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Sustainable Strategies for the Textile Industry in Bangladesh

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Ph.D Dissertation

A Dissertation Submitted to the University of Rajshahi, Rajshahi in Partial Fulfillment of the Requirements for the Award of the Degree of

Doctor of Philosophy

Submitted By

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Institute of Environmental Science (IES)
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Session: 2010-2011

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Dedicated
to
My Parents
Professor Md. Amzad Hossain
Most. Hamida Khatun

Declaration

I hereby declare that the thesis entitled **"Sustainable Strategies for the Textile Industry in Bangladesh"** submitted by me for the degree of Doctor of Philosophy is the result of my own investigation carried out under the supervision of Professor Dr. Madan Mohan Dey, Department of Accounting and Information System, University of Rajshahi, and Dr. Md. Redwanur Rahman, Associate Professor, Institute of Environmental Science, University of Rajshahi, Bangladesh. No part of this thesis, in any form has been submitted to other University or Institution for any degree or diploma. To the best of my knowledge and belief, it contains no material previously published or written by any other person, except when due reference is made in the text.

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Certificate

I have the pleasure to certify that the thesis entitled **"Sustainable Strategies for the Textile Industry in Bangladesh"** submitted by Mr. Md. Razib Ahsan, for the partial fulfillment of the requirements for the degree of Doctor of Philosophy in Management is his original work carried out in the Institute of Environmental Science under my supervision and guidance.

I have gone through the draft thesis thoroughly and found it satisfactory. His research interests have mainly focused on strategic management, sustainable development, and green management. The thesis has not been previously submitted in part or full for the award of any degree, diploma or fellowship of any other University or Institution.

Dr. Madan Mohan Dey
Professor
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Supervisor

Date:.....

Certificate

This is to certify that the thesis entitled **"Sustainable Strategies for the Textile Industry in Bangladesh"** submitted by Mr. Md. Razib Ahsan, Session: 2010-2011 for the award of the Degree of Doctor of Philosophy in Sustainable Management is based on the results of his own research work carried out in the Institute of Environmental Science under my supervision and guidance.

The manuscript of the thesis has been scrutinized and carefully checked by me. It is an independent and original work to the best of my knowledge, this thesis was not previously submitted for any Diploma, Degree or Fellowship to any other University or Institute except due references whenever needed.

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Above all the thesis will be a successful one when its recommendations are applied for practical purposes and finally I would like to draw a conclusion with this expectation.

(Md. Razib Ahsan)

Abstract

Textile industry plays a dominant role in the economy of Bangladesh. It is the mother industry and the most important sector of Bangladesh in terms of production, export and employment. This sector has contributed around 12% to country's GDP and has made 78% of total export earnings of the country. But textile mills in Bangladesh are not performing in a sustainable way. Corporate managers need to consider the social responsibility issues, economic sustainability and ecological issues in the strategic management process. Mill managers ignore the above stated issues several times and none of the strategies and policies would be long lasting and sustainable if those mills cannot effectively manage their environment and perform their social responsibility. A firm's ultimate goal need not be just profitability; rather it should connect among society, industry and environment for its sustainable development.

The present study aims at overviewing and analyzing the present scenario of social responsibility strategies of textile industry in Bangladesh. It also tries to investigate and evaluate the environment protection strategies, to examine and analyze the economic sustainability and financial strategies, to assess the strategic management practices and finally to formulate and implicate strategies for future sustainability of textile industry of Bangladesh. This research is based on both primary and secondary sources of data covering fifteen textile mills (sample mills) with 120 executives (corporate managers), 150 workers and 50 stakeholders. The data of five years have been utilized here to measure the performance of the sample mills with regard to social contribution, financial position and environmental condition and to test the hypotheses statistically. Hypotheses have been formulated to achieve the objectives of the study and major statistical tools i.e. correlation, chi-squares, multiple regression (SPSS), standard deviation have been used for testing it. Open-ended and closed ended questionnaire have been made for the purpose of data collection and in connection with the main hypothesis of the study, the thesis has been designed into six chapters. Cronbach‘s Alpha test was used to evaluate the result of the study. The result of the test shows that the value of Alpha is 0.984 which implies that

the result of the test is highly reliable. The split half coefficient of the first part is 0.972 and that of second part is 0.960 which confirm the reliability of the result. The Guttman split half coefficient is 0.960 which also exhibits the same view.

Actually textile industry's approaches and choices should be sustainability friendly that means it should be socially responsible, economically viable and environmentally sound. But from the analysis, it has been seen that net profit had been increasing, on the other hand, social contribution of textile mills had been decreasing remarkably. From the analysis of stakeholders' opinion, it has been also found that textile businesses were not responsible for the welfare of the community and the workers' welfare also. But this ignoring tendency in discharging social responsibility of sample mills fosters labor unrests and creates unsustainable socio-economic condition of Bangladesh. In reality, sample mills' social responsibility toward their workers, consumers, government and communities were not satisfactory during the study period. From the evaluation of social contribution of fifteen sample mills, it is revealed that net profit had been increasing during the study period but actual contribution of sample mills in the areas of heath care issues, sports, cultural issues, education support, and forestation etc. was rather going down remarkably. The social contribution by the fifteen sample mills was 0.813 percent of total net profit in 2010-11. It is also found that social responsibilities of sample mills regarding the payment of wages were not satisfactory. 53.33 percent of total sample mills pay minimum wages of Tk. 3000 to 3500 and none pays above Tk. 4000 per month during the study period for their workers. The minimum wages were not sufficient for the workers to maintain standard of livings as per market price and cost of living. This fosters labor unrest and unpleasant socio-economic condition. It is also observed that 82% of the total workers regarded cotton and fabric dust as the principal reasons behind major health problems. 44.66% of them claimed the huge sound menace, 29.33% of them defined dyeing effluent as major causes of health problems, 19.33% of total respondents claimed the lack of pure drinking water and 19.33% of them claimed the inadequate number of latrines as the principal reasons of occupational health hazards. According to the stakeholder's opinion about sample mills' responsibility toward consumers, it is found that 42% of total stakeholders opined that textile business discharged minimum responsibility and 20% of them told that they did not perform any responsibility to the consumers in Bangladesh.

The other purpose of this study is to investigate and evaluate environmental protection strategies of sample mills. After evaluating this scenario, it is found that textile business did not discharge their environmental responsibility properly. This study reveals that only 66.66% of the total sample mills did not have any eco-tex certificate and 66.67% of the overall sample mills were not certified by OHASAS-18001 standard. It is also revealed that 93.33% of total sample mills had adopted pollution control strategy instead of taking pollution prevention strategy. Only 13.33% of total sample mills had taken initiative for product recycling strategy for sustainable use of cotton and only 80% of them did not follow cleaner production strategy. Forty percent of total stakeholders (fifty) opined that textile business discharged minimum responsibilities to the environment and 20% of them exposed that textile mills did not perform any responsibility to the environment.

The purpose of the study is to examine the characteristics of social responsibility strategy, environmental strategy, and economic sustainability and financial strategies in the sample mills along with its impact on overall performance of the sample mills. Financial position and performance of the sample mills have been critically evaluated through some important financial indicators i.e. liquidity ratios, leverage ratios, activity ratios and profitability ratios. This analysis revealed that most of the sample mills had achieved the standard for fixed asset turnover ratios during the study period because they had got capability to utilize its fixed assets in generating sales. In case of inventory turnover ratios, all the sample mills had reached the reasonable norms. The sample mills' profitability position is good. Every company should earn profits to survive and grow but the management of a company should not aim at maximizing profits only through violating the legal rights of customers, employees, suppliers or social and environmental consequences.

Various industry external (uncontrollable) factors as well as industry internal (controllable) factors were analyzed. Factors of industry's external environment have been identified through socio-cultural, political-legal, social responsibility and ecological, economic and technological factors analysis, and industry's internal environment factors have been identified through management control, marketing, financial and accounting, production factor analysis. It is revealed from this analysis that social issues, ecological issues have had adverse impact on textile mills' production and on the overall performance of textile industry in Bangladesh. Besides, it is also revealed that they have

poor investment for their technological modernization. As a result, mechanical breakdown and problematic machinery have caused low productivity and high cost of production. It is found that strategically lackings in each step have had negative impact on sustainable development of textile industry. The success and growth of any modern organization depends mostly on its external and internal polices and strategies of management, and the importance of it, are increasing tremendously in the face of growing complexity and severe competition.

