-sized enterprises (SMEs) may be acknowledged as the foundation of the national economic progress in Bangladesh. This area is doing significant role to construct our economy. The contribution of small business sector is enormous to lessen the poverty from the country as well. Bangladesh is a country of 147, 570 square kilometers or about 56,000 square miles, but she has huge population. For such kind of heavily populated country like Bangladesh, small and medium enterprises are predominantly appropriate because they can offer massive employment opportunity with lower venture capital. Small enterprises are projected to generate employments opportunity, decrease poverty, and form a resilient domestic economy. So far we know, a large number of research studies, articles relating to various aspects of small business have been published at home and abroad. However, critical reviews of the relevant studies have been made in this study.

2.2.1 Summary of the Key Works or Studies on IS/IT Success and Adoption in SMEs

Table 2.1sketches the most significant explorations in the field of IST application in SMEs all over the world. This table contains the reference of the articles, the study location, aims of the study, research technique, procedures used to assess IS/IT success and main outcomes.

Table 2.1: A **Synopsis of the Literature on IS/IT Acceptance and Success in SME**

References	Research location	Aims/Objectives of the Study	Research Technique	Measures	Major Outcomes/Findings
Sandulli et al. (2012)	Spain	To find out the relationship between IS/IT and efficiency of small firms in Spain.	This proposition is verified by using a huge sample (more than 2,000 SMEs).		This study examined the impact of information technology (IT) on the efficiency of small and medium-sized enterprises (SMEs). The central proposition of the study is that IT practice improves productivity to a great extent in small and medium sized enterprises (SMEs) in Spain.
Ghobakhloo et al. (2011)	Iran	To acquire a superior knowledge about IT application in small businesses by understanding and recognizing the aspects or factors encouraging IT implementation process in SMEs in both advanced economies as well as developing economics.	Survey	IS/IT adoption	The research revealed that a number of in-house and outside factors would create pressure and persuade SMEs to accept IT solutions. The theoretical background of the study represented the determining factor of IT assumption process in SMEs through the evaluation of previous literature mentioning the conceptions, procedures, models, pragmatic study and case studies in relation with IT application among SMEs, and by relating exiting perceptions.
Masayuki Morikawa (2006)	Japan	To examine the effect of funding in information technology (IT) on the productivity of Japanese small businesses.	The survey questionnaire was sent to 18,000 firms and the number of	IS/IT effective-ness	The findings of this study implied that there is a positive and substantial relationship between information technology and firm's effectiveness and innovation in small firms in Japan. These results or outcomes highlight the significance of investment in IT for small

			responses was 6,432 (the response rate was 35.7%).		scale firms. The support of IT in this promising segment is essential to the progress of structural alignment in the Japanese economy.
Polland and Hayne (1998)	Canada	Identify new trends of IS/IT use in small and medium sized enterprises in Canada.	Survey and Telephone Interviews	-	The research reported the following new trends related to the adoption and use of IS/IT in small business improving IS/IT project management practices; developing an effective IS/IT setup; arranging IS/IT within the business; enabling and restructuring major business processes. According to this research, small business owners began to see the power of IST and can find the resources to adopt it.
Yap and Thong (1997)	Singapore	This paper highlights the outcomes of a proper evaluation of the impact of the small firm automation program based on the views of various participation.	Survey	IST success	The central finding of this study is that the initiative taken by the government has minimized the obstacles to computerization and assisted small firms to adopt computerized information system successfully and increase organization learning.
Igbaria and Tan (1997)	New-Zealand	Explain strategic influences moving personal computing acceptance in small firms.	An assessment of 358 users in small firms	System usage	The study tests a basic model exploring the assumed relationships among the paradigms; intra-organizational factors, extra-organizational factors, expected ease of use, expected effectiveness, and individual computing acceptance (system usage).

Raymond et al (1996)	Canada	Analyzing the management of technological change in small business.	Case study analysis in 14 firms. Semi structured interviews with the entrepreneurs	-	The research presents an analytical framework for the management of technological change in small business. This framework has four main dimensions; technological expertise, decision process, strategic advantage and organizational capabilities. According to the research, there is no one best strategy for technological change for SMEs.
Thong, Yap and Raman (1996)	Singapore	This paper describes an empirical study of the relative importance of top level executive support and external IS expertise on IS effectiveness.	Survey 114 small businesses	IS/IT effectiveness	The results show that the support from upper level management is essential for an effective IS implementation in small business. At the same time external IS/IT expertise is equally significant for IS effectiveness.
Cragg and Zinatelli (1995)	New Zealand	To clarify and improve the understanding of the nature and characteristics of IT management in SMEs and identifying the factors that may affect IT application in SMEs.	Using survey data gathered from 289 small and medium-sized Chartered Accounting Firms.	IS/IT success	This study explored three factors that the impact information technology (IT) success on small and medium-sized enterprises (SMEs): inside IT support, outside IT support, and IT administration.
Chau (1994)	Hong Kong	To know how a software package is selected and what factors affect the decision making process.	Questionnaire sent to 500 small manufacturing		Software characteristics, vendors' capability and suggestions or advices given by other concerned parties are important factors considered by owner-managers of small

			businesses, with less than 50 employees (68 responses for data analysis)		business house. Managers with high level of computer knowledge put an emphasis on technical factors. Managers used to packaged software give more importance to the competence of the vendor. Owners have a tendency to look at mechanical aspects of the system, while managers emphasize more on non-mechanical factors (cost, easiness, and attractiveness of the software package).
Zinatelli, Cragg, and Cavaye (1996)	New Zealand	Analyze end–user computing sophistication and success in small firms.	8 case studies in manufacturing firms	User satisfaction	Intra-organizational and inter-organizational factors influence concerned employees' computing success. Computer experience, computer related orientation, structured task, learning, attentiveness in computers, shortage of time, availability and quality of end users computing tools had a positive influence on IST sophistication and success. Absence of in-house support had an undesirable influence on IS/IT superiority and growth. Attitudes of upper management had a positive impact on IT adoption and sophistication.
Thong and Yap (1995)	Singapore	Examining the effect of three characteristics of the CEO and three organizational characteristics on IS/IT adoption.	Six hypotheses were formulated and tested using data collected from	IS/IT adoption	The results suggested that notwithstanding the business size and CEOs' characteristics are very stimulating forces for IS/IT adoption in small businesses. When the key persons or owner-manager are more innovative, have a positive approach towards the application of IT/IS, and possess greater IS/IT knowledge,

			a sample of 166 small businesses.		small firms are more likely to adopt IS/IT.
Lai (1994)	USA	To analyze the impact of computer use on decision performance. The survey also tested the relationship between organizational characteristics and success of computer use.	Survey 500 small businesses	User satisfaction and the extent of computer use.	Executives were satisfied with their computer systems, however many did not perceive a positive correlation between computer use and cost efficiency, they did not perceive the computer as a strategic tool for the business. The survey showed that IS/IT ranking function, age of business, and IS/IT experience were significantly associated with success of computer use the overall success of a small firm.
Naylor and Williams (1994)	UK	Identification of factors that may contribute to the effective use of IS/IT in small business.	Case studies in 30 firms use IS/IT, with less than 200 staff below 10 million pounds of annual turnover.	User satisfaction	Most companies were well informed about IS/IT related issues and presented a very few suggestions of resources poverty. However, there was lack of formalization in IS/IT strategy. 1/3 of the sample realized the value of IT as a strategic weapon. Four companies used IS/IT to develop new markets. Seven companies had gone behind elementary software applications: look for secondary assistances of IS to produce innovative goods, and incorporate IS/IT in future business plans. The effective use of IT in SMEs depends on the skill of the managers to interact with IS.
Cragg and King	New Zealand	To examine the evolution of small-firm computing	Longitudinal study in 6	IS/IT growth	Application growth tends to take place in firms where the owner was enthusiastic

(1993)			firms with less than 50 employees	application, number of users, diffusion of IS/IT, and managerial IS/IT practices	towards IS/IT. The strongest inhibiting factors of IS/IT growth were: limited IS/IT orientation, insufficient time for managerial practices, inadequate support from consultant, and scarcity of funds. The firms studied demonstrated low levels of internal IS/IT expertise and poor relationship with IS/IT specialists. They also showed little desire for this situation to change.
Yap et al. (1992)	Singapore	Points out a realistic study of fundamental aspects related with IS/IT success in small businesses and develops an evocative framework with the significant factors.	Questionnaire survey addressed to 282 SMEs	User Information satisfaction	The success of IS/IT highly depends on some vital factors such as expertise of consultant, support from vendors, lengths of small business's IS/IT know-how, availability of financial resources, level of owner-manager or key person support, and level of end-user involvement.
Cragg and King (1992)		The research explores the relationship between the successful application of information technology and firm's performance.	Survey 289 engineering firms.		It was found that there was no difference between the firms with modern IS/IT and the firms with no or less sophisticated IS/IT.
Chen and Williams (1993)	UK	To know the level of microcomputers use 10 years after its effective introduction	Postal questionnaires followed by interviews 216 companies with less than		Microcomputers are primarily used for basic and operational purposes rather than for decision making purposes.

			50 employees		
Gable (1991)	Singapore	This paper is an examination of the professional appointment process in small scale organization or small entity choosing a computer.	Case study research		Since there is a limited career opportunity for IS/IT staff, small businesses are hardly able to attract and retain competent IT executives or staffs. Thus they have to depend largely on external expertise. Moreover, there is a scarcity of funds in small business; they are unable to afford the cost of customized software. Lastly, high level of dependency on external persons or outside firms creates an obstacle to achieve the desired goals from the application of IS/IT.
Alpar and Ein-Dor (1991)	USA	To identify major IS issues of concern to IS managers and to management	Quantitative analysis, 526 respondents, 99% of the firms had Less than 500 employees (US Small Business Administration)		Computer firms are more concerned about cost and development. Non-computer firms are more concerned about systems quality and control. Running the business was major reason for computer use (the 2nd was decision making, and the 3rd was strategic advantage). No correlation was found between issues of concern to IS managers and top management and the following variables: number of years of computer use, IS planning, data processing costs, hardware costs and amount of software developed in-house.
Raymond (1990)	Canada	This paper proposes a contingency approach relating selected organizational factors,	Structured interviews with CEO, financial	User satisfaction , system usage, and	The level of IS success and the level of IS/IT sophistication are positively related to: larger size of the organization, the level of organizational maturity, the number of

		namely organizational size, maturity, resources, time frame, and IS sophistication to user satisfaction and system usage.	manager and production manager.	IS/IT sophistication	organizational resources allocated to IS/IT; the longer the organizational time frame. It is found that the higher the level of IS/IT sophistication, the higher the level of IS/IT success.
Kagan et al. (1990)	USA	To investigate the adoption of IS/IT by SMEs. This study analyses the differences relative to IS/IT usage; impact of the firm size in the level of software sophistication; hardware capacity and remote processing capacity; the relationship between software sophistication and user satisfaction; the nature of IS/IT applications.	Quantitative analysis. 884 small business firms (less than US $5 million and less than 250 employees).	-	The manufacturing sector has the largest proportion of firms that write their own software applications. Small business uses of IS/IT is very exclusive to every single small firm area. The intensity of computing varies among sectors and firms. Demand requirements for modern technology are very much different in large scale business organization as well as small scale organization. Usually, small and medium enterprises (SMEs) focus on the level of IT sophistication, easy control of managerial activities, strategic and tactical application of IS/IT.
Nazem (1990)	USA	Investigate how small businesses were coping with the process of computerization of their business performance.	Quantitative analysis. Survey in SMEs with less than 100 people.	IS/IT satisfaction	SMEs obtain their application software from different sources. The major source of software was found to be off-the-shelf standard programs. Small businesses are also generally satisfied with off-the-shelf packages software, despite of the apparent lack of vendor support service and training facilities.

Schleich, Corney, and Boe (1990)	USA	Identify problems with the use of microcomputers in small businesses.	Survey in small businesses with less than 50 employees and annual sales of less than US $ 20 million	-	Problems with IS/IT: inadequate hardware selection procedures; inadequate software selection procedures; poor systems planning, poor external support; unsatisfactory levels of knowledge and training.
Raymond (1989)	Canada	Examine the status and the factors related to the level of success of MIS in small businesses.	Quantitative analysis. 34 small manufacturing firms. Structured interviews to financial and production managers.	-	The management of the organization's information resources is not the soul of the concern of small business owner-managers or key persons. The initial computerization of the SME is too often done in an almost total empirical manner. The majority of the firms: do not plan or control formally their computerization process; don't recognize difficulties and prospects earlier to the requirements analysis; hypothesize their demands or necessities in terms of a computer system rather than in terms of IS; don't have proper records or documentation; have insufficient preparation and training of the users.

Source Adapted from Caldeira and Ward, (2003).

Small and medium sized enterprises (SMEs) are recognized as *employment generating engine* due to their vital role in the economy (Zaman, and Islam, 2011). SMEs create huge number of

job opportunities with a nominal cost (Table – 4.12). A great deal of small, cottage and medium enterprises is involved in export oriented activities so that they are able to be globally competitive. So it is essential to make sure the sustainable development of our economy, we must ensure the enhancement of our small scale sector. Small business is one of the most important vehicles for reducing poverty alleviation and creating more job opportunities. So policy strategies should be developed to ensure the remarkable and justifiable growth of SMEs in Bangladesh. So an effort has been taken in this study to find out key obstacles confronted by small businesses in Bangladesh and recommend some strategic guidelines to overcome those limitations in accepting IT/IS in small business.

SME sector is treated as a poverty lessening segment in a developing country like Bangladesh but they are suffering by a good number of difficulties and thus its contribution does not meet the global standard (Ahmed and Chowdhury, 2009). *Small firms are the main strength of an economy* – this realistic statement is highly recognized by the advanced economy but it is highly misjudged in least developed countries like Bangladesh Rabbanni (2014). He claims that small firms can construct a good economic foundation of a state by using local know-hows for producing goods and services that are used by the general people in the immediate locality within the country. He also speaks out that small firms can meet the global standard and earn a lot of foreign currencies. After all, small scale firms accommodate huge number of unemployed manpower which is very significant for ourselves.

Hossain (1998) has identified that cottage, micro, small firms in Bangladesh are facing some severe difficulties like power, inaccessibility in loan facilities, lack of working capital, in

adequate legal infrastructure, limited application of laws, severe rivalry among the firms, shortage of technical support and facilities, lack of selling and promotional activities, and high price of raw material. These major problems have made an adverse impact on small business development in Bangladesh. The report resolved that in Bangladesh, small businesses are getting extremely minor support (with some exceptions) from the state in terms of strategic and financial incentives. According to Chowdhury (2007), small business in Bangladesh is characterized by the shortage of resources, location variety, lack of credit information, restricted entrance to official source of loan facilities, lack of cash management, inappropriate recording system, issues relating to tax burden, high risk insight. Finally these issues have led to high failure rate of small firms.

A study conducted by Miah (2007) represents that the key barriers of small business in Bangladesh are inadequate fund facilities, absence of sophisticated technology, double digit of bank interest, lack of regular supply of energy or power, insufficient infrastructure, high costing for goods transportation, in appropriate knowledge about the opportunities in the market, non-availability of input or raw materials, absence of competent technicians and workers, poor research and development facilities, aggressive competition, lack of accountable or obligatory legal framework, problems in gaining access to new technology, difficulties in loan facilities, lack of skilled man power, poor consciousness, poor promotional capability, frequent changes in policy development, etc.

Quadir and Jahur (2011) acknowledge in their research paper that there is significant relationship between the two terms entrepreneurs and entrepreneurship. Entrepreneurs are the change makers

in a country in the context of economic development of a nation. This is very difficult for an entrepreneur to become a successful one in doing well in venture management without confronting internal risks as well as external risks. They have pointed out that some aspects contribute to the development and failure of entrepreneurs of small enterprises in Bangladesh. Alam and Ullah (2006) have revealed that 25 percent contribution to GDP comes from small businesses. About 80 percent of non-farm employment is created by small and medium enterprises. And finally this sector employs over 25 percent of the total labor force. But in Bangladesh, this vibrant sector does not get any significant supports from the relevant authorities. Moreover, they face diverse constraints almost every step of their operations. The researchers demand an academic investigation towards policy formulation and implementation in respect to overall development of small scale business sector.

Uddin and Bose (2013) found in their study that a good venture strategy or project plan, excellent supply chain management, managerial expertise, and state patronization are statistically important in shaping the success of small and medium businesses in Khulna City of Bangladesh. Bakht, & Basar (2015) opine that poverty alleviation, acceleration of growth, reducing discrimination in income of mass people, and ensuring equalization in regional growth are the main targets of Bangladesh in the beginning of 21st century. We may have an avenue for achieving those goals and the avenue is to pay more attention on development of cottage, micro, small and medium enterprises. Because our large scale industries are unable to accommodate the huge unemployment which is increasing day by day (0.8 million per year). Moreover, as an agro-based country, Bangladesh does not ensure good return on investment from informal and traditional agricultural sector. Very recently (2019), farmers are highly disappointed in their regular activities since they are not getting worth from land. So enlargement of small and

medium enterprises (SMEs) is a must and they are major driving forces if we want to attain double digit growth in GDP. Greater micro, small and medium enterprise (MSME) activities in urban, sub-urban, rural or backward area ensure an overall strategic development of Bangladesh (GOB, 2011).

Ferdausi et al. (2014) have found that SMEs are contributing a lot to the economic development of Bangladesh and it has enormous potentiality for future growth and development but the enterprises need financial aid. The researchers have pointed out some strengths and weakness of SME financing practices of commercial banks in Bangladesh. They have shown that now commercial banks (like Social Islamic Bank Ltd) are providing enough loan facilities to the clients. As a result, clients are highly satisfied about the collateral requirement but they think that interest rate is high. Riyadh et al., (2010) has piloted a study and revealed that the application of Internet-based financial services (e-finance service) has been taken as a vital area for small and medium sized enterprises (SMEs) at present for their excellent development. In this study, they have established a guideline for the application of e-finance in SMEs in Bangladesh which would be equally applicable to other countries ranging from developing to developed countries.

According to Uddin (2014), the contribution of small business is highly praiseworthy to the socio-economic development of an economy. But this promising small business sector is highly neglected. They face numerous hurdles like shortage of capital, expensive interest rate, inadequate infrastructure, credit information gap etc. The researcher has also made some realistic suggestions to overcome the situation. In a study, Lester and Terry (2008) focus on how a small firm may overcome the hindrances to appear in the international market. They have presented the

strong evidence of market failure that impedes the small and medium enterprises to involve in global trade and gain their full potential. The study identifies four obstacles. The most serious weakness of small business is to access to global market place due to the limitations of working capital, lack of recognizing overseas business opportunities, inadequate information to evaluate the position of different markets, and incapability to make a communication (lack of appropriate IS/IT) with potential foreign customers.

According to Hossain et al, (2014), Khadi, one of the significant cottage industries in Bangladesh, is passing tough time due high competition with national and global high-tech industry in spite of its glorious past. A number of difficulties like absence of modern technology, very limited of financial supports, inefficient managerial skills, scarcity of raw materials, unskilled labor and lack of proper marketing and promotion etc. are affecting this industry negatively. But having all these hindrances, still khadi is surviving because of some bright prospects like development of culture, tradition and image at home and abroad, stability of balance of trade, alleviation of poverty and unemployment, development of livelihood, sustainable development prospects and contribution to national economy.

Information technology (IT) is truly an indispensable instrument for executing regular activities of a business organization. Small businesses are now financing more in IT than previous time to reinforce their competitive advantages. In business, individuals seek for the ways by which they can attend more in a shorter time period. A bulletin '*November 2000'* printed by the **Federal Reserve Bank of San Francisco** describes that information technology increases your firm's productivity by introducing computerized methods and it reduces work-load of your employees.

Then your staffs are allowed to execute another task while the computer prepares their reports, generates enquiries, locates projects, and displays financials happenings. (Kyra Sheahan, 2014). Masayuki Morikawa (2006) examined that small firms in Japan may be highly benefited by making investments in information system technology (IST). His outcomes entail that there is an important statistical relationship between IST and firm's effectiveness in small businesses. He also claims that innovation is a precondition to survive in the upcoming competitive field and IST can ensure this innovation. Developing intimacy with customers and suppliers is one of the vital attributes to enjoy competitive advantages (Laudon & Laudon, 2016; Johnston & Vitale, 2009). The introduction of information technology can ensure a link between organization and its customers, suppliers, and other stakeholders. Moreover, IT establishes a sound business relationship with its all stakeholders which is an asset for a firm. David (2015) puts a high attention on start-up stage as well as growth stage of a firm. Technology provides an extensive variety of tools that are used by the entrepreneurs to run their new venture in the start-up phase and growth phase. Recordkeeping, marketing and telecommunication systems of small businesses have been modernized by the development of computer, networking facilities, and communication tools & techniques.

Most of the previous studies have explored on IT application in large scale organizations or IT adoption in small businesses in developed economics. We want to focus on IT adoption in small business in a developing country like Bangladesh. The role of this study has been intended to provide necessary information of various departments of small business such as up-to-date production management, innovative marketing practices, economical industry plan, etc. It is anticipated that this study will play a vibrant role in stimulating innovation, productivity &

competitiveness and market adaptation for the small and medium enterprises. This will assist small business to reply in the fresh and niche market. Consequently, this strength will help the business entity to develop an excellent *'foundation of the pyramid'* and explore the untouched opportunities for a standard shift.

In the 21st century, broadband-supported tools and techniques are permitting small and medium enterprises to access easily in the market because of management of information system technologies (IST). These tools and techniques are offering new avenues of reaching customers (Galloway and Mochrie, 2005). It is known to all that corporations have sufficient resources (good infrastructure, available fund, and skilled manpower) to invest in emerging information technologies. They also have some key shortcomings. Sometimes their size may a source of complexities and it may result inertia and slow down new technology adoption. Small business is very popular for its outstanding size and dynamic nature. As a result they may rapidly yield the advantages of technological development and minimize the risks. However, small businesses are able to plan, implement, maintain, and manage the broadband-aided technological revolution (Passerini, et al. 2012).

World Bank has conducted a survey on the level of small scale firms approximately in 50 developing countries and found that firms using information and communication technology (ICT) achieve faster sales growth, higher productivity and generate more employment opportunities (Khalil, et al., 2002). Furthermore, new prospects are emerging for smaller enterprises to contribute a sustainable development on the basis of this use of ICT. SMEs are the real driver for such kind of extraordinary development (Cánoves et al. 2004).

Table 2.2: Prospects for small businesses in a technology-based society

Area of Concentration	**Supporting Technology**			
	Vendors and Incoming logistic	Manufacturing oriented activities	Distribution oriented activities and Outgoing logistics	Client support, post-sales services
New Product/ Innovative Product		Product development through joint form of activities		
Minimizing Expenditures	Vendor-managed inventory (VMI) RFID tracking	Infrastructure as a Service (IaaS)		
Ease of Application		IT arrangements by the Software as a Service (SaaS) switching expensive internal arrangement.		
Improved Facilities and more services	Enlarged labor force movement		Increased workforce mobility	Ability to locate clients by common social internet sites/blogs
Superior Partner Management	Mobile/email services; distant entrance to database (DB) done by cellular (smart) phones	Better data movement and information management; expert sensor		

Improved marketing			More selling over social networking sites (SNS); mobile web site	
Enhanced capacity management	IT management improvement through SaaS	Increased process flexibility		
Improved demand management	Higher global outreach		Superior international presence, mobile web site/mobile transactions	Personalized customer service

Soruce: The Author (constructed based on Passerini et al., 2007).

Rai et al (2006) suggested that unified IT setup empowers a business house to ensure the advanced demand management in basic business operations. This ability allows the organization to un-bundle information and shares it with its key stakeholders to build information based tactics for higher efficiency. Moreover, IT based small firms may gain operative distinction and generate revenue significantly. Information technology offers flexibility and responsiveness in small businesses; as a result, in future they enjoy competitive advantages (Gunasekaran and Nagi, 2004).

Alam and Noor (2009) noted that information system technology (IST) enables a small scale firm to compete equally with their counterpart large scale firm. They pointed out that five factors stimulate the adoption and usage of IST in small business in the developing countries which are expected benefits, incurred costs, IST orientation, pressures from outside, and government patronization.

The necessity of information systems (IS) in small and medium sized enterprises (SMEs) has been recognized as strategic resource by Blili and Raymond (1993). The application of information system is under-researched in small firms in under developed countries. They put an special attention on the application of information technology in small businesses in order to build strategic benefits. The growth of IS of small and medium-sized enterprise is highly affected by three attributes such as in-house IT support, outside IT support, and IT administration (Figure: 2.1). IT administration includes IT forecasting, IT forming, IT monitoring, and IT leading (Cragget al. 1995)

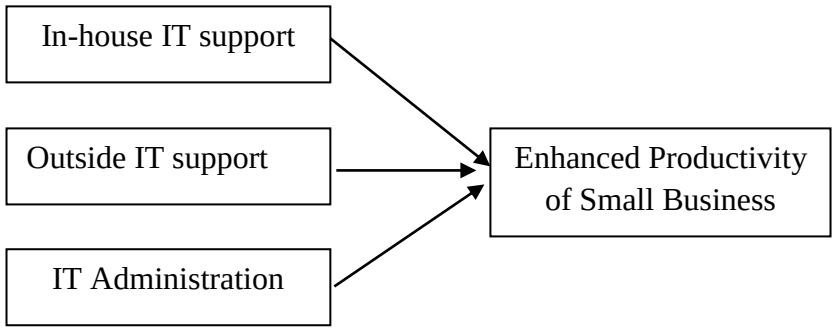


Figure 2.1 : Factor Influencing the success of small business

Source : The Author (constructed based on Cragg et al., 1995).

Fink, D. (1998) had conducted a study on small business and the purpose of this study was to address the attitudes of owner-manager or key person of small business to present their views on aspects that enable the acceptance of IT in today's tempestuous times. The objective of the research was to define those issues or blend of issues that had directed to the fruitful implementation of IT in the small and medium firms and hence could be used to provide guidelines for other small businesses to follow. These should enable small and medium enterprises to gain the benefits. Modern IT offers a small firm to response its customers and

suppliers quickly and thereby improve its competitiveness. The paper commences with a background discussion of IT adoption and factors that have been shown by prior research to be important to smaller firms during the acquisition of IT.

Denni (1996) speaks out that corporate domain is intensely influenced by information and communication technologies (ICT) and the practice of ICT among business field is very pervasive. ICT are promptly making a change in global production, effort and a way of doing things in business arena. Denni also states that production, distribution and consumption should be configured in an innovative way because of consumers' demand. Kazi (2007) points out that recently small scale firms are gradually approving and consuming information and communication technology due to the introduction of desktop or personal or laptop computer. Even smart phones also contribute a lot to the field of small industry. He adds that the cost-effectiveness or cheaper ICT products are making this domain to allow extensive use of latest technology.

Alberto and Fernando (2007) claimed that the usage of ICT can gear up business effectiveness with the help of internet tools and techniques. Small firms enjoy abundant prospects and compete equally with their counterpart large companies. According to Mutula and Brakel (2006), small firms are coming forward with their distinctive ability to take part in the local and global market places. Since trade barriers are decreasing day by day, firms have greatest chances for approaching themselves in the world market due to user-friendly information technology. Chong et al. (2001) emphasized on customer and supplier intimacy to survive in the competitive field effectively. Adoption of the IT is acknowledged as one of the ways by which these businesses

can contest on a worldwide scale with their enhanced productivity. This argument is also strengthened by Mutsaers et al. (1998) in their study. Small enterprises take a great deal of benefits from the global markets when they use information technology. Some scholarly and experimental studies of Bartelsman and Doms (2000), Brynjolfsson and Yang (1996), Dedrick et al. (2003), Kohli and Devaraj (2003) and Melville et al. (2004) endorse that there is the significant relationship between firm's performance and information & communication technologies (ICT). Firm's performance is measured by its efficiency, profit earning ability, customer satisfaction with quality product and service etc.

Technological advancement, IT implementation and applications are powerful forces for many socioeconomic developments (Dierckx and Stroeken, 1999). Today, both big corporations as well as small firms are looking for the ways to strengthen their competitive position and expand their efficiency (Premkumar, 2003). Internet tools and techniques offer an excellent platform for the small firms so that they collect required or right types of information at the right time at the right place. It has been shown by an insignificant number of studies that the rate of IT application by small businesses has remained relatively low (Grandon and Pearson, 2004). Moreover, a very few studies have been conducted on IS application in small businesses in developing country like Bangladesh. Usually, SMEs have narrow entrance to the market information and struggle by globalization constraints compared with the large organizations (Madrid-Guijarro et al., 2009).

Welsh and White (1997) examined in their study the relationship between IT transmission, innovation and firm productivity in SMEs. The major finding of the study was an affirmative rapport between IT equipment and firm performance, after controlling for industry, firm size and R & D effort. It appears that these results hold uniformly for small firms only and emphasize the

significance of IT investment as a determinant of the performance of small firms with IT diffusion a reliable indicator of better performing firms. The finding of the positive link for small firms between IT, innovation and profitability appear to be especially important, where small firms account for a huge share of economic activity. Small business with proper technology can easily enter into local market to develop the economy by creating employment opportunities at a great speed and SMEs are great source of lucrative profits earnings by regulating export and trade (Ahmed, 2014).

2.2 An Overview of Information Systems (IS)

Information system (IS) is a set of interconnected elements that are used for gathering, processing, and storing data for producing information to help the relevant person(s) or authority for making decision. Commercial establishments and other organizations depend on information systems to execute their processes, maintain links with their clients and merchants, and compete in the marketplace. Information systems ensure, for example, major business operations, record keeping system, human resources management, fund management, inter-organizational supply chain management systems, electronic buying-selling, promotional activities and all other key functions that are successfully executed by information system (Vladimir, 2016).

2.2.1 Components of Information Systems

There are six building blocks of information systems that are as follows:

1. Hardware: All physical devices or equipments that we can touch, exchange, carry are treated as hardware. It refers to machinery. Computer itself (without programmed instructions) is

hardware. The central processing unit (CPU), output devices, input devices, storage devices, communication devices all are hardware of a computer system.

2. Software: Software means detailed programmed instructions that tell computer hardware what to do and how to do. These programs are machine-readable commands that guide the hardware devices of the computer system to act in ways so that it can create useful information from data. Without software, hardware is simply worthless like a human body without soul and computer system will be treated as a metallic box.

3. Data: Data mean raw facts and figures that are used by programs to yield meaningful information. Like programs, data are usually saved in machine-readable form on disk or tape till the computer uses them.

4. Procedures: Procedures are the rules or guidelines that administer the functions of a computer system.

5. Users: Every single system requires users. The key part of the system is the users or people; probably this part influences the success or failure of information systems. Moreover, the persons who operate the computers, make a service for the computers, maintain the data, and support the network of computers are regarded as users (Kroenke, 2009).

6. Telecommunications: Telecommunications are used to link or interconnect computer systems and movable and wearable devices for the purpose of sharing resources and transmitting information from one location to another. Networks are made via wired media such as coaxial cable and fiber optics or wireless media such as microwaves and radio waves.

2.2.2 The Flow-Chart of Information System Development

Information system is considered now as the foundation of an organization (especially business organization) in the 21st century. The success of IS absolutely depends on its advancement, usage, and application in the organization. A set of practices and procedures can be used to cultivate and use an information system. At present, many scholars apply an engineering method such as the system development life cycle (SDLC), which is a systematic method of developing an information system. The key persons of top level management may build up an information system internally (within the organization) or they can outsource from professional persons or organization. System may be achieved by acquiring certain modules (a major part of the systems) or the entire system can be hired by the organization from third party (Suzanne, 2013; Kroenke, 2009).

Nyawayan (2008) states that there are seven stages in a system development life cycle. These steps are follows

1. Identifying the user needs or defining the problem (s) of the users,
2. Gathering required information,
3. Specification of demand or establish user requirements,
4. Planning for information systems,
5. Designing the system,
6. Construction of the system,
7. Installation or application of system,
8. Review and improve the system, and
9. Maintenance of system

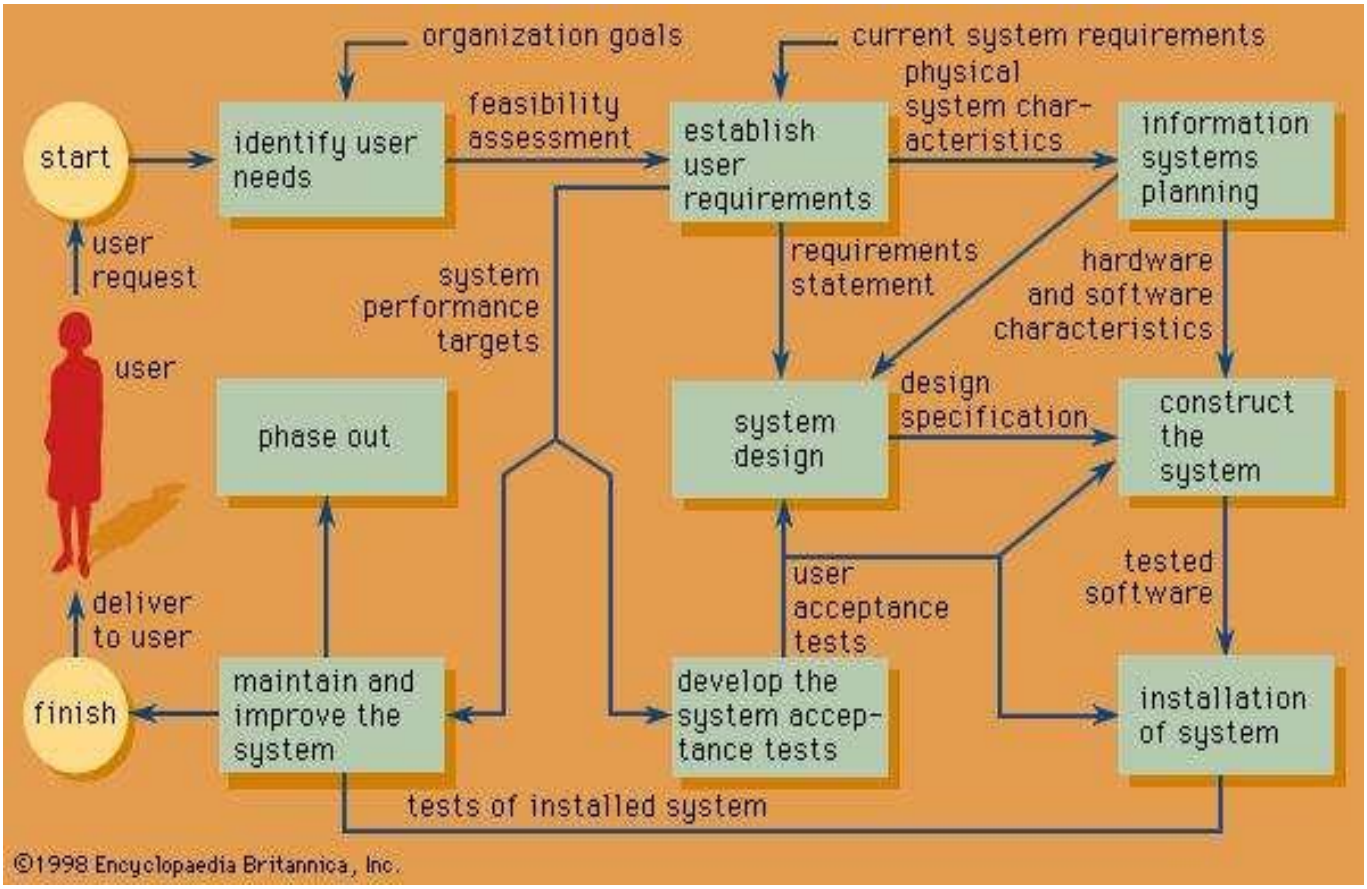


Figure-2.2: The Life Cycle of an Information System (IS)

Sources : Adapted from Encyclopedia Britannica, Inc. (1998).

2.2.3 Functions of Information System:

Information systems encompass structured facts or figures relating to required objects, places, and individuals within the organization or from outside locations adjoining it. There are three fundamental functions of information systems such as input, processing, and output. Feedback is a response returned to the relevant persons or desired functions in the organization to assess and improve the input. Several external forces or environmental actors, such as clients, dealers or

merchants, competitors, shareholders, and other controlling bodies affect the organization and its information systems (Source: Laudon & Laudon, 2017).

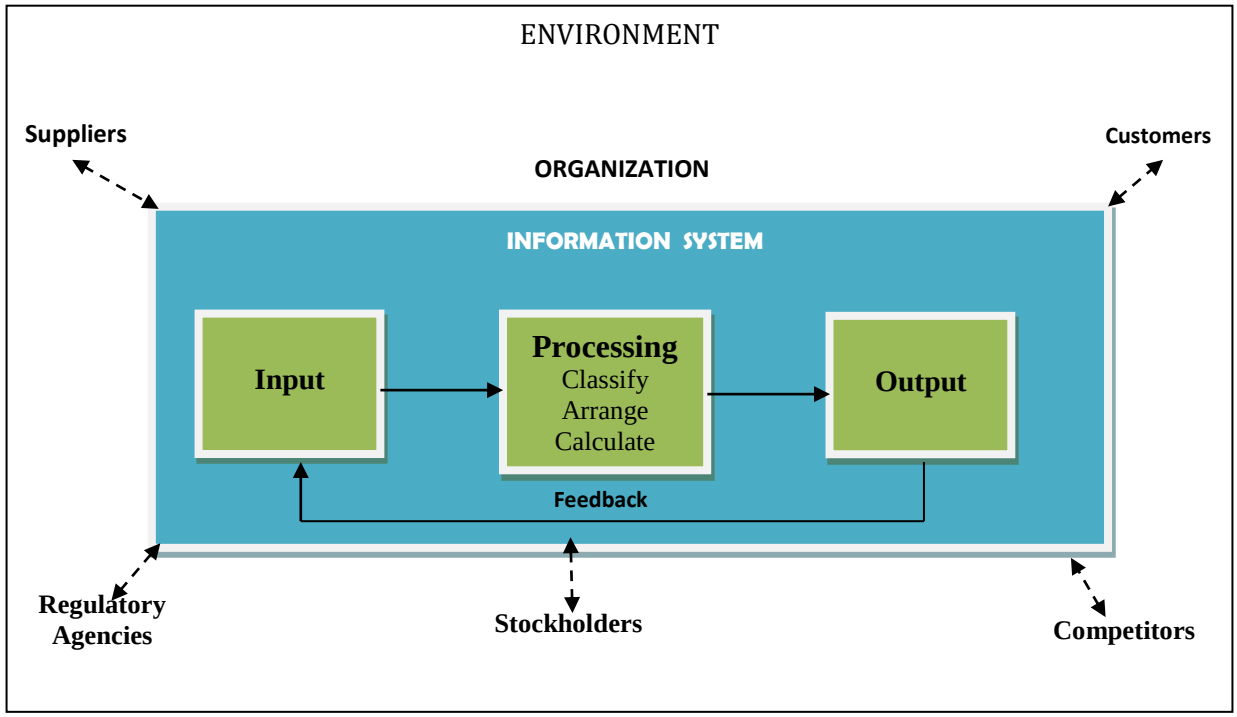


Figure: 2.3 : Functions of Information Systems

Source: Adapted from Laudon & Laudon (2017)

2.2.4 Management, Organization, and Technology Model

Almost every step of our lives in 21st century, both in personal level and professional level, is highly influenced by information systems. It is clear to all that we cannot ignore the application of latest know-hows, and it is essential for ourselves to know how to live within this technologies-based society (Grandon and Pearson, 2004). At national as well as international level, many countries have recognized the significance of IST and they are exceedingly

interested to use information system technology to increase the excellence of life of their citizens and to ensure socio-economic development by making sure it's versatile usage to small scale industries. It is broadly acknowledged that the meaningful utilization of technological know-how enables an organization or society to acquire effective industrial development (Kraemer et al., 2004). So the power of adaptability of a country is essential at present to achieve the remarkable progress in socio-economic sector in a knowledge-based service era.