In this study it is apparent that strategically lackings are main cause of multifarious problematic issues of this industry and are the major hindrances on the way of sustainable development of textile industry. So, owners and corporate level managers and government policy makers need to implement sustainable strategies. The growth of this industry entirely depends on how well the textile mills are being managed and to what extent their efficiency level can be increased. This study reveals that mills' management can improve their efficiency through selection and implementation of sustainability friendly and environment friendly strategies.

Contents

List of Tables, Figures and Charts

List of Abbreviations

AIL	=	Altex Industries Ltd.
ALTML	=	Alhaj Textile Mills
AnTML	=	Anlima Yarn Dyeing Ltd.
ASML	=	Apex Spinning Mills Ltd.
AWML	=	Apex Weaving & Finishing Mill
BGMEA	=	Bangladesh Garment Manufacturers and Exporters Association
BKMEA	=	Bangladesh Knitwear Manufacturers and Exporters Association
BSL	=	Beximco Synthetics Ltd.
BSR	=	Business for Social Responsibility
BSTI	=	Bangladesh Standard Testing Institute
BTMA	=	Bangladesh Textile Mills Association
BTMC	=	Bangladesh Textile Mills Corporation
CAB	=	Consumers Association of Bangladesh
CMTML	=	CMC Kamal Textile
CSR	=	Corporate Social Responsibility
DDML	=	Dhaka Dyeing & Manufacturing Company Ltd.
DOE=	=	Department of Environment
EMP	=	Environment Management Plan
EMS	=	Environment Management System
EPZ	=	Export Processing Zone
ETI	=	Ethical Trading Initiative
GDP	=	Gross Domestic Product
GOTS	=	Global Organic Textile Standard
GRI	=	Global Reporting Initiative
GSP	=	Generalized System of Preference
HTML	=	H.R. Textile Mills
IBS	=	Institute of Bangladesh Studies

IES	=	Institute of Environmental Science
ISO	=	International Standard Organization
LBL	=	Labour Behind the Labour
LS	=	Level of Significance
MFA	=	Multi-Fiber Agreement
MIS	=	Management Information System
MKSML	=	Maksons Spinning Mills
MSML	=	Malek Spinning Mills
NGWF	=	National Garment Workers Federation
OHASAS	=	Occupational Health and Safety Management System
PAT	=	Profit after Tax
PESTLECH	=	Political, Economic, Social, Technological, Legal, Environmental, Cultural, Historical Factors.
PTA	=	Primary Textile Sector
RMG	=	Readymade Garments
RSML	=	R.N. Spinning Mills
SD	=	Standard Deviation
SDS	=	Sustainable Development Strategies
STML	=	Square Textile Mills Ltd
SVN	=	Social Venture Network
SWOT	=	Strength, Weakness, Opportunity and Threat
TSML	=	Tallu Spinning Mills
TTML	=	Tamijuddin Textile Mills
WBCD	=	World Business Council on Sustainable Development
WWF	=	Workers Welfare Fund

CHAPTER ONE
Introduction

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Introduction

1.1 General Introduction

The textile industry in Bangladesh, now the sixth largest exporter of apparel in the world after a decade of spectacular economic growth, has positioned itself to benefit from the current global economic crisis. Production of ready-made garments and knitwear is at an all time high. Many challenges remain, but the overall outlook for this nation's industry remains bright. Textile sector being a major provider of employment, a pioneer in poverty alleviation and a base for economic emancipation can logically be treated as engine of growth for our economy (BTMA, 2011).

This industry is an important segment of Bangladesh's manufacturing industry, playing a critical role in her economic development. Textile exports (including apparel) accounted for 76% of the national export in Fiscal Year (FY) 2007, an increase from 41% in FY 1989 and 66% in FY 1995.

As the Bangladeshi textile sector keeps expanding, the country's weak infrastructure may potentially threaten continued growth. The industry has set a target of US$25 billion in garment exports by 2013, which would create an additional 1.4 million job opportunities within the sector and subsequently open up opportunities across different occupations. To make it happen, entrepreneurs are gradually moving to a higher value-added niche market, changing from factory-driven to market-driven processes, developing designs and collections, enhancing productivity, and strengthening the industry down the supply chain for the sector. The textile industry in Bangladesh may provide market alternatives to those looking for growth opportunities in the midst of the current global recession.

According to the Bangladesh Textile Mills Association report (BTMA), 2009, the scenario of production capacity in the textile sector of Bangladesh has been shown by the Table given below:

Table 1.1(a_1)
Scenario of production capacity in the textile sector of Bangladesh

SL No.	Sub-sector	Number of Units	Installed Machine capacity	Production Capacity	Manpower
01	Textile spinning	350	7.40 million spindles 0.20 million rotor	1800 million kg	400000
02	Textile weaving	400	25000 SL/SLL	1600 million meter	80000
03	Specialized textile and power loom	1065	23000 SL/SLL	400 million meter	43000
04	Hand loom (GF/F)	148342	498000 machine	837 million meter	1020000
05	Knitting knit dyeing (GF): a. Export-oriented b. Local Market	 800 2000	 12000 knit/dye machine 5000 knit/machine	 3600 million meter 500 million meter	 300000 24000
06	Dyeing and Finishing (FF) a. Semi Mechanized b. Mechanized	 180 130	 - -	120 million meter 1600 million meter	 10000 23000
07	Export oriented RMG	4500	-	475 million dozens	2000000
08	Others	-	-	-	60000
	Grand Total				4500000

Source: Annual Report, 2009, Bangladesh textile mills association

It may be observed from the above Table that at the end of the year 2009, Bangladesh Textile Industry employed about 4.5 million people. The backward and the local sector provided about 1.5 million employments of which 400000 had been generated by textile spinning sub sector. As per the report, there were 350 textile spinning units having 7.4 million spindles and 200000 rotors. One can easily grasp what kind of tremendous development the industry have achieved during the last 3 decades as the industry had only few spinning units and power looms when Bangladesh came into existence in 1971. During the past three decades textile emerged as the biggest manufacturing sub-sector and achieved remarkable growth. The sector fulfills almost cent percent domestic demand apart from fulfilling the external demand of clothing's and apparels to a large extent (BTMA, 2011)

Some of the achievements and contributions of the textile sector of our country have been stated below:

- Export earning from textile clothing and apparels in 2010-11 is over 17.9 billion US $ which is about 78% of total export earnings of the country.
- Almost 100% of Domestic yarn and fabrics requirements are met by primary textile sector (PTS). About 85-90% of Knit yarn and 35-40% of woven fabrics requirements for RMG export are met by PTS.
- Around 40% value addition of manufacturing sector comes form textile.
- Provides around 5 million jobs out of which 80% are women.
- Contributes around 12% to GDP.
- Retains around 70% of foreign exchange earnings of knitwear export by using local yarn.
- Provides 0.2 million jobs in waste recycle industry related to RMG.
- Creates huge clientele base for banking, insurance, transportation, hotel, tourism, and many other services.
- PTS is considered as import substitute and back ward linkage industry for the RMG sub sector.
- Investment in PTS is around 3.75 billion Euro.

Source: Survey Report: PPMA, BTMA Annual Report 2010-1, Discussion paper No 2010-11: Bangladesh Foreign Trade Institute.

This mammoth economic sector however, needs more skilled hands for further enhanced growth. A steady supply of skilled manpower is believed to be instrumental to boom up Bangladesh's share in the global market. Such a high employment prone growth would be one of the most effective way of fighting the unemployment and poverty in Bangladesh (BTMA, 2011).

The textile sector is absolutely necessary for survival of Bangladesh economy and growth of our country. But it is naturally interesting to know, to what extent, the recent and still ongoing global economic recession has affected our textile sector. To comprehend this situation, we are giving below export data for that the years 2006-07 through 2009-10.