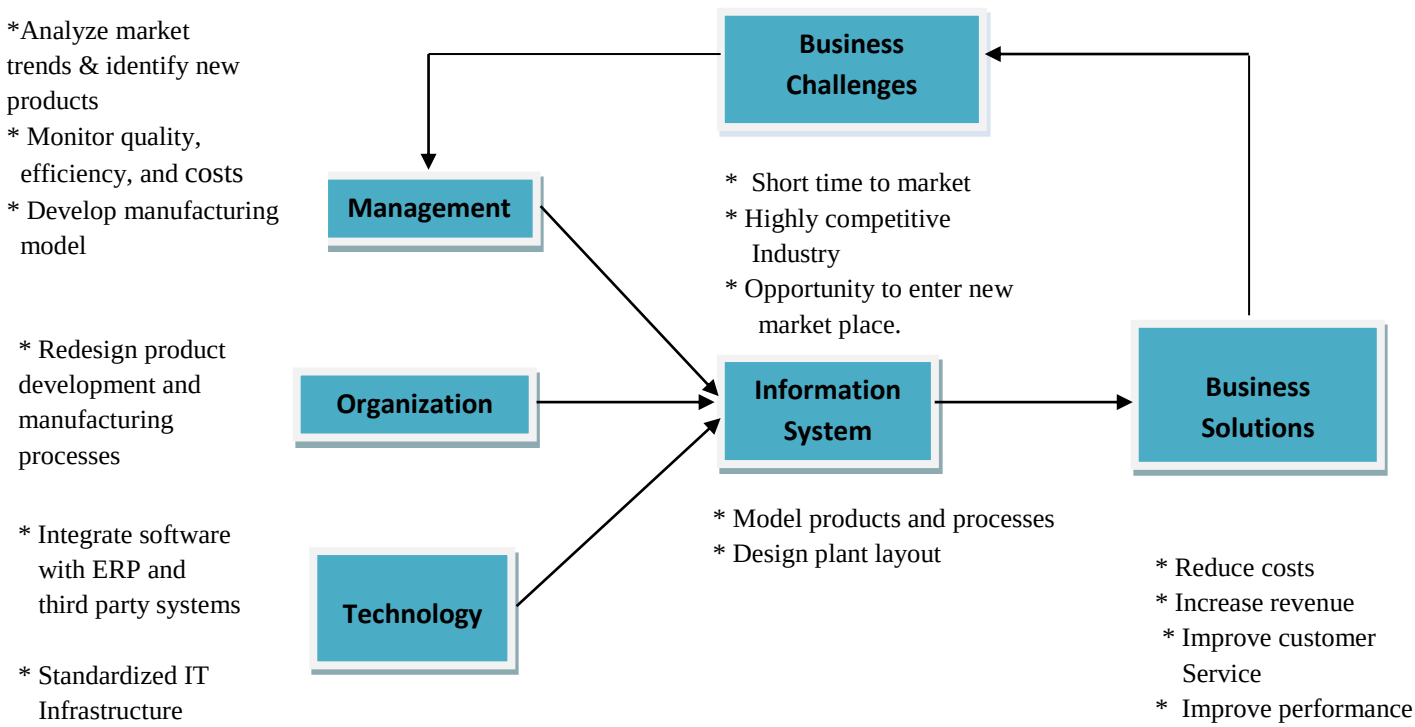


Figure 2.4: A graph that demonstrates the significant relationship among management, organization, and technology. Basically they work together to produce an IS-based solution for overcoming the business challenges.

Source: Adapted from Laudon & Laudon (2017)

2.2.5 The Business Value Chain Model

Business filed is now much more turbulent and competitive than couple of years ago. It is not an easy job to survive successfully in this competitive field. In order to construct an efficient tall building, we need a good foundation. Similarly business firms have to have a good foundation to survive in the competitive business filed. Information system is acknowledged as the foundation for business enterprises in the twenty first century (Laudon& Laudon, 2017). Porter (1985) highlights that a firm can enjoy competitive advantages by applying a value chain model. Information system can have a vital impact on business value chain model. The value chain model represents that a firm makes a margin by a series of activities by offering its customer quality products or services. There are two types of activities in the model – primary activities and supportive activities.

Primary activities are most directly connected with manufacturing and distributing oriented activities of the firm's goods and services, which generate worth for the customers. Primary activities are consisted of incoming logistics, productions, outgoing logistics, sales and marketing, and services. Incoming logistics include receiving and storing ingredients for manufacturing goods. Production converts inputs or raw materials into complete products. Outgoing logistics entails loading and allocating complete products. Sales and marketing is concerned with stimulating and selling the firm's products. The service oriented activity covers maintenance and renovation of the firm's goods and services.

Support activities assist the primary activities of a business venture that are consisted of organizational infrastructure (administration and management), human resources management

(employee recruiting, hiring, training, compensating, counseling), technology (designing or refining products and production process), and procurement (acquiring inputs). In order to build up an intimacy with customers and suppliers, a firm can utilize information systems who are in outside of the firm.

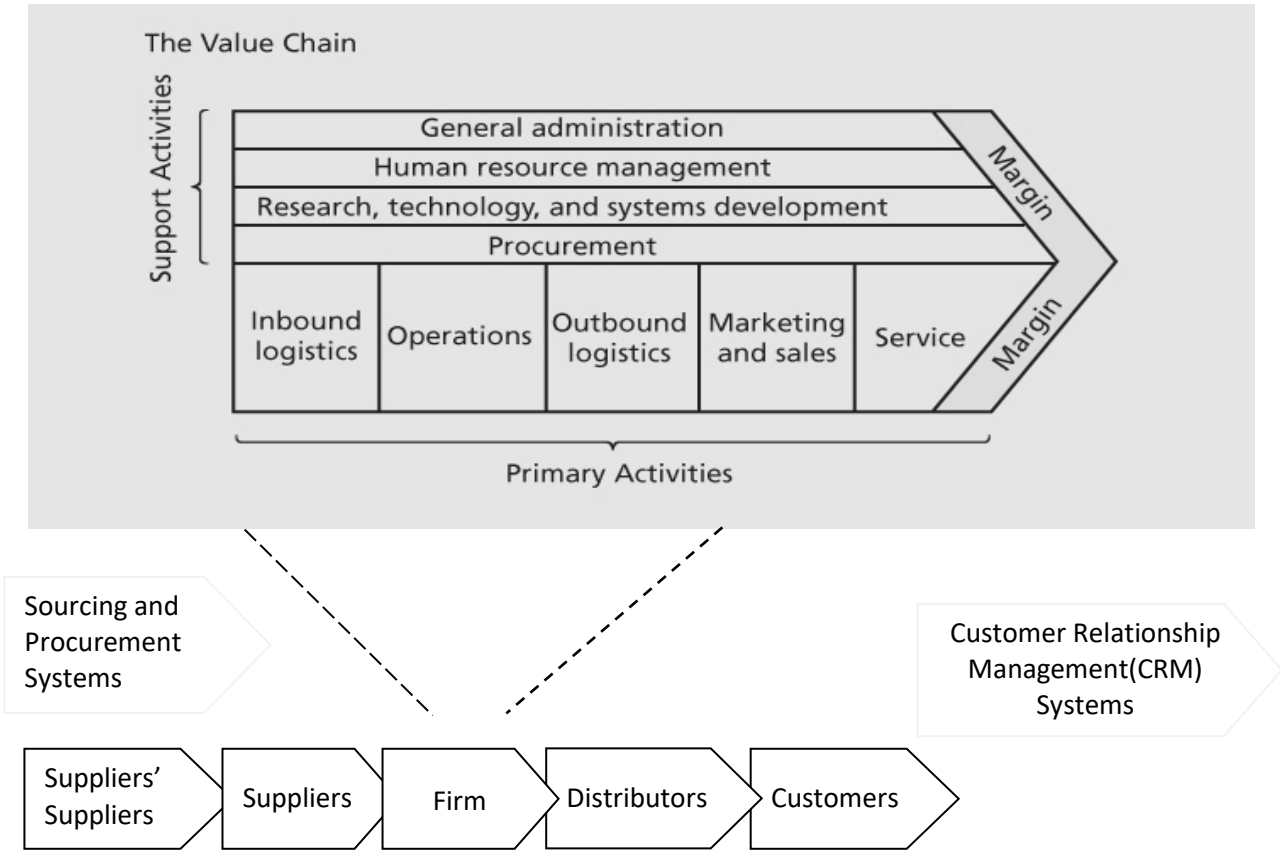


Fig 2.5 : The Business Value Chain Model

Source: Adapted from Laudon & Laudon (2017)

This figure offers a firm to add a profit margin of its products and services by executing both the primary and support activities

The value chain model developed by Michael E. Porter (1985) was taken as a technique for evaluating the sources of competitive benefit obtainable by a firm. It undertakes that competitive benefits of a commercial establishment come from an arrangement of the several actions. No one can enjoy competitive benefits from a single source rather than s/he has to depend on several sources. Primary activities are connected with the demand based production; need based marketing; excellent delivery system, and post-sale service of the product. Support activities permit the primary activities to happen by giving the necessary inputs and infrastructure.

Porter and Millar (1991) stated that current enhancement in technology have had a massive impact on the value chain model. Information system (IS) affects the business activities of all levels from primary activities to support activities. Primary activities counts mechanized store rooms, elastic production process, computerized order processing, e-marketing and computerized arrangement, and steering of renovation trucks, and support activities are forecasting models, programmed workforce arrangement, computer-aided design (CAD), and online procurement.

It is also stated by Porter and Millar that IS can make capable a firm to maintain a link in an efficient manner with all its stakeholders. The more businesses and individuals become networked and IT-aware, the more they enjoy competitive advantages. There is evidence to recommend that firms based on new technology or high-tech small and medium-sized firms are becoming increasingly significant at present for an economy. So researcher thanks partly information systems for creating opportunities.

2.3 Information System /Information Technology: A Source of Competitive Advantage

According to the economists, there are four factors of productions – land, labor (human resources), capital, and organizer or entrepreneur. Recently, they recommend *information* as a

factor of production. So, there are five factors of production (land, human resources, capital, organizer, and information). Because, all four factors accept accurate information are worthless in the production and distribution sector. So information is considered as a strategic resource or significant factor of production now a day. Perfect information can help a manager to take necessary initiative of production and distribution oriented activities. And information system or information technology is the best armament of collecting appropriate information relating to production and distribution.

2.3.1 Strategic Business Goals of Information System:

Information system is essential today since the foundation of business organization largely depends on it. All forms of business houses ranging from large corporations to small-scale firms (even micro and cottage industry) are investing a lot funds in information systems (IS). About 21 million managers and 154 million workers are utilizing information system in the United States to execute their major business processes (Laudon & Laudon, 2017). Advanced countries are highly depended on information systems. They are making sure the extensive use of information technology so that they can achieve three goals – profitability, growth, and survival of a business house. Like developed countries and large corporations, small and medium enterprises (SMEs) in developing countries (even in least developed countries) are using information system because of achieving strategic business objectives.

In fact, business entities are making a great deal of investment in information systems to attain six tactical business goals: operational superiority; innovative products, services, and

professional model; customer and supplier relationship; better-quality decision making; competitive advantage; and survival (Laudon & Laudon, 2017).

1. Operational Superiority: Improving productivity is one of the most significant goals of a business entity. If a firm can constantly achieve operational excellence, it can attain higher profitability. Managers are able to accomplish advanced level of efficiency and productivity in their business operations when they apply information systems or information technologies. Since, they have to conduct their business activities in a changing environment and the environment demands new businesses practices and new management behavior. The relationship among efficiency, productivity and profitability is shown here

Efficiency ⟶ Productivity ⟶ Profitability

2. Innovative Products, Services, and Professional Model: A professional (business) model defines the way of producing and distributing goods or service for creating wealth. This is human nature to use new products or services with innovative features and excellent performance. Information system develops new professional (business) models for creating innovative product and services.

3. Customer and Supplier Relationship: This is commonly said in business world that customers or buyers are the king and business houses have to satisfy themselves at any cost. When a firm truly recognizes the needs or demands of its clients and attends them accordingly, the clients usually respond by recurring of buying the products or using the service more and more. These increase sales volume and generating profits. Similarly, a business can fulfill the requirements of

suppliers and they get better quality inputs at a reasonable price at a right time. This lowers costs and brings more benefits.

4. Better-quality Decision Making: The prime objective of information is to assist the relevant person or authority to take decisions. Taking right decision (s) at right time at right place is a precondition of success in the field of professional life. Over the last 20 years, information system technology (IST) has made it possible for managers to use real-time data from the marketplace when making decisions. Information system helps the managers or owners to create data warehouse. Owner-manager or key person of the firm can take appropriate decision on the basis of this data repository. Instead of presumptions or luck, managers must rely on actual information which is only possible when they apply IST. There are several shortcomings of assumption or luck. It leads excess production or lower production of goods and services, wrong-allocation of funds, and poor response times. As a result cost will be high which creates threat for growth of a firm.

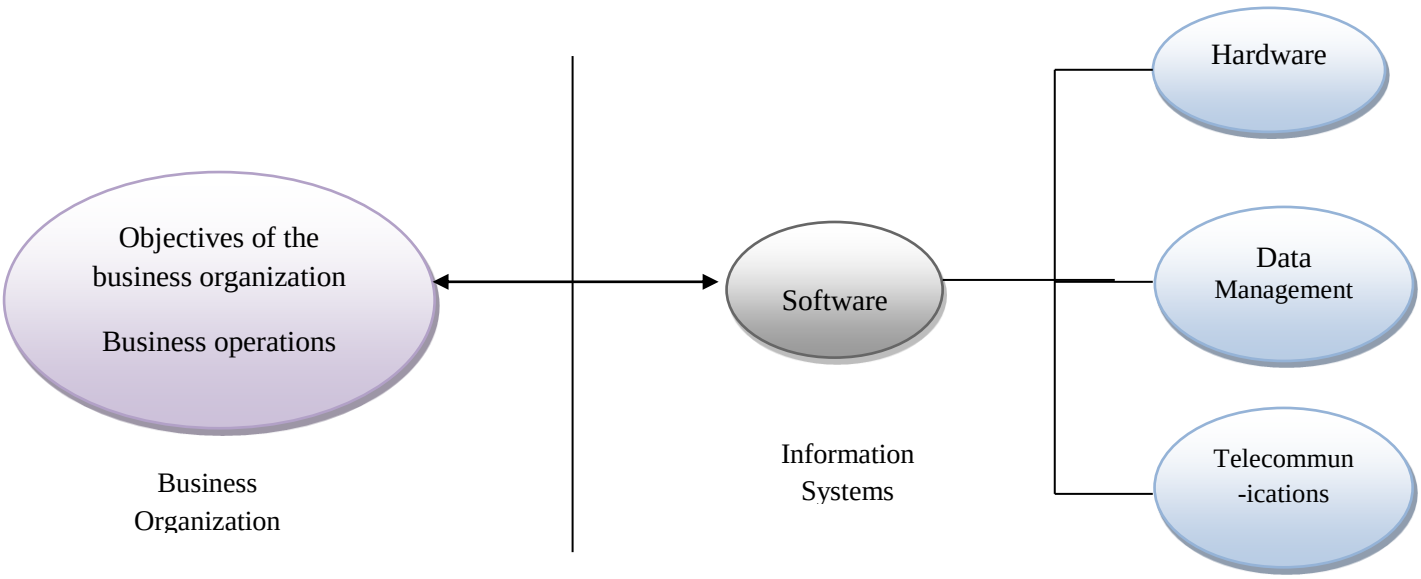


Figure-2.6: The mutually exclusive-dependency between organizations and information systems

Source : Adapted from Laudon and Laudon (2017)

5. Competitive Advantage: When firms attain one or more of these business objectives - operational superiority; innovative products, services, and professional model; customer and supplier relationship; better-quality decision making; they have already enjoyed a competitive benefits.

6. Survival: In order to survive successfully in a competitive field in the long run, business firms are investing more in information system technologies (IST).

2.3.2 Benefits of Selling Products on the Web/Advantages of E-commerce

Electronic commerce (widely known as *e-commerce)* means buying and selling of products and services through the Internet. Commercial transactions are occurred and the flow of information across the Internet. E-commerce permits the customers interchange their goods and services by electronic means eliminating the obstructions of time or place. In e-commerce, the store is open for all 24 hours in a day and 7 days in a week. So suppliers and customers can communicate one with another through online any time and execute the transactions smoothly. Small and Medium Enterprises (SMEs) are generally viewed as the *driving force of the global economy*. E-business or e-commerce offers instant communications facilities for small business and ensures the opportunity to lower the charges of transactions and give the opportunities of trading goods and services internationally rather than nationally or locally.

Recently, it is often said that inaugural a web-site is same to introduce a new sales station and many small businesses are taking these opportunities. Business houses that promote e-commerce facilities soon identify that their web arrangements are making added sales from new group of

clients. In order to sell their goods to the thousands of latent customers who are in outside of a country, the web is the most effective avenue for small and medium businesses. Doing business in the international market place via outdated way would be too challenging and too costly for the traditional small businesses. A small firm can sell its goods professionally to the consumers everyplace in the globe at any time of a day. David (2015) states that *about50% sales take place after 6 pm., when many conventional shops are closed*. With a web set-up, however, a micro, small and medium-sized businesses can do transactions around the clock without consuming any extra staffing expenses. In a traditional arrangement, customers are worries whether the store is open or not. But in web-based society, customers never worry about whether or not an online store is *'open'*.

David (2015) states that less than 33 percent of small firms in global scale have web portals, and out of those, only 24 percent actually generate revenues from online sales. However, the benefits of web selling are presented in the Figure-2.6:

i) The ability to disseminate product information easily and quickly all over the world (*brought new customer),*
ii) Lowering cost and a fast turnaround for placing orders and procurements *(reducing per unit transaction cost),*
iii) Increasing sales and gaining global business access *(increases total sales),*
iv) Increasing *efficiency,*
v) *Discovering* new market,
vi) Ensuring *Display stand* for firm's merchandises (*promotional tool*),
vii) Achieving universal scope of reaching consumers / dealers (*global presence*)

viii) Recovering *brand image & goodwill.*

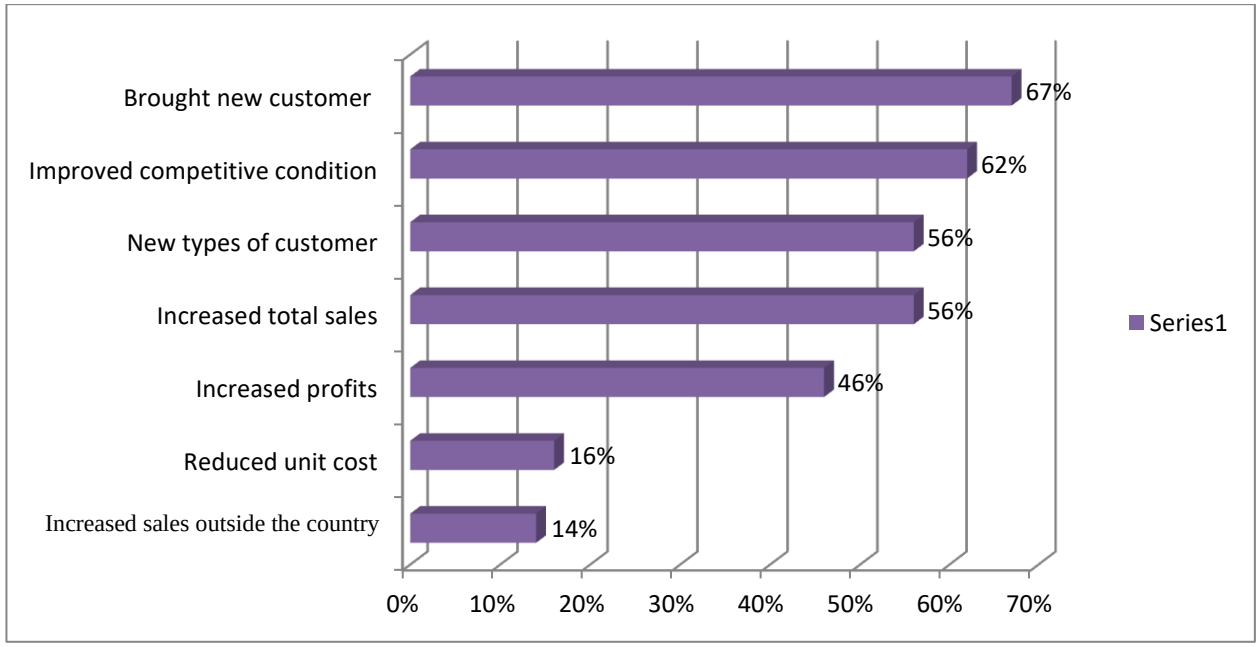


Figure: 2.7: Benefits of selling goods on the web site

Source: The Author (constructed based on US National Federation of Independent Business, 2015)

2.3.3 Benefits of Wireless Technologies / Mobile Technologies Landscape for SB

In an economy of 21st century, small and medium enterprises are enjoying a great deal of opportunities with the help of technology that were impossible or unthinkable without information technology. Technology meets a small firm's requirements effectively and sustains its successful survival. In this study, I want to present how mobile-based technologies can really care small business needs. In the figure (2.8), several researches recognized small and medium business needs by plotting the technical development and achieving good competitive position by applying information system. In this part, additionally, I want to discuss that how small and

medium enterprises in Bangladesh are highly benefited by adopting mobile applications in their day-to-day business.

Mobile technology establishes distant and instant relationship and communication by permitting the individuals anytime anywhere voice, data, and services entrance. Portable technologies incorporate software applications, several categories of supportive links, and consistent hardware (Fig. 2.8). These inter-connected devices reveal that incorporation of IS is indispensable to provide new facilities to the end users. Smart phone users are increasing rapidly day by day because of its user-friendly nature. Smart phones with their innovative features and excellent performance such as Black Barry's, IPhones, Google-Android phones, Windows Mobile phones are part and parcel of business world. Small industry using mobile applications are achieving operational excellence, creating new prospects for their firms, and building healthier client relationship.

Like other wire-based system, cellphone devices are not tight to a fixed position. They are completely a handy device and transportable and are deliberate to authorize data or information gathering and distributing those data through many wireless stations. Laptops, cellphones, smartphones (of several renowned brands), tablets, and other devices such as GPS receivers and electronic readers are the example of such devices.

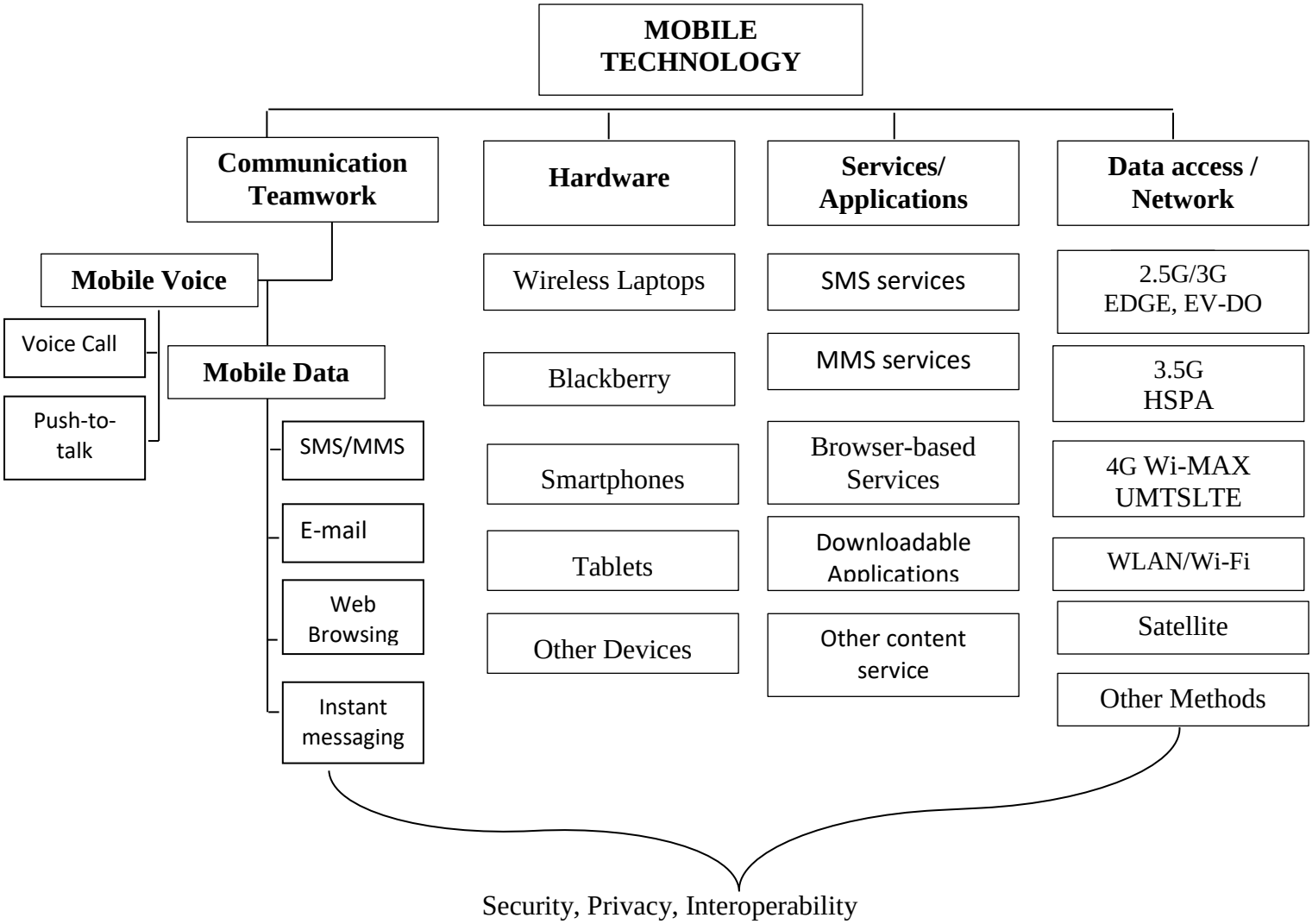


Figure 2.8 Mobile Technologies Scenario

Source: Adapted from Cutter Consortium (2012)

2.3.4 Prospects of Mobile Technologies for Small Business

It is stated earlier that the main objectives of a business firm is to ensure profitability, growth, and survival in the long run. It is very essential to choose appropriate technology for achieving

these major objectives. The application of mobile technologies is a source of achieving core competencies for small and medium enterprises. Additionally, extensive mobile opportunities for small and medium enterprises (MSMEs) are explained as under:

1. Prospects for mobile employees: Mobile workers can have easy access to the central resources from a distant location for executing their assigned tasks through wireless connectivity. This connectivity extends opportunities for business users such as the key person(s) or owner-managers, executives, customers, suppliers, and all employees of all stages. These persons are not limited by wired local area network connections to their workstations, offices, and homes. They have the flexibility to stay linked wherever they operate their businesses without physically present or being physically wired to a place or device (Fjermestad et al. 2007). We know that this is the age of information and communication technology. Moreover this is the era of mobile phone technology, more accurately an era of *smartphone technology*. Everyone wants to work in computer-generated groups and be at all times accessible to cooperate at any point in time. It is said that those days are gone away when people accomplished work manually.

Mobile know-how has taken place the manual labor and it has altered the traditional view of work-assignments at home and office. Virtual office or virtual working environment is a new dimension of wireless technology. Information system enables a firm to become digital. *Digital firms* sense and reply to their environments far more quickly than old-fashioned firms, giving them more flexibility to survive in turbulent times. Digital firms propose amazing opportunities for more flexible international organization and management. In digital firms, both time shifting and space shifting are the custom. Time shifting means business being conducted uninterruptedly, 24×7, rather than in narrow *'working day'* and *'working hour'* that bands of 10

a.m. to 6 p.m. Space shifting refers to that work takes place in an international workshop, as well as within domestic borders. Work is done actually wherever in the globe it is best accomplished. This is now important to attend the work where and when it makes most sense. Group members work together across the national boundaries and locations. Moreover, chain of command is flattened through teams. This flat hierarchy lowers cost and saves time. Moreover, such dynamic modifications have a positive impression on individuals and then on organizations, finally on entire environment.

2. Prospects for successful enterprise: Bess (2010) claims that the prospects for mobile technology exist in the *'supremacies'* of corporations and even for small & medium enterprises. He presents the concept of *'reconsidering the superiority'* by concentrating on supplier-partner-client relationships through smartphone.

3. Prospects across industries: Schuster and Lee (2010) present that 3G (now 4G or 4.5G) smart phones are brilliant devices to collect data and transfer data to the desired destination. The extended benefits of the 3G or 4G phones are the ability to locate exactly the observations through the phone GPS competences. When the data are transferred easily across the system, the prospects are limitless.

4. Prospects for common people: Chaka (2010) defines that an instant messaging service has enabled its creators to increase market shares. It has happened over 120 countries. It has enabled the community eventually to lead in the competitive world.

2.3.5 Mobile Applications (Apps) for Small and Medium Enterprises

Mobile apps for small and medium enterprises are summarized in the following table 2.3

Table 2.3 Mobile Apps for Small and Medium Enterprises

Area of Concentration	Description of Mobile Applications /Apps
Areas of new product / innovative product areas	Latest communication tools and techniques are used for innovating the products and several types of applications make this process of innovation easier than previous time.
Minimum costs	Specific applications (apps) of smart phone technology are used to incorporate bar code scanning proficiencies that can intensify the accuracy and speed of inventory management system. For example, *CS40* is a mobile phone application that can help the relevant person to administer the catalogue of a superstore.
Ease of use	It is said by the experts that 21st century is an era of smart phone technology. There is a revolution of iPhone technology (including BlackBerry, Windows Phone and others) and the maximum smart phone applications have advanced user-friendly interfaces that assist the users to make their assignments easily and successfully.
Service improvement	Recently people are not bound to do their business activities within a fixed time period such as 10:00 am to 6:00 pm. They can do business anytime, anywhere. Space shifting, time shifting etc. are the main features of digital technology. Many applications are used by the mobile workforce of small and

	medium enterprises that enables them for superior in-house administration such as easy reporting, stress-free communication, smooth managerial paperwork, and external client management like minimizing response time, follow-up etc. Moreover, enhanced data service, voice call software, customer-relationship management (CRM) or sugar CRM, automated location based tracking system, etc. minimize our work loads.

Superior partner synchronization	In order to make sure the superior partner synchronization or coordination, owner-managers or employees of small businesses apply different types of mobile apps. From the smart phone interface, users can easily coordinate or synchronize their different partners.
Advanced marketing	There is a great contribution of mobile apps to the file of marketing. Smart phones have changed the whole marketing scenario. These innovative marketing scenarios are founded on the utilization of the supremacy of social networking. Now a salesman can link the customers on Facebook and Twitter for faster follow-up and updates. Different forms of social networking site can be applied to extend reach to new group of clients. Apps like *Hub Spot*, *Batch Book* etc. can ensure

	easy access to new customers. So small business can be highly benefited by using these types of social applications.
Superior capacity management (supply)	Location-based SMS facilities, email messaging facilities, mobile device management system, etc. are used for effective supply chain management and following logistic cycle like routing and dispatch, and pick-up and delivery field services.
Enhanced demand management (increase in sales)	For managing demand, small business can apply software to place office order on the digital display for harmonizing data bases, schedules, forms and documents. They enjoy infrastructure as-a-service. *Nice Office Applications (NOAs)* is very popular software for better demand management.

2.4 The Concept of Digital Bangladesh and IS/IT Progress in Bangladesh

Digital Bangladesh is not a dream, it is a reality. Bangladesh is now not only on development highway but also on information super highway. We are applying modern technology relating to information and communication technology to make our lives easier and faster than previous time. Relevant information for relevant persons or firms will be easily available at any time and any place. These facilities will make our decision making process more rich than the past. The concept of Digital Bangladesh ensures our solidarity and reliability on day to day activities.

Youths Getting Opportunity:

Various start-up schemes have been taken by the government of People's Republic of Bangladesh and initiatives in individual level have also been taken for creating new

entrepreneurs so that they can move forward fast with the help of information technology. In order to train and develop the potential young entrepreneurs, the *Innovation Design and Entrepreneurship Academy* (iDEA) was established in July 2017 to promote innovation and design for stimulating potential young entrepreneurs to come forward and contribute to the economy.

ICT (Information & Communication Technology) Division Road Map

There is an explicit long term portrait of information and communication technology (ICT) division to ensure the development of this sector and contribute more for the overall progress of Bangladesh than previous period. Several initiatives have been launched by the government in this year (2019) under the short term (up to two years), mid-term (up to five-years) and long term (10 years or more) period. Since we, as an agro-based economy, have made a remarkable growth in the field of agriculture, but we hardly make a good progress in industrial sectors. In order to ensure the exciting growth in industrial sector, we should depend not only on large scale enterprises but also on small and medium scale industry. Moreover, SMEs sector with minimum fund and minimum expertise can be more appropriate for Bangladesh than large sector. Very recently we are able to build robots and they will contribute a lot to execute our day to day activities. This is our one of the greatest achievements in ICT sector. So our ICT division may also assist our SMEs arena and this vital sector may come up with rest of the world in business filed.

Digitalized Parks / High-Tech Parks:

Now, we have twelve digitalized parks, commonly known as *High-Tech Parks*, which will make thousands of job opportunities and permit many local, national, and international corporations or

business houses to work here. The government of Bangladesh recently says that we hope to export software and ICT oriented services and aims to make $5.0 billion by 2021 and a value of $ 10 billion from these parks by 2030. There is also a specific road map in the *Vision - 2021*. The Bangabandhu High-Tech Park is being constructed on a 355 acre plot at Kaliakair in Gazipur district. The construction of the Sheikh Hasina Software Park in Jashore has been completed and our honorable Prime Minister Sheikh Hasina inaugurated it on December 10, 2017. The expert opinion is that native and overseas firms are showing great interest in all digitalized parks all over the country to work due to low cost, uninterrupted power supply, high-speed internet connection and good communication facilities.

Other Successes in the IT Sector in Bangladesh

Sheikh Rasel Digital Lab and Language Centers, Sheikh Rasel Digital Labs, Sheikh Kamal Training and Incubation Centers, Shylhet Silicon City, the Barendra Silicon City at Nabinagar in Rajshahi, Software Parks, and other successes in ICT sector may shape up our overall socio-economic development in the near future. These facilities will encourage our young generation to create new venture and offer more employment opportunities. Since fiber optic connection had been successfully extended to the upazila or thana level with a aim of offering the facilities to all classes of people in the country by 2021. Moreover, the construction of 554 Business Process Outsourcing Centers (BPOCs) will be completed by 31st December, 2020 and offer working opportunities for the youths.

Digital Bangladesh: Achievements at Glance

ICT Training Centers in the Year 2015-16:

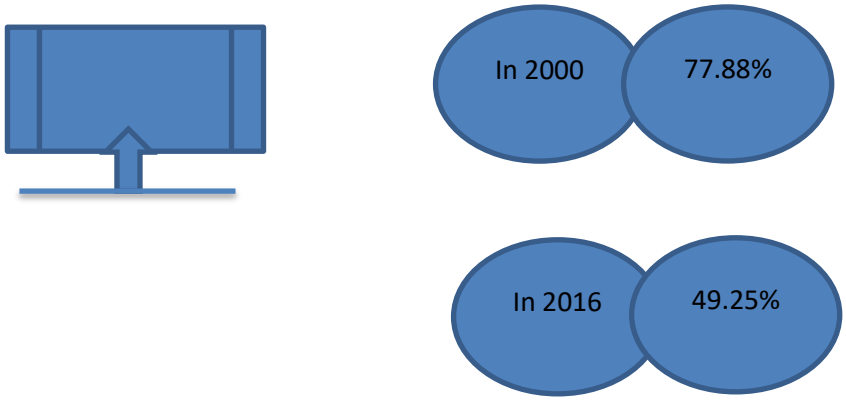
1,909 students being trained in Top-up IT

1,920 media personnel trained IT

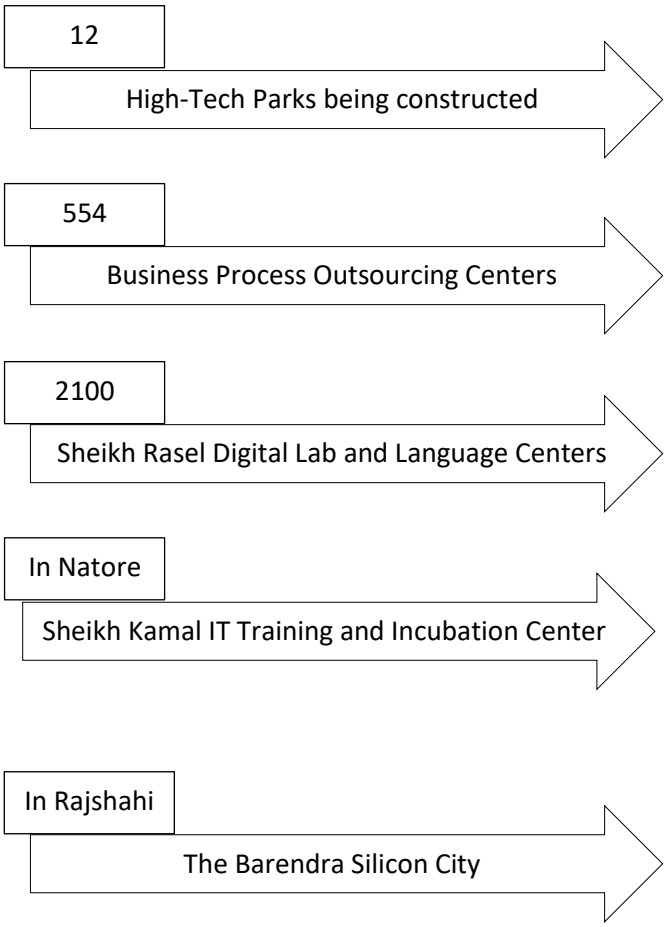
3,432 students being trained in *'Foundation Skills'*

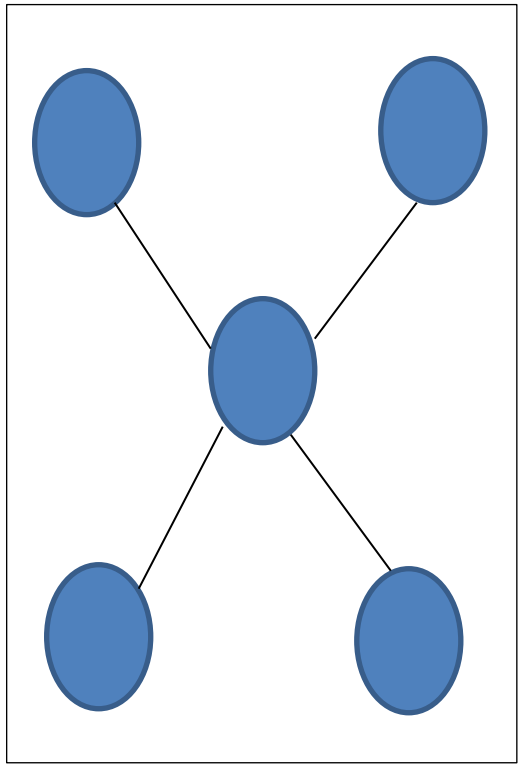
10,920 Women given basic ICT Literacy Training

In 2016, 79.7 million people used Internet in Bangladesh (49.25% of the total population) and it will be about 77.88% in the year 2000.



Source : ICT Division and ITU, GOB (2018)





Government offices (3,520 at district level and 14,610 at upazila level) are connected with secured high speed broadband Internet

Figure-2.9: The Progress of Digital Bangladesh

Source : ICT Division and ITU, GOB (2018)

2.5 Summary:

Small business (SB) is now acknowledged as a driving force of economic development of any nation in the world. Due to the economic significance of small business, we have to ensure their smooth operations in the challenging environment. During the abundant Internet boom in the early 2000s, SMEs in our country should adopt the information technology and make sure its

widespread use of it. Adoption of broadband information technology (IT) requires widespread investments, government and other concerned management bodies should offer such funds requirements so that small business can afford the funds and can easily access in the national and international markets. Without sufficient investments in IT (including all forms of hardware and software), small business hardly competes globally. The published researches relating to the study of information systems in small business give us evidence relating to the value of information systems (IS) tools and practices for evaluating information necessities in the upcoming dynamic situations. Finally, we can say that the owner-managers of small firms in Bangladesh have to make sure the extensive use of IS/IT in conducting business in order to survive in the competitive business filed successfully in the long run.

CHAPTER-THREE: THEORETICAL FRAMEWORK & METHODOLOGY

3.0 Introduction:

The advance level research project deserves a methodological sophistication. This chapter gives us a comprehensive description about the methodology of the study and it is designed to find out the gaps in the prior studies relating to information systems/information technology (IS/IT) in small businesses in an emerging country Bangladesh. This chapter is an attempt to present IT infrastructure and small business, ideas and procedures of IS/IT attainment in small businesses, the primary background for examination of IS/IT implementation and growth in small business, overall perceptions of exploration method and application of different techniques in IS research. It also presents a research method for this study and finds out the reason for selecting the method for this study considering the gap in previous research methods. Finally, the method of data collection and the techniques of data analysis for the present study would also be outlined; and the major tools used for data analyses are also set out. Therefore, for the purpose of the study, this part will explain how study topic will be explored and investigated as the science of method of data collection.

3.1 Information System Technology (IST) Infrastructure and Small Business

Now information system (IS) or Information system technology (IST) is recognizing as more adorable, influential and accessible tool. Pragmatic evidence demonstrates that the application of information technology is increasing day by day in business field to enjoy competitive advantages. It is said earlier that information system technology is used to collect, process, store and distribute information to the relevant individuals so that they take right decision, at right

time, and in right place. At the age of information technology (IT), everybody recognizes the importance of IT. Owner-manager of a small business also realizes the increased need of information technology to run their business successfully. Policy-developers and advisers of small business suggest that new entrepreneurs need to be educated so that they should make the best use of IST in their firm. They should have a good orientation about how to apply information system technology. The more a firm applies information systems in the early stages of its commencement, the more it can enhance its performance. There is a financial problem along with some other problems in small and medium scale businesses in Bangladesh. They hardly afford latest technology due to their insolvency. Government and other agencies should come forward with their funds and other allowances, training facilities, guidance and help-lines.

Now IT arrangement is a common phenomenon for every organization. IT capabilities are comprised of physical hardware, software, networking know-hows, data, and applications. It also includes proficiency or abilities, commitments, values, norms, and knowledge of human resources of an organization particularly a small business. IT facilities create a ground for communications through the whole organization; and implement and improve the present and future business applications (Byrd and Davidson, 2003).

Grover et al. (1993) indicated that the development and practices of innovative system is a universal instrument or device for changing the firm and it may place the organization in an excellent position since the early 1990s. Information technology is essential to reshape the fundamental business activities or basic operations (Brancheau et al., 1996). A contemporary study represents the correlation between information systems and the productivity of small firms

(Barney, 2000). This notion claims that long-lasting competitive advantage arises from an exclusive arrangements of IST based resources (Grant, 1991) that are economically appreciated, scares, and hard to reproduce (Barney, 2000).

Information technology infrastructures for small firms are naturally designed to offer a flexible base for forthcoming business advantages and thus are prepared to fulfill the upcoming business requirements (Keen, 1991, Weill and Broadbent, 1998). Nevertheless, structure-based investments also empower new applications and ensure substantial improvement of practices of newly developed IS in the organization (Duncan et al., 1996, Broadbent et al., 1999). Table 3.1descibed IT infrasturcture services for the organization.

Table – 3.1 Generic Lists of Information Technology Infrastructure Services

Fundamental Information Technology Facilities

1. Establishing networking facilities across the firm.
2. Build up comprehensive messaging services (SMS) across the firm.
3. Maintain the basic principles or guidelines in IT structural design (e.g., hardware, software - operating systems software as well application system software, data, communications, etc.).
4. Ensure safety and security, hardship preparation, and firm's retrieval facilities for enterprise-wide connections and presentations.
5. Offer information system technology (IST) oriented suggestions and support services.
6. Build up, retain, assist a central data processing services.
7. Ensure project management relating to information system.

8. Deliver data management advice and consultancy services.
9. Develop a distinctive and well organized IS/IT forecasting for whole organization.

Additional Services for Information Technology

10. Make compulsory standard IT applications in major business processes.
11. Introduce local area networking (LAN), campus area networking (CAN), and metropolitan area networking (MAN) to make communication available.
12. Develop intimacy with dealers and clients through IST.
13. Recognize and assess the benefits of latest technologies for business.
14. Build up customized and more specific application software for the firm.
15. Deliver and manage information electronically.
16. Improve and continue electronic communication with merchants as well as consumers.
17. Develop the environment (if possible).
18. Offer information technology (IT) oriented education, training and other services.
19. Arrange multimedia oriented operations, for example video-conferencing.

Source: The Author (constructed based on Broadbent et al., 1996)

3.2 The Context for Analysis of IS/IT Adoption and Success in Small Business

Now all aspects of life are highly influenced by information technology. Information technology has an indispensable influence in most of businesses and in all facets of economy (local, national and global). Since change is always very constant, business enterprise has to adopt this substantial change in order to survive in the rivalry. Changes make bound the venture to do business in a new way. So there is physical renovation of enterprises. Business organization, in 21st century, is not able to run its operations successfully without the assistance of information

technology. IT has an important impact on the operations of small enterprises. Moreover the application of IT is claimed to be crucial for the survival and growth of economies in general. Micro, small and medium enterprises are drawing attention in both developed and developing countries as well as in transition countries. It is usually well-known that the firms (small in nature) perform a strategic role in the regeneration and development of a domestic economy in many countries. Thus, the growth of small business is highly encouraged so that it can build the economic and social development by creating huge employment opportunities.

The composition or model presented in figure 3.1, defined by Pettigrew et al. (1989) and Pettigrew and Whipp (1991), was established with an aim of presenting strategic change and giving a good picture of the mechanisms by which the phenomenon under study operates. This framework has four indispensible measurements that, according to the authors, influence strategic change: external background, internal background, process, and content.

The *external background* includes the societal, financial, business, and political atmosphere that influence its behavior. The *internal background* consisted of a set of resources, capabilities, business culture, and internal politics that are inherent to the organization. *Content* comprises of goals or objectives, expectations, strategic views, and its assessment. The process contains the set of processes related to describe and execute business strategy.

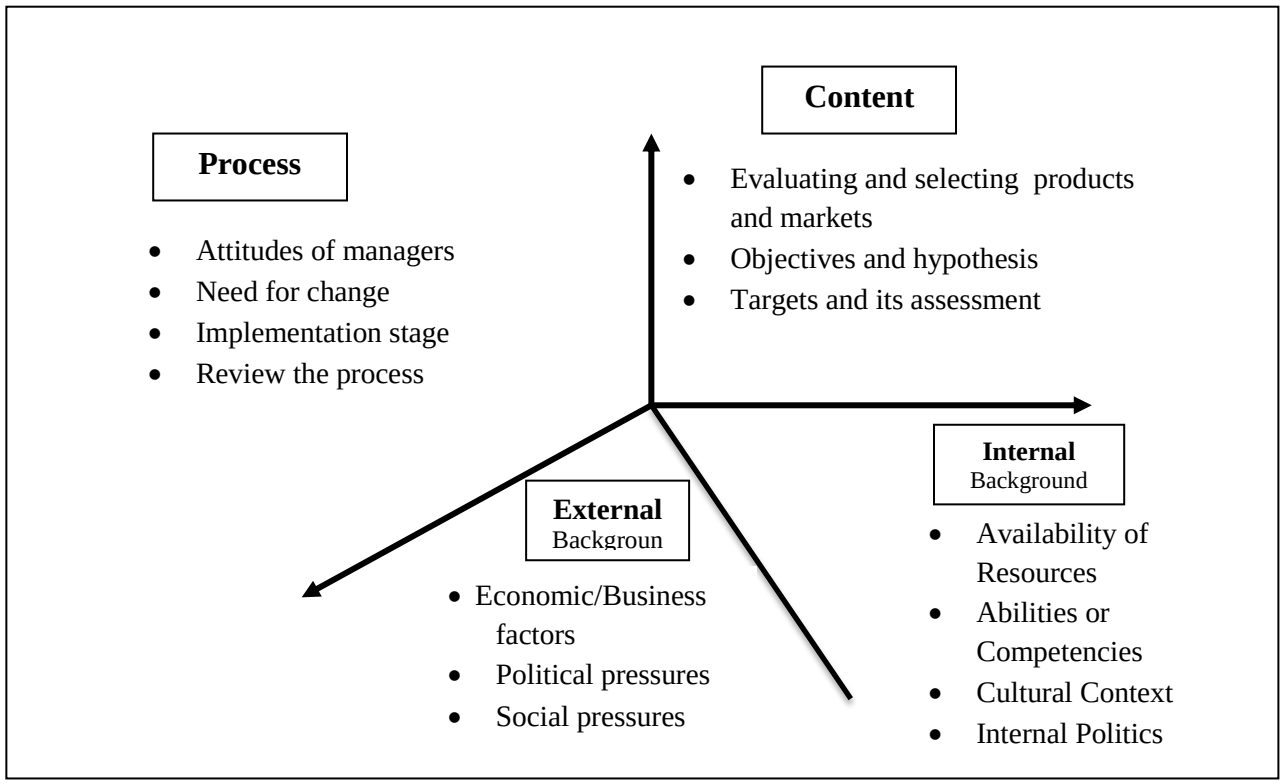


Figure : 3.1 The Concept of Strategic Change: Four Critical Measurements

Source: The Author (constructed base one Pettigrew and Whipp, 1991)

The adoption IS/IT occupies a course of organizational change and has a content, a process, external background, and internal background that create pressure the way it is conducted and achieved its end results. However, the aspects related one with another are explicit due to the meticulous features of each dimension. In order to classify those aspects connected with IS/IT success in small business, a comprehensive literature review was conducted in the *Chapter Two*.

3.3 Ideas and Processes of IS/IT Success in Small Business

The success of Information systems is acknowledged as a comprehensive idea, and it is not always clear to concerned parties. (Weill and Baroudi, 1990). According to Brabander and Thiers

(1984) IS success is concerned with the *"ultimate effectiveness of the achievement of assignments for which the information system is to be designed"*. Ives and Olson (1984) defined information systems success from a cost-benefit perspective, as *"the aggregated managerial benefits achieving from the computer-based information systems in comparison to alternative investments"*.

Since it is a tough job to assess accurately the achievement of IS/IT, two distinct factors are more usually used to assess the IS/IT success in small business. They are: *level of computer application* and *user information satisfaction (UIS)* usually *CEO's information happiness* (Baroudi et al., 1986; DeLone and McLean, 1992).

DeLone and McLean (1992) developed a unified assessment of IS/IT success by identifying six key factors for IS/IT success: systems excellency, information superiority, practices, users happiness, individual impression, and organizational impression. Figure 3.2 presents the model.

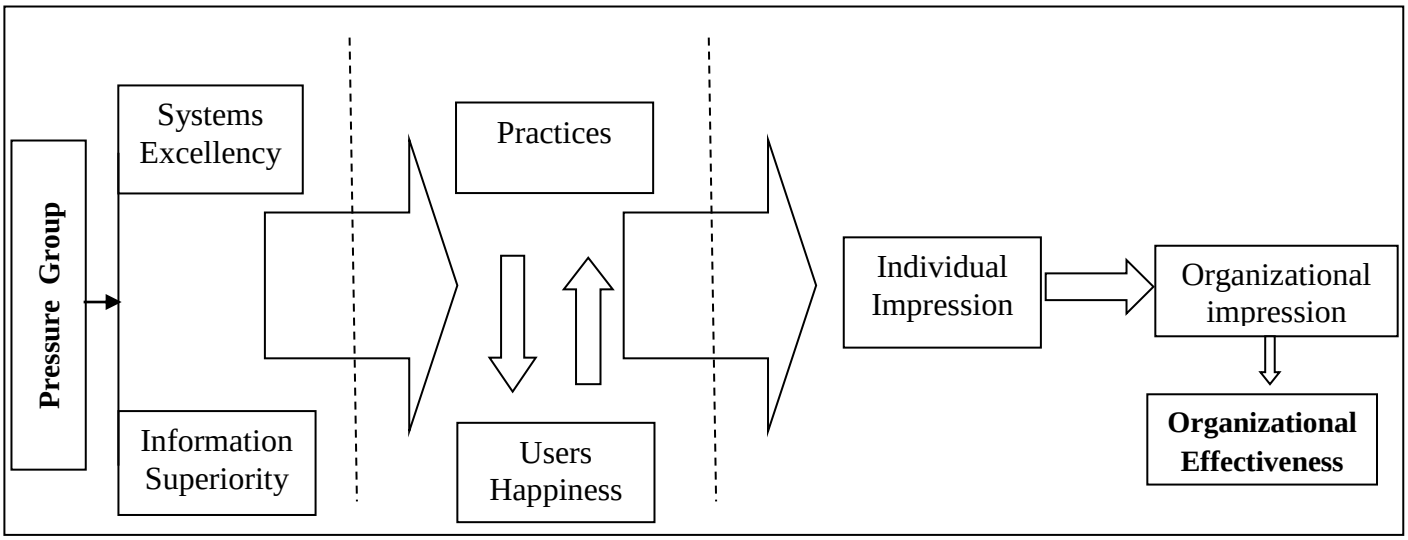


Figure 3.2 Information Systems/Information Technology Success Model

Source: The Author (constructed base on DeLone and McLean, 1992).

In order to assess IS/IT success, some academicians like Alloway, (1980); Hamilton and Chervany, (1981); Swanson, (1974); identify the measures of computer systems excellency such as: system's dependability, response time, data accurateness, systems flexibility, and easiness of use. The second measure in the model, information superiority, is typically regarded by scholars as linked with the quality of the IS/IT output (information). The features of information superiority are: correctness, timeliness, dependability, comprehensiveness, importance, money and preciseness (Bailey and Pearson, 1983). According to Raymond (1985), *operators' or users' information satisfaction* depends on superior system results, man-machine interface, electronic data processing (EDP), staff services etc. Ives et al. (1983) tell us that user information satisfaction is *'the degree to which users consider the accessibility of information system and fulfillment of their information requirements'*. So we can say that the success of system adoption and implementation absolutely depends on user's satisfaction and positive perception.

Since small businesses have fewer complexities than their counterpart large scale organizations. The entrepreneurs or owner-managers are regularly involved in each and every organizational activity. Thus IS/IT successes or growth are largely influenced by individual impression (entrepreneur's impression or owner-manager's impression) and organizational impression (nature, size of organization, other in-house context). Moreover, there is pressure group that may affect the effectiveness of whole system. Most of the times, an organization has to reshape all of its activities due to the pressure group. There is a comprehensive explanation of internal influence and external influence in the next section (3.4). However, the goal of this study is to recognize, classify, and scrutinize the issues and their inter-relationships that may affect the successful adoption and usage of IST in small and medium enterprises in Bangladesh. In order to

attain this goal, it seems to be necessary to look at small and medium enterprises in Dhaka city with an expected level of satisfaction with IS/IT.

3.4 Factors Influencing in IS/IT Adoption in Small Business

Ghobakhloo et al. state that there are some influencing factors (Figure 3.3) those are summarized into two main groups such as internal factors and external factors.

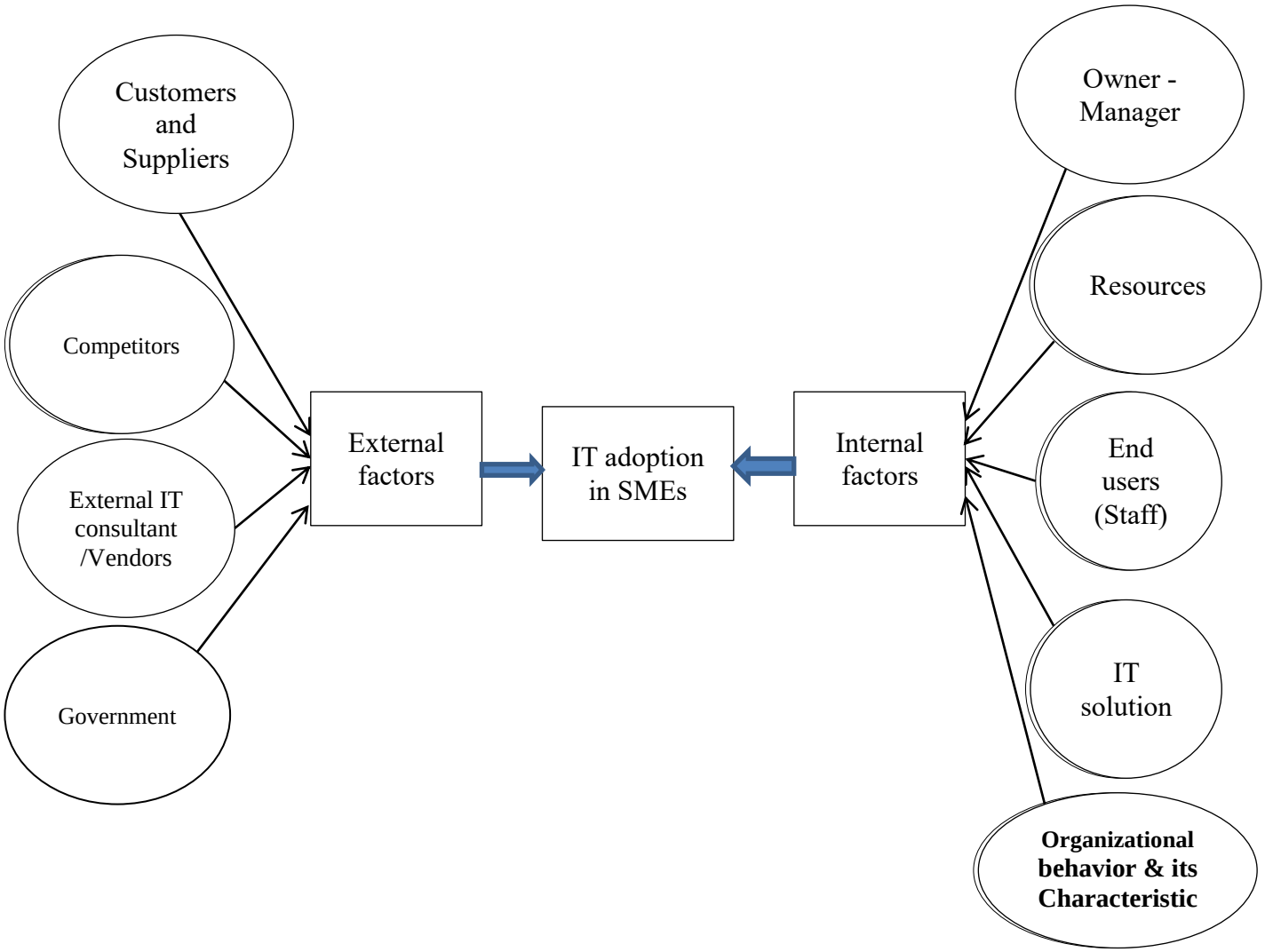


Figure -3.3 : Proposed Framework of IT application in Small Business
Source : Adapted from Ghobakhloo et. al (2011)

3.4.1 Internal Factors:

We told earlier that IT adoption in small business is highly influenced by good number of factors. These factors are categorized into two broad heading – internal factors as well as external factors. Here major internal factors are discussed briefly.

Attitude of Owner-Manager/Top Management Attitude

In small businesses, IS/IT implementation process is mainly influenced by the owner-manager or key persons of the firm or entity. They take all decisions from everyday actions to upcoming investments (Bruque and Moyano, 2007). Generally, small business is characterized by a central arrangement with a key person or entrepreneur. In most of the cases, owner and/or key person is one and the same person and s/he is the most powerful person in the organization (Ghobakhloo et al., 2011).

IT adoption decision ranging from forecasting stage to execution, maintaining, and system advancement stage are directed and guided by the key person (s) of the firm (Bruque and Moyano, 2007; Nguyen, 2009). These decisions are mostly grounded on their empirical understanding resulting from the arrangement of personal experience, assessment, and their communication skills (Carson and Gilmore, 2000). However, Keh et al. (2002) think that knowledge and skill of owner-manager are essential for finding out the prospects and problems of small firms. They also add that social relationship is required as like as personal qualities to gain the goals of the firm. In this regard, information technology may assist to develop this social network in home and abroad.

It is found in some literatures that a number of issues rightly affect the procedure of IT acceptance in small and medium enterprises such as *owner-manager's attitude, their readiness toward IS/IT, commitment, IT understanding and skills, innovativeness, expected behavior to regulate IT, intention for making progress, and so on* (Premkumar, 2003; Qureshi and York, 2008; Thong et al., 1995). Studies by Thong et al. (1995) and Thong & Yap (1999) pointed out that when key persons of a small firm who have an optimistic approach to introduce IST, they adopt IS/IT easily. This opinion is reinforced by Caldeira and Ward's (2003) study. They proved that affirmative action of top most position has brought the success of IST adoption in business entities especially in small and medium scale firms.

In addition, progressive attitude of key person to apply IT will be a cause IT reception and afterward success in small and medium enterprise (Al Gahtani and King, 1999; Davis, 1993). Moreover, Qureshi and York (2008) opine that if the owner-manager of small firm realizes that IT solutions will improve firm's performance, they will recommend new technology. Support and commitment of top person (s) towards IS/IT adoption is the foundation stone of high level IST acceptance and use in small businesses (Fink, 1998; Ghobakhloo et al., 2010a). Cragg and Zinatelli (1995) stated that poor attention by top administrator to IS was one of the problems for applying computerized system in small firms.

IT understanding and skill of key person in small business is another quality affecting IT adoption (Drew, 2003; Fink, 1998). . They argued that more knowledge of key person (s) will reduce the degree of uncertainty intertwined with IT which will result in lower risk of IT adoption (Thong, 1999). Another inducing issue for ensuring IS/IT adoption in small business is owner-manager's innovativeness (Ghobakhloo et al., 2011a & 2011b). Personal Innovativeness

in IT (PIIT) has been taken as a reliable forecaster of usage and effectiveness of new technologies (Nov and Ye, 2008). Agarwal and Prasad (1998) told us that PIIT is a key determining factor of IT acceptance by moderating in perceived usefulness (PU), compatibility, and perceived ease of use (PEOU).

Resources:

Resources refer to capital, manpower, physical infrastructure, information, time factor, and other properties. Generally, small business has limited resources compared to its counterpart large organizations (Igbaria et al., 1997; Nieto and Fernández, 2005). *Financial resources, managerial resources, information resources, internal and external expertise, market entry, and internal IT knowledge and experience* are the major resources which help the adoption of IT in SMEs. (Caldeira and Ward, 2003; Cragg and Zinatelli, 1995; Dutta and Evrard). Dutta and Evrard (1999) found that small firms are capable to make the use IT in their operations but innovation is often impeded through an inadequacy of financial resources.

In general, most SMEs are suffering from insufficient financial resources and owners mostly invest their own personal assets (Fuller-Love, 2006). These limitations compel small firms to be more careful about their investment and funds spending (Ghobakhloo et al., 2011b). We know that decision relating to IT investment influences financial impact on small business and; it may develop insolvency and overall economic failure (Sarosa and Zowghi, 2003). Use of latest IT system along with the various components demand for long term investment (Nguyen, 2009) and there is a high cost of such infrastructure (Walczuch et al., 2000). SMEs with sufficient financial resources can use IT facilities easily, otherwise not (Yap et al., 1995).

Virtually, the success of IS implementation depends on available financial resources. High allocation for IS investment will intensify the possibility of overall IS success in small firms or micro entities. As a result small firms will be able to hire more talented internal as well as external experts and/or implement better IS that meet their goals. It is clear that small and medium enterprises are suffering from shortage of internal IT experts that may affect adversely the extent of IT application (Chau, 1995; Fink, 1998). As a result, SME has ample risks and uncertainties in their computerization because of their insufficient knowledge in this regard (Igbaria et al., 1997). A study by Caldeira and Ward (2003) who exposed that in-house IT proficiency consisting of workers, managers, or those from top management are influential forces of IT implementation.

Moreover, the understanding level of IT is another significant basis for influencing IT implementation in SMEs. Development of in-house IS/IT knowledge and skills is one of the most vital foundation required for providing superior levels of IS/IT adoption and satisfaction in small business (Caldeira and Ward, 2003). Lack of IT awareness in small businesses can generally be considered as a hindrance to IT implementation (Sarosa and Zowghi, 2003; Venkatesh and Brown, 2001)

Employees /End Users (Staff):

Employees are taken as vital resources in an organization on which survival and success of a firm absolutely depend on them (Melville et al., 2004; Nguyen, 2009). These assets as the end users of IT within small business are another valuable resource of firms (Caldeira and Ward, 2003) which needs to be developed to contribute to the success of business (Egbu et al., 2005;

Zhou et al., 2009). End users' knowledge of IT, training, desires, perceptions toward IT, and extensive involvement in application procedure could influence IS/IT acceptance or its adoption process as well (Caldeira and Ward, 2003; Fink, 1998). To help the effective implementation of IS in small business sector, and to avoid adoption failure, people should have ICT knowledge with computer education and training facilities (Thong, 2001; Sarosa and Zowghi, 2003).

Users IT understanding have positive impact on IT adoption. Virtually, end-user's acceptance and their satisfaction with IT are significant factors in this regard (Davis, 1993; Zhou et al., 2009). Attitudes, usage, and the level of satisfaction of managers, professionals, and operating level personnel are also determining factors in IS adoption (Al-Gahtani and King, 1999). The users' happiness with IT is another aspect of IT implementation success in SMEs (Adam Mahmood et al., 2000; Palvia and Palvia, 1999; Yan et al., 2007). End-user information satisfaction is greatly influenced by expected benefits and risks of using IS in small firms.

IT solution (computer application):

Development of IT adoption in small firm relies on some features of applied IS/IT itself which shows various factors like type, process, user friendliness and quality & reliability of software available in market, etc. Moreover, excellence of IST available in market and its type could be a main factor influencing information systems applications and practices among small and medium enterprises (Caldeira and Ward, 2003). Cost is another important determinant that affects adoption of IT in SMEs. Fink (1998) recommends that it is imperative that own-managers or key persons of a small business should consider carefully the costs of IT (hardware and software costs) during IT adoption process.

Although IT ensures enormous benefits for small business, risk of IT has negative impact on organizational earnings (profitability) and growth. Tan et al. (2009) thought that high costs of IT tools & techniques, and expensive software are the major challenges of ICT use in SMEs. Small business can have benefit from wide use of IT through IT planning, controlling the threats and addressing the opportunities.

Organizational Culture

Use of IS/IT in micro, small, and medium enterprises is highly influenced by a good number of organizational characteristics like firm's policies, business size, nature of industry, information strength or accuracy, organization culture and technological advancement (Acar et al., 2005; Mole et al., 2004). *Organizational culture* is a vibrant element of IS/IT implementation in organizations (Bruque and Moyano, 2007; Riolli and Savicki, 2003). Laudon and Laudon (2016) define *culture as fundamental set of assumptions, values, and ways of doing things, that has been accepted by most of its members*. Marquardt (2002) defines the culture as *an organization's values, beliefs, practices, rituals, and customs*.

In small scale industries, culture is mainly influenced by owner-manager attitude, perceptions and his or her socio-economic characteristics (Nguyen, 2009). Usage of ICT may be determined by employees' or supervisors' behavior (Carmeli et al., 2008). Newell et al. (2000) suggest that appropriate knowledge is needed for the good use of IT in small business.

We have discussed here some significant factors that may affect directly to the IST adoption in small and medium scale enterprises in the global perspective. The success as well the failure of a small firm anywhere in the world is influenced by these factors. Specifically in Bangladesh, there are some major causes that may be sources of weaknesses for small and medium enterprises. Export Promotion Bureau (BEP) of Bangladesh has conducted a survey and identified some causes of sickness of small firms. These are summarized in the following table (Table – 3.2)

Table 3.2: Small Business's Internal Causes of Sickness

Aspects of Causes	**In Percentage (%)**
Marketing problem	31
Management inefficiency and lack of entrepreneurial skills	22
Faulty project planning and appraisal	14
Inappropriate technology and imbalance of machinery	12
Delay Implementation (mobilization of equity, etc.)	12
Others (diversions of funds labor problem, etc.)	9

Source: Export Promotion Bureau (EPB) of Bangladesh (2014)

3.4.2 External Factors:

The major outside factors are narrated here in brief

External pressures and competitive pressures:

External pressures and competitive pressures are the global challenges faced by most of the small business all over the world. Small and medium enterprises in the 21st century have to make sure the adoption of information system or information technology (IS/IT) in order to survive magnificently in rivalry. It is uttered earlier that information system is acknowledged as the foundation of business organization in 21st century. The more a business house makes sure IS application in its major operations, the more it can enjoy competitive benefits. Once market is competitive, external threats become convincing but it becomes very challenging in large imperfect competitions. External pressure and competitive pressure are imperative determinants to the adoption of ICTs in SMEs (Premkumar and Roberts, 1999).

In order to enhance survival and/or growth of a small firm, there is no alternative of adopting information systems (Drew, 2003; Mole et al., 2004; Nguyen, 2009). Levy et al. (2003) recommend that small and medium enterprises are inclined to customer pressure; these firms introduce information system as a result of customer's demand to ensure efficiency of their inter-organizational dealings. Premkumar and Roberts (1999) suggest that industry changes, industry trends, maintaining present market, discovering new market, prospects for growth are some driving forces for small firms to move toward IS tools which are essentials to keep up with competition ((Drew, 2003; Southern and Tilley, 2000). Suppliers' pressures, customer's pressures, highly affect the performance of owner-managers of a small business house; since they expect better service as well. As a result, owner-managers are to introduce new technology in operating their business processes. Information system plays an excellent role to deliver a greater level of customer service and healthier communication with distant partners-suppliers and customers (Dutta and Evrard, 1999).

It has been demonstrated by many scholars that the implementation of new technologies is highly influenced by competitors especially when a business entity notices that its industry competitors gain a lot of advantages by applying information technology. Porter and Millar (1985) state that competition takes place new shape because of new technology. SMEs with latest technologies are more effective in competition than traditional SMEs. So IS/IT increases the survival rate of small firms where they are functioning (Porter and Millar, 1985).

External IT Consultant and Vendors:

In Bangladesh, most of the small and medium enterprises are suffering from lack of financial resources and they hardly hire internal IT expert (s) or develop well-structured IT center. As a result, they have to depend largely on external IT consultant and vendors. Their availability and cooperation facilitate the wide use of IS opportunities but in developing countries like Bangladesh such cooperation is difficult to have. Cragg and Zinatelli (1995) stated that lack of internal expertise creates obstacle for IS advancement and sophistication within small & medium enterprises, so, they must seek help from outside sources or developing their own internal IT skilled employees to overcome this problem (DeLone, 1981). A study of Thong (2001) pointed out that small businesses with higher level of IS experts have higher level user satisfaction and overall IS effectiveness. Caldeira and Ward (2003) suggest that IST vendors' support is a key factor influencing IT adoption success in small businesses.

Government :

Government ordinances, circulars, and other rules & regulations highly affect the overall activities of a business organization. Government initiatives and policies could directly and/or indirectly encourage the growth and development of IT/IS arrangement and information facility to strengthen faster technology dissemination (Ghobakhloo et al., 2011). Different forms of government incentive programs like computerization program stimulate small and micro enterprises to apply information systems. Government computerization program has encouraged small businesses which suffer from lack of financial resources and technical expertise to computerize their operations. Fink (1998) found that government grants appear to be an important factor supporting IT adoption in small business. Many researchers have pointed out that this is the prime responsibility of a government to ensure e-readiness among the small and medium enterprises. The government agencies or different wings of Bangladesh should have a number of necessary training and development programs so that owners of small firms can enrich themselves. Government should pay special attention on e-commerce and other electronic transactions and facilities.

On the basis of above analysis, we may develop a guideline or identify significant factors in this study that affect in IS/IT adoption in small business in Bangladesh. These factors are discussed in detail in the Chapter Six. The guideline is depicted briefly as under

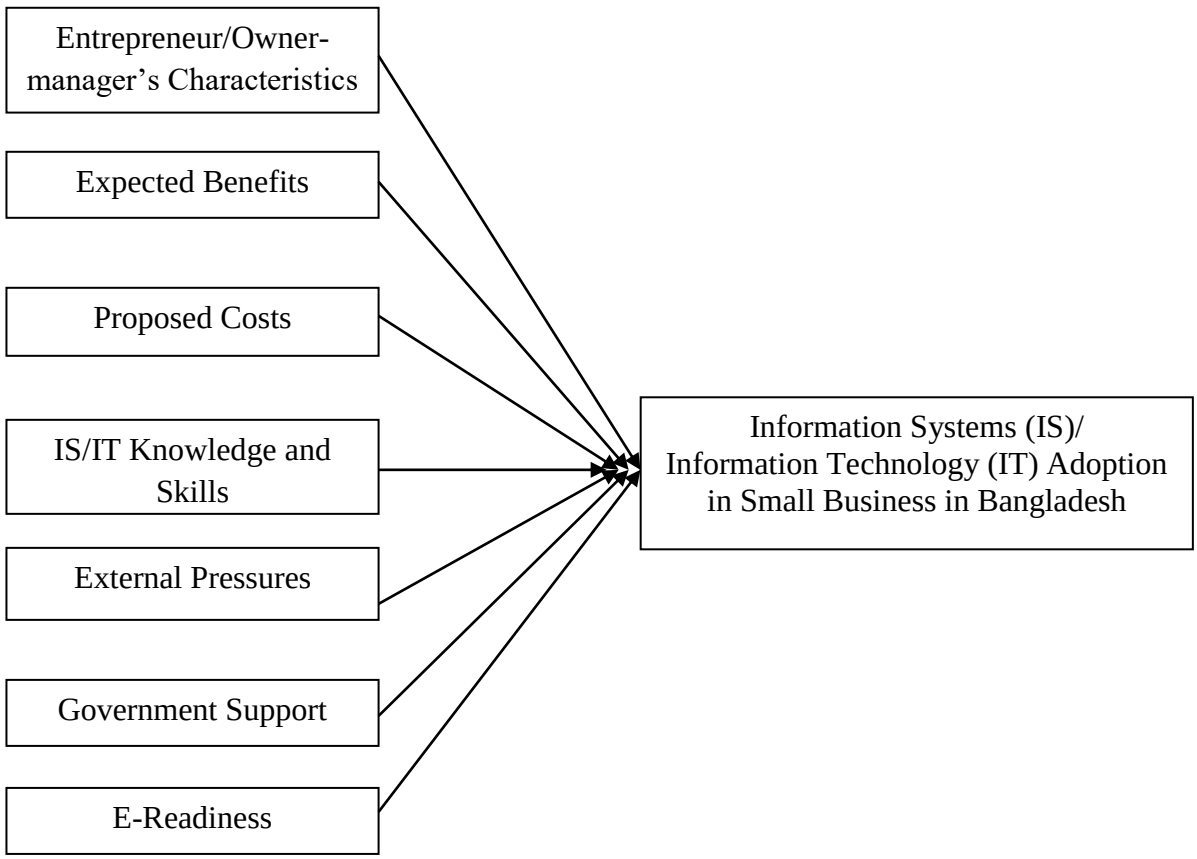


Figure : 3.4 Research Guideline (Model) for Factors Affecting in IS/IT Adoption in Small Enterprises (SEs) in Bangladesh

Source: The Author

On the basis of above discussion, we may summarize some external reasons of sickness of small firms in Bangladesh in the following table (Table – 3.3).

Table 3.3: Small Business's External Cause of Sickness

Causes of Sickness	In percentage (%)
Slower rate of authorization and allocation of loans	22
Inadequacy of working capital	21
Problem in power and energy	15
Frequent change in government policies (import liberalization)	13
Irregular supply of raw material and other vital inputs	11
Natural disasters	05
Smuggling, political instability	05
Others	08

Source: Export Promotion Bureau (EPB) of Bangladesh (2014).

3.5 An Overview of Business Research

Research is a methodical examination carried out to intensify the understanding and knowledge and to establish truths and principles. Research refers to a vigilant examination or analysis for searching new facts in any branch of knowledge. It consists of the formation of ideas and generation of knowledge that lead to new and improved insights and the development of new materials, devices, products and processes. Basically, research is a scientific approach of answering a research question, solving a problem or generating new knowledge through a

systematic and orderly collection, organization, and analysis of information with an ultimate goal of making useful decision.

In fact the term research (or re-search) means *'to search again'*. A research indicates a study with patience and an investigation in a scientific way. The research takes a more meaningful look i.e. it collects data in order to discover some results about the subject. Business research is the application of the systematic method of examining the fact (s) about business happenings. These happenings consist of describing business prospects and difficulties, making and assessing alternative courses of action, and checking personnel and organizational performance. Business itself is more than guiding surveys (Gibson, L., 2000). This procedure includes knowledge gathering, problem identification, searching and collecting information, evaluating data, concept development, and sharing the results and their applications (Zikmund et. al. 2010).

So it is clear that business research is planned to enable the managerial decision-making process smooth and meaningful for all facets of the business: investment, production, distribution, promotion, human resources, and so on. Business research is an indispensable instrument for organization in almost all problem-solving and decision-making activities. By providing the required information on which the concerned person takes decisions and can minimize the risk of taking wrong decisions in each area. However, it is vital to note that business research is an aid to make managerial decisions, never a substitute for it.

3.5.1 Steps involved in the Research Process

Like other methods of scientific investigation, a sequence of highly interrelated activities is involved with the business research. A business research often follows a general outline; we do offer the following stages in business research -

1. Identify the research goals
2. Plan for research design
3. Preparation for sampling
4. Data collection
5. Data Analysis
6. Developing the conclusions and making the report.

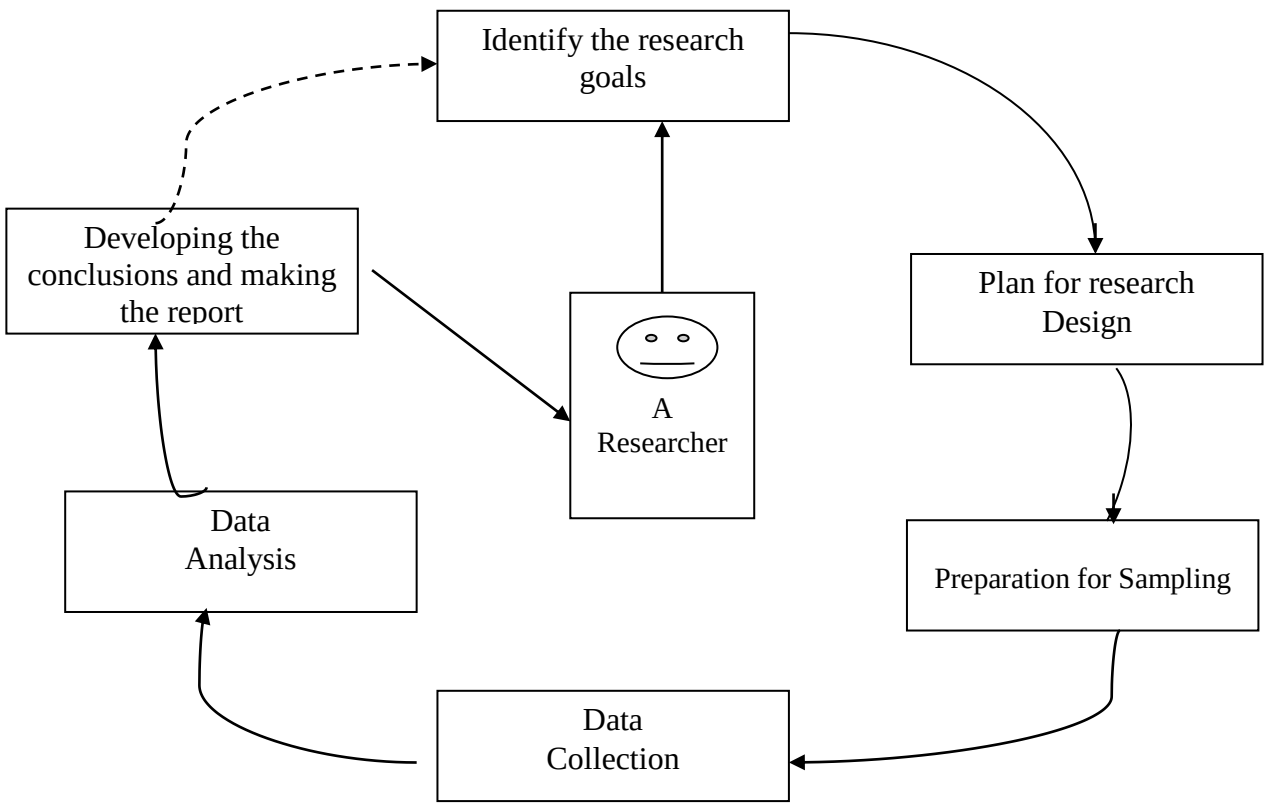


Figure: 3.5 Steps of a Comprehensive Research Process

Source : Adapted from Zikmund et al. (2010).

3.5.2 Flowchart of the Business Research Process

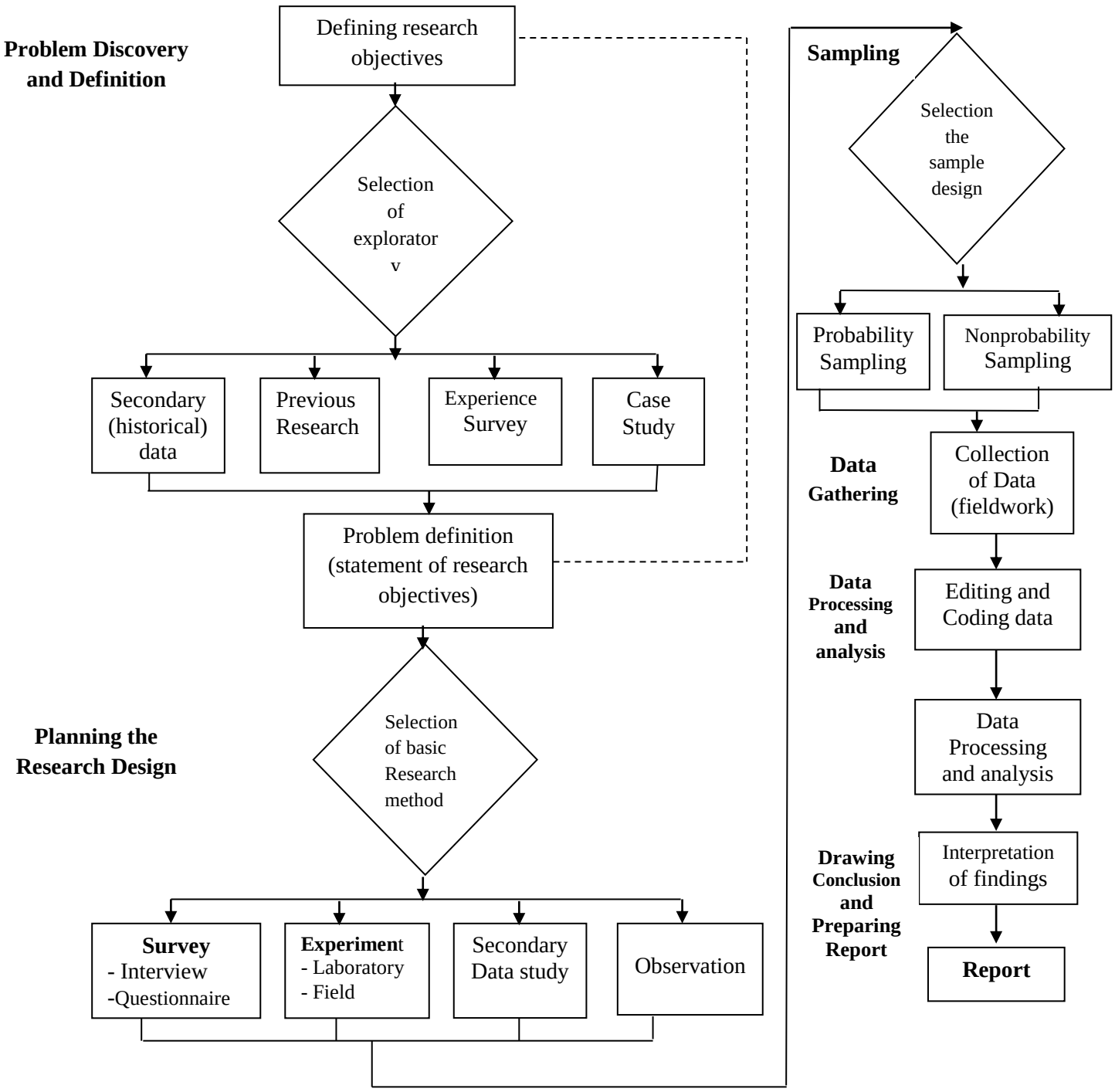


Figure: 3.6 Flowchart of the Business Research Process

Source : Adapted from Zikmund et al. (2010).