Table 1.1(b_1)
Export Related Data of Textile Sector

Textile products	2005-2006	2006-2007	2007-08	2008-09	2009-10
Knitwear	3780	4660	5645	6429	6483
Women Garments	3895	4658	5167	5919	6013
Home Textiles	300	257	291	314	539
Textile Fabrics	40	36	67	76	186
Total	8000	9611	11170	12738	13221

Source: Export Promotion Bureau, Government of Bangladesh Annual Report, 2009-2010

Bangladesh maintained the growth in export of textiles up to the year 2008-09 as it will be observed from the above Table that the exports grew by 16% during 2007-08 and 14% during 2008-09. In 2009-10, foreign exchange earnings from export of textiles amounted to USD 13221 million which was 3.8% higher than the exports in the previous year. Although the increase is marginal, the achievement is tremendous in the face of apprehension of downward trend because of world trade uncertainties.

It will be interesting to have an answer to the question whether the export of Bangladesh textile is showing improving trend or downward trend and for this matter the monthly export figures of the year 2009-10 compared to the export figures of 2008-09 will be relevant and are given below:

Table 1.1(c_1)
Monthly Export Figures of Textile Sector (USD in Million)

Months	2008-09	2009-10
July	1236	1221
August	1076	1058
September	1156	1269
October	680	815
November	1072	490
December	1030	915
January	1179	1136
February	1032	1066
March	1054	1197
April	946	1079
May	1105	1220
June	1172	1755
Total	12738	13221

Source: Export Promotion Bureau, Annual report of 2010, Government of Bangladesh.

The above Table indicates that the pattern for the improvement has commenced from February 2010. The increase is consecutive for the five months and is remarkable in June 2010 which was 50% higher compared to month in the previous year. If this pattern is sustained from July 2010, the export prospect of textiles seems to be brighter in 2010-2011. It will be interesting to watch if the clutch of world recession is over as far as Bangladesh Textile exports are concerned.

However, Bangladesh textile exports are going to greater competition in future with reduction in GSP facilities. This is a practical international situation which Bangladesh will have to recognize and be prepared for it. For this purpose all components of textile sector starting from spinning to the end users such as knitting units, weaving units, finishing units and garment units will have to be individually and collectively strengthened production wise, quality wise, cost wise, and marketing wise.

Bangladesh textile and apparel is the fast growing sector of Bangladesh economy. The sector's outstanding contribution to the national economy is praiseworthy. But multidimensional problems have become paramount and created obstacles in the way of growth and success of this vital sector. Sustainability strategy or long term strategy is essential in order to mitigate the multifarious problematic areas of this sector. Otherwise sustainable development of this sector can not be achieved and the activities of the industry will create unpleasant socio-economic condition and environmental degradation. So, the government and concerned authority should resolve the existing problems surrounding the minimum wages of the workers and other related issues and should extend all cooperation to the management and the workers to work in complete harmony to achieve maximum growth in the area of exports of textile products in the greater interest of our national income.

1.2 Statement of Problem

Bangladesh textile industry comprises of a mix of small to large scale privately and publicly owned companies that are engaged in mechanical spinning, knitting, weaving, dying and apparel. It has played an important role in Bangladesh economy for a long time. Currently, the textile in Bangladesh accounts for 45% of all industrial employment and contributes 5% to the total national income. The industry provides around 5 million jobs out of which 80% are women and contributes around 12% to GDP, and around 40%

value addition of manufacturing sector comes from textile (BTMA, 2011). But there are many problems existing here such as labor unrests, recurring fire incidents,, insecurity of job, irregular payment of wages and salaries, threat of terrorists and killing of the owners, unhygienic working environment, industrial pollutions, pressure from environmentalists for effluent treatment systems, mismanagement in waste, threat for occupational health and safety, raw cotton shortage, ecological crisis, global challenges and severe competition etc. All these issues have shaken the whole society with a great threatening to collapse the normal cycle of life and environment as well. Whenever one of the problems arises, the textile managers try to resolve it. But in reality the problems in another form emerges and remain the same as it was in the past.

If the textile mills fairly execute their operation and contribute to the society and environment within their ability to solve the problems, then as a whole it will be a great achievement not only for sustainable development of their own but also for the socio-economic development of Bangladesh . But they are failing to execute their operation sustainably as to why they are creating, producing multifarious unsustainable socio-economic condition and environmental degradation for Bangladesh. So, a question may arise in our mind that which lackings are responsible for these situations? There are, of course, many lackings, such as lack of appropriate management practices, lack of awareness and lack of integrity on the part of employees, market constraints, social, ecological and political environment. The root cause may be the absence of long term sustainability strategy or strategic management. It has been realized that without the application of appropriate strategy, business enterprise of any kind can not run efficiently. Business organizations, whatever may be the type, exist in multidimensional environments. In fact specific attributes of environment have a direct impact on management functions or vice versa.

It is rightly said that the events in the environment in which the company operates have a direct effect on the success or failure of that company. In this situation, strategic management helps the managers to examine the basic problems of the industry and to take better decision. Strategic management allows an enterprise to base its decisions on long range forecasts. This stimulates thinking about the future sustainability, helps educate managers to become better decision makers and examines the basic problems of the company. Successful companies are developing for many reasons like adequate resources,

efficient human resources, useful product and services and so lastly effective policies and strategies. In reality the growth and success of any organizations depend mostly on its external and internal policy and strategy of management, the importance of which is increasing day-by-day in the face of growing complexity and severe competition. This reality induces management to adopt modern and sustainable strategies and policies for smooth and successful business operations (Islam and Kumer, 1996)

It is apparent that for sustainable developments of any modern organization it requires to be a socially responsible, economically viable and environmentally sound in all aspects. So, its participation in the socio-economic and environmental activities should be increased for the achievement of long-term growth and development of business and all factors should be considered for the decision making process and for their business strategy analysis. The firm's ultimate goal should not be just profitability; rather it should create economic, social and environmental value (Kwon, *et.al.* 2008) Neglecting the social and environmental issues may be a barrier to long term survival at both micro and macro level. Those companies that can effectively manage their society and environment will help make themselves economically sustainable (Doane and Gillivary, 2001) Those organizations that opt for the sustainability route are the best positioned to survive, both for their own benefit, and for the well being of society as a whole (Doane and Gillivary, 2001).

Sustainability strategy is a long-term survival- socially, economically and environmentally. Sustainability strategy or long term strategy is a strategy that must aim to acknowledge responsibility for the full life cycle impacts of the activity of the industry. It would be proactive not reactive (Trudel, 2008)

But at present most of the business executives formulate short range plan instead of long range plan or strategic plan. Strategic plan or strategic management considers all internal and external environmental factors in the decision making process. So, strategic management is required for our textile industry instead of traditional management practices for sustainable growth and development of this vital sector. Strategic management does not reject the classical management practices. This perspective highlights the significance of devoting more and more attention to analyzing environmental factors that offer threats and opportunities. At present the business world has become so complex that no firm can think of surviving in the competition without

giving much consideration to the change in environments and developing strategies that directly relate to the environmental conditions. However, strategic managers need to consider all types of environmental factors for business strategy analysis while they prepare plan. But among all the factors they need to give highest priority on social and ecological factors; otherwise the strategies will not be sustainable, because sustainable strategies are those that are socially just, economically viable and ecologically balanced.

1.3 Aim, Objectives and Goals and Hypotheses of the Study

Aim

To mitigate the existing multifarious problematic areas of textile industry in Bangladesh.

Objectives:

i. To overview and analyze the present scenario of social responsibility strategies of textile mills in Bangladesh.
ii. To investigate and evaluate the environmental protection strategies of textile mills
iii. To examine and evaluate the economic sustainability and financial strategies of textile mills
iv. To assess the strategic management practices based on internal and external environmental factors.
v. To formulate and implicate strategies for future sustainability of textile industry in Bangladesh

Goal of the study:

To facilitate textile industry with pro-welfare managerial development strategies.

Hypotheses of the study:

1. Management control factors and socio-cultural factors are not correlated with each other.
2. Management control factors and economic environment factors are not related with each other.
3. Economic environment factors are not correlated with production environment factors.
4. Production Environment Factors are not correlated with the sample mills' social and ecological factors.