Note: Diamond-shaped boxes specify steps in the research procedure in which a choice of one or more methods need to be applied. The spotted line specifies another path that avoids exploratory study.

3.6 A Comprehensive View of Research Method and Research Design

The word method means a special technique assumed in any branch of intellectual action devoted for exposition or for investigation of any facts or figures. In other words, it means a procedure to attain an object and a systematic arrangement what refers to a branch of logic that teaches how to arrange thoughts and topics for investigation, exposition or literacy composition. Thus, it indicates a systematic organization of ideas and topics (Islam, 2002). In a simple term, method means a way of doing anything, especially on the basis of the overall plan. The research methodology is a way to scientifically solve the research problem. It may be assumed as a science of studying how research is done systematically (Kothari, 2004). In other side, the word methodology means the science of the method.

Research methodology is a way of solving the research problem methodically. It may be understood as a science of reviewing how an investigation is made systematically. In methodology, we investigate the different stages of an object that are usually assumed by a research in studying the research problem laterally with the judgment behind them. For a researcher, it is essential to distinguish not only the research methods/techniques but also the methodology. Investigators not only need to know how to build a certain test, how to estimate the mean, the mode, the median or the standard deviation or chi-square and so on, how to relate particular research methods, but they also need to know which of these methods or techniques,

are relevant and which are not. So, this is obligatory for an investigator to project a methodology for his/her problem and it may differ from problem to problem. For example, an architect, who designs a building, has to deliberately evaluate the basis of his/her design, i.e., he has to assess why and on what criteria s/he chooses particular size, number and position of doors, windows and ventilators, uses particular materials and not others and the like. Similarly, in research the scientist has to describe the research conclusions to assess before they are executed. S/he has to classify very clearly and accurately what judgment s/he chooses and why s/he selects them so that they can be calculated by others also.

Primary Research Methods and Techniques

The flow chart of primary research method and techniques is depicted as under:

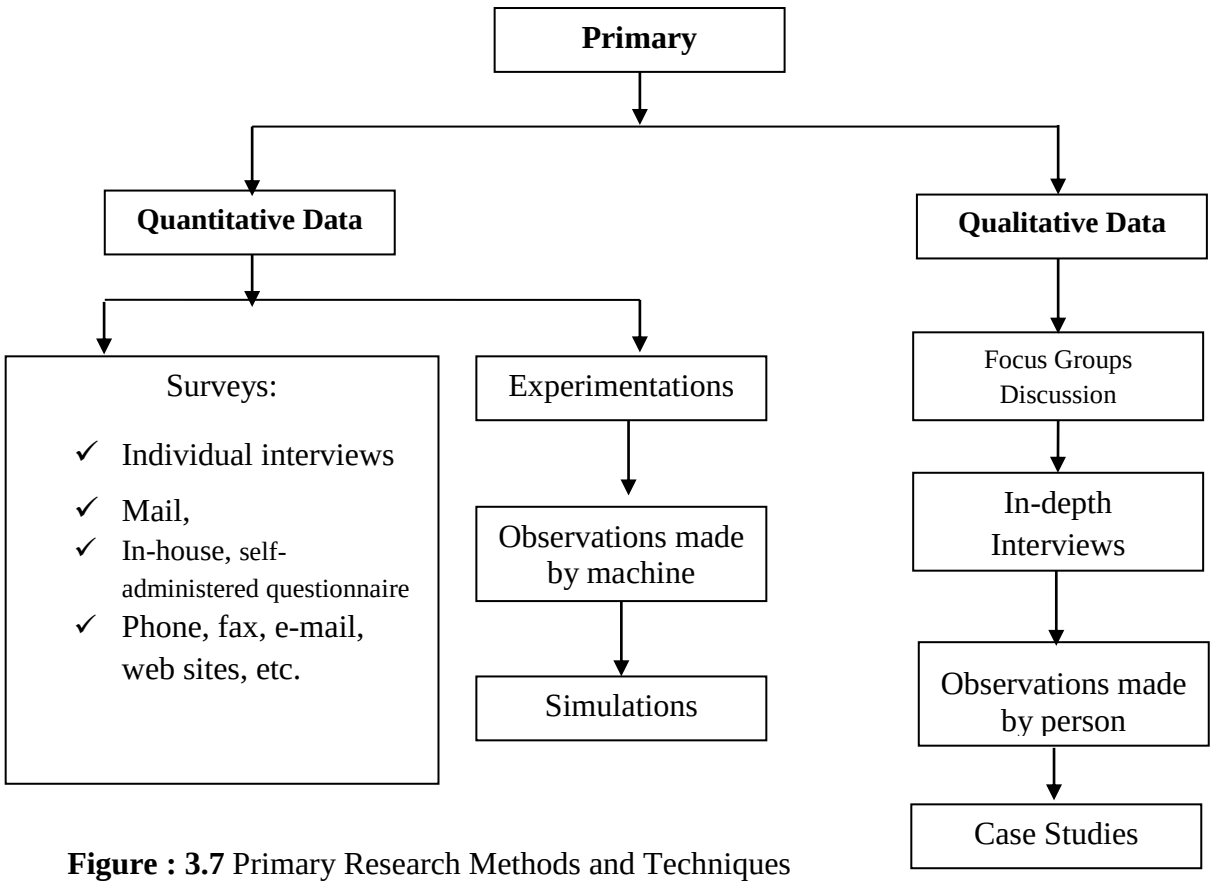


Figure : 3.7 Primary Research Methods and Techniques

Source : Adapted form Kothari (2004)

3.7 Quantitative Research vs. Qualitative Research:

Quantitative Research is based on the numerical dimensions of some characteristics. It is related with the events that can be stated in terms of quantities. A quantitative business research can be defined as a research in business filed that reports research goals over experimental evaluation that contain numerical dimension and analysis approaches (Zikmund et al., 2010). For example, quantitative research is fairly suitable when the aim of a research encompasses a managerial action standard. For instance, a food processing corporation is thinking to modify its formula. The new recipe was tested with a sample of consumers. Each consumer ranked the product by numeric scales. Authority set a rule that a majority of clients ranking the new product higher than the old product would have to be recognized with 90 percent confidence before changing the old formula. A project like this can include both quantitative measurement in the form of numeric rating scales and quantitative analysis in the form of applied statistical procedures.

On the other hand, **qualitative research** is related with qualitative happenings, i.e., phenomena relating to value, worth or kind. For example, a research team of real estate company is involved in examining the reasons for a specific pattern of human behavior (i.e., why most of the middle class people in Dhaka City recently are less interested to purchase apartments than previous?).The aim of this type of research is to find out the fundamental reasons of less booking for apartments and the ultimate desires of the people. Here an in-depth interview may be real technique to identify the attitudes of middle class people in Dhaka City.

Figure-3.8 : Design of Qualitative Research
Source: Adapted from Yilmaz (2013)

The following points are important to differentiate qualitative research from quantitative research and for an understanding of the advantages of one over the other:

1. In a qualitative research, cases are designated decisively. This is in contrast to the quantitative research, where a great deal of data signifying the population is randomly selected.
2. Qualitative research is usually carried out through unstructured or semi-structured techniques e.g. individual in-depth interviews or group discussion, while the quantitative research follows structured interviews such as questionnaires, fax or telephone interviews.
3. Data analysis in qualitative research is usually non-statistical, while quantitative research heavily depends on statistical analysis followed by statistical tests.
4. In qualitative research, results/outcomes are not decisive and cannot be used to create an

overview about the population. In quantitative research, results/outcomes are decisive and can be used to endorse a final course of action.

5. In qualitative research, researcher's role receives superior devotion. This is because in qualitative research, the possibility of the researcher taking an unbiased role is realized as more challenging in applied and/or logical term. While quantitative data analysis can produce variability of forms, it differs from quantitative analysis in its focus on language, signs and significances. Moreover, qualitative research presents its analysis universally and contextually, rather than being reductionist and isolationistic.
6. Qualitative research techniques are used for examination (i.e. for hypothesis generation) or for explaining and puzzling measureable outcomes. Quantitative research methods, by contrast, are more focused on and are used to test hypothesis.
7. Qualitative research is frequently used for evaluating policy and strategy-oriented research. Because it can answer certain significant queries more professionally and effectively than quantitative methods.
8. Qualitative research methods have the advantages of permitting for additional variety in response and the ability to familiarize to new developments or subjects throughout the study procedure.
9. It may be costly and time-consuming to conduct a qualitative research. On the other hand, quantitative research may save time and cost. But several arenas of research apply qualitative methods that have been explicitly designed to offer added concise, cost-efficient, and timely outcomes.

The philosophical arguments regarding research methodology in the field of information systems have gone through a numerous academic 'terminology' surrounding quantitative and qualitative methods. Again, these quantitative and qualitative methods can be considered as a broad classification of research methodology currently used by social science and anthropological researchers. Different researchers have introduced different concepts, i.e. terminology for explaining their logic and understanding to profess the use of a particular methodology (i.e. either quantitative or qualitative) as they perceived and believe as a process of scientific research from an epistemological point of view. Whatever the terminology used by the researchers, however, basically it reflects the arguments either for or against the quantitative or qualitative approaches. The fundamental expectations of the quantitative and qualitative models result in changes which encompass beyond logical and procedural arguments. The two paradigms have given rise to diverse journals, diverse sources of funding, diverse expertise, and diverse methods.

Figure-3.9 Nature and Types of Research

Source : Adapted from Kothari (2004)

The core aims of the study are to explore and explain the IS practices with the deep insight understanding strategic essence in small business in Bangladesh. The study is aimed at examining how small businesses in our country may come up with the information technology and they can be benefited by the application of information system.

For the present study in relation to research topic due to absence of literature on developing countries like Bangladesh, researcher has to review the bulk of literature on developed countries. Thus the researcher has obtained adequate understanding of the research issue but felt that in the context of Bangladesh the theory testing as well as theory generation can be appropriate. Indeed, due to all the above arguments and with a reference from Baker (1991), Bonoma (1985), Bonoma et al. (1977), Brannen (1992), Gordon and Langmaid (1988), Goodyear (1982), Miles (1979), it will be the best justification for choosing and using both qualitative and quantitative research approach for this research.

In social sciences, quantitative as well as qualitative research signifies the methods of collecting data that each method is taken into consideration to indicate different norms about the nature and purpose of the research (Bryman,1988) . To differentiate between the two paradigms of research, the quantitative model is assumed to ensure a positivistic, hypothetic inferential and natural view of world (Reichardt and Cooks, 1979). In contrast the qualitative paradigms is supposed to contribute to a phenomenological, inductive, universal, independent, process oriented and social anthropological world view. Reiterating the last part of Reichardt and Cooks (1979) distinction, Deshpande (1983) points out that the symbolic predominant in the quantitative paradigm is that of natural sciences. Under the consideration of this paradigm researcher objectively develops a

priori model and then derived some hypothesis from the model which are subjective to empirical test with some related closed questions prepared by the researcher. Then the respondents within a specific boundary provide the answer as researchers' need to verify a priori model. According to Anderson (1983), these processes create an ideal view of science and offer an eventual source of data that is used for getting qualified information accurately. The natural world view of the systematic technique indicates its exponents (e.g. Hunt 1983) to believe that this science model is decent science while any substitute must suffer by comparison (Mitroff, 1974).

Table : 3.4 Usage of Qualitative Research and Quantitative Research:

Qualitative Research is used to	**Quantitative Research is used to**
✓ Build an primary understanding of an object or concern, ✓ Search a range of concepts and spirits or outlooks relating to something, ✓ Understand different perspectives between different clusters and classes of people, ✓ Expose fundamental inspirations and issues that guide decision making process, ✓ Offer information required in designing a quantitative study, ✓ Enlighten the outcomes or findings from a quantitative study.	✓ Recommend a concluding progression or development of achievement, ✓ Identify whether there is agreement on a particular issue, ✓ Develop outcomes or results about a greater population, ✓ Classify indication concerning causes and effect relationships, ✓ Describe characteristics of relevant groups of people, ✓ Test specific hypotheses and examine specific relationships, ✓ Identify and size market segments

Source: The Author (constructed based on Reichardt and Cooks, 1979)

This research primarily based on Information System / Information Technology in Small Business (SB) in Bangladesh is multifaceted, dynamic and not well structured; the multi-method approach is adopted in the fieldwork and also for analyzing collected data. Moreover, small business in Bangladesh is in very poor condition / old tradition but it is employment creating engine. Many initiatives are taking place to improve the performance of industry as a whole. Industry scenario is generally based on quantitative data from multiple sources specially documented and published source, but there is always a criticism of this type of data because of bias about the data. In order to overcome this type of criticism, multi-method approach in data collection is used that will reduce bias and at the same time will increase validity of the data.

As Pettigrew (1990) mentioned while no single method is completely reliable, measures can be taken to increase the validity of data. In the present case, the use of multiple observers and multiple sources of documentary data were built-in checks, which also prevent over identification with the views of particular information and widen the range of data collection.

The stages of initial model were: familiarization with the field, data collection from the field, and the revisits of field. Lincoln and Guba (1985) highlighted the importance of determining successive phases of the inquiry. They suggest three phases for any study. The first phase is *"Orientation and Overview",* the second phase is *"Focused exploration"*, and the third phase is *"Member check.* Walker (1985) also suggests three phases in designing the qualitative search model and these are: Preliminary phase, Principal phase, and Validation phase. Although the

different phases have been used, the explanation provided by both methodologists is appeared to be identical.

Ackroyd and Hughes (1993) has emphasized two aspects in collecting data: First, it is necessary for social researcher to take appropriate precautions as far as is possible to ensure that the data is reliable. Second, since there is not really and way of resolving problems entirely, it is also wise to regard survey data as indicative rather than definitive evidence. Regarding the first point, it is possible to check the responses of respondents by the use of different questions on the same topic, to as open-ended questions as well as fixed answer questions, in short to probe the test the validity of the answer being given. It is also valuable to pilot a questionnaire and to consider the responses given reflectively.

3.8 Population and Sampling

The population for this study was small and medium enterprises as defined by latest industrial policy (Industrial Policy – 2016) of Bangladesh. The exact geographic area of the population was Dhaka city and its adjacent area. I collected a list of owners or entrepreneurs from Small and Medium Enterprise (SME) Foundation as well as from Bangladesh Small and Cottage Industries Corporations (BSCIC). I visited the firms of Dhaka city of different categories and conducted an interview with the owners or managers or key persons and collected relevant data. Moreover, I made a successful session with a good number of owner-managers in SME Foundation when they were present in attending training program. During the break time or at the end of the day, they assisted me to give relevant information about their firms or entities. Total number of surveyed firms was 68.

Fink (2013) argues that how sampling techniques are determined and which one is a suitable technique of simplifying outcomes for a big population. Uprichard (2013) extended an argument of applying random sampling technique as a collection mode that permits every object of the population has an equal chance of selection. Daniel (2012) stated the differences between non-probabilistic and probabilistic sampling technique where the key difference is one of chances of selection. We know that random sampling is an ideal method, depending the size and dispersion of small businesses in Dhaka city, this was as a viable method. Therefore, I used a convenience sampling method based on availability of owner-managers and the membership in SME Foundation and Bangladesh Small and Cottage Industries Corporation (BSCIC).

The principles of selecting participants (samples) were that who had fulfilled the terms and conditions of definition of small business as prescribed by the Industrial Policy – 2016 and who were members of SME foundation and BSCIC. I have even collected data from the firms who were not the members of said organizations. The applicability of the population depends on the variety of business categories. The population comprised of electronic and electrical Products, fashion house, plastic firms, IT firms, jute-made products, online shopping, leather-made products, retail store, wholesale firms, landscapers, and other service firms.

3.9 Ethical Issues in Research

Theoretical research needs retain the degree of reliability and dependability when carrying out research doings. My moral responsibility is to maintain the secrecy of the member firms who have participated in the process and all data. Some of the participants such as owner-managers or key persons of the entity request me not to disclose their information. As a result this survey does not include any special or administrative information.

3.10 Data Collection Techniques

In social research, numerical data collection techniques are usually applied such as self-directed (organized) survey interviews (Bryman, 2012). The self-directed or self-structured survey is helpful because it lowers costs; it maintains the speed and ensures the right quantity. Moreover, it is free from investigator's biasness and inconsistency and even it is very useful to the respondents (Bryman, 2012). I have applied a self-guided interview technique because of study reliability and validity. I have used the subsequent steps of my self-guided survey approach. First, I acquired a member lists of Bangladesh Small and Cottage Industry Corporations (BSCIC) and SME foundation. Moreover, I have collected data from firms not enlisted in BSCIC and SMEF those are situated in Dhaka city and its adjacent areas. Secondly, I went to the firms and interviewed with the owner-manager, key person/CEO, IT specialist (s), and others. I met a group of small business owners who came to attend 3 days or 5 days training session either in SMEF or BSCIC. At the end of session or break time, I conducted my survey as like as focus group discussion. My survey questionnaire is included in Appendix Part of the study.

3.10.1 Field-Work

Fieldwork is a study that is comprised of practical works and that are attained away from school, college, university or place of work. Fieldwork is consisted of two phases:

3.10.1.1 Phase-One : **Orientation** and **Familiarization**:

This phase concentrates on real condition of small businesses or small and medium enterprises (SMEs) in Bangladesh. The main thrust of first stage is to familiarize with the small and medium enterprises getting acceptance from the management to conduct research; developing trust;

gaining unrestricted access to all documentary sources; collect maximum data to broaden the reason and process of implementing different aspects of business decisions.

The experience and knowledge gathered during this stage will help not only to support or to modify the theoretical framework but also to validate the research model. Lincoln & Guba (1985) told us that the objective of this first phase [orientation and overview] is to obtain sufficient information and ensure what is important enough to follow up the detail.

3.10.1.2 Phase-Two: **Data Collection from the Field:**

The second stage of the research model was *"Data collection from the field."* This phase is largely dependent upon the analysis of previous phase to determine the interview structure, the sample size and the exact standing data. The primary model of collecting data is interviewed and followed by open ended questions as it was planned for specific time period (minimum three to six months) to attain the minimum number of interview from the selected sources (Lincoln and Guba, 1985). They opine that sufficient time must be allowed between phase 1 & 2, and more structured protocols (interview, discussion, and others) should be built accordingly in the phase-two. Wilkinson (1983) said that questions should be put to interviewees which were generally determined prior to the interview.

Moreover, the process of selecting the small firms for interview is largely dependent upon the access to the firms. Having discussed the research problem with the owner-managers or key persons of a good number firms or entities, they told me not to provide every detail of their firms. The researcher understood the sensitivity of data. On the other hand, researcher has got

time constraint to finish the study. Finally the researcher had taken interviews with 68 owners or key persons or managers as well as IT specialists of 68 small firms selected earlier in this study.

3.10.2 Interview Method

Interview is essential in any field of research. Generally, interview is one of the most extensive knowledge-generating processes in the field of social sciences. There are several types of interviews like formal interviews and informal interviews. Formal interviews, for instance, include conducting a survey through the Internet or over the telephone or in face-to-face interaction. On the other hand, ethnographic fieldwork is an example of informal interview. Interviews can also be more organized (structured) or less organized. In an investigation oriented research, standardized questions are often asked to pursue responses that are not open to say in a quantitative research. On the other hand, most qualitative interviews are less-organized or semi-organized (structured). In a semi-structured interview, the investigator may depend on some structure-based questions or guidelines or on his/her area of interests. The investigator enjoys some flexibility and permits room for the respondent's natural explanations and descriptions.

In order to cover the majority of the content of my research, I have used a semi-structured questionnaire and self-structured or self-administered interview approach. It is added that I have taken interviews of the owner-managers or key persons of 68 small firms. The successful firms in terms of revenues/profits and goodwill at each level of small business sector would be identified and contacted. For collecting data, snowball sampling or some other relevant sampling methods or techniques would be applied. A snowball sampling is a sampling technique in which the investigator accumulates data from limited members of the target population he / she can

locate. Then s/he requests those persons to deliver required information and locates other members of that population whom they know. Interview with the respondents often led to contacts with respondents within the same firms, stratum, or in another stratum of IS/IT. There are 68 interviews with the key persons / owner managers from (firms included in the Appendix) in this study. Data will be collected in between July 2018 to December 2018. All measures were anchored on a 5 point Likert Scale which is reviewed by several seasoned researchers.

After embracing their feedback, the instrument was then pretested with multiple owner-managers on key-persons. The comments and suggestions of key person were carefully appraised and incorporated in the final version of the questionnaire. Once an individual or a firm decided to join in the interview session, a short-lived synopsis of the research goals and a copy of the interview protocol should be delivered (Spradley, 1979). A semi-organized interview guideline should be used to ensure comparability of the results and an extent of flexibility should also be offered the respondents in hunting insights information or in understanding the unique practices and programs that can be treated as evidence during the interview session. During each interview, comprehensive records would be taken for future references. These notes are then decoded into organized case write-ups to escape "data smothering" (Pettigrew 1990). Finally, each firm is regarded as a "stand-alone entity" to help recognizing unique shapes and to authenticate universal model in cross case comparisons (Eisenhardt and Graebner 2007). In this research, I have preserved all the questionnaires (68 questionnaires) and completed necessary notes after completing the interview session.

3.10.3 Observation

Observation is one of the important tools in qualitative research. This method illustrates how an observation can be made and applied to discover several matters in a particular study. Observation may occur in different forms. Generally it takes place in visual form. An investigator may notice workers in their workstation, customers in their family. He/she tries to get information from photographic records. Observation can either be very economical, such as when an exploration committee sits together and merely notices the performance or behavior of the participant, but it can be very costly. In most of cases, it takes a great deal of money to study the participant. Observational study is highly beneficial for attaining comprehensive knowledge about the things that respondents will not express. So observation is one of the most common and useful methods of data collection in qualitative research. To this end it has been observed that data is necessary from multiple sources since the multi-level management people (such as CEO or owner-manager, managers of different levels i.e. IT manager, operation manager, customer relation manager) are directly involved in such IS practicing activities. Here, I have observed the practices of a few small entities and finally have taken notes.

3.10.4 Documentary Analysis:

In a qualitative research, when required documents are clarified by the investigators to develop understandings and find results about an object or event, this is known as document analysis. This technique includes the desired contents by coding them into similar form so that the investigator (s) can evaluate it later successfully.

3.11 Techniques of Data Analysis

In this study, descriptive statistics and Cronbach's Alpha Test are applied by me in evaluating the data. I have done all-inclusive exploration by my laptop computer for the study. Statistical Package for Social Science, commonly known SPSS, Version 20 is used in examining the collected data.

3.12 Descriptive Statistics

Descriptive statistics are used to define the elementary features of the data in an investigation. They offer an ordinary abstracts or synopses about the sample and the measurements. Descriptive statistics are applied to represent quantitative explanations in an adaptable form. These techniques assist us in streamlining huge volume of data in a workable way. For example, the Grade Point Average (GPA) states the general performance of a student diagonally a wide range of course experiences. The use of descriptive statistics in information systems in small business is well recognized mean for the purpose of filtered concepts and the discrete measures that comprises of the elements (Fawcett and associates, 2011). We may depend on most commonly used descriptive statistics that measure location, variation, and linear association (Johnson and Wichern, 2007).

3.13 Summary

This chapter presents the ideas and measures of IS/IT attainment in small businesses in Bangladesh; the preliminary outlines for examining IS/IT adoption process and its success in small business; researcher outline (model); common ideas of research method and methodology;

etc. It also presents several methods used in the field of information systems (IS) oriented research. The author of this study has found a gap in prior studies which entrusts the author to carry out this study reasonably to minimize the existing methodological gap. As a result, the researcher tries his level best to enlighten research methods for this study considering research questions, objectives, and study field. Moreover, the rationalization of the selection of the methods for this study explains throughout this chapter. The chapter five of this study has presented the collected data from primary and secondary sources on the basis of methods discussed in this chapter. Moreover, the next chapter (chapter four) would present the overall scenario of small business (SB) in Bangladesh.

CHAPTER – FOUR: THE SCENARIO OF SMALL BUSINESS IN BANGLADESH

4.0 Introduction:

"Bangladesh is now on Development Highway: The Time is Ours" – can be said by us confidently during the beginning of 21st Century. The government of Bangladesh has formulated the *Perspective Plan* (2010 – 2021) on the basis of this vision. The implementation of the targets and strategies of the *Perspective Plan* has already been largely accomplished with the completion of the 6th Five-Year-Plan (2011 – 2015) and ongoing 7th Five-Year-Plan (2016-2020). A significant achievement in this regard is the graduation of Bangladesh to the rank of lower-middle income countries. In the light of our successive progress towards becoming a prosperous country, we have also wished for the *Vision 2041* declared in 2014.

This is the ultimate goal of Bangladesh is to develop herself as a middle-income country by the year 2021. In order to fulfill this target, she demands for a great deal of investments from both inside sources as well outside sources. In this regard, we got different types of assistances or supports from several growth associates in the form of loan and grants and these were the important bases of resources. Recently, the flow of these type of funds are decreasing day by day. So this is the major concern of present government to encourage capital formation and investment for increasing more employment opportunities. In this regard, small and medium-sized enterprise is one of the best segments that can offer huge employment opportunities with minimum capital. The next two tables (Table-4.1 and Table-4.2) represent the current status of socio-economic progress of Bangladesh that we have achieved over the last two decades.

Table 4.1: **Socio-Economic Progress of Bangladesh**

Year	Life Expectancy (Year)	Growth Rate of Population	Rate of Poverty (in percent)	Rate of Extreme Poverty (in percent)	Rate of Literacy (in percent)	Rate of Infant Mortality Rate (Per thousand live birth)
2007	66.6	1.47	36.8	22.60	56.1	43.0
2008	66.8	1.45	35.1	20.98	55.8	41.0
2009	67.2	1.36	33.4	19.30	56.7	39.0
2010	67.7	1.36	31.5	17.60	56.8	36.0
2011	69.0	1.37	29.9	16.50	55.8	35.0
2012	69.4	1.36	28.5	15.40	58.8	33.0
2013	70.4	1.37	27.2	14.60	57.2	31.0
2014	70.7	1.37	26.0	13.80	58.6	30.0
2015	70.7	1.37	24.8	12.90	63.6	29.0
2016	71.6	1.36	23.2	12.10	71.0	28.0
2017	71.9	1.35	22.8	12.0	73.0	25.0
2018			21.8*	11.3*		

Source: Adapted from Bangladesh Bureau of Statistics (BBS), General Economic Divisions (GED), 2018 . * The Daily Prothom Alo, November 07, 2019.

In the above table (Table - 4.1), it is stated that we have achieved a remarkable progress in overall socio-economic sectors such as life expectancy, rate of population growth, rate of poverty, rate of hardcore poverty, rate of literacy, rate of child mortality, and others. For example, poverty rate in 1980 was 58.5%* 2005 was 48.9% and it is 21.8% in 2018. It is added

that by the year 2021, it will be less than 20%*. Moreover, we have reduced our infant mortality rate 18% (43.0% in 2007 and 25.0% in 2017).

Table 4.2 **: Socio-Economic Achievement during 2001-06 and 2009-2017**

Indicators	2001-2006	2009-17	2017-2018
GDP Growth Rate (%, Annual Change)	5.40 (Avg.)	6.44 (Avg.)	7.24
Investment (as % of GDP)	25.2 (Avg.)	28.46 (Avg.)	30.27
Exports [Billion US$]	10.5 (FY06)	34.85 (FY17)	34.85
Remittance [Billion US$]	3.5 (Avg.)	13.40 (Avg.)	12.77
Foreign Exchange Reserve [Billion US$]	2.63 (Avg.)	19.68 (Avg.)	33.41
Budget Size, [Billion BDT]	497.44 (Avg.)	2035.9 (Avg.)	4,003
Per Capita Income [Billion US$]	543 (FY06)	1,602 (FY17)	1,602

Source : Adapted form Finance Division, Bangladesh Bank (2018) and Bangladesh Bureau of Statistics (BBS, 2018)

The Table – 4.2 represents socio-economic achievement during 2001-06 and 2009-2017. We have achieved a lot in the various vital sectors of our economy like GDP, export, investment, remittance, foreign exchange reserve, per capita income, etc. we should mention that our per capita income in 2006 is only $ 543 whereas it was $ 1602 in the financial year 2017 and it will be more than $1900 by the end of the year 2019.

According to the very recent survey conducted and published (February 11, 2019) by Centre for Policy Dialog (CPD), every year we get 2.3 million graduates and we both private and public sectors can make sure their employment opportunities only for 1.3 million graduates and 0.8 million are work less. This is a great challenge to accommodate them in working environment. The contribution of small business is essential to the socio-economic progress of a developing country like Bangladesh. Small business segment may encompass huge workforce within the shortest possible time with a limited capital. Moreover it is able to increase gross domestic production or national income by creating employment opportunities. As a result, we can achieve our Millennium Development Goals (MDGs) by reducing hardcore poverty and starvation. The small businesses can empower our women community, half of the total population, and ensure to limit gender biasness. Due importance on small business has given by India, our bordering countries. They consider small business as '*employment producing engine'*. They put high attention on small and medium enterprise expansion for achieving higher economic growth, reducing income disparity, and poverty mitigation program. Recently the government of Bangladesh has put the top most priority on the progress of small and medium enterprise sector and acknowledged SME sector as '*the power house of industrialization*'.

Table 4.3: **Investment and Employment Generation in Small and Cottage Industries Sector (June 2017)**

1	Industrial Estates	74
2	Industrial Plots	10,389
3	Plots allotted	10,053
4	Industrial units allotted	5,822

5	a) Total units under production	4,547
	b) Export oriented units	946
6	Total Investment	Tk. 20,178.17 crore
7	Employment	5,64, 319 persons
8	Total Production	Tk. 55, 262.26 crore
9	Export	Tk. 25, 528.46 crore
10	Revenue paid to the Government	Tk. 3,584.85 crore.

Source: Adapted from MIS Report, Management Data Center, BSCIC (July 2016 to June 2017)

In the table 4.3, we get an idea relating to investment and employment generation in small and cottage industries sector only. After liberation, we have done a good job in industrial sectors but which is little bit insufficient in terms of huge population. So small business will be good platform for accommodating our uncountable unemployed young generation.

Policy makers, academics, businessmen, and people in general pay an imperative attention on growth and development small type business. They believe that it is almost impossible to make sure the socio-economic progress without the smart development of small and medium scale firms. So we can claim that small and medium scale business is a prime driving force for our economic development. Small business (SB) or SME encourages sole proprietorship. This type of firm or entity can offer people to establish themselves as entrepreneurs. It may be a foundation of entrepreneurial skills. Due to its small size, small firm can familiarize itself rapidly to dynamic market condition. It offers expanded economic actions, and creates a noteworthy support to exports and trade.

Since small businesses (SB) are founded on comparatively small fund, their existence largely depends on local market with smooth entrance. In this regard, small business has to face some challenges such as lack of available funds, limited access to the national and international market, lack of customer-supplier intimacy, and so on. So an integrated effort from personal level as well governmental level is required for their remarkable progress and development.

Unfortunately, we don't still ensure a complete database of small business at the national level. The complete database can sketch out a meaningful picture of the small business (SB) scenario in Bangladesh. Small and medium enterprise (SME) Foundation, Bangladesh Small and Cottage Industries Corporation (BSCIC), the Bangladesh Bureau of Statistics (BBS), Bangladesh Bank and some other wings of government provide partial scenery on the industrial enterprise landscape in Bangladesh. Thus a complete country-wide databank on the small and medium enterprise (SME) sector remains an instant policy priority and it should be updated from time to time and we can enhance our need-based strategy for the overall growth and development of SMEs.

It is projected that the small and medium industry (SMI) sector which encompasses cottage, micro, and small and medium-size enterprises (CMSMEs) account for 99 (about 7.82 million economic units) percent of the private sector business enterprises (SMI, 2012; BBS Economic Census, 2013; and ADB, 2014). Here it is added that the term cottage, micro, and small and medium-size enterprises (CMSMEs) as against small and medium enterprises (SMEs) appear to be more correct for a comprehensive identification and description of the SME sector in Bangladesh. This vibrant sector occupies about 70-80 percent of non-agricultural workforce, in Bangladesh. It donates up to 25 percent of gross domestic product (ADB, 2014) and about 40

percent of manufacturing output (IFC Mckinsy, 2015). SME, the employment generating engine, employs a total of 27.4 million people (Bangladesh Economic Review 2017) and more than 40 percent total civilian labor force of the country is involved in SME sector. Thus CMSMEs in Bangladesh organize the biggest fragment of the private sector economy after agriculture. In order to ensure a sustained long-term progress in Bangladesh, a private sector-based entrepreneurial economy is largely dependent on the growth and enlargement of a vibrant SME sector.

4.1 Definition of Small and Medium Enterprises (SMEs):

At first, we should have a clear idea about the definition of small business and its basic characteristics. A study conducted by International Labor Organization (ILO) states that there are 50 or more definitions of small business in 75 countries (ILO, 1977). The definition of small business differs from state to state and from time to time. In the next few pages, we have given a good number of definitions of small business (defined by several countries) in several times. Small business may be defined on the basis of two criteria, as stated below

a. Total investment (excluding land and equipments), and

b. Total number of employees.

Moreover, other concerns are place or location; strategic method or technique engaged i.e. physical skill and/or use of technology, nature of marketplace, nature of working hours or working conditions etc. (Bureau of Labor Statistics, USA, Technical Assistance Mission, EEC, 1964).

Definitions of Small Business in Different Countries

Small businesses are defined in different countries at different times in different ways. The definition of small business varies time to time or country to country due to its level of development. Usually, the common yardsticks of measuring small business are total number of workforces, yearly revenues or incomes, and total investment. Country-wise definitions of small business are given below:

Sri Lanka:

In Sri Lanka, small business includes micro, small and medium enterprises. In Sri Lanka, the *National Policy Framework* of Small and Medium Enterprises (SMEs) defines small and medium enterprises (SMEs) on the basis of number of workers and yearly turnover. The following table (Table – 4.4) summarizes the definitions of micro, small and medium enterprises.

Table-4.4: Definition of Medium, Small, and Micro Enterprise

Size / Sector	**Standard/ Criteria**	**Medium**	**Small**	**Micro**
Industrial Segment	Yearly Revenues	Rs. 251 Million – 750 Million	Rs. 16 Million – 250 Million	Less than Rs. Million 16
	No. of Workers	51 – 300	11 – 50	Less than 11
Service Segment	Yearly Turnover	Rs. 251 Million – 750 Million	Rs. 16 Million – 250 Million	Less than Rs. Mn. 16 Million
	No. of Workers	51 – 200	11 – 50	Less than 11

Source: Adapted from National Policy Framework for Small Medium Enterprise (SME) Development, Ministry of Industry and Commerce, September, 2014.

India:

Cottage, small, and medium scale industries (CSMEs) are acknowledged as an *'employment generating engine'* in Indian economy (Smirity Chand, 2010). Since these type industries play a significant role in the whole economy, Indian government has taken a good number of initiatives to endorse them. Policy makers in India, a country with more than 1250 million people, claim that CSMEs are great source of employment (Bhagwat and Sharma, 2007). This sector contributes a lot to the industrial finished goods and exports. Industries in India are generally categorized into four groups – large-scale, medium-scale, small-scale, and cottage industries. Industries having an investment of Rs up to 10 million are considered to be as small scale enterprise. (The office of Development Commissioner, Ministry of Micro, Small & Medium Enterprises, 2010)

Japan

In Japan, small sized firms occupy key positions in the Japan. The definition of SB in Japan at present is formulated, in principle, on the basis of the Fundamental Law on Small and Medium Enterprise of 1963 (revised in 2013). Under this law, a small business is one that satisfies either one of the following criteria.

Table-4.4: Small and Medium Enterprises, SME Basic ACT (Revised September-2013)

	SME Operators		of which Micro Enterprises
Industry Type	Stated Capital	Employees	Employees

Manufacturing	¥ 300 million or less	300 or fewer	20 or fewer
Wholesale trade	¥ 100 million or less	100 or fewer	5 or fewer
Services Industry	¥ 50 million or less	100 or fewer	5 or fewer
Retail	¥ 50 million or less	50 or fewer	5 or fewer

Source: Adapted from Small and Medium Enterprises Agency, Ministry of Economy, Trade, and Industry, September 2013.

Pakistan

Small & Medium Enterprise Development Authority (SMEDA), in line with the economic development of Pakistan, defines Small & Medium Enterprises as follows, as approved in SME Policy 2007:

Table – 4.6: Definition of Small and Medium Enterprise in Pakistan

Enterprise Category	**Employment Size (a)**	**Paid Up Capital (b)**	**Annual Sales (c)**
Small & Medium Enterprise (SME)	Up to 250	Up to Rs. 25 Million	Up to Rs. 250 Million

Sources: Adapted from Small & Medium Enterprise Development Authority (SMEDA), 2007

The Philippines

The National Census and Statistics (NCS) department of the Philippines defines a small industry as manufacturing and industrial service enterprise employing 5 to 99 workers and the total investment in the enterprise including land and building does not exceed 100,000,000 peso.

The Magna Carta (2012) in Philippines defines Micro, Small and Medium Enterprises (MSMEs) as follows:

Micro: Up to Php 3,000,000 and employee from 5 to 24

Small: Php 3,000,001 –15,000,000 and employee from 25 to 49, and

Medium: Php15,000,0001 –100,000,000 and employee from 50 to 99

The United States of America

In the United States of America, an enterprise having less than 500 employees or annual sales under $ 5 million is termed as small and medium businesses (U.S., SBA 2011). The U.S. Small Business Administration (SBA) identifies diverse extent of criteria for small businesses involved in attempting for federal agreements. Such size differences are founded on industry codes and they usually reveal the number of personnel over the last one year (twelve months) or average annual revenues over the past three years. (SBA 2011: US Office of Advocacy).

United Kingdom

According to British Companies Act-1985, Section – 249, a medium-sized enterprise (ME) needs to satisfy at least two of the following conditions:

i) yearly turnover not over £11.2 million;

ii) a balance sheet total not over £5.6 million; and

iii) employees not over 250 (Bridge et al., 1998).

Canada

In Canada, a business entity with less than 500 workers and fewer than $ 50 million gross revenues per annum is known as medium enterprise. It is added that small business can have maximum 100 employees in a manufacturing oriented establishment or 50 employees in service oriented establishment. A firm having fewer than 5 workers is a micro business in Canada (F&S, 2010).

European Union (EU)

The European Commission Communication (2013) defines SMEs as follow:

'An enterprise is any entity engaged in an economic activity, irrespective of its legal form.'

Enterprises can be nominated as micro, small, or medium if it can satisfy the norms put down in the recommendation which are précised in the following table. Moreover, it must fulfill the workforce headcount ceiling and it meets either the revenue ceiling or the balance sheet ceiling, but not essentially both.

Table-4.7: Small and medium enterprises defined by European Union (EU)

Types of Enterprise	Workforce Employed	Sales Revenue (Yearly)	Balance Sheet Total
Medium	< 250 persons	≤ € 50 million	≤ € 43 million
Small	< 50 persons	≤ € 10 million	≤ € 10 million

Micro	< 10 persons	≤ € 2 million	≤ € 2 million

Source: Adapted from http://ec.europa.eu/enterprise/policies/sme/facts figures_analysis/sme_definition/ index. (November, 2018)

Economic Commission for Asia and the Far East (ECAFE)

According to the standing committee of the Economic Commission for Asia and the Far East (ECAFE), small business may be defined as an enterprise that does not take more than 20 individuals when consuming power or 50 individuals when not consuming power.