5. Social responsibility and ecological factors are not related with sample mills' management control strategy factors.
6. Management Control Strategy factors are not correlated with political legal environment factors.
7. Political legal factors are not related with the marketing environment factors.
8. There is no significant relationship between marketing environment factors and economic environment factor of the sample mills.
9. Economic environment factors of the enterprises are not related with finance and accounts factors.
10. Technological environment factors and management control strategy factors are not related with each other.
11. Industry's external environmental factors are not correlated with each other.
12. Industry's internal environmental factors are not related with each other.
13. The industry's SWOT factors are not correlated with each other.
14. Strengths and weakness factors are not associated with the industry's internal environment factors.
15. Opportunity and threat factors are not related with the industry's external environment factors.
16. Weaknesses and threats factors are not related with ecological and business responsibility factors.
17. Weaknesses factors are not related with economic environment factors.
18. Production Environment Factors are not related with the threat factors
19. Ecological and Business Responsibility Factors are not related with the industry's internal environmental factors.
20. Economic environment factors are not related with the industry's internal environment factors
21. Production environment factors are not related with the industry's external environmental factors.

1.4 Justification of the Study

The textile and clothing industry is one of the oldest, largest and most global industries in the world. This industry offers a range of opportunities including entry-level jobs for unskilled labor in developing countries and forms a major part of manufacturing production, employment and trade in many developing countries like Bangladesh. This industry in Bangladesh is the largest employer after agriculture and Bangladesh is particularly dependent on the export of readymade garments. This industry in Bangladesh might be collapsed by 2004 due to the MFA phase out but such prediction has not played out. Currently, we have noticed that Bangladesh has become a great supplier in the US and EU markets. In reality, we cannot think of economic progress without textile as it is the life blood of our economy at this moment and is expected to be continued so far as unforeseeable future period of time. So, every effort should be made to undertake effective measures which will improve the efficiency and profitability of the country's vital industry. We know that steady industrial progress demands efficient management of that industry and in this regard, the strategic management practice covering sustainability issues can play a pivotal role in improving the overall managerial efficiency and profitability position of the industry. Many academicians identified numerous obstacles in the way of the industrial progress such as operational inefficiency, poor production, financial weakness, old technology etc. Since no attempt has been made to focus on the lack of sustainable strategies and to analyze and evaluate the application of strategic management approaches for our textile mills, the present study has been designed. The findings will be of enormous academic value and will enrich the stock of literature in the relevant field. Besides, the findings may assist the national policy makers, textile mills owners, mills management, BTMA officials, BKMEA, BGMEA, Ministry of Commerce, and Ministry of Finance etc to find out the ways for overcoming the existing problems of this vital industry.

1.5 Scope and Limitations of the Study

This study is related to the private sector textile mills located mostly in Dhaka, Savar, Gazipur, Narayangonj, Pabna, Chuadanga, Norshindi, Comilla under BTMA. It covers 15 textile mills and the reason for selecting these locations is based on the consideration that almost all of the textile mills are situated in these areas of Bangladesh. This study covers five financial year from 2006-07 to 2010-11. This study has analyzed and focused

different strategic management elements covering mainly internal and external environmental factors and social and environmental responsibility factors having their impact on socio-economic, environmental development and managerial performance.

This study was based on both primary and secondary data derived from different books, records, annual reports maintained by the companies. The opinion relating to different aspects of social and environmental responsibility and strategic management have been collected from a number of selected executives, employees, shareholders, consumers, scholars, concerned officials and key informants of the company. But more elaborate and purposeful discussion was not possible due to the respondents' unwillingness to devote a longer period of time for answering the questions because they were found very busy with manifold functions of their jobs. However, all relevant data, information and literature have been reviewed, examined and incorporated here with due care and acknowledgement.

CHAPTER TWO
Review of Literature

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2.1 Prelude

In the light of research objectives, the researcher reviewed the relevant literatures covering the concepts of sustainable development strategies, strategic management and green management, its tools and techniques, managerial practices, present managerial conditions, and strategical lacking of textile mills in Bangladesh. The relevant literatures of this research have been discussed below:

2.2 Review of Literature

Allwood *et.al.* (2006) has written an article entitled "Well Dressed? The Present and Future Sustainability of Clothing and Textiles in the United Kingdom". The main objective of this study is to take a very broad view of the sector encompassing the views of business, governments, society environments, consumers and tried to reflect the widest definitions of 'sustainability'. The other objective of this article is a wide-ranging scenario analysis of various possible futures. The analysis included prediction of social, economic and environmental consequences of changes in production structure, consumer behavior, material and process innovations and government influence. The results of the Delphi study are also used to develop a set of possible future scenarios. The Delphi panel's comments on the forces influencing the sector and its consequences and influences were grouped according to the categories of PESTLECH (Political, Economic, Social, Technological, Legal, Environmental, Cultural and Historical Factors) used in business strategy analysis. The finding of the study is that companies face three forms of pressure from their consumers: shareholders expectations, consumer loyalty and ethical pressure. There is considerable evidence in the UK that consumer interest in 'ethics' is growing and so, business interest is developing and therefore 'corporate social responsibility' is also growing. This report also revealed the major environmental issues, occupational health issues and major social issues associated with this sector. The major sources of these issues are energy use in laundry, production of fibers, use of toxic chemicals, release of chemicals in waste water, solid waste arising from yarn manufacturing, fiber dust, hazardous chemicals, noise, child labor, low pay, sexual

harassment etc. The limitations of this study are that all these analyses stated in this report were made according to the business environment of United Kingdom (UK). The condition of Bangladesh is not reflected here. Besides data analysis techniques were not clear.

Arafin (2005) has made a study on "Strategic Management of Jute Mills in Khulna Zone". The objectives of the study are to identify the jute mills' internal and external environmental factors responsible for the effectiveness of strategy, to know management pattern of public sector corporations with reference to BJMC, to identify the problem areas of strategic management practices highlighting financial strategic, productivity trends, and factors governing in the sample mills, to provide recommendations for improvement of strategic management practices and proper implementation in view of business environment for future sustainability of this vital sector. In reality, this study analyzed and focused on different strategic management elements covering mainly environmental factors, both external and internal having their impact on managerial performance. But the major limitations of the study are that the researcher ignored ecological factors (air, water, soil pollution from processing of materials, dust, heat, noise, waste etc) as external environmental factor which is a great influential factor to stop the whole activities and for losing the ecological balance. The limitation of the study is that the researcher did not mention social responsibility factors (responsibility toward community, toward workers, toward government, toward consumers) which are also very influential factors for adopting strategic management plan. Though he discussed about the improvement of management system but the researcher ignored to consider the present great environment management issues in the decision making process for the future sustainability of this sector.

Azad (2004) has made a study on "Ready-made Garment Industry in Bangladesh, Competitiveness and Sustainability". The main objectives are to analyze the growth and development of Readymade Garment (RMG) industry in Bangladesh, to find out the critical issues and challenges to the success of RMG industry, to analyze the competitive factors in the global RMG business, to evaluate the strength, weakness and competitiveness of RMG and to develop an action program focusing on international competitiveness and sustainability of RMG industry in Bangladesh. The researcher, in his study has identified that price, quality and lead time are the significant factors to cope with the challenge and make it sustainable. In addition, in the context of global

environment, the strengths, weaknesses and the relative position of competitiveness are also analyzed. In order to make this sector more sustainable, he has emphasized on developing backward integration, improving productivity, ensuring shorter lead time, low pries through cost reduction strategies etc. But he has not considered the basic indicators of sustainability. Because in order to make RMG more sustainable in all aspect, he should have emphasized on social responsibility, environmental protection strategy and economic viability equally, otherwise lack of all these factors create unsustainable socio-economic condition and environmental degradation as well. This study has not mentioned economic factors (employment, human capital investment, etc) and ecological factors (pollution, waste, harm from dying etc).Besides the researcher has not mentioned anything about the methodology of the study.

Bhawmic (1998) has written an article entitled "Environment Pollution of Bangladesh: Social Responsibility of Business". The objectives of the study are to find out the causes of environment pollution and to find out the social responsibility strategies of business organization to protect environment from pollution in Bangladesh. The limitation of this study is that the researcher failed to overview and assesses the actual field level scenario of business actions to protect the environment from pollution. Environmental protection from pollution is not the only component of social responsibility of business. In this paper the other important components of social responsibility of business such as consumers' protection, employee welfare, community development, human resource development, responsibility towards government etc are also neglected. Moreover, the researcher did not mention sampling techniques clearly. Besides, the researcher has not analyzed the environmental management system and pollution prevention strategies.

Davis and Frederic (1984) have written a book entitled "Business and Society, Public Policy, Ethics". They analyzed the social challenge to business, origin of the social responsibility debate, the direction of social involvement etc. They discussed the matters in relation to the business environment of the United States. There is no discussion about the business environment and social responsibility of business of Bangladesh. Besides, the writers ignored the economic viability and ecological responsibility issues and strategic management practices for the business concern. So, a detail study including strategic management practice should be conducted for the perspective Bangladesh.

Davis and Blomstrom (2012) have written a book entitled “Business and Society: Environment and Responsibility”. In this book, they have noticed that the earth is traveling through space at a high rate of speed and changes within the whole social system on the earth seem to be moving about as fast. If business wishes to remain viable and potent in its role as a major social institution, it needs to be flexible and relate to these new conditions. It seeks to relate business to its external culture, that is, to the whole social system. It takes a system point of view, relating business to ecology, pluralism, and social power. They also have discussed on business ideology emphasizing on business values and codes of conduct. They have talked about social power and social responsibility. The writers, in this book, also explained about the role of business on customers, employees, government, and organized labor and community. An ecosystem is a total ecological community, both living and non living. Mankind is just now coming to understand that each act he takes is intricately tied to many other events in the chain of life of an ecosystem. Since these intricacies have not been understood by experts, businessmen likewise often have not realized the effects of their actions. This lack of understanding means that even the best of intentions may have unforeseen and undesirable results. The authors also have talked about pollution and business revolution. As a contributor to pollution, business is involved in society’s ecological crisis. They mentioned that pollution has become serious because of compound growth of the industrial revolution, a higher standard of living, and a population explosion .To correct this situation, economic incentives, effluents standards, and effluent charges will be applied. They also noticed about cost / benefit analysis will be used to guide decisions. Hopefully, the discussion also is challenging and constructive, showing how mankind’s institutions work together to achieve as better quality of life for all of us. However, all the discussions are theoretical and based on the perspective of America. So, a vast and practical oriented analysis needs to be conducted on the perspective of our country.

Doane and Gillivary (2001) have written an article entitled “Economic Sustainability: The Business of Staying in Business.” This study looks at the economic sustainability of organizations in the context of sustainability management. It aims to put forward an understanding of how business ticks and what business contributes to the wider economy. The findings of the study are that sustainability is a long-term survival socially, economically and environmentally. They mention that it is the key to long-term staying

power. Those organizations that opt for the sustainability route are the best positioned to survive, both for their own benefit, and for the well-being of society as a whole. This research is involved with the survey of SIGMA organizational partners, interviews with organization partners, workshops with other research teams and peer review process. The other important finding of that study is that neglecting the social and environment issues may be a barrier to long-term survival at both the micro or macro level. They mention that economic sustainability forces to look on the internal and external implications of sustainability management. They also mention that managing economic sustainability must consider the influence of company on the wider economy, how it influences and manages social and environmental impacts, how the company manages intangible assets and the financial performance of a company. This study illustrates decision making timescales for business. They identify standard financial measures. This report also finds that sustainability is desirable for individual business to prevent the devastating and inefficient impacts of corporate premature death and to enable and protect social and environmental initiatives. But this report has analyzed only sustainability indicators but this report has not mentioned any variables required for sustainability. This study also mentions about social and environmental impact but does not show about how much impact on community and on workers. So, an in-depth study in this regard should be applied.

Gardetti and Torres (2013) have written an article entitled “Sustainability in Fashion and Textiles: Values, Design, Production and Consumption.” The main objectives of this study are to find out and define the relationship between sustainability and textile industry and to overview and analyze the sustainability practices in textile and fashion industry. The findings of the study are that the contribution textile industry is significant to our economy but within the context of sustainability, this industry commonly operates to the detriment of environmental and social factors. Textile is a process and it has a direct link to the environment. It is embedded in everyday life. So, sustainability within textile and fashion means that through the development and use of a thing, there is no harm done to the people or the planet and that thing or a process, once put into action, can enhance the well being of the people who interact with it. The major limitations of the study are that the researchers did not use any statistical tool to analyze the data and this study was based on secondary sources of data only. Field level data should be collected and an empirical analysis needs to be conducted.

Griffin (2009) has written a book entitled “Management”. In this book he discussed the external environment highlighting the general environment, economic environment, socio-cultural environment, technological environment and natural environment, political legal environment and task environment. He also discussed the internal environment encompassing owners, board of directors, employees and physical work environment. In this book he discussed the ethical and social environment emphasizing on managerial ethics and how an organization treats its employees. Griffin stated that an organization should exercise social responsibility towards its stakeholders, toward natural environment and toward the general social welfare. Major stakeholders are employees, customers, local community, interest groups etc. All these stakeholders are directly or indirectly affected by the functions of a business organization. So, a business organization has responsibility to protect the interest of all related groups. So, it is necessary to protect the natural environment from pollution for greater human interest. The measures for pollution control and waste management would be taken as the responsibility of business firm. He mentioned about general social welfare which means that business is a close component of society and a healthy business can not exist in a sick society. Business has an obligation to perform the society’s welfare for its enlightened self interest. Business should spend a portion of its profit for philanthropic activities, charity fund, cultural activities, public health and education, for protection of environmental pollution, worker’s legal payment purity of products etc. In his book he mentioned all things stated above including the global environment and the multicultural environment covering environmental challenges of management in the chapter named “the environmental context of management”. In his book he also analyzed about managing strategy and strategic planning in the chapter of planning and decision making”. However all these discussions are theoretical and based on the environment of USA. The conditions of Bangladesh are not reflected here.

Gur and Kale (2009) have written an article entitled “Sustainability Report on SLN TEXSTIL”. SLN TEKSTiL is a knitwear textile production and exporter located at Isltanbul, Turkey. The main objective of this report is to disclose company’s sustainability performance by means of systematic methodologies which measure and disclose the company’s successes, failures, future plans and goals. In this report, they mentioned that by evaluating its sustainability performance in an honest and transparent manner, SLN

textile will be better positioned in today's competitive market. Collection of data have been analyzed and coordinated by an external team named Global Reporting Initiative (GRI). This report has revealed that SLN was committed to operating within the legal framework and in compliance with its code of conduct. This report focused on social responsibility by creating awareness among employees about discrimination and inequality, by increasing awareness about gender and women's right, by strengthening existing communication among workers and between workers and management, and by eliminating discrimination among workers in the work place order to create an equal working environment. This report has revealed that SLN textile industry was certified by ISO-9001, Eco-Tex, 14001 and OHASAS-18001.The other finding of this study is that only companies that produce high quality products and services at a low cost within shorter production lead times can survive. They have focused on lean production to build effective business processes resulting in a sustainable manufacturing environment. Lean production means doing more with less, less time, less space, less human effort, less machinery, less material while giving customers what they want. This report has focused on social, economic and environmental perspectives of Turkey textile industry. The Environment of Bangladesh is not reflected here. Besides, sampling procedures and data analysis techniques of this study are not clear. But this concept will bring fruit for the textile industry of Bangladesh.

Islam (2013) has written an article entitled "Workers' Attitudes toward the Sustainable Human Resource Development in the Readymade Garments Industry of Bangladesh: An Empirical Analysis. The main objective of this study is to measure the workers' attitudes toward the sustainable human resource development in the readymade garment industry of Bangladesh. The other objectives of this study are to know the human resource development activities, to measure sustainability of human resource development programs, to identify the problems and to recommend some guidelines to ensure sustainable human resource in readymade garment sector of Bangladesh. The findings of the study are that Bangladesh is far behind from proper utilization of human resources to improve the skills and efficiency of workers of readymade garment sector of Bangladesh. The workers of readymade garment sector of Bangladesh are not satisfied on the initiatives taken by the management of the organization and government. The limitations of the study are that the researcher did not apply Cronbach

alpha and split half reverse test to validate the results of the study. Besides the researcher did not incorporate the working environment factor and environmental factor as the indicators of this study.

Kabir and Islam (1995) have written an article on social responsibility of business in a journal entitled "Corporate Social Audit" A Case Study of Some Selected Enterprise". The objective of this article is to identify some areas of social responsibilities performed by the business enterprise. These are (a) compliance with laws and acts. (b) Maintenance of moral and ethical standard & (c) Voluntary performance. But they failed to identify the major areas of social responsibilities, as consumers' interests, workers interests and the states interests. This article is based on the survey of only four enterprises from private sector. This article does not represent the present situation of social responsibilities of private sector in Bangladesh. Besides, the researchers have mentioned nothings about the methodology of the study.