People's Republic of China

People's Republic of China is going to emerge as number one super power (economically as well politically) by the end of 2020 whereas its position in 1992 was in third in a list of world's largest fifteen economies (Pearce and Robinson, 2016). In the People's Republic of China, 95.8 percent of all the commercial establishments are small in nature and the rest 4.2 percent are medium and large enterprises (Huang, 2010). Small and medium enterprises in China are relatively gigantic in comparison to Europe or the United States. Due to the remarkable contribution of small scale as well as medium sized business, Chinese people are now leading the entire world. We, as Bangladeshi, are very much familiar with the Chinese brands which are mainly produced by small and medium entities. The following table signifies the definition of small enterprises (SEs) as well as medium enterprises in People's Republic of China.

Table-4.8: Definition of small and medium enterprises in People's Republic of China

Size of Business	Nature of Industries	No. of Employees	Total Investment	Business Turnover
Small Enterprises (SEs)	Industry	< 300	≥ 40 million RMB	≥ 30 million RMB
	Construction	< 600	≥ 40 million RMB	≥ 30 million RMB
	Wholesale	< 100	< 40 million RMB	< 30 million RMB
	Retail	< 100	< 40 million RMB	< 10 million RMB
	Transport	< 500	< 40 million RMB	< 30 million RMB
	Post	< 400	< 40 million RMB	< 30 million RMB
	Hotel & Restaurant	< 400	< 40 million RMB	< 30 million RMB
Medium Enterprises (MEs)	Industry	300 - 2000	40 million RMB - 400 million RMB	30 million RMB – 300 million
	Construction	600 - 3000	40 million RMB – 400 million RMB	30 million RMB – 300 million
	Wholesale	100 - 200	40 million RMB – 300 million RMB	30 million RMB – 300 million
	Retail	100 - 500	40 million RMB – 200 million RMB	10 million RMB – 150 million
	Transport	500 - 3000	40 million RMB – 400 million RMB	30 million RMB – 300 million
	Post	400 - 1000	40 million RMB – 300 million RMB	30 million RMB – 300 million
	Hotel & Restaurant	400 - 800	40 million RMB – 200 million RMB	30 million RMB – 300 million

Note: SE has to meet at least one conditions and ME has to meet at least two conditions.

Source: Adapted from SME Promotion Law, People's Republic of China, 2013.

Singapore

There is no officially declared definition of small enterprise in Singapore. However, a worker of less than 100 and capital investment up to US$ 500,000 seems to be as small business. It can be mentioned that a degree of flexibility is applied in classifying small business considering the progress of economic development into account (Prokopenko, Joseph, 2008).

Thailand

Table-4.9: According to the *Version – 1, Ministry of Industry*, Thailand, (February 2016), Small and Medium businesses are as follows:

Category	**Small size**		**Medium size**	
	Manpower	Capital (THB Million)	Manpower	Capital (THB Million)
Manufacturing	Not over 50 persons	Up to 50	51 – 200	51 – 200
Service	Not over 50 persons	Up to 50	51 – 200	51 – 200
Wholesale	Not over 25persons	Up to 50	26 – 50	51 – 100

Source : Adapted form Ministry of Industry, Thailand, (February 2016)

Indonesia:

According to the *Small Enterprise Act-1995, Section-9 (*Revised on February, 2008), any entity can be called as a small enterprise if it

a. retains net assets value 200 million rupiahs or less (excluding land or buildings),

b. yearly net turnover of 1 billion rupiah or less,

c. possesses by the inhabitant of Indonesia,

d. will be an autonomous economic body,

e. is directed and maintained by a single person or by a cooperative body.

Few authors and scholars have defined small business from different point of views. Some of the definitions are given below:

Stoner, Freeman, & Gilbert (1995) stated that *a business which is locally possessed and succeeded, often with very limited workers, and occupied at a particular place is identified as small business.*

Curtis et al. (1982) defined small business as *'a business with a name, single place of operations, one proprietor, and one or more staffs other than the proprietor.'*

The Federal Reserve Bank of USA (1934) acknowledged small business is one which *'is freely directed and guided by a single person and it is not a leading form in its arena.'*

The Small Business Act-1953 of the US Congress has given a definition of small business. *A business operated by one person by meeting the demand of its locality only is termed as small business.*

4.2 Definitions of Small and Medium Enterprises in Bangladesh

Like many others authorities, Bangladesh government has defined small business (SB) depending upon the number of employees and amount of funds (excluding fixed assets – land and building). The definition of small business underwent many modifications over the last six decades on the basis of its requirements in Bangladesh. In the early fifties, the Bangladesh Small

and Cottage Industries Corporation (BSCIC) defined small business as those establishments whose investment in fixed assets not exceeding Tk. 0.25 million. In the early sixties, the ceiling was raised to Tk. 0.50 million and subsequently the ceiling was again raised to Tk. 1.00 million excluding the value of land and building. This definition continued till the liberation. After independence, the definition of small scale industry underwent a further change in terms of the ceiling for fixed assets. The ceiling was raised from Tk. 1.0 million to 2.5 million.

In 1982, BSCIC in its survey report on small industries in Bangladesh defined small industry as a privately owned manufacturing unit which uses hydro or thermal power, diesel, oil or gas for any production process or for industrial service rendered, employing 10 or more but less than 20 workers; or employs 20 or more workers but does not use any electricity and whose investment in fixed assets does not exceed Tk. 2.5 million. Cottage industry which is a part of small business was defined by BSCIC in its survey report of 1983 as an industry which is carried on whole or mainly by the members of a family either as a full time or as a part time occupation employing a maximum of 10 person (if electricity is used) and a maximum of 20 persons (if electricity is not used) [Source: BSCIC, a survey in Dhaka, October 1983]

With the introduction of the Industrial Policy-1986, the ceiling for fixed investment in case of small enterprise was further revised and accordingly small scale enterprise was redefined as a business enterprise involved either in production oriented activities or service oriented activities, with a maximum investment of Tk. 15 million including investment in machinery and other equipments not exceeding Tk. 10 million (excluding taxes and duties). In 1991, Small business was defined as an industrial undertaking involved in manufacturing processes or service activities whose total fixed investment is limited to a maximum of Tk. 30 million. Whereas

Cottage Industry was defined as an industrial unit run by household associates, either full or part time, which has a total investment of up to Tk. 5,00,000. But for survey purpose small and cottage industry was defined in a different way by the Govt. of Bangladesh.

In the Industrial policy – 1999, small business was demarcated as an entity or firm which engaged less than 50 staffs and had a fixed investment of less than Tk. 100 million. Cottage industry was defined as house hold base units operated mainly with family labor. According to Bangladesh Industrial Policy – 2010, medium scale business involved in manufacturing oriented activities is a business which has workmen in between 100 persons to 250 persons and investments in between Tk. 100 million to 300 million (excluding the cost of land and factory buildings). Medium scale business involved in service oriented activities means an industry having investments in between Tk. 10 million to 150 million (excluding the cost of land and factory buildings) and employment generation in between 50-100 persons.

Small business (SB) concerned with production related activities means a business having investments in between Tk. 5 to 100 million (excluding the cost of land and factory buildings) and employment generation in between 25-99 persons. Small business (SB) involved in service oriented activities means a business having investments in between Tk. 0.5 to 10 million (excluding the cost of land and factory buildings) and employment generation in between 10-25 persons. Micro enterprise (ME) is a business entity having investments in between Tk. 0.5 to 5 million (excluding the cost of land and factory buildings) and employment generation in between 10-24 persons.

Table – 4.10 Definition of Micro, Small and Medium Enterprise signified by the Industrial Policy-2016 (the latest industrial policy in Bangladesh)

a) **Manufacturing SMEs:**			
Criteria (at least one norm must be met)	Micro Industries	Small Industries	Medium Industries
Value (replacement cost) of fixed assets excluding land and building	Up to Tk. 10 - 75 lac	Tk. 75 lac – 15 Crore	Tk. 15 – 50 Crore
Nos. of Workers	16 – 30	31 – 120	121 – 300*
b) Non- Manufacturing SMEs (Service Oriented SMEs):			
Criteria: any one of the two to be met	Micro Industries	Small Industries	Medium Industries
Value (replacement cost) of fixed assets excluding land and building	Less than Tk. 10 lac	Tk. 10 lac – 2 Crore	Tk. 2 – 30 Crore
Nos. of Workers	Up to 15	16 – 50	51 – 120

* It is added that number of workers in RMG sector will be up to 1000 persons for manufacturing SMEs.

Source: Adapted from SME Foundation, 2018 (April)

Bangladesh Bureau of Statistics (BBS):

On the basis of number of workers, Bangladesh Bureau of Statistics (BBS) has defined small business. Firms engaging workers between 1 to 9 are entitled as micro; firms engaging workers between 10 to 49 are termed as small; establishments engaging workers between 50 to 99 are entitled medium establishments. Finally, the enterprises having workers 100 or more are named as large firm. (BBS' Economic Census 2004/2005, Business Registry 2005/2006)

Bangladesh Better Business Forum (BBBF):

The definition developed by Bangladesh Better Business Forum (BBBF) of small and medium enterprises is summarized the following table:

Table - 4.11: Definition of SME suggested by the BBBF in 2008

Enterprise	Area	Size of Capital or Fixed Assets	No. of Workers
Small	Service	Total fixed assets Tk. 50,000 – Tk. 5 million (excluding land and building)	Less than 25
	Trade	Total fixed assets Tk. 50,000 – Tk. 5 million (excluding land and building)	Less than 25
	Manufacturing	Total fixed assets Tk. 50,000 – Tk. 15 million (excluding land and building)	Less than 25
Medium	Service	Total fixed assets Tk. 5 million – Tk. 100 million (excluding land and building)	Less than 50
	Trade	Total fixed assets Tk. 5 million – Tk. 100 million (excluding land and building)	Less than 50
	Manufacturing	Total fixed assets Tk. 15 million – Tk. 200 million (excluding land and building)	Less than 150

Source : Bangladesh Better Business Forum **(**BBBF), 2008

According to Bangladesh Executive Committee for National Economic Council (ECNEC),

"A Small Business is one which possesses at least two of the subsequent features:

1. Administrators are the proprietors,
2. Fund provider and the owner is individual or a very small group,
3. Both owners and workers are local people,
4. Marketplace is relatively smaller in comparison to their counterpart large scale business in terms of turnover, workers etc.

Operational Definition of Small Business:

From all of the above definitions, we can have an operational definition of small business:

A business organization does not rule in its domain; hardly engages in any innovative marketing strategies; its workforces come from locality and they are mainly occupied at a particular operating site; its manufactured goods are comparatively small in quantity; and its almost all activities are executed by the owner or his/her family members is known as small business.

4.3 Features of Small Business

Small business, the part and parcel of economic development ranging from developed countries to least developed countries, has some distinct features. Some of them are narrated in the following:

1. Ease of formation:

Anybody can enjoy this feature of small business. There is no hard and complex rule and regulation which creates barrier for an entrepreneur/owner to start and run a small business. So proprietor can easily form and operate small business.

2. Motivational endeavor:

The individual who takes risk to establish a small business is exceedingly encouraged for further physical extension and administrative development. Since the owner-manager can run business

in accordance to his/her own choice or style, this format in business is a principle motivator for an owner. A small business can also be a source of social motivation.

3. Workers' Personal dignity:

In a small business, employees preserve their personal identities. They understand business goals and commit themselves to attain the goals at any cost.

4. Owners as Managers:

This is the fact in most of the small businesses that owners are accountable for managing the firm. The operating staffs are hired by the owners and they enjoy authority for taking any and all management decisions.

5. Efficient Communication

A meaningful communication is built up among employees because of its modest and informal structure. This intimacy makes the organization stronger to survive in the competitive field than other large firms.

6. Helpful Environment for Administrative staffs:

Owner, manager including supervisor maintains friendly relationship with all assistants. They arrange training, encouragement and counseling programs to the assistants for solving the problems. There is a stimulating and enjoyable working environment for the subordinates.

4.4 Bangladesh Industrial Policy - 2016

The government of Bangladesh has recently approved a distinct policy for promoting small and medium enterprise. This is titled as *'Policy Strategies for Development of Small & Medium*

Enterprises. This policy puts more attention on enlargement and enrichment of SMEs growth in Bangladesh. So the government of Bangladesh has established SME Foundation to accelerate the growth of small and medium enterprise. Bangladesh Small and Cottage industries Corporation (BSCIC) and SME Foundation have given top most priority on the growth of cottage and micro industries along with the development of SMEs. Recently special attention has given on innovation and application of new technology so that this vibrant sector can compete in national and global market successfully. This is now a burning issue how our cottage, micro, small and medium enterprise (CMSME) will be benefited with the application of new technology in their day to day operations.

Moreover, the government of People's Republic of Bangladesh acknowledges small business as vehicle for strengthening and accelerating overall economic growth, alleviating poverty, and enhancing the standard of living. So the prime responsibility of government is to formulate policies for eliminating obstacles and neutralizing market failures. At the same time they should offer different types of financial, mental, and technological support to ensure their sustainable growth. Some initiatives are as follows:

a) Government will emphasize and endure SME activities through motivation, credit provisioning, and training & development programs of the entrepreneurs.

b) Female entrepreneurs will be given importance in the cottage, micro, small and medium scale business sector. At least 15% of total fund endorsement will be kept in reserve in favor of the female entrepreneurs and the interest rate will be less than 10%.

c) According to the instruction of central bank (Bangladesh Bank), all commercial banks will

finance and refinance to the SME sector; and commercial bank must have SME loan section and cooperate them efficiently.

d) Special attention will be given on information and communication technology (ICT) to the development of this segment.

4.4.1 SME Policy and its Objectives

Comprehensive policy-guidelines have been developed by the government to accelerate the socio-economic growth of small and medium enterprises in Bangladesh.

The purposes of the well-conceived policy are

1. Recognizing the significance of small and medium enterprises as an essential actor in growth acceleration and poverty reduction program of Bangladesh;

2. Inspiring and persuading private sector development and stimulating the progress of foreign direct investment (FDI), formulating a code of principles or ethics of doing business, creating good governance, developing information technology (IT) based knowledge management, and building client supremacy in the markets;

3. Defining and introducing a proper physical infrastructure and information system (IS) based network, and institutionalizing an excellent distribution channel that ease the advancement of SMEs;

4. Enlarging present financial and supervisory framework and state-owned institutions (BSCIC, SME Foundation, etc.) towards enabling accomplishment of the objectives of SME policy;

5. Fostering entrepreneurial skills and building leadership qualities of owner-mangers and opening realistic programs and counseling center themselves, etc.;

6. Ensuring new but meritocratic arrangements so that talented and prospective small firms or entities with preferred entrepreneurial track record and / or promise can be offered financial incentives;

7. Providing legal supports if needed so that they can avoid high legal charges and devious harassment, if any;

8. Taking actions to make opportunities of mobilizing debt without guarantees in order to support small businesses in fulfilling their financial needs;

9. Acquiring information & communications technologies, Internet Protocol (IP) based infrastructure, and electronic-governance etc. with a view to increasing the sustainability of SMEs in all sectors of our economy;

11. Enhancing the prospects for marketing of SME's goods and services, improving sub-contracting facilities; and ensuring diversification of export-oriented activities.

4.5 Justification of Small Business in the Socio-Economic Development of Bangladesh

Small business (including cottage or microenterprise) is really essential for the society to build up a platform of generating entrepreneurs. This type of industry is basically indispensable for human resource development, poverty alleviation, and employment generation both in countryside and city areas. Thus small businesses or microenterprises may be acknowledged as the financial backbone of a nation (Syed, 2004).

Mayoux, L. (2002) claims that some fundamental points should be considered carefully for the development of micro entrepreneurship:

i) Microenterprise movement: Microenterprises (MEs) may be defined as initiatives or entity with fewer than 10 workers and are regularly engaged in the casual or semi-formal sectors.

ii) Microcredit for poverty alleviation: Microcredit can be labeled as security free small credits offered to underprivileged entities or families to make self-employment in income generating activities (IGAs).

Micro entrepreneur is a person who thrives for socio-economic freedom by generating self-employment, creates employment opportunities for others, and founds and operates an entity or firm by keeping pace with his or her vision. Micro funding or micro credit is a scheme to lessen poverty of the poor who are hardly eligible for formal financial loans and/or services. The poor can enjoy social empowerment by accessing to the micro credit and deposit services under nonfinancial involvements. In this way, they can take part dynamic role in their corresponding economies through income generation, bargaining power and other enhancement. This is also soundly dedicated in numerous reports and journals (Mayoux, & Sanfi, 1998). In this viewpoint, most of the micro finance institutions (MFIs) are aimed at creating micro entrepreneur.

It is evident from the economic development perspective and the historical pattern of economic growth that industrialization is a precondition for sustained economic development, particularly for the eventual solution to the problems of mass poverty, acute unemployment, low Gross National Product (GNP) growth, and heavy dependence on foreign aids (Mahmood, A 2013). Therefore, since independence the development strategy of Bangladesh has been geared up

toward a structural shift from agriculture based country to industry based country to create new job opportunities for increasing labor force and to alleviate poverty.

Development through industrialization can be achieved in one of two distinct ways, which have little direct connection with each other: a) Rearing of large enterprises by means of state owned capital or foreign direct investment; and b) Upbringing of both traditional urban and rural small scale enterprises. But due to limited funds and obtainability of ample supply of manpower, emerging nations like Bangladesh is gradually paying superior importance on the up-gradation of labor-intensive small and medium businesses as compared to capital-intensive big corporations to accelerate economic growth. The government of Bangladesh has recently tried to achieve development through placing emphasis on small scale enterprises. Since small firms or micro and cottage industries need comparatively less capital and less multifaceted managerial skills. This skill-intensive entity can ensure more occupation and manufacturing channel for entrepreneurial capability and finally generate a route of faster economic growth than its counterpart large scale organizations. Due to limited infrastructure development, limited investible funds, isolated small sized markets and non-availability of experienced human resources, most of the large scale industries in Bangladesh failed to operate in a manner that helps to generate surplus from the production process (Hossain, N. A. 1994). As a result, we are now in a loan defaulting culture and large scale corporations are unable to generate a corresponding increase in employment opportunities, created income inequality, failed to alleviate poverty and to achieve development (Haque & Hossain, 1984).

4.5.1 Failure to Achieve Development through Large Scale Industries:

A crucial element in the achievement of economic progress in a low-income economy is the enhancement in the standard of living of the poor (ARTEP Bangladesh, 2005). Policies and programs for development through expansion of large-scale industries in Bangladesh have resulted in growing unemployment and under employment, declining real wages and deterioration in absolute poverty after the liberation war (Haque & Hossain, 1984). Various studies point out a worsening of the situation in Bangladesh, whether a yardstick is used, nearly three-quarters of the population were found to be deprived of a conservatively defined threshold living (ARTEP, 2005). While the causes for such impoverishment are many; it is widely accepted by academician, policy makers and planners that one of the main causes is the failure of the large scale industries to generate productive employment and income equality.

4.5.1.1 Unemployment

Centre for Policy Dialog of Bangladesh stated that every year more than 0.8 million fresh graduates are added in the line of work less people (CPD, February 11, 2019) and it creates huge threat for whole economy of Bangladesh. This is a great challenge to accommodate them in working environment. Since the modern industrial sector (large size companies) is not capable of absorbing the fast increasing labor force, the expansion of large industries in Bangladesh could not absorb more than 8-9 percent of country's labor force (Haq, M. Z, 2003). We need to patronize small and medium enterprises at our best level to create the job opportunities. One statistics reveals that *'disguised unemployment'* in the rural sector remained roughly constant (over 38 percent) and rate of under employment both rural and urban sector remained unchanged (Khan, M., 1994).

4.5.1.2 Underemployment

The problem of underemployment appeared to be much more acute day by day. The situation seems to be much worse when an income criterion was used. Three-fourths of the employed labor force appeared to be underemployed if the urban poverty thresh-hold income was used as the criterion. Even on using the minimum wage as the dividing line, it was found that one-fourth of the employed labor force was underemployed.

4.5.1.3 Poverty and Inequality

In 2018, about 20 million of the total population lived under the poverty line (Bangladesh Economic Survey, 2018) estimated on the basis of an ascetic physiological standard. Assets distribution showed that inequality (e.g. in land-ownership) clearly increased over the past four decades. This statistics revealed that expansion and development of large industries is not a solution to the unemployment, under unemployment, and income inequality problem in Bangladesh. This led some policy makers and the multilateral as well as bilateral donor agencies to understand this laconic part in policy implementation, so that in industrial policy 2016, they advocated that vigorous promotion of small and medium business which will be capable of utilizing local resources, information system technology (IST), and manpower to ensure catalytic role in the transformation of Bangladesh economy (Hossain, N. A. 1994).

The following table represents that introducing small business is much more realistic for the economic development of Bangladesh than to patronizing large scale firm. It is more clearly identified that the more we pay attention on small and medium enterprises, the more we will be benefited.

Table 4.12 : **A Cost Comparison Between a Large Scale Business and a Small Scale Business**

Name of the Organization	Category	Capital Required	Total Employment Opportunity	Investment Per Person
ABC Factory Ltd.	Large Scale	$230,000,000	4,340 persons	$,53,000
XYZ Co.	Large Scale	$250,000,000	3,570 persons	$70,000
PQR Karukaz	Small Scale / Cottage	$ 20,000	15 persons	$ 1,330
STU Green Products	Small Scale/ Micro	$ 12, 000	10 persons	$ 1,200

Source : The Author

In the above table, it is clear that the ratio of capital requirement in large scale industry and small scale is 58:1. Sometimes this ratio rises up to 230:1 which is very unfortunate for us a country like Bangladesh. This scenario is very common in government project or expenditure. It needs $230,000,000 to run a fertilizer factory and the factory employs only 980 persons. On the other hand, a micro entity can employ 10 persons by investing only $12,000. So, small firm is more feasible than a large scale industry.

Table – 4.13 : **A comparison between a Large Scale Business and a Small Business in Terms of Efficiency**

Category Business	Levels of Management	No. of Executives Involved	Nature of Job	Expenditure (in terms of compensation)	Utilization of Time
Large Scale Business	Top level management	Very few but most powerful persons in the organization	Making Policy, taking decisions, monitoring activities, etc.	Senior persons enjoy a handsome amount of financial benefits & others allowances	

	Mid-level management	Largest group of Executives	Carrying out the plan (s) of top level management	It is very expensive to maintain the mid-level executives.	Time consuming process
	Operational management	Good number of operational managers	Finally executing the plan of top level management by operational level	Moderate expenditure.	
Small Business	Single level of management structure (in general)	Owner-manager or key person may be the same person in most cases.	The owner-manager plays a **dual roles** – taking decisions and executing of plans by himself or herself	The owner-manager can ensure economy in operation. S/he can save money, effort, and time.	Proper utilization of time (saves time)

Source : The Author

The above table represents that small business is more efficient in terms of cost and performance i.e. efficiency than a large scale business firm (with some exceptions). The owner-manager of a small firm can play dual (multiple) roles in the operations. S/he can save money. But in large company, managers at different level play single role as assigned by the immediate superiors. As a result, the company has to pay huge amount money to accommodate the executives in all levels. So, small and medium enterprises (SMEs) are dominating in the economy of a country ranging from first world to third world.

4.6 The Role of Small Business in Socio-Economic Progress of Bangladesh

Small business, which is involved relatively in small investment and simple & less expensive technology is capable of creating larger employment opportunities, has a dynamic role to play in socio-economic development of Bangladesh. Studies on small business in Bangladesh reveal that in addition to the wide spread consensus on the great potential of small enterprises in generation of employment opportunities and in providing the means of livelihood for much of the non-agricultural population; it also leads to innovation, formulation of capital, and equitable growth of national income and the development of entrepreneurs.

Table 4.14: Growth of Production of Small Scale Enterprises in Bangladesh

Year	Growth (in %)
2007-08	7.15
2008-09	7.30
2009-10	8.17
2010-11	5.67
2011-12	5.58
2012-13	8.81
2013-14	6.33
2014-15	8.54
2015-16	9.06
2016-17	8.76

Source : Adapted from Bangladesh Economic Review (2018)

The growth of production of small scale enterprises in Bangladesh has been around 6 to 8 percent in the years 2007-08 to 2016-17, while it reached its highest growth rate in 2015-16, which is 9.06 percent.

Table 4.15: Volume and Growth Rate of Industrial Segment

(At constant prices of 2005-06) (Tk.in Crore)

Form of Industry	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Small & Cottage	21176.0 (5.67)	22569.1 (6.58)	24557.9 (8.81)	26113.1 (6.33)	28342.6 (8.54)	30909 (9.06)	33945.8 (9.82)	37455.6 (10.34)
Medium – Large	88475.3 (11.11)	97998.3 (10.76)	108436.2 (10.65)	118540.3 (9.32)	131225.4 (10.70)	147313 (12.26)	163819.5 (11.20)	186371.6 (13.77)
Total	109651.4 (10.01)	120567.4 (9.96)	132994.1 (10.31)	144653.4 (8.77)	159568.0 (10.31)	178222 (11.69)	197765.3 (10.97)	223827.2 (13.18)

Source: Adapted from Bangladesh Economic Review (2018).

Note: Figures in parentheses indicate *rate of growth*.

In the above table (Table 4.15), it is stated that the growth rate of and cottage and small industry in 2010-11 was 5.67% and it is 10.34% in the financial year 2017-18. It is almost double in comparison to 2010-11 in the total manufacturing sector. On the other hand, the growth rate of medium-large scale industry was 11.11% in 2010-11 and there is an insignificant change 13.77% in the year 2017-18 (only 2.66%).

4.6.1 Generating More Jobs:

The main argument for small business enterprises rests on their potential to generate employment opportunities at a relatively low investment cost. Small firms create greater employment because unlike large firms, they use more labor-intensive techniques. This view has become increasingly widespread in current years, and is propagated by many international agencies (Sing and Viitanen, 1987)**.** In the economic development, it has been established that small-scale enterprise have offered most, if not all, of the net new jobs created over the last decade (Keneth Loucks, 1988). Even in highly developed economics such as USA, Japan or China, most new employment is created by smaller firms, not by large companies or by the government (Willonghby, C., 1992 and Islam et al., 1995).

In USA, during the period 1980-82, 1.7 million jobs were lost in firms with over 100 employees whereas 2.6 million new jobs were created in firms with fewer than 100 employees, accounting for 43 percent of the net increase in jobs (ILO, Geneva, 1986, p-13). Virtually all of the new jobs created in the United States in the past decade are in businesses with fewer than 100 employees. Most of the growth i.e. 67% occurred in the new high growth of small ventures and only 7 percent growth was done by large businesses in USA (David & Birch, 1987 and Rachman et al, 1990).

Table 4.16 : **The Rate of Employment in Different Categories of Firms in EU**

	Micro	**Small**	**Medium-sized**	**SMEs (all)**	**Large**	**Total**
Enterprises	19,058,000	1,424,000	226, 000	20,709,000	43,000	20,752,000

(%)	91.8%	6.9%	1.1%	99.8%	0.2%	100%
Employment	39,630,000	27,652,000	22,665,000	89,947,000	43,414,000	133,362,000
(%)	29.7%	20.7%	17%	67.4%	32.6%	100%
Employees per enterprise	2.1	19.4	100.3	4.3	1006.1	6.4

Source: Adapted from Annual Report (2009) on EU Small and Medium-sized Enterprises

9.75 million (65%) net new jobs out of the 15 million are offered by small firms in the United States of America between 1993 and 2009 (17 year, except in the year 2008-2009 due to great recession). SMEs employ 43% of high tech workers and produce 13 times more job opportunity than large firms due to technological advancement.

4.6.1.1 Generates Employment Opportunities for Women

The jobs created by small business particularly in developing countries differ significantly from those crated by big enterprises in several key respects. For example, a significant share of the jobs in small business roughly 35 percent is part time and SB needs fewer funds to operate its day to day activities. It is added that women prefer more part-time activities and have less capital. Thus they own small or cottage industry. Since, in rural area, many women of Bangladesh are not highly educated that their male counter parts and need to look after their households, they have a good chance to get a job in small business and continue there. By hiring women workers who are less fit in corporate model, small business serves as an important safety net for women of developing countries like Bangladesh. This argument is also supported by the following statistics revealing that small business is an important source of livelihood for women;

a) Women in the rural industries of Bangladesh constitute over 53 percent of the workforce. Female participation in cottage industries is quite high. It is higher than their male counterparts (MOWCA, GOB, 1995).

b) A survey in four districts of Honduras indicated that women possessed about 61 percent of all the small enterprises and occupied nearly 56 percent of all the workers. (Hossain, N. A., 2000).

c) A survey of small enterprises in rural Guatemala indicates that women contribute more than 50 percent of the workers in textiles, about 20 percent in leather works, 47 percent in food processing and baking and more than 65 percent in commercial services. (ILO, 1986)

The role of women as entrepreneurs in the very small enterprise sector of developing countries is another factor that argues in favor of promoting the factors. One of the significant findings of the Sierra Leone Survey is that over 80 percent of the owners of tie dye firms are females (Clenta, E., 1986**).** In Britain women represent 25 percent of all the self-employed persons. In Jamaica, they now represent 21 percent, the number of men and women entrepreneurs is about equal. (The Bangladesh Observer, Jan. 22, 1999).

The survey of Grameen Bank also shows that small business activities are important means of employment for the poor women in Bangladesh. The proportion of women entrepreneurs among the Grameen Bank's creditors in different activities is about 94 percent, suggesting that promotion of small business and development of women entrepreneurship will increase female

participation in economic activity and will thereby improve their status in society through increasing their income.

4.6.2 Provides More Job Satisfaction

The small enterprises allow the individual artisan or craftsman to retain a pride in his or her work by not reducing him or her to an operator on the assembly line; at the same time it also assures him or her the benefits of modern technology through improved tools and processes that are suited to him/her and which he can use with confidence. It is in this sense that small industry development can provide more job satisfaction and can play a crucial role in modernizing the stagnant rural economy of the developing countries. (Vepa, Ram K., 2001).

4.6.3 Radical Innovation:

SMEs foster radical innovation (Baumol, & Lerner, 2010). Small firms are the seed bed of large corporation and their existence in an economy leads the large enterprises to enjoy competitive advantages. Large firms can outsource some of their activities to smaller firms. (Audretsch, D., and Thurik, A., 2001).

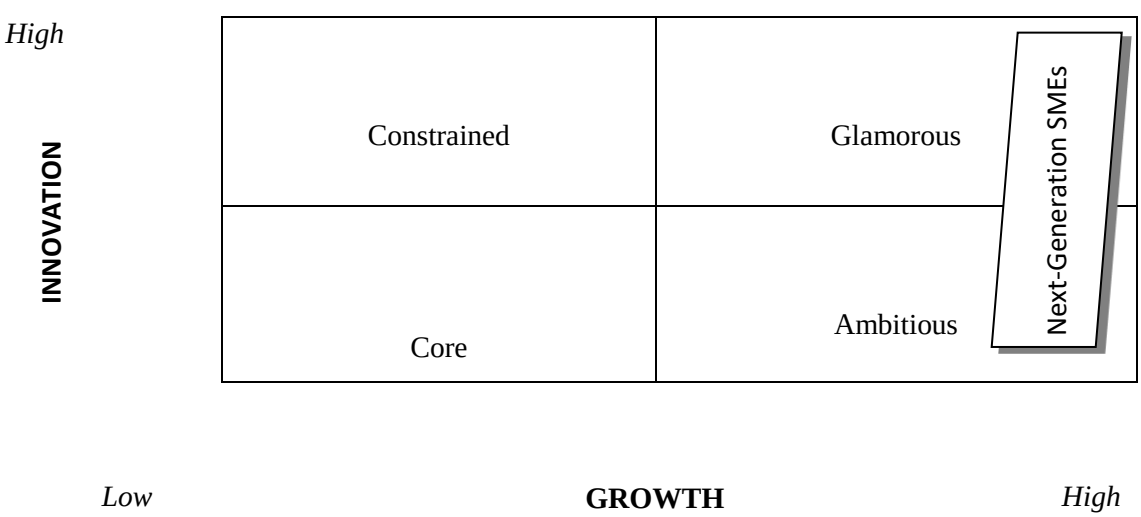


Figure: 4.1 Classifications of Small Firms , **Source :** Adapted from Kirchhoff, M. (2011)

SMEs contribute to economic progress in an imperative way by fostering innovation, imagination and entrepreneurship. '*Often creative and resourceful entrepreneurs in small business tend to be mavericks as they push back the frontiers of knowledge. Ideas are the stock in their trades*' (Griffin and Ronald, 1991). It is the small business entrepreneurs who have developed the Polaroid camera and the Citizens band radio and also some of the PCs.

The results of investigation by many researchers suggest that many innovations leading to the formation of new industries for future development has originated by small sector (Kenneth Loucks, 1988). A recent study of innovation in 121 industries in USA found that small firms or individual investors produced 40 percent of the new products, a remarkable percentage, given the fact that small companies spend less than 5 percent of the nation's research and development budget (Solomon, S. 1996).

4.6.4 Reduces Dependency on Foreign Credit and Helps Development of Infrastructures

Small business relies on domestic assets that may otherwise not have been drawn in the development process. It also evolves intermediate technology (by copying, adapting and imitating obsolete technology). Because development of small business leads to utilization of local resources, technology and manpower, it helps to gradually reduce dependency on foreign loan and helps to develop local infrastructures – one of the main conditions for national development.

4.6.5 Offers Flexibility

Small and medium-sized enterprises (SMEs) offer a great extent of flexibility. In terms of product development, small business enterprises often have an edge over large business enterprises because they can response more quickly to customer's satisfaction, are extremely flexible and ready to change not only operations but also strategy. In addition to producing new products and creating new jobs, small business may play an imperative role in the operation of large enterprises, acting as distributors, servicing agents, suppliers and sub-contractors. Sub-contracting is defined as a situation in which a parent firm, instead of doing the work itself, request another independent firm to undertake the whole or part of an order it has perceived while assuming full responsibility for the work vis-à-vis the customer. Sub-contracting not only ensures the marketing of small industry products but also helps the large enterprise to concentrate on the main task of large scale manufacturing operation leaving the other tasks to the sub-contractors, get the benefit of technological change in production process, reduce the cost of production and minimize business risk.

Small firms in all developed countries play an indispensible role in the development of modern industries, particularly in engineering and electronics, where they act as complementary to the large-scale sector. A substantial portion of industrial production originates in small and medium sector in India (Srivastava, S. K. 1995). Thus, small business contribute to the industrialization of a developing country like Bangladesh by spreading industrial production and employment over a wide area than can be done by large firms only with concentrated forms of production. Subcontracting between the large companies and small business also generate much needed new employment and is expected to provide a greater scope for improving conditions in the informal sector. Some of the large companies in developed countries have based their business strategy on the use of small suppliers. Liz Claiborne, one of the leading firms in the fashion industry in the

USA has no factory. All of its garments are made on contract by outside suppliers. This gives Liz Claiborne the flexibility to change its designs quickly – an important competitive edge in the fickle world of fashion (Gannes, S. 1988). Subcontracting by small firms can be especially useful to developing countries such as India, Brazil, Sri Lanka falling within the category of '*newly industrializing countries*' as they are less limited by the narrowness of the local market, lack of skills, technology and know- how of indigenous firms than other countries. Subcontracting by small firms can also be useful to Bangladesh, a densely populated country.

4.6.6 Social Benefits:

The social arguments in favor of development of small business sector fall broadly into two heads i. e. equity and democracy

4.6.6.1 Equity

Small and medium enterprises ensure equity in the society. It is stated that:

(a) The economic and social gap between the employer and employee in small business is minimum. Sometimes the CEO of a company may enjoy 300 times more benefits than his/her subordinate (office staff) who is in the lowest position.

(b) There is less exploitation in small business sector. Owner or key person of the entity receives his subordinates as like as a family member. The owner is always concerned with his coworkers and treats the subordinate with justice and equity.

(c) The development of a large number of small enterprises will reduce the spread between the highest and the lowest income brackets through generating income for the landless

and would help to avoid an undesirable awareness of economic supremacy in the hands of a small number of persons.

Cottage industries and handicrafts are particularly important for rural households with little or no land. In some Asian countries where land is very much a limiting factor in generating household income, small business projects in favor of the landless and near landless could contribute to increasing total household income, thus alleviating mass poverty and income inequality (ILO Report – VI, 1986).

4.6.6.2 Democracy

Existence of a large number of independent and self-employed persons would have an increased understanding of the development potential and needs of the country. This arrangement would provide a base for equitable relations between the rural and urban areas and establish democracy among the people of a country. So government should help maintaining democratic institutions.

4.6.7 Helps the Advancement of other Sectors

Small enterprise is very much pertinent to endorse the growth of other sectors particularly agriculture through production linkages. For example, there may be backward linkages from the small sector in the form of demand and there may be forward linkages where output of this sector may serve as inputs to agricultural sector.

Small manufacturing enterprises in rural areas provide backward linkages by processing agricultural products through such activities as dairy products, jutes products, oil making, grain

processing, tobacco processing, wood processing, leather processing, and etc. Small business sector in rural Bangladesh has a very high backward linkage (Mondal, H., 1988).

Since Bangladesh is an agro-based country, the overall development largely depends on the growth of agriculture. SME sector offers forward linkages to agriculture and other sectors through supplying intermediate and capital goods in the form of equipments, seeds, plants, fertilizers and pesticides for agriculture. For black smithy supplies metal agricultural and non-agricultural implements; wood works manufacturing supply rural transport equipments like carts and boats, baskets for petty trade and earth work; and tobacco crushing supplies processed tobacco for the cigarette and bidi factories.

4.6.8 Offers Customer Responsiveness:

Small scale enterprises confronting competitive markets produce low cost goods efficiently for the customers mainly for the consumers with limited income. The low-cost goods produced by the small business sector satisfy the food, housing, and other basic needs of the rural poor, and middle and low-income groups of the urban sector. But this feature of small business is not typically valued because there are usually some difficulties of small scale production in comparison to the advantages of large scale production. It is wrongly argued that small scale production in small scale industry charges high price on goods and services. Since the purchasing power of our common people is very limited, they hardly afford the products manufactured by small firms (Fourth Five Year Plan, June 1990). But in reality small business is now extraordinarily capable and highly responsive to market conditions and it is able to charge low price for their products.

4.6.9 Vehicle for Progress

Small enterprises with new innovative products demonstrate a higher rate of growth, job creation and make other contributions to the economies in terms of overall growth. Small business in general is considered to be a **vehicle for progress** (Haq, H., 2000) because of following reasons

1. It contributes highly towards value added activities.
2. Small business enables the attainment of administrative knowledge and skills that will facilitate to form and operate successfully medium or large scale enterprises in future.
3. Small business (SB) enables a particular group of people, mainly young generation and women, to acquire a greeted economic freedom through employment and self-employment.
4. SB introduces innovative model (s) for needs and wants and helps the marketers to redesign and energizes the economic activities. Finally small business establishes a direct relationship between the customers and formal sectors of production and distribution.
5. Small business (SB) contributes significantly to the economy in terms of productivity of goods and services and creates direct and indirect employment opportunities at a comparatively low capital cost, particularly in the fast rising service areas.
6. Small and medium scale enterprise ensures industrialization and rural development and it works as a vehicle for dropping income inequalities.
7. SME develops a group of experienced and semi-experienced hands as a foundation for future industrial enlargement and provides the prospects for developing and modifying proper technology.

8. Small business improves onward and backward integration among geographically different sectors of the economy. This process ensures to reshape of economic reformation.

9. Small enterprise offers an outstanding background for entrepreneurial and managerial talent. The acute shortage of such talent is really a great barrier for economic development of any nation. It is added that many successful entrepreneurs left Bangladesh when British left India (including this part). So we lost a good number of successful businessmen, this is our great loss. Moreover, we have lost seasoned entrepreneurs again in 1971. Thus, we are historically back-warded in industrial sectors. There was a huge crisis of experienced hands in the field of business. Over the last four decades, some people have come up with their industrial talents and contribute a lot. But this is very insignificant. So there is hardly any option without generating entrepreneurs for remarkable economic progress.

10. Cottage, micro and small business demonstrates flexibility in adapting to market change.

11. Micro enterprise serves limited or specialized markets that are not attractive to large companies.

12. Small scale industry makes the community stable. Moreover, they are little harmful for physical surroundings than large companies, inspire individual saving, promote agro-industrial linkage, improve rural welfare and generally raise the level of people's participation in the economy (Chowdhury, R, 1994).

13. SB helps to improve the balance of payment through discouraging the use of imported raw materials and equipments.

Policies aimed at self-employment in small business through greater mobilization of domestic resources would also alleviate poverty through the expansion of productive employment; a major development issue would reduce the persistent reliance on external economic assistance, which has become an increasing source of concern to planners and academics in the country. So it is high time that more attention was paid by the developing nations to the development of interactive small and micro entities, which feed each other through interlink, offer a productive channel for entrepreneurial force of individuals and assist in the dispersion of economic activities all through the country.