Karim (2006) has made a study on "Social Responsibility of Private Sector Business in Bangladesh: A Study of Selected Enterprises." The objectives of the study were to overview the present condition of social responsibility of private sector business in Bangladesh, to identify the factors which necessitate the social responsibility of private sector business in Bangladesh, to identify the benefits derived from the operation of social responsibility for both business and society, to identify the problems and to recommend measures for enhancing the social responsibility of private sector business in Bangladesh. In this study the researcher found that business depends on society for the supply of employees, consumers, raw materials, security, infrastructures etc. The researcher also found that every business action has some positive and negative impact on society. It was revealed from the study that industrial pollution creates ecological injury, concentration of resources creates poverty, social unrest and crime for which it becomes obligatory to business community to discharge social responsibility. This study revealed that private sector business neglects and avoids business responsibility to the employees, consumers, community and to the environment. Another important finding of this study is that few companies have pollution control system and few have modern waste management system. But most of the surveyed companies have no pollution control mechanism and have traditional waste management system. But the limitations of the study are that this study did not consider the economic viability achievement strategy for discharging social

responsibility and for environment protection. Besides, this study was conducted on private sector business only and sampling procedures and data analysis techniques were not clear.

Keane, *et.al.* (2008) have written an article entitled "The Role of Textile and Clothing Industries in Growth and Development Strategies." The main objective of this research paper was to examine the role of textile and clothing industries in growth and development strategies in developing countries. The data have been collected from secondary sources and percentage, rates and ratios were applied to utilize the data for presentation. The researcher discussed the economic aspects of the textile and clothing industry and focused on the comparative study among the various countries like Bangladesh, Vietnam, India, Pakistan, Chiana and some European countries. The finding of the study is that Bangladesh has the highest total dependence on textile and clothing as a total share of merchandise exports (83.5%), followed by Pakistan (67.2%) and Sri-Lanka (47%).The limitation of the study are that the researcher failed to evaluate the role of textile industry in corporate social responsibility significantly and sustainable development strategies effectively. Besides, the researchers have not mentioned anything about the methodology of the study. So, an in depth study should be conducted in this regard.

Khan, *et.al.* (2013) have written an article entitled "Textile Industries in Bangladesh and Challenges of Bangladesh". The main objective of this study is to identify the major reasons for the challenges of growth of textile industry in Bangladesh. The finding of the study is that global recession, unfavorable trade policies, internal security concerns, high cost of production, different safety issues were the main reasons behind these challenges of growth. Depreciation of Bangladeshi Taka that significantly raised the cost of imported inputs, rise in inflation rate and high cost of financing, have also affected seriously the growth in the textile industry. The limitations of this study are that only secondary data have been used here to investigate and analyze problems. The researcher also ignored the social responsibility issues, economic viability issues and ecological issues. That means the researcher overlooked the sustainability issues in overcoming the challenges of growth of this industry.

Kwon *et.al.* (2008) have written an article entitled "Strategic Sustainability and the Triple Bottom line". The goal of this study was to examine the relationship between strategic sustainability practices in the apparel – textile complex and performance outcomes at the

corporate and consumer levels. The researchers were interested in the impact of triple bottom line performance outcomes stemming from economic (sales increase, cost reduction, waste reduction, cycle reduction), social (social responsibility, ethics), and environmental (legal compliance, standards, codes, reduced impact) goals. They found that the firm's ultimate goal should not be just profitability rather it should create economic, social and environmental value. In the management field, researchers proposed that our future lies in building sustainable enterprises that connect industry, society, and environment. The researchers showed that strategic sustainability activities create either relative short term or long term sustainable competitive advantage. Research in strategic management on competitive advantage suggest that firms that anticipate change and adapt their strategy using their resource base accordingly will be able to realize competitive advantages. If firms do not act, then existing competitors or new entrants may seize opportunities. They found that to create a long term sustainable competitive advantage using a differentiation strategy, consumers must perceive some difference between a firm's product offering and the competitors′ offering. In terms of social performance, they revealed that the market segment will be extremely loyal and sensitive to social responsibility. From an environmental performance perspective, they revealed that firms should use technology to reduce their impact on the environment. In terms of economic performance, they mentioned that analysis estimate the consumer segment represents 68 million American consumers, who are willing and able to pay higher prices for products that appeal to their sustainability ideals. The limitations of the study are that this study was based on US textile and Apparel Industry. The condition of Bangladesh was not reflected here. Besides, the researchers have not mentioned anything about the methodology of the study.

Lawrence, (1996) has written a manual entitled "Pollution Prevention in the Textile Industry". The objective of this manual is intended to be a comprehensive overview of the documented information on pollution prevention and recycling practices for the textile industry. The data have been collected through the accessing pollution prevention information clearinghouse and survey. However, the collection, organization, and dissemination of pollution prevention information are a relatively new initiative, and an ongoing process. The finding of this report is that production of economically competitive products is the driving force behind any successful business. Production frequently

requires the use of various chemicals throughout the manufacturing process. The purchase and storage of these chemicals, their use in the process, and the ultimate disposal of the waste generated by the manufacturing process can present many challenges. Such challenges involve disposal costs, waste management, and worker health and safety. Pollution prevention strategies provide an effective means of minimizing, and even eliminating, such challenges. However, this report is intended only to assist the user in his or her preliminary research and development of pollution prevention options. This report has not contained every relevant piece of information on pollution prevention and recycling for textile and apparel manufacturing firms. So, an in depth study regarding pollution prevention and recycling strategies for future sustainability of textile mills in Bangladesh is required.

Martin, (2013) has written an article entitled "Creating Sustainable Apparel Value Chains: A Primer on Industry Transformation." The main objective of the study is to create sustainable textile and apparel value chains. The other objectives are to find out the factors influencing workers[1] health and safety, to find out the ways for upgrading the industry infrastructure and for improving working conditions. The findings of the study are that creating a win-win of raising productivity and competitiveness, as well as social and environmental performance is possible. But an ambitious, systematic approach is needed to achieve industry transformation. This includes four steps: *(1)* upgrading the industry infrastructure by investing ,(2)fostering total resource productivity and transparency across the supply chain; (S)improving working conditions with a new level of ambition; (4)studying and replicating the best practices of leading procedures. The limitations of the study are that sampling procedures and data analysis techniques of this study are not clear. Besides, the researcher ignored the achievement of economic viability of the industry without giving priority on social and environmental performance.

Martinuzzi, *et.al.* (2011) have written an article entitled "CSR Activities and Impacts of the Textile Sector. The objectives of this article are to overview the corporate social responsibility practices in the European Textile Industry and its impacts on the environment and society. The major findings of this study are that the European textile industry is disadvantaged due to high labor costs and higher environmental standards. Therefore, a strategy of cost leadership is impossible. The methodology is based on secondary data only and percentage, rates and ratios have been used here to analyze the

data. The writers have discussed the critical success factors of textile sector. They have said that few studies are available on the impacts on sustainable development. The researchers have identified the most important environmental hazards from textiles. They are use of chemicals, use of water, and hazardous and toxic waste generation and generation of contaminated waste water. This study has revealed that environmental impacts start at the farm level, when toxic chemicals are used to support growth of cotton. In this research, the researchers have emphasized on sustainable supply chains, labor rights and code of conducts in the part of CSR issues. The limitations of this study are that the researchers have failed to cover the impact of economic aspects of the textile sector. Besides, this research has been conducted on the perspective of European textile industry and the researchers have not mentioned anything about the methodology of the study.