4.6.10 Small is Beautiful:

Harper & Row (1973) said that *'small is beautiful'*. A small firm can save a lot of labor hours and energy costs by applying information system or information technology (IT) in its major processes (Johnston and Vitale, 1988). Computerized information system reduces coordination costs such as transaction processing costs, order management costs, etc. Malone, Yates, and Benjamin (1987) claimed that information technology (IT) can assist an organization to configure its markets and expand business opportunities nationally and globally.

4.6.11 Other Benefits:

Small and micro enterprises as compared to large enterprises have a substantially lower capital-labor and capital-output ratio. It ensures a greater surplus for per unit of capital utilized as a greater reliance on indigenous resources. Small business does not require much capital or large funds for investment both for the establishment and running of it. In a small business, employment is created with limited investment of resources. For example, in India to create one

work place in small-scale unit, an individual requires Rs. 7000; it is almost eight times less than the amount required in the large sector. (Gulati, P., 1992). In this study, the author has presented the same scenario in generating employment opportunity (Table - 4.12).

4.7 SMEs sector vision - 2021

SMEs sector vision - 2021 is stated in the following table:

Table : 4.17 : SMEs Sector Vision - 2021

Targets/Goals	Duration of time by which the target will be achieved
Vision-2021 declared by the govt. of People's Republic of Bangladesh	Vision-2021 will be achieved by the year 2021 and SMEs in Bangladesh will achieve their goals by this time period.
Double Digit Growth: To raise double digit economic growth	To raise 10 percent (double digit) economic growth should be attained by 2021 and small businesses will play a significant role in raising GDP.
Industrial Sector Growth: To increase the contribution of SMCI (small, medium, cottage industry) in industrial sector	To raise contribution of small, medium and cottage industries from 25 percent to 40 percent in industrial sector by the year 2021.
Labour Force Employment : Creating more employment opportunities	To promote employment opportunities from 16 percent to 25 percent (yearly) by 2021. In this regard, 6.8 million cottage, micro, small and medium enterprises (CMSMEs)

	units will employ 20.14 million people by 2021.
Reducing Un-employment Rate: Dropping un-employment as much as possible	Un-employment rate will be reduced by 2021 from 40 percent to 25 percent.
Reducing Poverty Level Poverty alleviation as a target	To raise daily wages in SMCIs sector from 2 dollar to 4 dollar and reduce poverty level from 40 percent to 18 percent by 2021.
Making Digital Bangladesh a widespread vision of government of Bangladesh	To introduce online system between BSCIC headquarter, SME Foundation, and other administrative offices to regional level, district level and industrial estate offices.
Motivating Entrepreneurs increasing entrepreneurial knowledge skills	To motivate entrepreneurs and owner-managers of cottage, small and medium enterprises for introducing information and communication technology in SMCIs.

Source: Adapted from Ministry of Industries, Bangladesh (2015)

4.8 Prime / Booster Sectors of Small and Medium Enterprise (SME) in Bangladesh

SMEs are acknowledged as the economic powerhouse in the Country by 2021. Industrial Policy - 2016 has identified the following **11 booster sectors** for promotional support:

1. Electronics and electrical;
2. Software development;

3. Light engineering and metal-working;

4. Agro-processing or agri-business, plantation agriculture, specialist farming/tissue culture, and related business;

5. Leather-making and leather goods;

6. Knitwear-making and related goods;

7. Plastic and other synthetics;

8. Healthcare and diagnostics;

9. Educational services;

10. Pharmaceuticals, cosmetics / toiletries; and

11. Fashion-rich personal effects, wear and consumption goods.

4.9 Thrust Sectors of Bangladesh

There are 31 trust sectors in Bangladesh. Thrust sectors are those sub-sectors in industries which have been contributing to industrialization process of a country successfully and poverty alleviating poverty by aggregating GDP, generating employment opportunities, and increasing export earnings. As per National Industrial Policy – 2016, the list of thrust sectors has been given below (Table - 4.18):

Table : 4.18 - Thrust Sectors of Bangladesh

SL. No	Name of the Sector/Subsector	SL. No.	Name of the Sector/Subsector
1	Agro-based and agro-processing industry	17	Plastic Industry
2	Human Resource Export	18	Furniture

3	Ship Building	19	Handicrafts
4	Renewable Energy (Solar Power, Windmill)	20	Energy Efficient Applicants/ Manufacturing of Electronic goods/ Development of Electronic Materials
5	Tourism	21	Frozen Fish Industry
6	Basic Chemicals/dye and chemicals	22	Tea Industry
7	ICT and ICT based service	23	Home Textile
8	Readymade Garment Industry	24	Ceramics
9	Active Pharmaceuticals Ingredient (API) Industry and Radio Pharmaceuticals Industry	25	Tissue Grafting and Biotechnology
10	Herbal Medical Plant	26	Jewelry
11	Radio-active (diffusion) Application industry (e.g. developing quality of decaying polymer / preservation of food / disinfecting medicinal equipment)	27	Toys
12	Development of Polymer Industry	28	Container Service
13	Jute and Jute Products	29	Warehouse
14	Leather and Leather Products	30	Innovative and Import Substitute Industry
15	Hospital and Clinic	31	Cosmetic and Toiletries
16	Light Engineering Industry		

Source: Adapted from Ministry of Industries, Bangladesh (2015)

Among the above mentioned thrust sectors (31), almost all the sectors can be entertained by the entrepreneurs of small and medium enterprises. So government should have special attention on development of the sectors.

4.10 The Role of Few Selected Organizations Regarding SME Developments in Bangladesh

Government of Bangladesh has comprehended development of small business as the means for achieving the targets of Vision - 2021. As a result, different departments or wings of government and some non-government organizations (both local and foreign) are supporting and promoting small and medium businesses for ensuring their vibrant role to the economic development of Bangladesh. According to Maryke Dessing (1990), it is hard to reach any support to the small scale entrepreneurs in a under developed or developing country. He suggested that effective support agencies should be assigned for stimulating the small and medium enterprises. Stately and Richard (1971) also hold the same opinion. They told that underdeveloped (or developing) countries should have different institutions for the purpose of promoting entrepreneurs involved in small scale business. They also added that these institutions should upgrade entrepreneurs' skill; increase entrepreneurs' access to important technological and market knowledge, and provide better quality, less expensive factor inputs by means of improved program arrangements.

Government of Bangladesh has realized this and founded organizations like Bangladesh Small and Cottage Industries Corporation (BSCIC), Small and Medium Enterprise (SME) Foundation, Micro Industries Development Assistance & Services (MIDAS), SME Cell under the Ministry of Industry, SME corner in every branch in a commercial bank under the guidance of Bangladesh Bank, etc. for growth and advancement of entrepreneurship among in small scale sectors.

Government, quasi-government, and non-government organizations consider SMEs as one of the mainstreams of national economic development. Grameen Bank, ASA, TMSS, Palli Karma Shahayak Fonndation (PKSF), Bank of Small Industries and Commerce (BASIC) and some other organizations are working for the development of small and medium enterprises. These government, quasi government, and not-government organizations extend loan facilities to the owners of a small firm for income generating activities and entrepreneurship development. It is found by the author that some leading NGOs in Bangladesh have recently introduced SME branches to strengthen the role of small and medium business. ASA, one of the leading micro finance institutions (MFIs), has established 63 SME branches in different parts of Bangladesh to stimulate the small and medium scale business sectors in Bangladesh (ASA Vision, July – September, 2019).

Moreover, according to the strong guidelines and instructions Bangladesh Bank, all the commercial bank either nationalized commercial banks (NCBs) or privatized commercial banks (PCBs) are to offer SME loan facilities at the convenience of small business owners. It is added that initially government, non-government organizations and private voluntary agencies all were involved assisting poor people of Bangladesh first life and rehabilitation, then health and education. Over the few decades, they had shifted themselves to income generating activities through development of cottage, small and medium sized businesses.

4.10.1 Bangladesh Small and Cottage Industries Corporation (BSCIC)

Bangladesh Small and Cottage Industries Corporation (BSCIC) is one of leading organizations in Bangladesh to care and maintain industrialization progression by the formation of an

entrepreneurial culture or society. BSCIC was established by an Act of the Parliament in 1957. The aim of this corporation is to speed up the business progression by promoting and extending support and services for medium, small or micro, and cottage industries. The contribution of medium, small and cottage industries (MSCIs) to GDP is about 20.8 percent (2015-2016). Medium industry contributes 16.0 percent and small & cottage industry contributes 4.80 percent of all manufacturing sector's contribution. Bangladesh small and cottage industries corporation has a number of institutes like training institute named *Small and Cottage Industries Training Institute* (SCITI), 15 *Skill Development Centers* (SDC), one *Design Center* and a well-equipped *computer lab* in the Head Office in Dhaka. Moreover, it has 4 Regional offices, 64 District offices which are known as industries service center, 74 industrial estates.

These institutes and/or centers are involved in volume building through training and consultancy services. BSCIC maintains has an innovative program dedicated to entrepreneurship development and enterprise creation. Moreover, BSCIC has an exclusive experimental learning program for the potential entrepreneurs and demonstrate how an entrepreneurial culture can be developed and this culture or society can be involved in fighting against poverty. Besides, as an organization of People's Republic of Bangladesh, BSCIC is always devoted to work hard in executing government's decisions and agenda for the interest of the country. Basically, it works under the supervision of Ministry of Industries. Consequently, BSCIC has been employing its labors to execute the government's initiatives regarding the *Vision-2021* and *A Digital Bangladesh*. Recently, different types of capacity building programs are introduced through its ICT arrangement. BSCIC has established ICT based infrastructure and services to

provide facilities promptly to the entrepreneurs for the interest of small and cottage industry (SCI) sector.

Major Goals of BSCIC:

The major goals of Bangladesh Small and Cottage Industries Corporation are as follows:

- Improving industrial output and production capacity in the small and cottage industry sector;
- Generating employment opportunities;
- Alleviating poverty;
- Ensuring balanced growth of different regions in the country;
- Endorsing the maximum utilization of human resources as well as financial resources;
- Accelerating overall economic progress of the country through SCI.

Services of BSCIC

The services or facilities offered by BSCIC are

- Entrepreneurship development through counseling and training;
- Offer infrastructural accommodations by creating industrial estates;
- Spread out credit facilities to the entrepreneurs from its own funds and also through banks and other financial institutions;
- Make a project assessment proposal;
- Provide technical and consultancy services for establishing new industrial units and quality improvement of SCI products;
- Advancement and spreading of new designs and model;
- Innovation and adaptation of appropriate technology in the SCI sector;

- Gather, accumulation, and distribution of technical and other information leading to investment, production, and marketing of SCI;
- Conduct investigation, studies and survey in the SCI sector;
- Arrange pre-investment, and post investment counseling programs;
- Supervisory jobs;
- Ensure the registration of small and cottage industrial unit;
- Suggestions for reducing taxes and duties;
- Recommendations for import entitlement of raw materials and packaging materials.

Table - 4.19 **Contribution of BSCIC to National Economy by establishing Industrial Units in Different Industrial Zone** *(Tk. in Crore)*

SL	Area or Divisions (former)	Industr-ial Zone	Established Industrial Unit			No. of Unit (Fully export oriented)	Total Investment	Total Employed Manpower		
			Operating successfully	Sick Project	Total			Male	Female	Total
1	Dhaka	24	2195	270	2465	851	14946.35	197126	186458	383584
2	Chottogram	22	996	109	1105	83	6869.705	58133	53593	111726
3	Rajshahi	17	889	33	922	08	7184.29	27660	11346	39006
4	Khulna	11	469	77	546	14	3535.29	21619	8384	30003
	Total	74	4388	498	4886	946	20178.17	307193	256503	564319

Sources : Adapted from BSCIC Corner (2016-17)

4.10.2 Small & Medium Enterprise Foundation (SME Foundation):

The Small & Medium Enterprise Foundation, widely known as *SME Foundation*, is a self-governing entity founded in 2007 for the purpose of building it as an apex institution for the development of small and medium scale business sector in Bangladesh. SME Foundation is a limited company. It is registered by the People's Republic of Bangladesh under the Ministry of Industries according to the Companies Act-1994, Section - 28.

The foremost doings of SME Foundation are the execution of policy-strategies approved by the government of Bangladesh, courses of action for promotion and interpolation of SME's growth and development. This institution provides financial supports and services for SMEs and offers proficiency development program and capacity building training. Moreover it facilitates the adaptation with appropriate technologies and access to ICT and provides business support services, etc. It should be mentioned here clearly that this apex body is only occupied for the development of enterprises and entrepreneurs who are in micro, small and medium categories as defined in the Industrial Policy 2016. Besides the general supports to the development of SMEs and entrepreneurs, the institution is offering expanded support-services to the present and prospective women entrepreneurs in order to place them into the mainstream business community.

Vision: Promote Small and Medium Enterprises (SMEs) for lessening poverty, creating employment opportunities, and thereby accelerating economic development.

Mission: Encourage the growth of small and medium enterprises of all production and service oriented enterprises of the country.

Goals of Small and Medium Enterprise (SME) Foundation:

The goals of the foundation are listed as below:

1. To stimulate, care, and inspire the progress and improvement of SMEs.
2. To formulate strategy, program and other necessary guidelines for small sector organizations.
3. To introduce rewards in order to stimulate competitiveness among the SMEs.
4. To enable small and medium enterprises to access required funds by designing appropriate policies and organizations.
5. To justify public sector assistances for SME development.
6. To build a pro-growth business environment.
7. To design suitable incentives systems, mechanisms, and support structures to ease the formation of new enterprises.
8. To detect and report policy irregularities, market and organizational disappointments those are harmful to the authentic interests of SMEs.
9. To develop a database on SMEs and SME sectors.
10. To inspire in developing connection among the domestic and global institutions occupied for SME development.
11. To build up capability of service providers of public and private sector for SMEs.
12. To improve productivity.

Development Strategies of SME Foundation:

Strategy- 1: Strengthen regulatory and legislative framework in favor of SMEs.

Strategy- 2: Recognize the difficulties & prospects of SME or SME cluster for scheming proper

development interventions.

Strategy- 3: Certify the obtainability of business support services for SMEs.

Strategy- 4: Ease of entrance to official finance for SMEs.

Strategy- 5: Implementation and enhancement of applicable technology for SMEs.

Strategy- 6: Cultivate human resources for SMEs.

Strategy- 7: Introducing information system or information technology (IS/IT) in the progress of SME sector.

Strategy- 8: Place women entrepreneurs into the conventional business community.

Strategy- 9: Ensure group or cluster based SME development.

Strategy- 10: Build organizational linkage for SME improvement.

4.10.3 Micro Industries Development Assistance and Services (MIDAS)

'Creating Economic Opportunities in Bangladesh' is the *mantra* of MIDAS in Bangladesh. Micro Industries Development Assistance and Services (MIDAS), a promotional institute in the private sector, was established in 1982 with a view to facilitating the growth and development of micro, small and medium enterprises. During this time, it has enhanced exclusive professional capability in offering both practical and financial support services to different and wide ranging target groups. MIDAS absolutely believes that micro and small enterprises offer the greatest prospect to make new employment and build a new base of entrepreneurship in the country.

MIDAS provides financial and technical supports to present and potential entrepreneurs of micro, small and medium enterprises. MIDAS also offers training, information and consulting services to local, national, and global firms. Public organizations, non-government organizations (NGOs), patron agencies, and individual persons in different parts of the country are getting services relating to technology, management, production, marketing, finance, export, development, etc. MIDAS Financing Ltd., a public limited company, is playing a significant role in advancing micro and small enterprises.

Mission, Vision and Objective of MIDAS

Vision : To be a leading business development service provider in Bangladesh.

Mission : To assist in generating employment for reducing poverty and endorse socio-economic development.

Objectives: MIDAS is dedicated to the improvement of a comprehensive and fast growing micro, small and medium enterprise segment in Bangladesh. Hence, the objectives of MIDAS are to:

1. Recognize the prospective micro, small and medium scale establishments by giving financial, managerial and technical support.
2. Cultivate entrepreneurship and serving entrepreneurs to pursue and discover new business opportunities.
3. Assist aptitude building of micro, small and medium enterprises and promoting organizations.

4. Patronize the growth of micro, small and medium-scale business enterprises in the country as a driving force.
5. Constantly build its institutional capability to operate on self-sustainable basis.

In the following few tables (from Table-4.20 to Table-25), we have presented significant information about macro-economic scenario, contribution of major sectors to the economy, export performance, employment structure, etc. Information available in these tables will help us to get comprehensive information about the growth actors of the economy.

Table - 4.20 : **Macro Economic Scenario of the Seventh Five Year Plan (7FYP)**

Macro Indicator	FY14	FY15	**FY16**	**FY17**	**FY18**	**FY19**	**FY20**
Growth: Real GDP (%)	6.1	6.5	7	7.2	7.4*	7.6*	8.03*
CPI Inflation (%)	7.4	6.5	6.2	6	5.8*	5.7*	5.5*
Gross Domestic Investment (as % of GDP)	27.2	28.9	30.1	31.0	31.8*	32.7*	34.4*
Investment in Private Sector (as % of GDP)	22.0	22.1	23.7	23.9	24.4*	25.1*	26.6*
Investment in Public Sector (as % of GDP)	6.5	6.9	6.4	7.1	7.4*	7.6*	7.8*
National Savings (as % of GDP)	29.2	29.0	29.1	29.7	30.2*	30.7*	32.1*
Consumption (as % of GDP)	77.9	77.7	77.5	76.7	75.9*	75.1*	73.5*

Source: Adapted from Bangladesh Bureau of Statistic (November, 2016) and Seventh Five Year Plan (7FYP) Projections (2016). ***** *Projected*

Table – 4.20 represents private investment, public investment, national savings, consumption, etc from 2014 to 2020 (projected). It is to be mentioned that private investment is gradually growing and this is a good sign for the economy. The more we can encourage private investment, the more contribution we will make in the GDP.

Table 4.21 **Sectoral Growth Projection for Seventh Five Year Plan (7FYP)**

Sectors	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*	*2020*
Growth Rate							
Agriculture	4.4	3.0	3.2	3.3	3.3*	3.4*	3.5*
Industry	8.2	9.6	10.2	10.5	10.8*	11.2*	11.9*
o/w Mfg.	8.7	10.3	10.5	11.0	11.3*	12.0*	12.6*
Services	5.6	5.8	6.3	6.4	6.5*	6.6*	6.7*
GDP	6.1	6.5	7.0	7.2	7.4*	7.6*	8.0*
Share as % of GDP (FY 2015 Prices)							
Agriculture	16.1	15.6	15.1	14.5	14.0*	13.4*	12.9*
Industry	27.6	28.0	28.9	29.8	30.8*	31.8*	33.0*
o/w Mfg.	17.4	17.8	18.4	19.1	19.8*	20.6*	21.5*
Services	56.3	56.4	56.1	55.7	55.3*	54.8*	54.1*

Source: Adapted from Bangladesh Bureau of Statistic (November, 2015) and Seventh Five Year Plan (7FYP) projections. ***** *Projected*

We get a synopsis of Sectoral growth prediction for Seventh Five Year Plan (7FYP) from the table 4.21. It is stated by the table that we are gaining our strengths in industrial sector day by day though Bangladesh is an agro-based country.

Table 4.22 **Export Performance in the Sixth Plan (Million US$)**

Sectors	Jute & Jute goods	Leather & Leather Products	Foot-wear	Frozen Food	ICT	Others	Non-RMG Total	RMG	Total Exports
FY 10	736.4	226.1	204.1	445.2	35.4	2294.0	3701.7	12496.8	16176.2

FY 11	1114.9	297.8	297.8	62.5.0	45.3	2669.5	5005.0	17914.3	22919.3
FY 12	939.3	329.8	350.6	637.6	70.8	2940.8	5198.0	19089.8	24287.7
FY 13	1030.6	399.7	419.3	543.8	101.6	3016.5	5502.4	21515.8	27027.4
FY 14	824.5	505.5	550.1	638.2	125	3051.1	5694.1	24491.9	30186.0
FY 15	868.5	397.5	673.3	568.0	133	3077.6	5717.5	25491.4	31208.9
Growth (in percent)									
FY 11	51.4	31.7	45.9	40.4	28.0	16.4	35.2	43.4	41.7
FY 12	-15.8	10.7	17.7	2.0	56.3	10.2	3.9	6.6	6.0
FY 13	9.7	21.2	19.6	-14.7	43.5	2.6	5.9	12.7	11.3
FY 14	-20.0	26.5	31.2	17.4	22.7	1.1	3.5	13.8	11.7
FY 15	5.3	-21.4	22.4	-11.0	6.3	0.9	0.4	4.1	3.4

Source: Adapted from Export Promotion Bureau (November, 2015)

Table -4.23: **The Changes in Employment Structure, 2005/06-2009/10** (In Millions)

Sectors	**FY2006**	**FY 2010**
Agriculture	22.9	22.3
Manufacturing	5.3	6.0
Construction	1.5	2.0
Service	17.8	19.7
Total	47.4	51.0
Sector-wise Employment	(in Percent)	
Agriculture	48.1	43.6
Non-agriculture	51.9	56.4

Source: Adapted from Bangladesh Bureau of Statistics (2011)

Every year, we are increasingly overloaded by our unemployment and under-employment. This tendency is very much alarming for whole economy. Moreover, there is a migration of labor forces in our economy. Recently Bangladesh Bureau of Statistic (BBS, 2011) has conducted a survey of farm and non-farm employment. This survey has shown that total 9.6 million workers have switched from agriculture sector to non-farm sectors within the five-year period (2005 – 2010). The share of agriculture sector in the total labor force has sharply fallen by 4.5% during the 5-year period from 48.1% to 43.6% by 2010 (figure – 4.3).

Enhanced progress in manufacturing, construction, and services areas expected under this projection should assist in generating of 10.4 million fresh employments. This arrangement should be necessary to engage the fresher in the job markets (9.6 million) and also enable a ample number of employees to discovery employment opportunities away from the farming area (about 1.2 million per year).

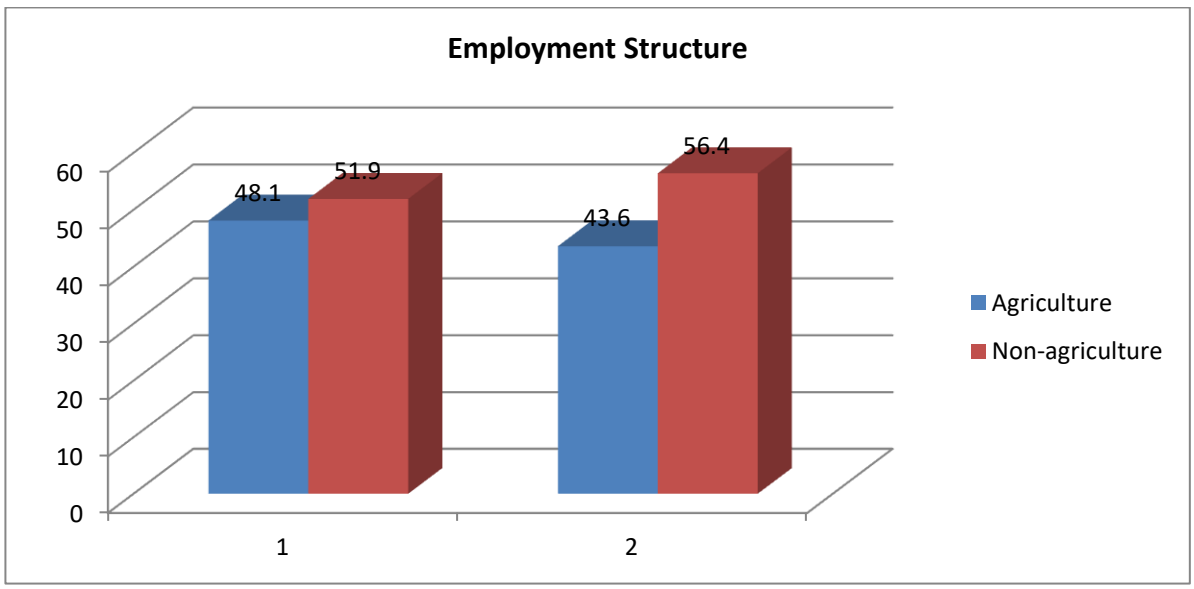


Figure -4.3 : Comparison of Employment Opportunity in Agriculture and Non-agriculture sector

Source : Adapted from Bangladesh Bureau of Statistic (November, 2011).

This figure indicates that employment opportunities in agriculture are decreasing day by day (from 48.1% in 2005 to 43.6% in 2010 i.e. the net effect is negative (- 4.5%). On the other hand, non-agriculture sectors accommodate more people at an increasing rate (from 51.9% in 2005 to 56.4% in 2010 i.e. the effect is positive (+ 4.5%).

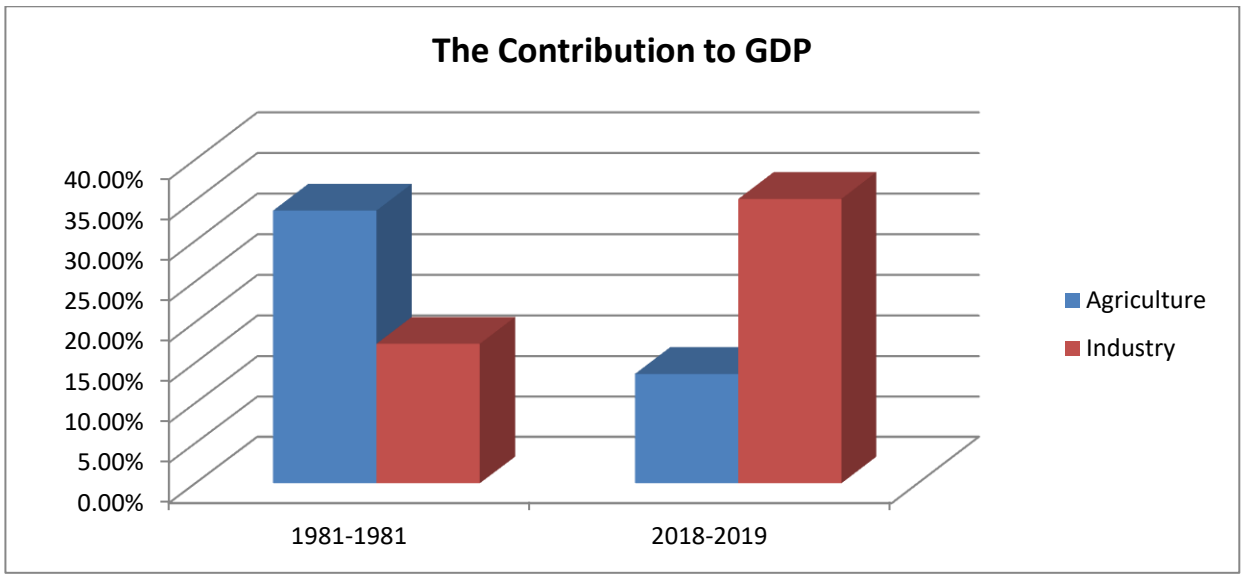


Figure -4.4 : Comparative contribution of Agriculture and Industry sector to the GDP

Source: The Author (constructed based on The Daily Prothom Alo, November 07, 2019 & www.bgmea.com.bd)

In the figure – 4.4, we notice that the contribution of agricultural sector to GDP is decreasing day by day whereas industry dominates the whole economy. Moreover, it is stated earlier that 1.2 million people are migrating from agro-based society to industry based society every year. So we should focus on the particular industry that can accommodate more manpower. Small and medium enterprises are the best option in this regard.

4.11 Summary

Bangladesh had a glorious tradition in small scale enterprises. M*uslin*, the fine cloth of Dhaka, was well-known all over the world during the Mughal dynasty (1526- 1707). Now *Jamdani* is quite popular at home and abroad. Moreover, some other Bangladeshi handicrafts, ready-made garments, metal work, gold and silver thread work, silk, cotton, leather, jute products etc. are dominating in the world market. These world famous products are made by Bangladesh and small and medium scale enterprises are main sources of these well-known brands. Small and medium enterprises are acknowledging as the main strength of our economy. We may utter again SMEs as the *driving force of the nation*.

CHAPTER – FIVE: ANALYSIS AND INTERPRETATION OF DATA

5.0 Introduction:

Industrialization is a precondition for viable economic expansion and attainment of social development in an emerging economy like Bangladesh. So the government of People's Republic of Bangladesh has taken initiatives to speed up the atmosphere responsive sustainable business development in the country. In order to quicken the step of industrialization, *National Industrial Policy-2016* was articulated by Ministry of Industries. The imperative and fundamental goals of this industrial policy consist of comprehensive and justifiable industrial progress over the generation of dynamic engagement of fresher to make new entrepreneurs, placing women in the economic growth process and identification of international market linkage. The strategic factors of National Industrial Policy- 2016 are infrastructural renovation, modification of the economic base, enhanced economic progress, jobs creation, enlarging income level, and improving of livelihood of the people. The vital and primary aim of this policy is to contribute to Bangladesh's transition to middle income country by 2021. An appropriate action plan has been developed in discussion with relevant ministries and other stakeholders to attain the expected industrial growth. At the end of this policy, distinctive importance is being placed on micro, small, and medium enterprise (MSME) development. Cottage, Micro, Small and Medium Enterprises (CMSMEs) are acknowledged as a prospective segment for undertaking joblessness difficulty (Bangladesh Economic Review, 2017).

5.1 Impact of IT/IS on a Firm's (Small and Medium Enterprise) Performance

Bangladesh is striving hard to emerge as a country of middle-income status by the year 2021. In this heavily populated country, the small businesses or small & medium enterprises may also be

considered as the backbone of national economy. Facing the challenge of creating large-scale employment opportunities, increasing per-capita income, reducing poverty, and social inequality; government of People's Republic of Bangladesh has taken initiatives to establish and develop small and medium enterprises (SMEs) as a pro-poor development strategy for achieving a vision 2021. SMEs are recently acknowledged the most promising sector in Bangladesh particularly in creating new employment opportunities. There is a very high density of SME inhabitants in Bangladesh Industrial economy. Bakth and Basher (2015) state that this is completely impossible to achieve double digit economic growth without caring the field of small and medium enterprises. Moreover, in the comprehensive latest industrial policy, the small business sector was declared as a priority sector that is playing a significant role in employment creation, entrepreneurship development, poverty alleviation and national economic growth (SME Foundation, April, 2018).

Our SMEs are facing some severe problems over the last four decades such as lack of available loan facilities, lack of sufficient government patronization, lack of proper infrastructure, etc. Moreover, this boosting sector is suffering a lot by lack of appropriate modern technology. But, a firm (large, medium or small scale) may hardly survive successfully without ensuring extensive use of modern information technology. Recently, the scenario is gradually improving. Small firms are highly interested to introduce latest technology in their day to day operations to achieve operational excellence.

This study has conducted on 68 small firms in Dhaka city and adjacent to Dhaka city. The analysis and interpretation of data are given below.

Table – 5.1 **Using Computerized Information System**

Firm's / Entity's Status	Frequency	Percentage
No	11	16
Yes	57	84
Total	68	100

Source : The Author (constructed based on data collected from field)

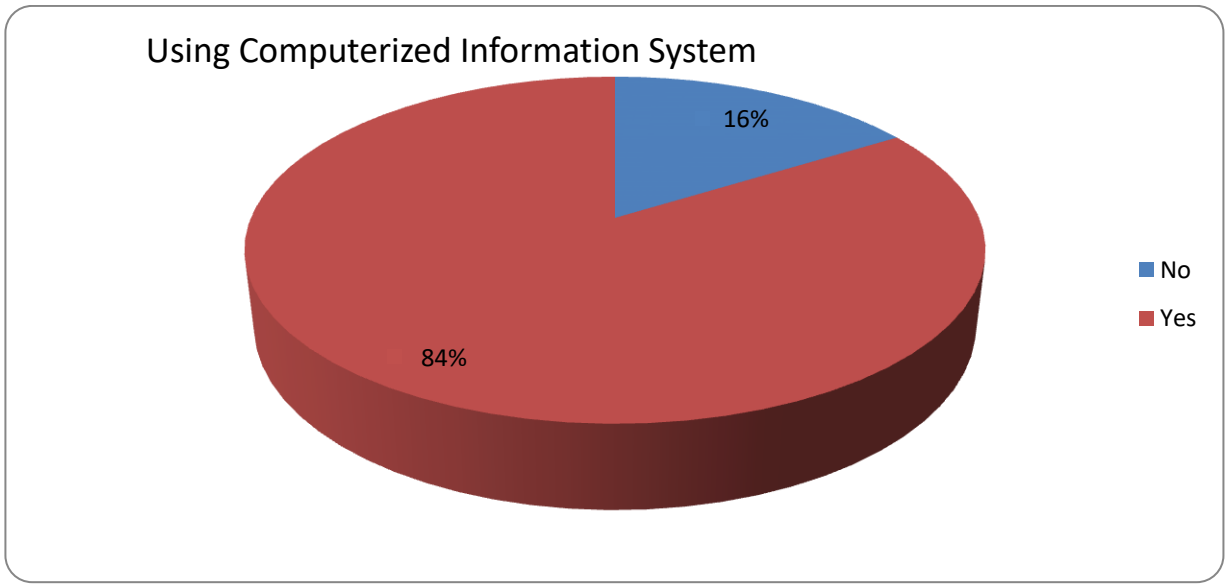


Figure- 5.1: Using Computerized information system

Source : The Author (constructed based on data collected from field)

In this table (Table-5.1), it is added that we don't make sure the extensive use of information systems or information and communication technology in small scale enterprises (SMEs) in our country. It is stated that I have conducted my study on Dhaka city and its adjacent areas only.

Out of 68 firms, 16% firms (11 firms) still now do not apply information technology, but 84% firms (57 firms) are using computerized information technology. Though, 16% percent firms do not apply computerized information system, they highly realize the importance of information system in 21st century. They have made comment that we may hardly survive in a world of competition without having the latest technology.

Table 5.2 : **Types of Business or Nature of Business**

Business Sector	**Category of Firms/Entity**	**Frequency (N)**
Industrial/ Manufacturing	Ready-made Garments (RMG)	2
	Jute and Jute Products	4
	Leather and Leather Products	5
	Electronic and Electrical Products	5
	Light Engineering	4
	Furniture	3
	Handicrafts	5
	Plastic Products	4
	Others Industrial or Manufacturing	4
Retail/ Wholesale	Fashion House	6
	Online Shopping	5
	Jewelry	3
	Others Wholesale and Retail	6

Other service	Others services oriented entities	12
Total		**68**

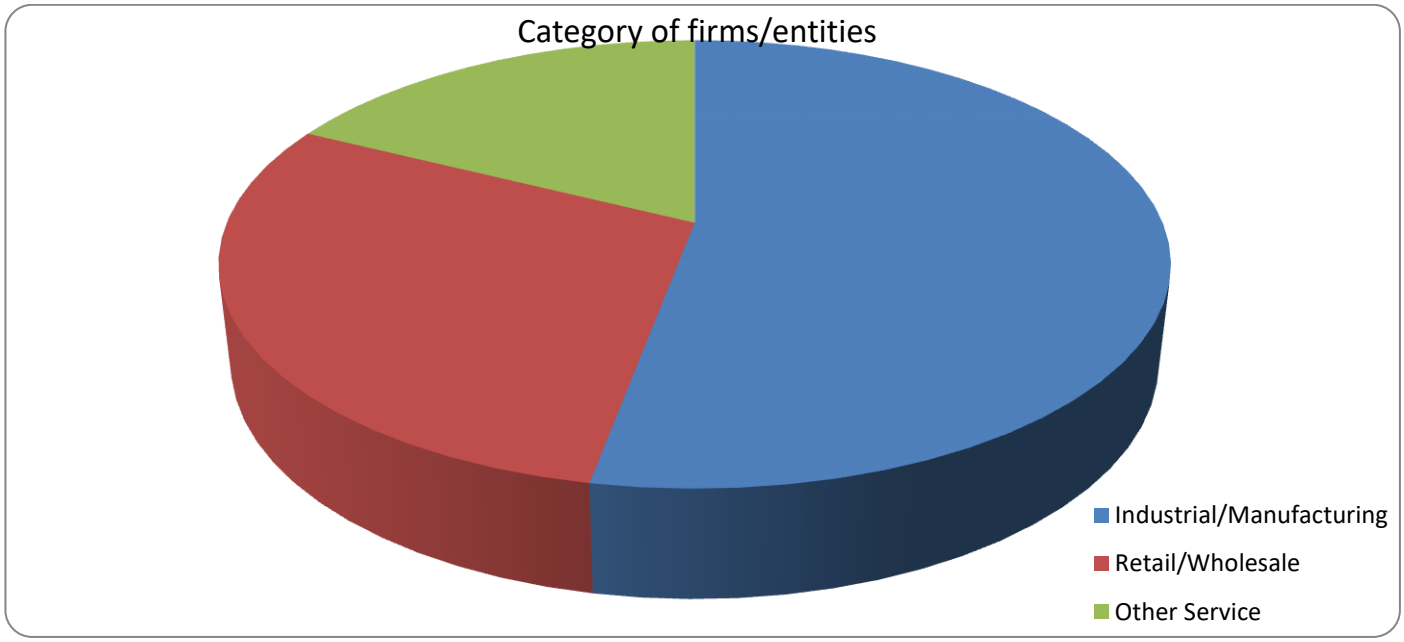


Figure- 5.2: Category of Firms or Types of Business

Source : The Author

The figure-5.2 states that 36 firms i.e. 53% surveyed firms are different types of industrial or manufacturing firms, 20 firms (29%) are wholesale or retail houses, and rest 12 (18%) firms are service oriented entities.

Table – 5.3 **Gender Information**

Gender	Frequency	Percentage
Male	36	53
Female	32	47
Total	68	100

Source : The Author (constructed base on Field Survey)

The above table shows that 36 firms (53%) are operated by male entrepreneurs and 32 firms (47%) are headed by female organizers.

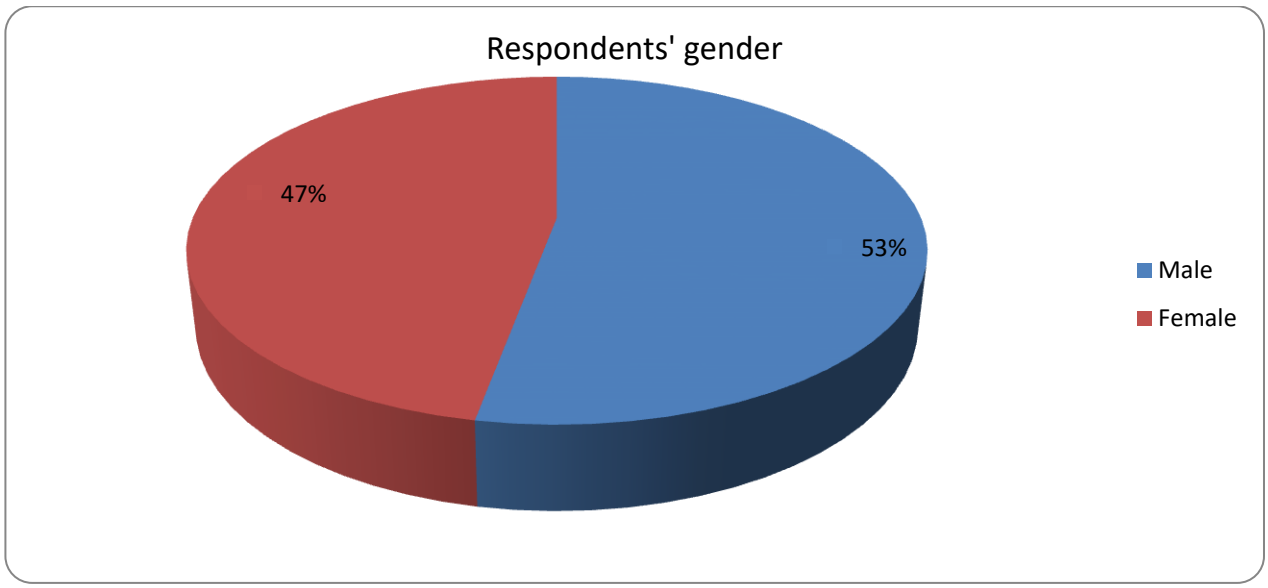


Figure- 5.3: Gender's Status

Source: The Author (constructed base on Field Survey)

Table –5.4: **Number of Respondents and Their Position**

Position/Rank	Frequency	Percentage
Owner-Manager	55	81
Chief Officer/Key Person	7	10
IT Officer	6	9
Total	68	100

Source : The Author (constructed base on Field Survey)

The Table 5.4 depicts that 81% respondents were owner-managers, 10% were chief officers or key person, and only 9% respondents were IT officers.

Table - 5.5 :**Years of Involvement in Business / Business Age**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Less than 1 Years	3	4.41	4.41	4.41
	1 - 5 Years	11	16.18	16.18	20.59
	6 - 10 Years	21	30.88	30.88	51.47
	11 - 15 Years	18	26.47	26.47	77.94
	16 - 20 Years	10	14.71	14.71	92.65
	More than 20 Years	5	7.35	7.35	100.00
	Total	68	100.0	100.0	

Source : The Author (constructed base on Field Survey)

Table 5.5 shows that about 31% respondents acquired 6 – 10 years of working experience, 26.47% acquired 11 – 15 years, less than one year about 4.4%, 1-5 years 16.2%; working experience; 16 – 20 years again 14.71%, more than 20 years about 7.35% working experience.

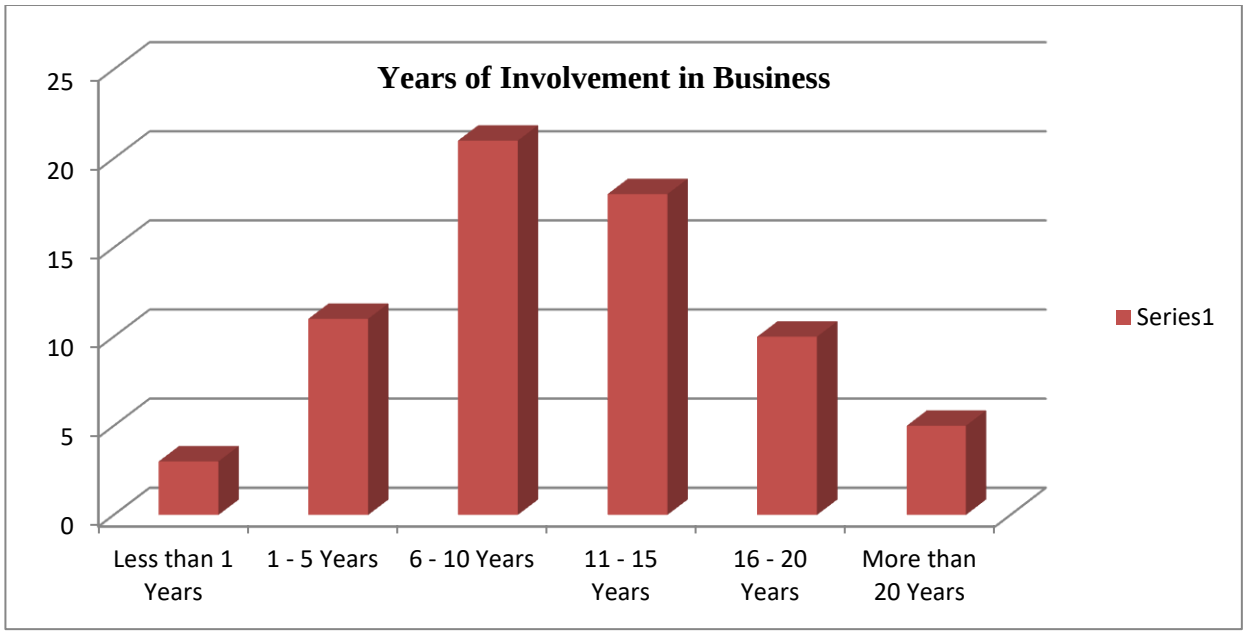


Figure - 5.3 :Years of Involvement in Business / Business Age

Source : The Author (constructed base on Field Survey)

Table- 5.6 : **Years of IS/IT Experience**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	No Experience at all	11	16.0	16.0	16.0
	Less than 1 Year	2	3.0	3.0	19.0
	1 - 2 Years	5	7.0	7.0	26.0
	2 - 5 Years	15	22.0	22.0	48.0
	5 - 8 Years	22	33.0	33.0	81.0

	8 - 12 Years	8	12.0	12.0	93.0
	More than 12 Years	5	7.0	7.0	100.0
	Total	68	100.0	100.0	

Source : The Author (constructed base on Field Survey)

Table 5.6 shows that only 3 % respondents has less than one year IT experience; 1-2 years 7%; 2–5 years 22%, 5 – 8 years 33%; 8 – 12 years 12%; more than 12 years 7% of IT experience. It is added that 16% respondents (11 firms) have no more IS/IT experience because they do not use information technology.

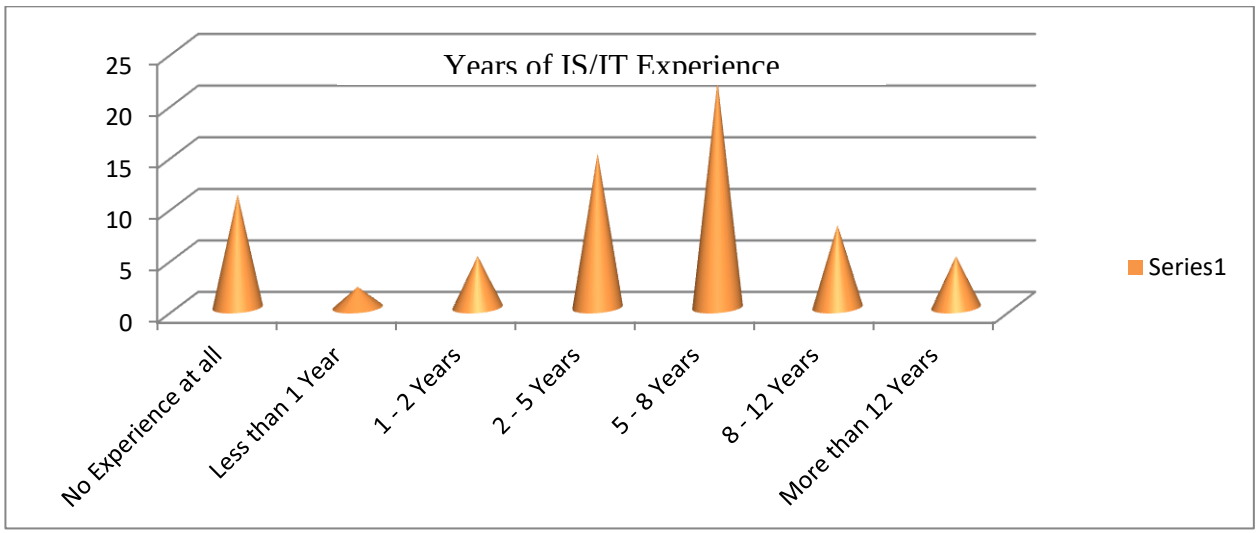


Figure- 5.4: Years of IS/IT Experience

Source : The Author (constructed base on Field Survey)

Table-5.7: **New Way of Doing Operations**

As an owner-manager, you have to change the way you work when you introduce information technology	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	37	18	10	3	0

Source: The Author (constructed base on Field Survey)

The above table (Table- 5.7) depicts that in maximum cases (54.5%) owner-managers strongly feel, 26.5% moderately feel that they have to introduce the new way of doing thing after introducing information technology. 14.7% respondents did not give any opinion and only 4.3% respondents have disagreed with the statement without showing any rationale ground. Comparing with agreement the ratio of disagreement is very poor.

Table-5.8 **Cost-Benefit Analysis:**

The costs of introducing and maintaining computer technology are LESS than the benefits gained	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	16	30	14	8	0

Source: The Author (constructed base on Field Survey)

The above table represents that 24% owner-managers strongly feel, 44% simply feel that they will enjoy more benefits than the cost incurred after introducing new technology. 20% did not give any opinion and 12% respondents have disagreed with the statement without showing any rationale ground. Comparing with agreement the ratio of disagreement is poor.

Table-5.9 : **Intention to Apply New Technology** .

Owners/Managers/the workforces are less interested to learn new technology.	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	0	4	8	30	26

Source: The Author (constructed base on Field Survey)

Here, only 6% respondents (owner-manager and other staffs) are reluctant to use information systems, 12% respondents are neutral in this regard. On the other hand, 44% respondents disagree and 38% population strongly disagrees with this statement. On the basis of field survey, we can say that 82% small business owners are highly interested to learn and introduce new technology in their day to day operations because they know the prospect of latest technology.

Table-5.10: **Intention to Spend Time to Learn New Technology**

Owners/Managers/the workforces do not have enough time to learn new technology	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	0	4	14	46	4

Source: The Author (constructed base on Field Survey)

In the above table, it is noted that 68% respondent disagree and 6% strangely disagree with the statement i.e. 74% owner-manager have enough time to get the orientation about new technology and 21% respondents have no opinion. Comparing with disagreement the ratio of agreement is very poor.

Table-5.11: **Easier Control through New Technology**

Owners/Managers cannot control the business if they do not understand the technology	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	2	30	14	16	6

Source: The Author (constructed base on Field Survey).

Here it is observed that 47% respondents support this statement. 21% respondents have no idea in this regard. 32% owner-managers do not think that they have to have enough technical knowledge if they want to guide and control the business successfully.

Table-5.12: **Easier Adoption of New Technology**

The more you know about computer technology BEFORE you invest in it to make sure the easier implementation.	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	9	32	18	7	2

Source: The Author (constructed base on Field Survey).

In the Table 5.12 it is illustrated that more than 13% respondents are strongly agreed and 47% respondents are agreed that is very easier to use information technology and most of them are very user friendly. The respondents think that a short orientation can assist them to make sure the proper utilization of new technology. About 26% owner-managers did not give any opinion. Only about 14% respondents are disagreed with the statement which is very insignificant.

Table-5.13: **Enjoying Competitive Advantages by Introducing New Technology**

You need to use computer in order to compete successfully in today's market place.	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	43	22	3	0	0

Source: The Author (constructed base on Field Survey).

It is said that *if you want to survive successfully in the competitive field in the 21st century, you have to make sure the extensive use of information technology* (Laudon & Laudon, 2017*)*. Though our SME sector is a late adopter of information technology or information system, they fully recognize the significance of introducing new technology. In the above Table-5.13, 63% respondents strongly feel and 33% respondents feel that they need computer based information systems to enjoy competitive advantages successfully. Only 4% respondents did not give any opinion which is very negligible figure.

Table-5.14: **Orientation of New Technology**

Though you are using new technology, you do not know enough about them.	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	0	25	11	27	5

Source: The Author (constructed base on Field Survey)

The above table demonstrates that in 37% cases small business owners classify themselves as a little bit illiterate in the field of information technology. But they are using information technology in their day to day operations. 40% respondents have disagreed with this statement. The respondents apply IT with a good orientation. In 7% cases, owner-managers strongly disagree with the statement and 16% respondents did not give any opinion.

Table-5.15: **Level of IT/IS Knowledge**

You do not know where to go for advice on the purchase of equipment/hardware and software.	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	6	15	5	26	16

Source: The Author (constructed base on Field Survey).

Here, only 31% respondents opine (strongly and simply) that their level of IT knowledge is poor and 62% respondents do not agree with the statement. Their level of IT knowledge is enough to purchase computer hardware and software. Only 7% respondent did not give any opinion.

Table 5.16 : **Information Technology or Information System (IT/IS) Saves Time**

Technology saves time	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	53	15	0	0	0

Source: The Author (constructed base on Field Survey).

In the table 5.16, it is clear that information systems/information technology saves time which is invaluable in business world. 78% respondents are strongly agreed with this statement and 22% respondents' opinion is that IS/IT saves time which increases efficiency. Nobody can differ from this statement.

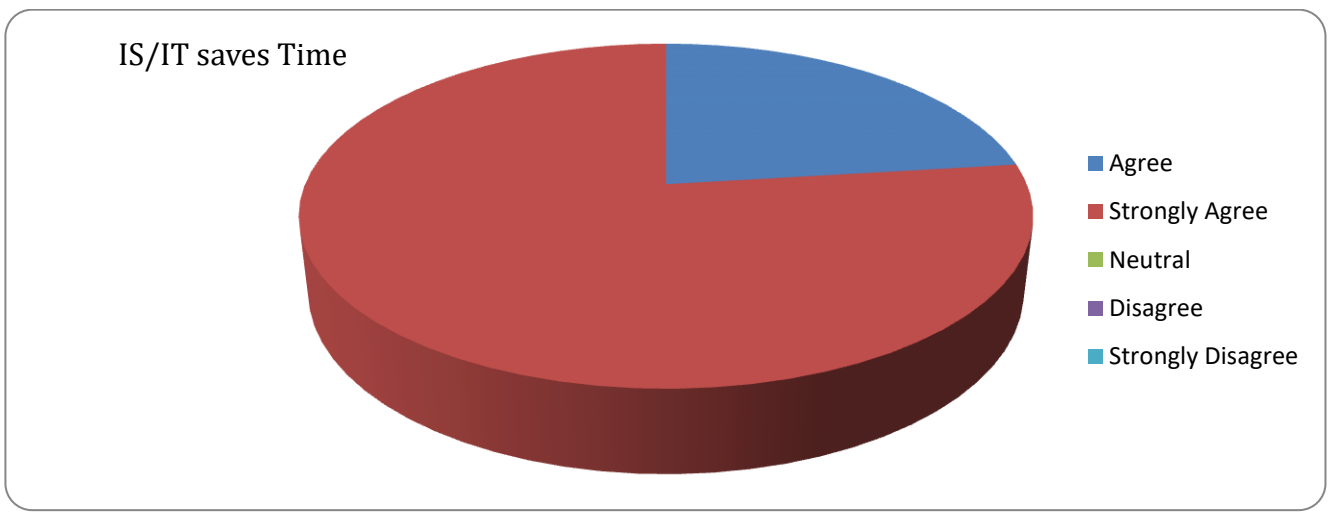


Figure -5.5 : Information Technology (IT/IS) saves time

Source: The Author (constructed base on Field Survey).

Table-5.17: **Information Technology (IT/IS) or Information System saves money**

Technology saves money	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	33	25	6	4	0

Source: The Author (constructed base on Field Survey).

In the table 5.17, it is stated by 48% respondents that information systems/information technology saves money which increases efficiency and profit margin of a firm. 37% respondents are agreed with this statement and 9% respondents have no more opinion and 6% respondents do not think that IS/IT saves time.

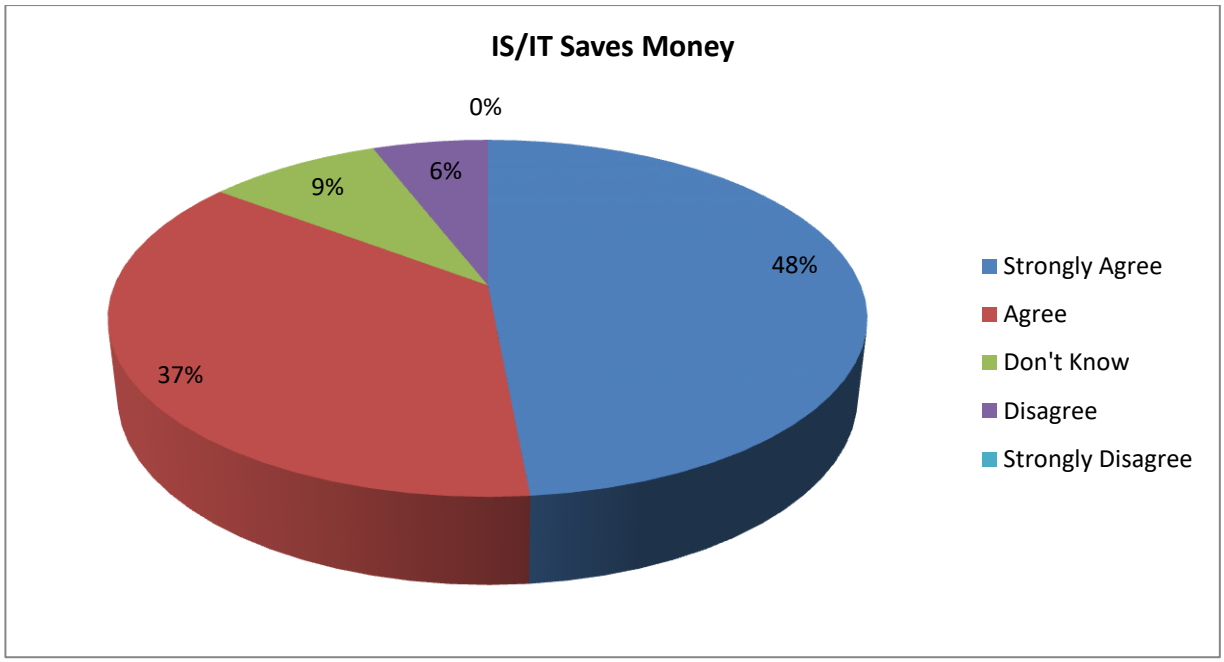


Figure-5.6: IS/IT Saves Money

Source: The Author (constructed base on Field Survey).

Table-5.18: **Information Technology Saves Effort**

Technology saves effort	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	38	26	4	0	0

Source: The Author (constructed base on Field Survey).

In the table 5.18, it is clear that information systems/information technology reduces human effort which also lowers the cost. IT also increases the speed of business operations. Majority of the respondents i.e. 56% are strongly agreed with this statement and 38% respondents' opinion is that IS/IT saves effort. Only 6% respondents are in neutral position. Nobody can differ from this statement.

Table-5.19: **Technology Ensures Efficiency (Productivity)**

Using information systems, you will improve your effectiveness and efficiency.	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	12	37	15	4	

Source: The Author (constructed base on Field Survey).

The table-5.19 depicts that there is significant relationship between information systems and a firm's productivity. In this study, 72% respondents think that they can improve their effectiveness and efficiency by using information system. Few respondents (22%) did not give any opinion. Only 6% owner-managers have disagreed here.

Table-5.20: **Traditional (paper based) System is better than Information Technology (IT) based system**

Paper based systems are just as good as technology based system.	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	5	11	6	42	4

Source: The Author (constructed base on Field Survey).

It is stated by most of the owner-managers (68%) of SME in Dhaka city that paper based system can cost of time, money, and effort. On the other hand, IT based system is faster, more effective and accurate than traditional system. In the 23% case, the owner-managers prefer traditional system. It is added that aged owners are little bit reluctant to welcome new technology. Only 9% respondents have no opinion in this regard (Table-5.20).

Table - 5.21: **Technology Ensures Accuracy**

Technology is always right	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	26	32	5	5	0

Source: The Author (constructed base on Field Survey).

In the above Table-21 it is proved that manual operation is less effective than IT/IS based operations. Information technology ensures accuracy. 38% respondents are strongly agreed with the statement and 47% are simply agreed with the statement. Only 7% did not give any opinion and a very insignificant number of respondents don't support this statement.

Table-5.22: **Affordable Cost of Modern Technology**

You cannot afford the costs of modern technology	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	11	7	0	32	18

Source: The Author (constructed base on Field Survey).

In the table-5.22, 16% owners of small firms are highly worried and 11% are moderately worried about the installation cost and other cost of information technology. But 47% respondent did not accept this statement and 26% respondents strongly reject the statement, i. e. 73% owner-managers of small firms think that they afford the costs of modern technology. Because, the cost of information technology is decreasing day by day.

Table-5.23: **New Technology is used as Promotional Tool**

IS/IT is helpful for your promotional activities (promoting products or services in home and abroad).	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	6	35	18	7	2

Source: The Author (constructed base on Field Survey).

Web sites/web portals, Facebook, etc. are treated as very popular promotional tools. These are open for all. David, F. (2015) said that more than 50% transactions occur after 6:00 pm world-wide when many retail stores remain closed. 60% respondents think that IS/IT is quite popular as

promotional tool. In 27% case, respondents did not give any opinion. Only 13% respondents did not support the statement.

Table-5.24: **New Technology is used as Communication Tool**

IT is very helpful as communication tool.	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	28	40	0	0	0

Source: The Author (constructed base on Field Survey).

In the table-5.23, it is undoubtedly stated by respondents (100%) that new technology works a great source of communication. Cell phone (especially smart phone technology), e-mail, messenger, and other devices are used as most appropriate communication tool.

Table-5.25 : **Technology Ensures Latest Mode of Transactions**

Electronic Fund Transfer (EFT) Electronic Data Interchange (EDI), Computer Aided Designing (CAD), and Computer Aided Manufacturing (CAM), etc. tools and techniques are very much helpful to operate your business smoothly, if you apply them	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	9	25	34	0	0

Source: The Author (constructed base on Field Survey).

Buyers and sellers are highly grateful to the latest mode of transactions in global scale. EFT, EDI, CAD, CAM, and other tools and techniques are very much helpful in business operations. But in our country, 50% owner-managers are not aware about the latest mode of transactions. In the near future, these modes of transactions will take place instead of traditional one.

Table-5.26: **Getting Support (training, development and other assistances) from Government**

The training and other necessary support provided by BSCIC, SMEF or other government wings are sufficient.	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	2	8	15	18	25

Source: The Author (constructed base on Field Survey).

Table-5.25 depicts that 27% respondents have simply disagreed with the statement and 37% respondents strongly disagree. About 64% owner-managers think that BSCIC, SME Foundation and other wings of government do not offer enough support for the small businesses in Bangladesh. The rest 34% opine that BSCIC, SMEF, and other departments of government paly their assigned roles.

Table-5.27: **New Technology Saves Inventory Cost**

IT/IS helps you reducing your inventory cost.	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	14	35	4	2	0

Source: The Author (constructed base on Field Survey).

Table-5.26 shows that a satisfactory number (25%) of owners are strongly convinced and 64% are moderately convinced that IT/IS saves inventory costs. The rest 7% did not give any opinion and 4% respondents have disagreed with statement but the ratio is very insignificant.

Table-5.28: **Ease of use of New Technology**

After all, it is easier for yourself to use computerized information systems/information technology.	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	4	40	16	6	2

Source: The Author (constructed base on Field Survey).

It is observed by Venkatesh at al., (2003) that users are worried about the ease of usefulness of new technology. We know that modern technology is hardly welcomed by aged people in most of the cases except some few ones. They want to avoid new technology if they can and their perception is '*old is gold'* without showing any rationale ground. In the above table -5.27, 65% respondents feel that information technology is absolutely easier to use. 23% owner-manager or key persons did not give any opinion and only 12% respondents have disagreed with the statement without showing any rationale ground.

Table-5.29: **Information Technology/Information system (IT/IS) improves overall performance**

Finally, information systems/ information technology (IS/IT) improves overall performance of an entity (small firm).	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
Out of 68 respondents	8	47	10	3	0

Source: The Author (constructed base on Field Survey)

The Table-5.28 depicts that in maximum cases (81%) owner-managers simply feel or strongly feel that information systems/information technology (IS/IT) improves overall performance of a small and medium sized enterprise. 15% did not give any opinion and only 4% respondents have disagreed with the statement without showing any rationale ground. Comparing with agreement, the ratio of disagreement is very poor.

Table 5.30: **Descriptive Statistics of Observed Variables**: at a Glance

SL	**Observed Variables**	**Strongly Agree (5)**	**Agree (4)**	**Don't Know (3)**	**Disagree (2)**	Strongly Disagree (1)	**Mode**	**Mean**
1	You have to change the way you work when you introduce information technology	54.5%	26.5%	15%	4%	0%	5	4.21
2	The costs of introducing and maintaining computer technology are LESS than the benefits gained.	24%	44%	20%	12%	0%	4	3.75
3	Owners/Managers/the workforces are less interested to learn new technology	0%	6%	12%	44%	38%	2	1.92
4	Owners/Managers/the workforces do not have enough time to learn new technology	0%	5%	21%	68%	6%	2	2.27
5	Owners/Managers cannot control	3%	44%	21%	21%	11%	4	3.02

	the business if they do not understand the technology							
6	The more you know about computer technology BEFORE you invest in it to make sure the easier implementation.	0%	48%	36%	12%	4%	4	3.29
7	You need to use computer in order to compete in today's market place.	63%	33%	4%	0%	0%	5	4.5
8	Though you are using new technology, you do not know enough about them.	0%	37%	16%	40%	7%	2	2.8
9	I do not know where to go for advice on the purchase of equipment/hardware and software.	8%	23%	7%	34%	28%	2	2.46
10	Technology saves time	78%	22%	0%	0%	0%	5	4.77
11	Technology saves money	48%	37%	9%	6%	0%	5	4.33
12	Paper based systems are just as good as technology based systems	4%	19%	9%	56%	12%	2	2.67
13	Technology is always right	38%	47%	7%	8%	0%	4	4.1
14	We cannot afford the costs of modern technology	16%	11%	0%	47%	26%	2	2.29
15	Small and Medium Enterprises do not get enough technical support	4%	56%	16%	24%	0%	4	3.4

	from the Government in this area							
16	Training programs do not cater for Small and Medium Enterprises' needs	24%	40%	8%	12%	16%	4	2.81
17	IT/IS helps you to reduce your inventory cost.	25%	64%	7%	4%	0%	4	4.11
18	The training and other necessary support provided by BSCIC or SMEF or other government wings are sufficient.	8%	26%	0%	30%	36%	1	2.48
19	Technology saves effort	56%	38%	6%	0%	0%	5	4.29
20	Using information systems, you will improve your effectiveness and efficiency	12%	60%	22%	6%	0%	4	3.81
21	Using information systems, you will improve your productivity	15%	71%	12%	2%	0%	4	4.0
22	IS/IT is very helpful as communication tool	46%	54%	0%	0%	0%	4	4.46
23	IS/IT is very helpful for your promotional activities - promoting products and services in home and abroad	2%	58%	27%	10%	3%	4	3.48

24	Electronic Fund Transfer (EFT), Electronic Data Interchange (EDI), Computer Aided Manufacturing (CAM), Computer Aided Design (CAD), etc. tools and techniques are very much helpful to operate your business smoothly.	13%	37%	50%	0%	0%	3	3.40
25	After all, it is easier for yourself to use information systems/information technology	6%	59%	23%	9%	3%	4	3.35
26	Finally, using information systems, you will improve your overall performance	12%	69%	15%	4%	0%	4	3.88

Source: The Author (constructed base on Field Survey)

In the table 5.29, we have attained a summary of 68 respondents (owner-managers or key persons of the firms). After acquiring the information from the following table, we have a concrete conclusion.

Table 5.31 : **Descriptive Statistics of Observed Variables**

SL	**Observed Variables**	N	Maximum	Minimum	Standard Deviation
1	You have to change the way you work when you introduce information technology	68	5	2	0.77552104

2	The costs of introducing and maintaining computer technology are LESS than the benefits gained.	68	5	2	0.967612789
3	Owners/Managers/the workforces are less interested to learn new technology	68	4	1	0.882202099
4	Owners/Managers/the workforces do not have enough time to learn new technology	68	4	1	0.769909203
5	Owners/Managers cannot control the business if they do not understand the technology	68	5	1	1.162997894
6	The more you know about computer technology BEFORE you invest in it to make sure the easier implementation.	68	4	1	0.824538813
7	You need to use computer in order to compete in today's market place.	68	5	3	0.700140042
8	Though I am using new technology, I do not know enough about them.	68	4	1	1.016270355
9	I do not know where to go for advice on the purchase of equipment/hardware and software.	68	5	1	1.349822624
10	Technology saves time	68	5	4	0.425435630
11	Technology saves money	68	5	2	0.809772513
12	Paper based systems are just as good as technology based systems	68	5	1	1.097611558
13	Technology is always right	68	5	2	0.869067911

14	We cannot afford the costs of modern technology	68	5	1	1.318593107
15	Small and Medium Enterprises do not get enough technical support from the Government in this area	68	5	2	0.891344334
16	Training programs do not cater for Small and Medium Enterprises' needs	68	5	1	1.428539108
17	IT/IS helps you to reduce your inventory cost.	68	5	2	0.731741038
18	The training provided by BSCIC or SMEF or other government wings is sufficient.	68	5	1	1.393125765
19	Technology saves effort	68	5	3	0.605094012
20	Using information systems, you will improve your effectiveness and efficiency.	68	5	2	0.657936809
21	Using information systems, you will improve your productivity.	68	5	2	0.594088526
22	IS/IT is very helpful as communication tool	68	5	2	0.503382226
23	IS/IT is very helpful for your promotional activities - promoting products and services in home and abroad.	68	5	1	0.779401093
24	Electronic Fund Transfer (EFT), Electronic Data Interchange (EDI), Computer Aided Manufacturing (CAM), Computer Aided Design (CAD), etc. tools and techniques are very much helpful to operate your business smoothly.	68	5	3	0.533564240
25	After all, it is easy for yourself to use	68	5	1	0.947330933

	information systems/information technology.				
26	Finally, using information systems, you will improve your overall performance.	68	5	2	0.70443542

Source: The Author (constructed base on Field Survey)

Table 5.32: **Summary Item Statistics**

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	No of Items
Item Means	3.456	1.923	4.769	2.846	2.480	.646	26
Item Variances	.840	.181	2.041	1.860	11.275	.287	26
Inter-Item Co-variances	.029	-.565	.978	1.543	-1.730	.034	26
Inter-Item Correlations	.033	-.433	.779	1.212	-1.799	.040	26

Source: The Author (constructed base on Field Survey)

Table 5.33 : **Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
QU001	135.6500	739.0940	.069	.712	.9543
QU002	136.1000	737.6180	.156	.698	.943
QU003	137.9200	735.9160	.351	.840	.934
QU004	138.5800	738.5230	.135	.845	.935
QU005	136.8300	738.3810	.047	.820	.934
QU006	136.5600	739.7020	.002	.707	.933

QU007	135.3500	738.9370	.112	.716	.946
QU008	137.0600	737.5460	.147	.706	.939
QU009	137.3800	737.0260	.095	.883	.936
QU010	135.0800	741.2100	-.180	.686	.932
QU011	135.5200	739.5490	.020	.748	.934
QU012	137.1700	743.4400	-.293	.746	.937
QU013	135.7500	738.0340	.151	.736	.941
QU014	136.4400	739.3890	.020	.705	.942
QU015	137.0400	733.0970	.321	.751	.938
QU016	137.5600	736.0950	.162	.806	.934
QU017	135.7100	738.3660	.173	.774	.944
QU018	137.3700	731.2170	.466	.793	.932
QU019	135.5600	740.1730	-.017	.742	.939
QU020	136.0400	737.6850	.283	.795	.941
QU021	135.8500	737.7010	.323	.837	.945
QU022	135.3800	740.7510	-.093	.844	.933
QU023	136.3700	738.1190	.175	.809	.947
QU024	136.4400	738.6830	.217	.692	.949
QU025	136.5000	736.8820	.228	.750	.936
QU026	135.9600	738.4690	.165	.846	.935

Source: The Author (constructed base on Field Survey)

Scale dependability is one of the most vital measures of scale suitability which is represented in percent of a variance in a real-world variable. Different methods are used to measure scale reliability, the most commonly used statistics is Cronbach's coefficient α. Cronbach's α deals with the degree of relationship in each set of items and shows the percentage of variance in the scale scores that is attributable to the true score. Cronbach's α level below 0.7 is considered unacceptable (Sanders et al., 2005). Here all the observed variables have a value of Cronbach's α above 0.7 (Table- 5.32). So, we can say that all the observed variables and their values are reliable.

5.2 : Relationship between IS/IT and the Success of Small Business

Doing business successfully in 21st century is absolutely unthinkable without applying information technology or information system. Because of environmental pressures (like pressures from competitor, clients, suppliers and others), a firm has to find out the ways how it can ensure the extensive use of information system to gain competitive advantages. An outdated organization will not compete any more with an organization having latest technology. I have told that 16% owner-managers are still not using information technology, but they have highly realized the significant role of IT. Since IT/IS saves time, effort, money, inventory costs, it is considered as a source of success for small scale enterprise. IT/IS works as the most common communication tool and promotional tool. It is a central resources or strategic resources of an organization. So we can say that there is a significant relationship between IT/IS and success of small business.

5.3 Summary

This chapter has an analysis of data of sixty eight small firms/businesses in Dhaka city and its adjacent areas in Bangladesh. The data and evidence obtained from the field visits, was presented in details. Based on this information, evidence and observation made during the field survey, the impact of information systems/information technology was assessed. It is identified clearly by the researcher that information technology or information system has a great impact on performance or productivity of small and medium enterprises in today's competitive business environment. There is no way of ignoring information system by a business firm whether it is large, medium or small in nature. They have to make sure the extensive use of information systems. Otherwise, they cannot survive successfully in the long run.

CHAPTER – SIX : MAJOR FINDINGS OF THE STUDY

6.0 Introduction:

This chapter mainly describes the finding of the study. The analysis of data is shown in chapter five. In this study, I have analyzed my data by applying descriptive statistics and Cronbach's Alpha Test. In this study, the whole analysis is prepared by personal computer (PC). The Statistical Package for Social Sciences (SPSS) Version 20 is applied in order to evaluate the data. After analyzing the data, the findings are made and described in this chapter. Cottage, Micro, Small and Medium Enterprises (CMSMEs) are acknowledged as a prospective area for resolving unemployment problem. In order to attain remarkable economic progress and earn foreign currency, this arena is essential for our economy. We can make ourselves self-dependent by inspiring and growing the business activities of small sectors.

6.1 Acceptance and Application IS/IT in Small Business (SB) in Bangladesh

In the challenging field of business in 21st century, it is hardly possible to do business successfully with ignoring information technology or information systems. The investment in IT/IS sector returns more than the investment in land, building or other infrastructural development (Laudon & Laudon, 2017). So, businessman ranging from big corporations to micro or cottage industries has to apply new technology to do business in the new horizon of business environment. There are four main effects of IS/IT on productivity and some other dimensions of a small firm which is presented briefly in the following figure. The Figure 6.1 illustrates that *performance, growth, & expansion* of a firm, and *new product development* are highly related with IS/IT adoption (Manochehri et al., 2012, Sabbagh et al., 2012). It is added

that each broad heading, like *performance*, consists of several measurements such as efficiency and effectiveness, ensuring competitiveness, expected benefits, and business innovation. IS/IT enhances the output of the labor force.

It is also well-known to all that IS/IT can make the transaction more simply and minimize cost. It also saves time. As a result, an organization (manufacturing or service oriented as well as large, medium or small) can increase its productivity (Manochehri et al., 2012). A good number of surveys shows that IT/IS and productivity is significantly co-related (Morikawa and Kim, 2006).

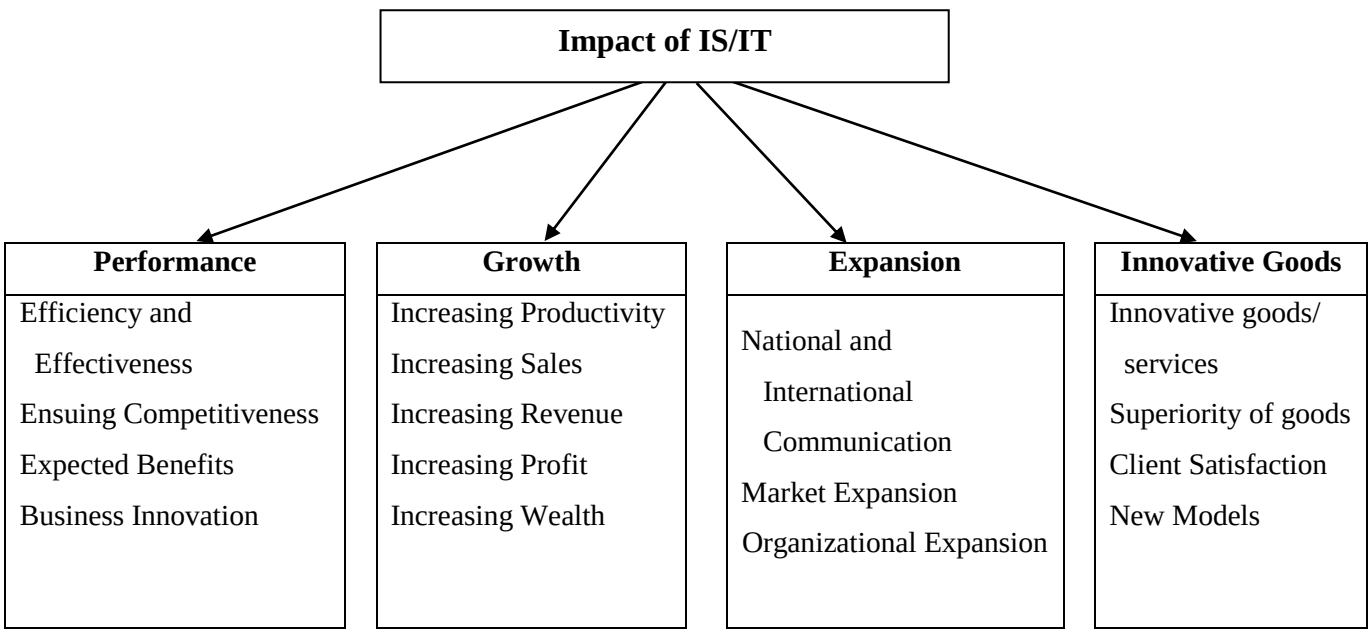


Figure -6.1 : Effect of IS/IT on Performance in the private sector SMEs

Source: The Author (constructed based on Consoli, D., 2012).

Lau & Tokutsu (1992) had conducted a comprehensive research over three decades (1960–1990 periods) in the US environment. They found that 50% of the economic development in the US was occurred due to ICT investment. Matei & Savulescu (2012) has made the same conclusion.

They told that economy progress largely depends on information system technology. Consoli, D (2012) has conducted a study on a sample of 20,000 firms or entities in 50 emerging countries which is financed by World Bank (WB). The study has proved that a business house with appropriate and modern technology can sell more than the traditional one. Its efficiency is greater and employee‘s progression is faster than the companies without IS/IT.

Wolf and Matthews (2007) reinforced this statement and indicated that some empirical evidence represented that small businesses may achieve greater viability because of their IS/IT mechanism. Thus they can acquire an excellent market position. We can say that IS/IT is not only measured as a ‘*growth driver’* but also as a ‘*growth supporter’*.

6.2 Direct and Indirect Effects of IS/IT on SME’s Performance

The power of the small scale industry is indispensable to the success and economic steadiness of a country (Santos & Brito, 2012). It could be suggested by the authors that special priority should be given to measure the direct and indirect impact of IS/IT on small business’s performance. It is true that economic solidity will be in trouble if business organizations are in insolvency and the birth rate of new business decreases day by day. The existence of small business rises with the accessibility of certain advances and credit supports (Gale & Brown, 2013). It is equally important that policies for constant modernization or innovation are also essential for the long-term existence of small businesses (Robinson & Stubberud, 2012).

Furthermore, if the owner-manager of small entity is unable to apply latest technology into their business activities, he places herself in a risky position and s/he is unable to enjoy competitive

advantages (Alsaaty, 2012; Marston et al., 2011). So information technology has a direct and indirect effect on SME's performance (figure 6.2).

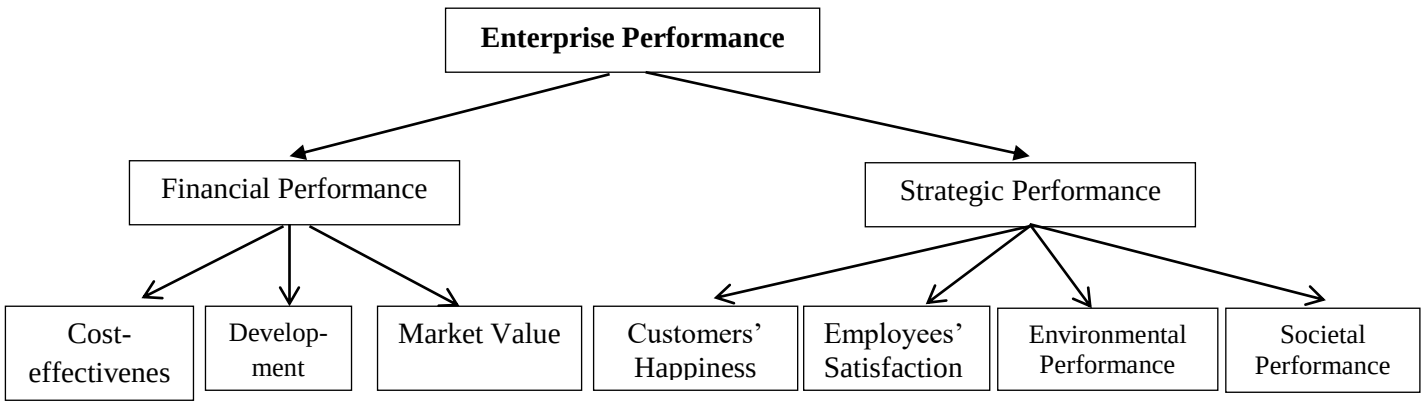


Figure - 6.2: Dimensions of Performance

Source: Adapted from Santos & Brito (2012)

Matei & Savulescu (2012) point out that efficiency, effectiveness and competitiveness, innovative business and intangible benefits, etc. are highly depended on information technology and its proper application. IS/IT has a vital societal influences. The overall performance (financial performance as well as strategic performance) of a firm are influenced by information and communication technology.

This research provides a comprehensive knowledge to the academics and specialists about the aspects and mixture of some dynamics that influence the growth and achievement with the implementation and use of IS/IT in small business (SB) in Bangladesh. This study identifies that most of the small businesses (84%) in our country have been using computerized information system to enjoy competitive advantages in the market. Although their knowledge is limited, and many owner-managers do not know about how to cope up with the practice of IS/IT implementation and usage. This study offers an outline which allows the owner-managers and IS/IT specialists of small firms to detect how the firms may attain a positive extent of success.