Muller and Gandenberger (2006) have written an article entitled by "Sustainable Resource Management- Illustrated at the Problems of German Textile Industry." The objectives of this article are to find out the challenges of sustainable resource management and to analyze about how textile industry deals with scarce resources. This paper has applied the rational interpretation of sustainability to the German Textile industry. The finding of the study is that Garman textile companies face strategic problems stemming from scarcity of vital resources. Securing long-term supply of scare resources becomes a core strategic task when the business is unable to substitute these resources. This paper has mentioned that sustainable resource management stems back to the economic – ecological theory of the firm. This article has identified the challenges that are raised out from the scarcity of economical, social and ecological resources. This article has illustrated how scarcity of economic, social and ecological resource threatens the survival of German textile companies and how companies deal with scarce resources. They have observed two prevailing strategies in textile industry which aim to overcome scarcity of financial resources that is pricing strategy and dynamization strategy.This study has addressed the following tasks: (1) reduction of negative environmental impacts (2) development of ecologically friendly niche collection (3) reduction of CO2 Emissions, (4) monitoring of supply compliance to ecological minimum standards. In this paper, they have showed that strategies targeted at efficiency gains from result in increased stressed on the company's resource networks. As shortages in resource supply can endanger their survival, textile companies need to manage their scarce resources in a sustainable way. However, all these discussions are based on theoretical not empirical. This study was

applied in the German textile industry. The condition of Bangladesh is not reflected here. Besides, the researchers have mentioned nothings about the methodology of the study.

Pearce and Robinson (2006) have written a book entitled "Strategic Management". In this book, they discussed the stakeholder approach to social responsibility. They analyzed the dynamics of social responsibility. This means that stakeholders can be divided into inside stakeholders and outside stakeholders. Outsiders often demand that insider's claims should be subordinated to the greater good of the society and they believe that some thorniest issues like pollution, the disposal of solid and liquid waste, and the conservation of natural resources should be principal considerations in strategic decision making. The writer in this book also mentioned a continuum of social responsibility and said that strategic managers must use a continuum that encompasses four types of social commitment: economic, legal, ethical, and discretionary social responsibilities. They also mentioned about corporate social responsibility and identified three principal reasons why managers should be concerned about the socially responsible behavior of their firms. The writers in this book also discussed social audit. This audit, conducted by an outside consultant scores company performance in such areas as employee benefits, plant safety, ecology, community involvement, and customer service. They also have discussed management ethics and ethical standards. In the chapter "three" of this book, they mentioned the external environmental factors. They identified the most influential environmental factors such as social, economic, political, technological and ecological factors. The most prominent factor in the remote (external) environment is the reciprocal relationship between business and the ecology. They also discussed the benefits of Eco-Efficiency. They mentioned the name of Stephen Schmidheiny, chairman of the Business council for sustainable development, who has coined the term eco-efficiency, which means producing more useful goods and services while continuously reducing resource consumption and pollution. They also talked about the industry environment and global environment. They have mentioned the SWOT analysis in the internal environmental analysis. All discussions were made according to the business environment of foreign country USA. This is a theoretical discussion and not based on empirical study though it helps understand the concept and its implication.

Rahman (2003) has written a book entitled "Globalization, Environmental Crisis and Social Change in Bangladesh". The objectives of the study were to overview and analyze the social development strategies, integrated rural development techniques, sustainable

development, environmental conservation policies, woman in development and globalization to a great extent. The author cited the dimension of globalization by economic, political/ideological, socio-cultural, technological and ecological. The writer discussed globalization and ecological sustainability. He urged policy planners and environmental researchers to formulate strategy for harnessing and conserving our resources for the sustained development of Bangladesh. The writer mentioned that the success of this industry is laudatory, so a SWOT analysis should be examined in order to gauge the viability of the government strategy and it is a necessary step for successful strategic planning. The writer stated that strengths and weaknesses are the current characteristics, on the other hand, opportunities and threats are the characteristics of the environment in which the organization operates and generally forecast future trends. He cited the statement of Bryson (1995) which indicated: strategic planning is concerned with finding the best and most promising fit between an organization and its environment. He has discussed all these issues stated above in the chapter named "Trade liberalization and economic change in Bangladesh". The author compiled a chapter in this book headed by "Workplace, Residence and Relationships among Garments workers in the Globalizing, Export, Economy of Bangladesh", written by Raymond wiest, Amena Khatun and Helal Mohiuddin. This work was based upon interviews with 212 garment workers in Dhaka, Bangladesh. He tried to find out the reasons for migration from rural areas to Dhaka city. He analyzed worker's skill, educational status, marital status, economic and occupational health status household or family role, physical working environment, housing and living conditions. The writer further compiled another chapter named "Shifting social Relations and cultural change in the livelihood strategies of women Garment workers of Bangladesh", written by Raymond wiest and Helal Mohiuddin. He mentioned about women garment workers sense of entitlement to own wage earnings and control over expenditures, women worker empowerment, change in the moral order. The limitations of the study were that all studies were made in the Dhaka city that could not represent the whole country. The writer did not mention the data analysis techniques as well as sampling procedures clearly. Besides, this study did not mention about work place code of conduct, ecological impact, pollution prevention strategy and environment management plan, monitoring plan and mitigation measure provided by the garment industry.

Rumana (2014) has written an article entitled "Corporate Social Responsibility in Bangladesh: Practice and Perpetuity." In this research, the researcher aimed at assessing the effectiveness of corporate social responsibility (CSR) practice of some local and foreign companies operating in Bangladesh. The main purpose of this study is to find out the extent and the kind of CSR practice by companies in Bangladesh and make recommendations for establishing a national framework to advance CSR in the country. The methodology used to conduct the study is a combination of qualitative and quantitative analysis based on face to face interviews using semi-structured questionnaire containing sections regarding company data, and dealt with a broad range of sustainability aspects such as charity giving, CSR and human resource management, drivers for CSR. The targeted respondents in this study are managers of corporate communication division for each company. Finally, they have selected fifteen companies and obtained the information regarding the CSR activities of those companies. The finding of the study is that corporate managers of these companies understand the concept of CSR though they didn't follow any CSR guideline. There are few companies who have separate units of department for CSR activities. The CSR responsible person of every interviewed company have stated that their employees are so satisfied that they need not to form a trade union. This study has suggested that businesses should aim at disclosing their CSR engagement to the public about the exact percentage of their profits goes into CSR activities in their annual report. However, this research failed to reveal available information about CSR practices in Bangladesh and a detail and more statistical tools need to be applied in order to conduct this study significantly. Besides, this study has failed to consider environment management plan (EMP) and economic viability strategy.

Saeed (2000) has written an article entitled "Environmental Challenges in Enterprises Working". The broad objective of this study is to find out the environment issues and to face the challenges of environmental changes in the working enterprises. He mentioned about five different environment issues of enterprises like challenges of environment changes, approach to environment analysis, organizational environment, industrial environment and microenvironment. The findings of the study are that there are several challenges of environment changes, which need to have serious consideration for successful enterprise working having competitive market economy and technology. He also indicated three approaches of environment analysis like, traditional approach,

incremental approach and current thinking approach. In order to achieve sustained competitive advantages, the researcher identified three significant resources like, human resources, organizational resources and physical resources. According to the writer, industry attractiveness (industry growth, cyclicality of the industry; historical probability, environmental opportunities at micro level etc.) and factor governing industry environment are the key factors in industry environment. And at last the researcher identified four governing macro environment factors like political cum legal, economic, social and technical. But the major limitation of the study is that the researcher did not consider pollution factor that has had negative impact on workers health and safety and on ecological balance. Besides, he ignored environment management factors, social responsibility issues and management ethics and code of conduct for consumer satisfaction issues. The researcher did not mention anything about the methodology of the study.

Sakolnakorn *et.al.* (2009) have written an article entitled "Management Strategy for Administration of Textile Industries in Developing Country: Case Study Thailand. The objectives of this research are to analyze the influential factors affecting the organizational development of textile industries and to explore the guidelines for development of the operation and management of textile industries. In this study, the writers proposed a strategic and management plan to textile organizations in developing countries like Thailand. In this research, data were collected and analyzed using both qualitative and quantitative methodology. In depth interviews have been conducted with 18 entrepreneurs in the textile mills to synthesize the qualitative data. Five factors and 59 variables drawn from interviews have been compiled in the questionnaire. In the quantitative study, six factors gathered from the qualitative data gained in interviews have been compiled in a questionnaire consisting of 59 closed-ended questions. Multiple regression (SPSS) has been used to analyze the factors affecting entrepreneurs. A coefficient of determination of $R^2 = 0.208$ and Durbin- Watson = 1.903 was obtained in the study. From this analysis, human resources management and financial management interfere with the administration of the textile industry. These two factors were found to be most significant issues and to solve this problem; management should adopt outsourcing strategy that can reduce the cost of building for employees. The limitations of this study are that they have ignored economic environmental factors as well as social responsibility and ecological factors. Besides, they should have considered F. ratio and its

significance level (≤0.05) in the multiple regression analysis. This study has been conducted in the textile industries of Thailand. So, a study in the context of Bangladesh should be conducted.