Moreover the firm can ensure an appropriate course of action relating to the difficulties of overwhelming IS/IT panic in their accomplishment. Additionally, this research explores a new knowledge/idea that clarifies how some significant factors or combinations of factors related to IS/IT success can be described within an environment of scarcity of resources.

6.3 Technology Acceptance Model (TAM):

The Technology Acceptance Model (**TAM**) is a model relating to information systems or information technology that identifies how the operators or end users can receive and use a technology. The model advocates that when users are placed with an innovative know-how, a number of attributes or dynamics stimulate their judgments about how and when they will use it, particularly:

- **Perceived Usefulness** (PU) – This is demarcated by Venkatesh and Davis as *"the extent to which a person trusts that using a specific method or system would improve his or her job performance*".
- **Perceived ease-of-use** (PEOU) – Venkatesh and Davis defined this as *"the extent to which an individual considers that using a particular system would be free from strength"*.

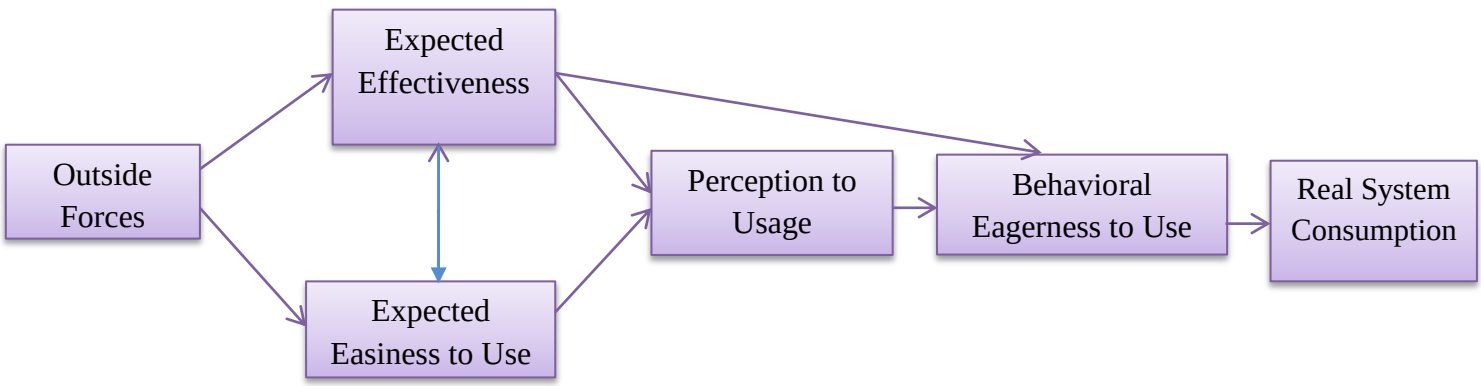


Figure- 6.4 : Technology Acceptance Model (TAM)

Source : the Author (constructed based on Venkatesh & Davis, 2000)

1. Outside Forces: A good number of external variables can have a direct impact on system utilization. The decision of an owner-manager relating to the IT adoption is highly influenced by the competitors and some other external pressure group such as competitor's pressures, business opportunities, customers' demand, availability of hardware, software, suppliers' cooperation, government support, etc.

2. Expected Effectiveness: In the 21st century, firms of all classes ranging from small scale to large scale largely depend on modern technology. They have to make sure the extensive use of information technology. Otherwise, they can hardly survive successfully in the competitive business filed in the long run. So owner-manager of a firm must have positive attitudes about information technology/information system. It is proven in this study that young entrepreneurs are highly interested to adopt new technology rather than their counter part (old people) doing their business traditionally.

3. Expected Easiness to Use: Users' intention to use modern technology is significant for IT/IS adoption. It is said by many scholars that old people are little bit reluctant to use latest technology. They hardly welcome the new technology since they have to have a new orientation about the sophisticated one. They feel better in their traditional domain or comfortable zone.

4. Perception to Usage: Finally, users of all kinds in a firm should make sure the proper utilization of information technology. They should apply appropriate technology for their respective tasks to achieve effectiveness and efficiency. It is suggested that owner-manager must conduct a cost-benefit analysis before taking decision to apply a new technology.

5. Behavioral Eagerness to Use: System application highly depends of behavioral eagerness to use

6.4 Factors/Determinants Affecting IS/IT Adoption in Small Business in Bangladesh

Small business (SB) or small & medium enterprise (SME) may be acknowledged as the pillar of the national economy of Bangladesh. The SMEs account for over 96% of the private sector industrial establishments, providing employment opportunities up to 78% of the non-agricultural labor force, and contribute to nearly 30% of the country's GDP (SME Foundation -2017).

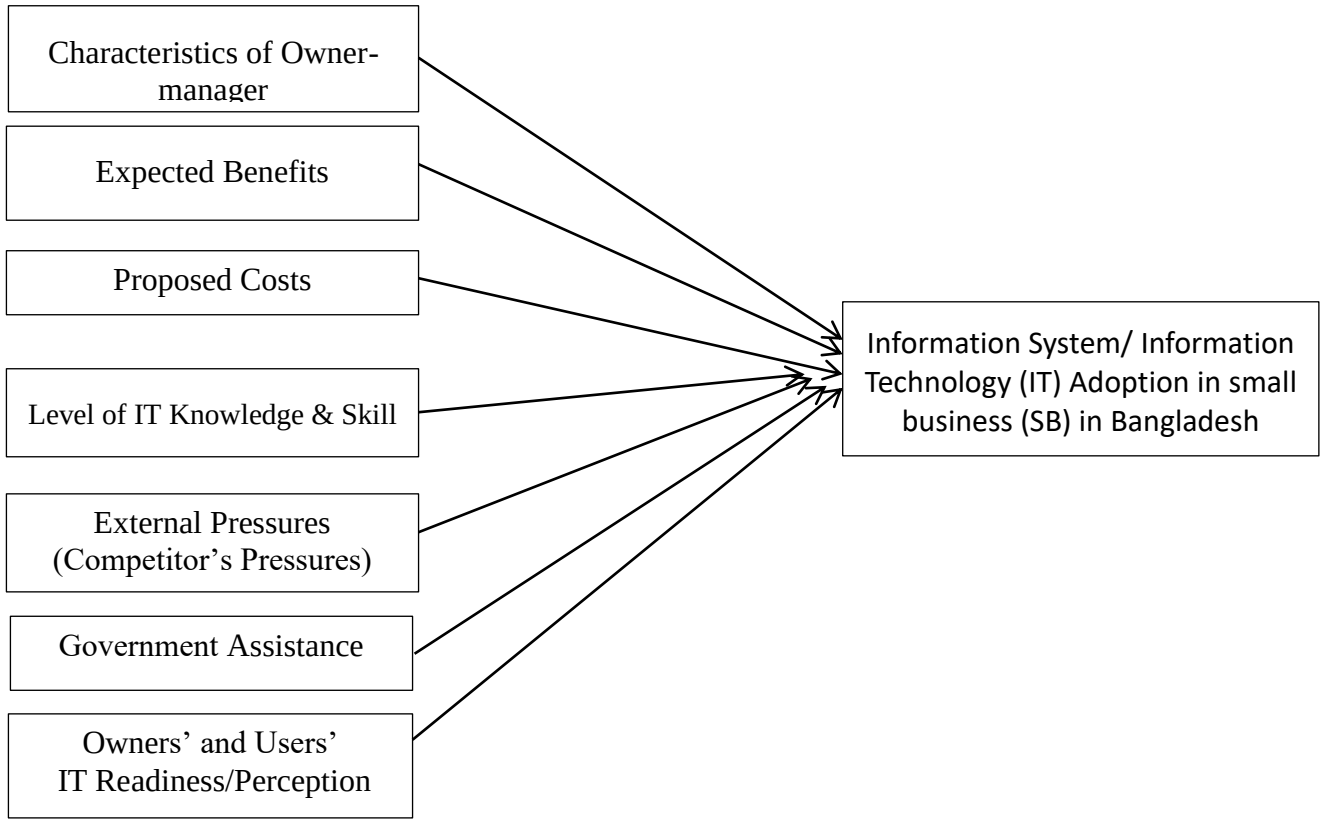


Figure 6.3: Framework of IT adoption in small business in Bangladesh.

Source: The Author

From the field survey and literature review, it is revealed that mainly seven major factors, shows in the figure 6.3, affect the IT adoption in small business (SB) in Bangladesh**.** These are as follows:

1. Characteristics of owner-manager,
2. Expected benefits,
3. Proposed costs,
4. Level of IT knowledge & skills,
5. External pressures especially competitors' pressure,
6. Government assistance or patronization, and
7. Owners' and Users' IS/IT perception & readiness

1. Characteristics of Owner-Manager: The most significant factor for a sustainable growth of a SME is its owner-manager's characteristics. These are his/her work experience, education, gender, age level, business knowledge, etc. For example, aged people are reluctant to adopt latest technology in their day to day operations. They fear about changes, costs, control and others. Educated entrepreneurs depend on calculated risks rather than their illiterate or low-educated counter parts. Educated persons welcome new technology in their operations.

2. Expected Benefits: Most of the respondents opine that they are enjoying a good number of benefits after introducing modern technology. They can save their time, inventory costs, handling costs, and gear up their communication, etc. Information technology (IT) brings more benefits than costs that results growth and survival of a firm.

3. Proposed Costs: Over the last two decades, cost of hardware, software, communication technology and other devices are decreasing gradually. As a result, owner of a small firm dears

to apply modern technology. They are thinking to make sure the moderate degree of utilization of information technology to ripen the benefits with a minimum costs.

4. Level of IT Knowledge & Skills: Still now many owner-managers of small firms are not habituated in IT application even in Dhaka city. They prefer to go through the rules of thumbs. Their perception is outdated not modern or situational. Moreover, level of IT knowledge and skill of an owner-manager is poor with some exceptions. They hardly welcome the latest technology.

5. External Pressures (Competitors' Pressure): There is well saying that the food someone takes absolutely depends on his or her taste and preference. But the fashion that someone likes or wears absolutely depends on others not on his/her preference. Similarly, competitor's pressure is a significant concern for the IT adoption in business. The decision of an owner-manager relating to the IT adoption is highly influenced by the competitors or some external pressures such as business opportunities, customers' demand, availability of hardware, software, suppliers' cooperation, etc.

6. Government Assistance or Patronization: It is revealed by a great deal of studies that financial problem was very much acute in the small business sector in Bangladesh even in few years back. Scenario is changing very fast due the good initiatives taken by the government. *SME Cell or SME Unit* favors a lot to the owner-managers of cottage, small and medium enterprises. The well-drive of BSCIC, SME Foundation, MIDAS, PKSF and other wings of government offer

different types of training, development programs, promotional programs, seminars, symposium, orientation program, etc. to patronize our *employment generation engine* SME sector.

7. Owners' and Users' IS/IT Readiness and Perception: The owner-managers of a small business must have *IT/IS readiness* so that they can orientate or accommodate themselves with IT/IS-based society. Moreover, most of aged owner-managers should be encouraged to welcome new technology (hardware, software, communication technology, etc.) by overcoming the fear of new technologies and cost factors.

6.5 Major Findings of the Study

This study has been conducted on 68 small firms. Though sample size is very small in number, the following findings are made after analyzing the data:

1. Most of the small firms are suffering by lack of required resources - financial as well as managerial. As a result they may not afford sophisticated technology with their own IT center. They highly depend on external sources and are exploited by them a lot. Unfair control of service providers on client firms is a very common phenomenon in SMEs in Bangladesh.

2. It is observed by the researcher that small firm is guided and directed by centralized management structure which is often inflexible. It is added that the key person or owner-manager is not as capable as the situation demands. On the other hand, IS/IT is very dynamic in nature. The inertia of owner-manager creates barrier in the progress of small business.

3. Particular characteristics such as family involvement and family culture in business are very common in small and medium enterprises (SMEs) in Bangladesh. High family orientation is a threat for small firms in the 21st century.

4. IT readiness is insufficient in SMEs in Bangladesh especially when the owner- manager or key person is old. They hardly welcome new technology. Moreover, inadequate teaching and preparation of end users relating to IT are common phenomenon in Bangladesh.

5. About 56% owner-managers think that government assistance (training and other support) is very limited and sometimes this is also inappropriate. Government support should be far extended so that SMEs in village level may be benefited as their highest extent. Some owner-managers complain against the biasness of SME Foundation, BSCIC and other wings of government.

6. Most of the owners of small firm are not highly educated and their IT orientation is significantly inadequate.

6.6 Recommendations / Suggestions

In this study, a set of essential recommendations or suggestions are required to make sure the sustainable growth and development of small businesses in Bangladesh. Such realistic suggestions are here for the academics and owner-managers of small and medium enterprises in Bangladesh:

1. We badly in need a separate ministry of Cottage, Micro, Small and Medium Enterprises (CMSME), instead of only *SME Cell* or *SME Foundation or BSCIC* under the ministry of industry in order to accelerate the overall economic development of our country. Since, we are unable to achieve a remarkable progress in large scale industries, government must patronize small and medium scale businesses.

2. Selected government organizations such as BSCIC, SMEF, BRDB and others should offer sufficient assistances including training and development program (s) relating to the latest information technology for the advancement of the small business in Bangladesh. According to the respondents' view, number, types and space or accommodation facility for training and development should be ensured comprehensively and regularly.

3. The owner-managers of a small business should have sufficient *IS/IT orientation* or *IT/IS readiness* so that they can accommodate themselves with IT/IS-based society. Moreover, most of aged owner-managers should be encouraged for welcoming new technology (hardware, software, communication technology, etc.) by overcoming the fear of latest technologies.

4. Excessive involvement of family members may be harmful sometimes for a firm. If the firm is dominated by less qualified person(s), it may be suffered by a lot in the long run. The success of the entity will be uncertain. So unwise/un-thoughtful control should be eliminated or minimized.

5. We should strengthen information dissemination and business networking all over the country.

6. Service providers (internet service providers) should have a hand with cooperation to assist the client firms not to exploit them. After all, ISP should have fair practice towards the customers.

7. Since women entrepreneurs are playing a great role in starting and maintaining small entities with their best effort and skills with minimum fund, they should be offered a wide array of services by the relevant wings of the government including modern technology.

8. Finally, development of technological and managerial human resources should be grown for modernization, innovation, productivity, and progress of a firm. Orientation of human resources information system (HRIS) may be fruitful for the owner-managers and end-users.

6.7 Summary

This chapter has evaluated the findings of information system or information technology in small business in Bangladesh. On the basis of collected data, evidence and observations made during the filed survey, the effectiveness of IT/IS use in SMEs was assessed. Findings divulged that all most all SMEs may be highly benefited by the application of modern information technology. IS/IT can help the firms to minimize their inventory cost, save their time, money and effort. As a result, small firms may enhance their efficiency, effectiveness, and productivity (performance). IS/IT can expand their market in home and abroad. IT can be used by small firm as an effective communication and promotion tools. Information system is increasing the intimacy among the suppliers, customers, and other stakeholders. But small and medium firms in our country are suffering a lot because of shortage of sufficient capital. They could hardly collect fund from banks or other financial institutions few years ago. Recently, SMEs are gradually getting such

kind of facilities but these are insufficient. So government should take necessary steps to make sure the loan facilities as well as IT orientation and adoption facilities more easier than previous time.

CHAPTER – SEVEN: SUMMARY, CONCLUSIONS & IMPLICATIONS

7.0 Introduction

Information systems provides an organization, whether it is large or medium or small scale, a strategic resource by which it can do the required set of activities more accurately and more timely. With the help of IS/IT, a small firm can take quick decisions by which it may offer better service to their clients. IS/IT assists to grow their employees and control their operations and costs so that it can enjoy competitive advantages and survive in present and future market successfully.

7.1 Summary and Conclusion

Information system is an incorporated set of elements that collect, store, process, and distribute information so that a firm can take right decisions at right time and at right place. Information systems are applied to execute inter-organizational buying, selling, payments, supply chains, and other activities electronically. For example, organizations depend on information system to process financial records, to administer their manpower, and to touch their prospective clients with virtual advertisements. From the overall analysis and interpretation both qualitative and quantitative data, it is concluded that information system or information technology prevalent in SMEs in Dhaka city are yet to be developed. Majority of the sample unit have initiated their computerized information system through using in purchase, production, marketing and financial activities. The major factors influencing the adoption of information system are competence of entrepreneurs, mission and vision of the business, competitive business environment, availability of funds, and outlook of the stakeholders, customer expectations, environmental threats and other

challenges. This is clearly found that SMEs having better operational performance have more attraction for the use of diversified information technology and vice versa. There is ample scope to develop our SME sector through diversified use of latest information technology as popularized our digital Bangladesh programs. We can hope that efforts for *a2i* activities, digital Bangladesh development programs and sustainable development goals might be more contributory for the advancement of our SME sector in cooperation with our talent entrepreneurs' management, people and other stakeholders.

7.2 Implications of the Study

After completing field work and analyzing the data and findings on the role of information technology in small business in Bangladesh, the SMEs will be benefited if they use IS/IT in their day to day operations. So, in this study, I have developed an assumption that, if we apply information system in our small firms, performance of the firm will be improved. Thus the implications can be explained in the following way:

1. Implication for the Theory,
2. Implication for the Practitioners,
3. Implications for Social Change, and
4. Implication for New Researchers.

7.2.1 Implications for the Theory

The argument of this research is that IS/IT can play a vital role in operating the small firms efficiently or in cost effective way. As a result, a small firm can improve its productivity. After filed study, findings show that application of information technologies (networking facilities and

internet tools & techniques) in the core business processes of SMEs can bring benefits a lot for them.

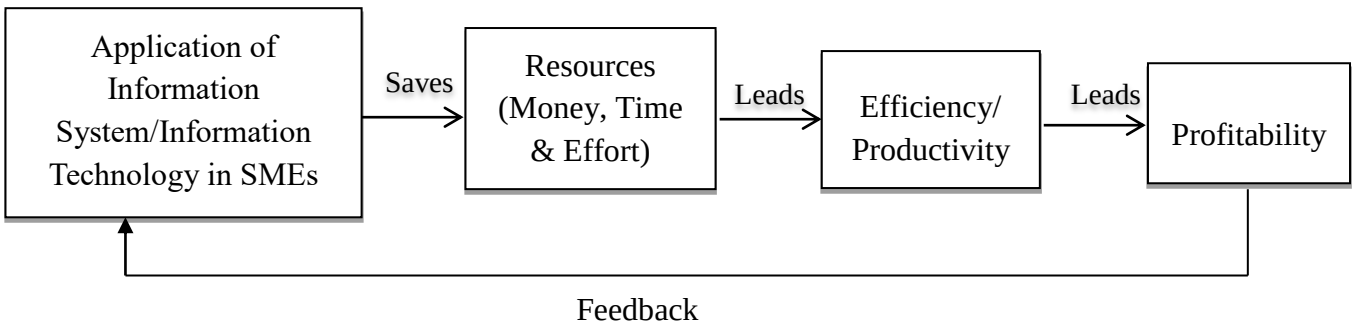


Figure 7.1: Application of Information System or Information Technology in SME and a relationship with a Firm's Productivity & Profitability.

Source : The Author

Here I have developed a logical sequence of application of information system/ information technology in SME and a relationship with a firm's productivity & profitability (Figure 7.1). The logic represents that if we introduce proper information technology in all core business operations in a small firms/entities in Bangladesh, the overall performance will be increased. This theory will contribute to the development of SMEs in Bangladesh, one of the key drivers of national economic growth. This theoretical development will not only help the academic world but also help the owner-manager to improve the performance of micro, small and medium enterprises. Next section I will explain the contribution of the theory to the practitioners.

7.2.2 Implications for the Practitioners

This study will contribute for the owner-managers of micro, small and medium enterprises and the studied organization also. If the practitioners accept the idea (Figure 7.1), they will take their decisions quickly and accurately, and their performance will be improved. Practitioners include

- Owner-managers and users, and
- Studied firms or entities.

- **Owner-Managers**

If the owner-managers of a small firms develop IT infrastructure like communication systems, sophisticated software, database management systems (DBMS), and Internet tools & techniques in production, finance and accounting, sales and marketing, human resources management, inventory management, and other core business activities; the owner-manager can take decision at right time, at right place, and at right mode. IS/IT can integrate all stakeholders (customers, employees, suppliers, strategic partners, and external pressure groups) easily. So owner-manager can apply this logic (Figure 7.1) in their firms.

- **Studied firms/entities**

This study will also be helpful for the studied firms, because IS/IT is treating day by day as a most popular tool or technique. The outcomes of this study are pertinent with the owner-managers for their business practices because they can be benefited from the enriched and relevant information at right time. By applying IS/IT, the key persons of small and medium enterprises may increase their knowledge about the position of their business in an appropriate manner. This comprehensive and well-timed information ensure benefits to the owner-managers for their meaningful decisions and assist them to predict unforeseen problems and prospects. Finally, they acquire competitive advantages in their domain.

7.2.3 Implications for Social Change

In order to lessen industry failures, IT/IS application in business is essential for making constructive societal change. Business failure is a great threat for a small firm in national as well as global perspective. The study demonstrates that 84 percent small firms in Dhaka city are currently using computerized IS/IT and only 16 percent firms are not using IS/IT. But they use cell phones (smart phones and some other latest devices) to run their regular operations. In the near future, we can hardly see any organization without any information system. We can say that if a firm is able to adopt information system from the very beginning of its entrance, it could enhance its success rate few times more than others with an slow adoption of IS/IT. Finally the society as whole might be benefited by the prosperous firms with latest information technology and it can go for an economic expansion.

7.2.4 Future Research Directions

This study can assist us as a significant ground for further forthcoming exploration. The study will help the prospective academics to authenticate the power of the study through the means of diverse study contributors, diverse topographical zones, and large sample sizes. Further researches might include added variables and acquire comprehensive data relating to micro, small, and medium enterprise working in Bangladesh as a whole.

7.3 Limitations of the Study

This study is not free from limitations. The first shortcoming was the inadequacy of accessing a limited number of small firms (68 firms only) in Dhaka city only. The second limitation was the application of descriptive statistical tools and Cronbach's Alpha Test only. No other advanced statistical tools or techniques were used in the study. Moreover, the results of the study actually

are founded on the respondents' opinion during the study period (July 2018 to December 2018). As the study conducted on the practices of IS/IT which is very changeable, very fast because of technological innovation, the findings of the study may not fully practical after a period of time.

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Appendix

Questionnaire

Information Systems in Small Business in Bangladesh: An Exploratory Study

Serial No…….

Date of Survey:

Name of the Shop/Entity/Firm:

Name of the Owner-Manager/Owner/Manager:

Address of the Shop/Entity:

Email Address/Website (if any):

Contact No (Cell/Telephone)

The Nature of Business:

Year of Establishment:

Total Turnover (Yearly):

Section One – Demographics

1. How many years has this business been operating?
    - Less than one year
    - More than one year but less than 6 years
    - More than 6 years but less than 10 years
    - More than 10 years but less than 15 years
    - More than 15 years but less than twenty years
    - More than twenty years

2. How many people are employed in the firm/shop? (Please tick a box)

Self-employed	☐
1 - 4	☐
5 – 10	☐
11 – 24	☐
25 – 49	☐
50 – 100	☐
More than 100	☐

3. How many years has this business/firm/entity been expiring information system/information technology?

- Less than one year
- More than one year but less than three years
- More than three years but less than five years
- More than five years but less than eight years
- More than eight years but less than twelve years
- More than twelve years

4. What type of application software you are applying in your operations?

Word Processing	☐
Excell/ Spreadsheet	☐
Database	☐

Accounting Software ☐

Payroll Software ☐

Presentation software ☐

Communication software ☐

CAD/CAM ☐

Integrated Package ☐

Others ☐

5. Rank your degree of satisfaction with the experience of using information technology (computer, mobile, and others).

Not satisfied	Not entirely satisfied	Satisfied	More than satisfied	Very Satisfied

6. Before you purchase new technology (computer hardware, software, router, modem, and other devices) what of the following factors (if any) do you take into consideration carefully?

	Hardware	Software
Costs of purchase	☐	☐
Costs of maintenance	☐	☐
Costs of new systems	☐	☐

Skill level of existing workforce ☐ ☐

Future needs (upgradability) ☐ ☐

Compatibility with existing systems ☐ ☐

Flexibility ☐ ☐

Compatibility use of Information Technology ☐ ☐

Need to standardize ☐ ☐

Time needed to familiarize yourself/staff with new technology ☐ ☐

7. If you have any problem or query relating to computer hardware and/or software, where do you go for the solution?

Internal staff ☐ Trade Assistance ☐

Manufacturer ☐ Helpline ☐

Supplier ☐ External Consultant ☐

Other (please give details below) ☐

Section Two: The following questions are designed to measure how an owner-manager of a firm use and accept information system or information technology. For purposes of this survey, an owner-manager can be highly benefited by introducing information systems in his/her day to day operations. There are no correct answers to the following questions. The questions have been structured in a way which allows you to determine the extent to which you agree or disagree with statement. Before beginning the survey,

please indicate whether you currently have a computerized information system.

- Yes
- No

8. Evaluate the following statements by placing a tick in the appropriate column:

	Strongly Agree (5)	Agree (4)	Don't Know (3)	Disagree (2)	Strongly Disagree (1)
You have to change the way you work when you introduce information technology					
The costs of introducing and maintaining computer technology are LESS than the benefits gained.					
Owners/Managers/the workforces are less interested to learn new technology					
Owners/Managers/the workforces do not have enough time to learn new technology					
Owners/Managers cannot control the business if they do not understand the technology					
The more you know about computer technology BEFORE you invest in it to					

make sure the easier implementation.					
You need to use computer in order to compete successfully in today's market place.					
Though you are using new technology, you do not know enough about them.					
You do not know where to go for advice on the purchase of equipment/hardware and software.					
Technology saves time					
Technology saves money					
Technology saves effort					
Using information systems, you will improve your effectiveness and efficiency					
Using information systems, you will improve your productivity					
Paper based systems are just as good as technology based system					
Technology is always right					
You cannot afford the costs of modern technology					
IS/IT is helpful for your promotional activities (promoting products or services in home and abroad)					

IT is very helpful as communication tool.					
Electronic Fund Transfer (EFT) Electronic Data Interchange (EDI), Computer Aided Designing (CAD), and Computer Aided Manufacturing (CAM), etc. tools and techniques are very much helpful to operate your business smoothly.					
Small and Medium Enterprises do not get enough technical support from the Government in this area					
Training programs do not cater for Small and Medium Enterprises					
IT/IS helps you to reduce your inventory costs					
The training and other necessary supports provided by BSCIC or SMEF or other government wings are sufficient.					
After all, it is easier for me to use computerized information systems/ information technology.					
Finally, information systems/information (IS/IT) improves overall performance of an entity (small firm)					

9. What advice would you give to anyone thinking of investing in information technology or what advice would you want?

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Thank You

List of Surveyed Firms/Enterprises:

SL	Name of the Firm/Entity & its Address	Nature of Firm	Name of Owner-Manager/Key Person	Contact No.	Email/Fax & Website
1	**Khan International** 2/A, 1/107, Mirpur, Dhaka	Garments Accessories	Mr. Tuhin Ahmed Khan	01711-934166	khantuhin234@gmail.com
2	**FA Sardar Plastic Industry** Kamrangirchar, Dkaka	Plastic Industry	Md. Iqbal Hossain	01711-281959	fasardardhaka@hotmail.com
3	**Treat n Eat** 23/6 (Opposite of Squar Hospital) Pantha Path, Dhaka	Restaurant & Catering	Avik Das	01711-924655	dasavik_dhaka@yahoo.com
4	**Set Bangla** 1/5, B Tali Office, Zigatola, Dhaka	Electrical & Electronic	Palas Ch. Roy	01621-357882	setbangla@gmail.com
5	**AR BAZZAR / hoichoi** Shewrapara, Mirpur	Online Shop	Afia Akhter	01715-005254	hoichoi_akhterafia@gmail.com
6	**Diswvery Fisheries & Agro Farms** (Live Fish) 146, Monipuri Para, Tejgaon, Dhaka	Fish & Agro Product Marketing, Exporting	Mollah Md. Faridul Islam	01711-262414	mollahmdislam_agrofish@yahoo.com
7	**Sky Bag International** 6. Super "A" Market, Baitul Mukaram	Bag and Trolley Manufacturer	Tabibur Rahman	01711-938523	skybagintldhaka@gmail.com
8	**Nahar Boutiques** 3/7/A, Lalmatia, Samdani Lodge, Dhaka	Fashion House	Kamrun Nahar	01911-005849	naharfashion_2012@gmail.com
9	**Syber Publication**	Books &	Hasem -A-Rafsanzani	01677-	arafsanzanihasem_038@hotmail.co

	38, Banglabazar, Dhaka	Publication		479020	m
10	**Bridal Story BD** House 59, Road # 8A, Dhanmodi, Dhaka	Online Bridal Photography Page	Md. Golam Samdani	01670-545787	bridalonstory@gmail.com
11	**Eduvision Education** 6/25, Indra Road, Framgate, Dhaka	Consultancy Firm	Suman Kanti Nath	01710472302	eduvision_dhaka625@yahoo.com
12	**SA Tex International** BA -5/1, South Badda, Dhaka	Fashion House	Md. Mahathee Hasan Khan	01612--881624	mmhkhan_satex2007@gmail.com
13	**MIC Green Products** 56, Lalbag, Dhaka	Gum tape, gum tupe, Printed Paper cup, Paper plate, paper box, etc	Nasrin Jahan Mimi	01971-006044	greenmicgoods044@gmail.com
14	**Bd Lovely Product** 259, East Kafrul, Dhaka Cantonment, Dhaka	Craft products	Md. Shakir	01965-273200	bdcraftsproducts_cant@yahoo.com
15	**Bridal Creation** 540, East Kazipara, Kafrul, Dhaka	Online marriage media	Abida Sultana	01670-732917	sultana_onlinemedia@gmail.com
16	**Banglar Haat Bazar** Niketon, Gulshan-1, Dhaka	Selling all kinds of fashion dress	Sharmin Islam	01552-330900	haatbazarbaglabd@yahoo.com
17	Daehan S. C. Co. Building -25, Road-10, Block-E, Banani, Dhaka	T-shirt, polo shirt and others garment items	Md Mamunur Rahaman	01825687862	daehanbd@hotmail.com
18	**Shayel Craft** House-8, Road-11 (Lane-13), Mirpur,	Jute and Diversification	Md. Aktar Hossain	01774439017	hossain_shayelcraft@gmail.com

	Dhaka				
19	**Next Monitor** 104, Green Road, Farmegate, Dhaka	Technology & Software Firm	Farhad Hossain	01819-896366	hossainfarhadtech@yahoo.com
20	**Protibeshi Trading Center** House -2, Road – 38, Sec.- 6, Mirpur, Dhaka	Trading and Product making & Selling	Roksana Parvin Dipu	01935-300950	tradingprotibeshi_950@gmail.com
21	**MS Shariar Telecom** 33/2/1, North Pirerbagh, Mirpur, Dhaka	Dutch Bangla Bank Agent Banking	Md. Shariar Ahmed	01708-515904	ahmedshahariatel@gmail.com
22	**Farjana Jutes & Craft** 21 Shantinagar, Dhaka	Diversified jute products & crafts	Ms Farjana Islam	01981-377688	craftfarjana_santinagar@yahoo.com
23	**Karukaj Products** 21 Shantinagar, Dhaka	Jute products manufacturer and marketer	Abdul Khaled	01711-312956	akhaledproducts@gmail.com
24	**Prokirtee** 1/1 Block –A, Asadgate, Dhaka	Handicrafts (whole & retail)	Swapan Kr. Das Thomas Decosta	01731147947	daskswapan_prokirtee@gmail.com
25	**Source** 1/1 Block –A, Asadgate, Dhaka	Handicrafts (whole & retail)	Swapan Kr. Das Thomas Decosta	01731147949	thomasdecosta_source@gmail.com
26	Nasa Global Trade Ltd		Shariful Islam	01911-676669	islamshariftrade@gmail.com
27	**Paragon Agro Engineering** A/10, Thanaroad, Savar, Dhaka	Electric and Submersible Pump Motors	Md. Golam Mostafa	01711-000239	paragon294@gmail.com

28	**Kozi Leathers Ltd** Jalal Tower, Natunpara, Hemayetpur, Savar,Dhaka	Leather Products, Bag, Purse, belt, etc.	Md. Shakawat Hossen	01755652244	shakawat@kozyleatersbd.com
29	**Annex Bangladesh** 62/1, Sher-e-Bangla Road, Rayerbazar, Dhaka-1209	Leather Products, Bag, Wallet, jacket, etc.	Md. Mostafa and associates	01717-025434 01842800491	annexbdird@gmail.com
30	**Rangpur Foundry Ltd** Pran RFL group, 105 Progati Soranoi, Badda, Dhaka	Tube-well, Agricultural equipment, spare parts, etc	Rathindronath Pal	01912256675	nnsonar@naboti.com
31	**Powerman Electric Ltd** C-91, Mahanagar Project, Rampura, Dhaka	Transformer and LPPI products	Latifa Sultana	01712036226	
32	**Clayfar Fashion** 11/12, Kazirbag Lane, Hazaribag, Dhaka	Textile and Leather , Verities	Shadul Haq	01610259327	
33	Abir Enterprise B-237, Khilgaon Chowdhurypara, Dhaka	Incubator Machine, Digital Remote Control, etc.	Most. Momena Aktar	01715212499	jerin2224@gmail.com
34	**Bibi Biswas Handicrafts** 110 North Mugdapara Basabo, Sabujbag, Dhaka -1214	Handicrafts manufacturer	Rubi Biwas	01714-758572	juidu10@gmail.com
35	**Afnan Jutex** 137/A, Ahmed Nagor,	Jute Product manufacturer and	Md. Sharif Uddin Khandokar	01534306816	khandokarsu@gmail.com

	Palkpara, Jonaki Road, Mirpur, Dhaka	Diversification			
36	**Ayon Crafts** Road#8, House#746, Baitul Aman Housing Society, Adabor Dhaka	Diversified jute products & crafts	Naima Islam	01716544762	
37	**BRB Handicrafts** 29, Barakatra, Chalk Bazar, Dhaka	Jute Products Manufacturer	Al-Haz C. M. Sadik	01711025903	
38	**Bonosree Enterprise** 202 (3rd Floor) House-17, Road-27, Block-7, Dhaka		Veena Ahmed	01711025903	ahmedveena903@hotmail.com
39	**TopTech Enterprise** 385/6, Free School Street, Hatirpul, Dhaka	Water Treatment Plant, Water Purifier Plant, etc	Md. Ariful Alam	01717180857	toptech@yahoo.com
40	**Brothers' Engineering Works** 26, Kazi Riaz uddin Road, Lalbag, Dhaka	Plastic Mold and Plastic Products Manufacturer	Md. Mafizul Islam	029614470, 01712679636	brothersewbd@gmail.com
41	**Firefly** 212, Payikpara, Mirpur, Dhaka	Three piece, Two piece, one piece, Sari, Pillow cover	Afsana Jamil	01712036226	afsanakamal25@gmail.com
42	**Karigar** 20 Hazaribag, Sher-e-Bangla Road, (3rd Floor), Dhaka	Leather Goods and Corporate Gift Item	Tania Ohab	01717585830	bdkarigar@gmail.com

43	**Unicon Leather & Leather Goods** Rabhar Tower, Flat-c 77-78, Ring Road, Mohammadpur, Dhaka	Leather Goods	Amir Hamza	01716810683	uniconleather@gmail.com
44	**Trust Agro Food Products** Ramerkanda, Ruhitpur, Keranigonj, Dhaka	Eligible oil and agro products	Rita Akhtar and Md. Monjur Alam	01819281669	trustfoodbd@gmil.com
45	**Naksha Handicraft & Boutiques** 248/C, Kazipara, Mirpur, Dhaka	Floor Carton, Tissue Box, Key Ring, Show piece item, Bamboo and Cane products	Israt Jahan	01715910726	nakshahandicraf@gmail.com
46	**Rangima** 6-NA/1, Barnali, Lake city Concord, Khilket, Dhaka	Jewelry item	Rubina Karim	01716271740	rubina.karim@yhoo.com
47	**Sajoya** 106, Islampur, Dhaka	Oyster goods, silver goods, etc.	Pejush Vadro	01715347639	
48	**Haven Touch** 337/C, Khilgaon, Chowdhurypara, Dhaka	Kids item, Kids garments	Fajilatunnasha	01715703577	heaventouch17@gmail.com
49	**Nishorgi** 67/G/ZA, Green road, Panthopath, Dhaka	Canvas, Curtain, glass paint, bed sheet, Ladies garments	Ayesha Siddiqua	01726460757	hasinayessha@yhoo.com
50	**Shokonir Kotir**	Ribon, Thai-clay, puthi, jewellery	Naira Nahar	01711085	naina.nahar@yao

	Shilpa Sec.-11, Avenue – 5, Block – C, Line-5, Mirpur, Dhaka	item		141	o.com
51	**FM Plastic Industry Ltd.** 132/2, Ahmedbag, Sabujbag, Dhaka	Plastic Products	Md. Gazi Tauhidur Rahman	01911382306	tauhid26@yaho.com
52	**A & M Partners** House#131, Road-18, Avenue-2, DOSH, Mirpur, Dhaka	Accounting Software & Services	Sayed Asif Aziz	01727776 6058	asifaziz2k2@hotmail.com
53	**BdJobs Dot Com Ltd** BDBL Bhaban (8th Floor), 12 Kawranbazar, Dhaka	Jobs Portal, Recruitment Automation Software	A K M Fahim Mashrur	01819261788	prokash@bdjobs.com
54	**Nakshi Bari** House#14, Dhaka Housing, Adabar, Shaymoli, Dhaka	Three Piece, Sari, Baby items and others	Shahina Akhtar	01713028552	ferdous1419@gmail.com
55	**M/S Golden Fiber and Yarn Co**. House#27, Road#, PC Culture Housing Society, Mohammadpur, Dhaka	Jute Products	Ajoy Kumar Bose	01712412881 01912939090	info@msgoldenfber@gmail.com ajoy@msgoldenfber.com
56	**Cloud-Well Ltd.** Skill House (8th Flr) KA-53/2, Progathi Shoroni, Shajahanpur, Dhaka	Online based Service Center	Mr. Anisul Islam	01711594659	anisul.islam@cloudwell.com

57	**Hello Green** 149/C, Monipur, Mirpur, Dhaka	Paper cup, Paper Box (Food Grand), Coffee cup, etc.	Md. Amirul Islam	01842426427	amirul_dhk_islam@yahoo.com
58	**Shamim Refrigeration Works Ltd.** 162 Lakesarkas, Kalabagan, Dhaka	Air Condition, Water Cooler, Water Heater, Coffee Maker	Md. Abdul Jabbar	01911810810	kenttropica@gmail.com
59	**M X N Modern Harbal Food Ltd** 2/1, Shaheed Tajuddin Ahmed Shoroni, Magbazar, Dhaka	Herbal Medicine, Unani products, Homeopathic, Agro Pharma	Dr. Alamgir Mati	01911386617	info@modernhebal.com
60	**Triangle Services Ltd** TA-131, Wakil Tower (7th Flr) Badda Lake Road, Gulshan, Dhaka	Internet Services	Md. Abdul Kayum (Rashed)	01842783868	kayum@trianglaervicesltd.com
61	**Tedfo Bangladesh Ltd.** House#1005, Level - 3, Road -9, Avenue - 11, Mirpur DOHS, Dhaka	Management Assistant of SMEs and supporting them to export goods.	Debasish Chakrobarti	01708574204	debasish@tedfo.com
62	**Sharif Metal Ltd.** 84, Arambag, Motijeel, Dhaka	Kitchen and Bathroom Fittings	Omar Faruk	01911810810	sharifmetalbd@gmail.com

63	**Sarokunjo** Flat 10/12, Haimanti Sarokunjo, 3/26/6, Sultangonj, Rayerbazar, Dhaka	Boutique House	Dilshad Begum	01716809769	www.msgoldenfber.com
64	**Panchbati** 374/1, C-6, Diluroad, New Eskaton Road, Dhaka	Jamdani Sari, Boutique, Block, Hand stitch dresses Etc.,	Suporna Bannik	01711084127	suparnagp@gmai.com
65	**Apsara Boutique & Gift House** 108/KA (7th Flr.) 10/2 No. Road, Shyamoli, Dhaka	Sari, Three Piece, Bed sheet, Pillow cover, Bag, Ornament, etc	Mrs. Mariom Kabir	01719714870	mkabir143@gmai.com
66	**Shokh Crafts** Sec.-11/A, Road 3/3, Mirpur, Dhaka	Thai-clay, ribbon, puthi, and jewelry items	Razia Jaher	01711544596	-
67	**Ananya Sari and Three Piece** Aanarkoli super market, Dhaka	Handloom, Jamdani sari, Rajshahi slik, Jute milk, Mirpuri Katan	Monisha Sarker	01715304693	-
68	**Rangtuli Ladis & Kids Fashion** 93/A, North Mugdhapara, Dhaka	Tidye, Vegetable dye, Readymade products, Hand stitch	Rawshanara Akhtar Bithi	01921097005	-