Solaiman (1991) has written an article named "Environmental Factors Affecting Organizational Performance: An Analysis from Observations". The objectives of the study are to highlight the impact of environmental factors on the performance of Jute industry of Bangladesh, to explain about how social environment, political environment, and economic environment affect the performance of Jute industry. The finding of the study is that the environmental activities have not been functioning smoothly in the jute industry in Bangladesh. Due to the existence of unfavorable environmental factors both external and internal factors; he has mentioned that these factors have direct impact on organizational effectiveness. But the limitation of this study is that this article is based on jute industry not textile industry. Besides this, this study has not considered ecological factor, environmental protection strategy like cleaner production strategy, waste management system, pollution prevention strategy etc. The employee welfare and community welfare issues have become major influential factor for analyzing the environmental factor analysis. But the writer in his study has ignored this vital issue. Besides, the researcher has not mentioned anything about the methodology of the study.

Strobel *et.al.* (2006) have written an article entitled "Corporate Sustainability Indicators at Textile Industry: A New Proposal". The main objective is to prepare an alternative model for the measurement of corporate sustainability based on social, economic and environmental dimensions. Three approaches were studied in this regard such as the Dow Jones Index, the Global Reporting Initiative and the Initiative of Ethos Institute. This study was applied on Brazilian Textile Industry through questionnaire covering indicators corresponding to all variable defined in the study. The main variables of the environmental dimensions were environmental strategy, environmental legislation, environmental management tools, emissions, waste and residues, water and energy consumption and natural resources conservation. The variables of social dimension were social strategy, employment, training, society, ethics, health and safety and responsible product. The variables for the economic dimension were economic strategy, management tools, technology and quality. The evaluation of the obtained results was that the

environmental dimension was the best assisted according to the proposed model. This fact evidences that in the textile sector the environmental legislation was rigorous. In the social dimension, it was observed that there was a trend that the companies with better economic performance invest more in its social strategy, especially in employee job and training. However, an important component of the social dimension, the existence of an ethical code was not found in any of the researched industries. The main finding of the study is that a company cannot have a high sustainability degree if it does not observe the economic, social and environmental tripod, because, if the company is not economically solid, it would not have enough resources to invest in the social and environmental dimensions. So, the balance among all the variables is required for corporate sustainability. But the limitation of this study is that all these analyses were based on the condition of Brazil, and the condition of Bangladesh is not reflected here. Besides these, the researchers did not consider ecological factors and physical work environment in the social dimensions and did not consider wages and benefits, charitable donation, fixed asset investment, taxes as variable for the economic dimensions. However this study is an important one to have an idea regarding business, society and environment.

Trudel (2008) has written an article entitled "Strategic Guide for Sustainable Development; Spider Thread: Textile of the Future?" The main objectives of this study are to analyze the concept of sustainable development of Textile industry to identify the success factors for the industry and to find out about what should be best sustainable practices in the textile industry. The researcher explained about how strategic sustainability help us to reduce expenses, attract the best talent, better manage risks, develop a competitive edge, improve our environmental performance and improve industry image. The aim of this study is to present the most innovative business practices inspired by the principles of sustainable development. The findings of the study are that if the business leaders are at the heart of the environmental problem, they are also part of the solution. It is revealed from the study that sustainable development is a new model of development and a real business reality, today more than ever. He emphasized that sustainable development factors are different from the present model of development. According to sustainable development model, economic performance is the means where a project must be profitable; otherwise it will not be viable. But unlike the present model, economic success must not be the objective but the means to attain the objective. Social development is the

objective and economic activity must aim to improve living condition for the greatest number of people and environmental respect is the condition. An economic activity must not destroy the ecosystems′ ability to sustain life. He mentioned the two most important trends that will propel companies during the coming years. Those are the reduction of environmental impacts and the development of ethical textiles. He also identified the characteristics of eco-friendly textile industry. He mentioned that consumers demand more information about where the raw material comes from and how was the product manufactured? This question resulted in a growing demand for eco-friendly textiles. The author also mentioned about sustainability strategy or long-term strategy that must aim to acknowledge responsibility for the full life cycle impacts of the activity of the industry. It would be proactive not reactive. . However, all these analyses were based on theoretical not empirical. These analyses were prepared for the Canadian Textile Industry. The researcher has mentioned nothing about the methodology of the study. So, a detail and analytical study should be conducted in Bangladesh perspective.

Weihrich and Koontz (1993) have written an article entitled "Management and society: the External Environment, Social Responsibility, and Ethics." The objectives of this study are to identify the external environmental factors, social responsibility factors and ethical issues and to find out its influence on the business actions. The authors stated social responsibility of business in a chapter of this book entitled "Management, A global perspective". In this article the authors showed the relationship between social responsibility and external environment and how ethics influence the business actions. The limitations of the study are that the writer had not discussed about economic viability and environmental protection strategy of business organization. This article deals with theoretical discussion only. So, a detail and analytical study in the context of Bangladesh is essential

Yperen (2006) has written an article entitled "Corporate Social Responsibility in the Textile Industry". The objective of this article was to find out the benefits of corporate social responsibility (CSR) in the textile industry. In this article he has mentioned that CSR is a world wide accepted development on how companies can manage their business process to produce an overall positive impact on society and environment. CSR represents care for social and environmental issues with a profitable business perspective.

CSR sees environmental and social trends as opportunities for growth and competitive advantage. He further mentioned that textile companies are lacking behind in the CSR process, often have a reactive and short-term management perspective. The important finding of the study was that a reactive response on daily business concerns and pressure can lead to violations to social and environmental performances. In this study, the majority of results (68%) point to a positive relationship between corporate social performance and financial performance. The researcher in this article found that CSR enables companies to implement a proactive social and environmental strategy, which reduce pollution in the production processes by means of preventive measures and increase workers productivity and liability. It's a structural business strategy that increases the efficiency and the gross returns. It is also revealed that CSR helps companies to reduce production costs: attract and retain talented staff; use resources more efficiently; produce safer and better products; reduce levels of pollution and risks; comply with international standards and code of conduct; link up with international markets and to improve company image. The researcher further mentioned that there are many obstacles existing in the textile companies to engage with CSR. The major limitations of the study were that all the analysis and discussions have been constructed from an international overview and based on secondary data only and data analysis techniques were obstinate. But this article will build a solid and clear conception regarding this research.

2.3 Conclusion

The global textile and garment industry is a three trillion dollar industry that encompasses the manufacturing and selling of textiles and garments, and has long been considered a source of economic progress around the world, historically serving as a catalyst for national development and industrialization. In Bangladesh, the textile and garment industry has become both a major contributor to development since its beginnings in the mid 1980s and a constant reminder that globalization has a dark side as well. This industry has grown tremendously and now accounts for about 20% of GDP, 80% of total export earnings, and over 4 million direct jobs. The flipside of this growth and the accelerating production of textile and fashion has been a broadening and deepening track record of poor working conditions and heavy pollution. The recurring fire incidents, labour unrests for low wage payment, and the collapse of the factory have brought longstanding questions to the forefront over how to bridge the gap between economic

viability and social and environmental performance. With an end of this view, the researcher had gone through the above mentioned literatures and found that this area is still untouched. After reviewing all the literatures the researcher observed and identified that nobody mentioned about how to achieve economic viability through giving adequate priority on social and environmental performance. They have not taken social responsibility strategies, economic viability strategies and environmental protection strategies factors into consideration in the strategic management process. That means they ignored the sustainable strategies in the decision making process. So, the researcher decided to carry out a research on this specific field of “Sustainable Strategies for the Textile Industry in Bangladesh.”

CHAPTER THREE
Research Design

Chapter Three
Research Design

3.1 Introduction

In this study the researcher aimed at making a critical evaluation of strategic management concerning sustainability perspectives of some textile industries in Bangladesh, identifying the major flaws in the vital area of management effectiveness considering all internal and external environmental factors that create unpleasant socio-economic condition and environmental degradation and influence the success or failure of the textile and apparel industry in Bangladesh. In conducting the present study, the research methodology has been designed in such a way that accomplishes the research objectives by minimizing the constraints of time and research limitations.

3.2 Choice of the Study Period

In this research, the data of five years from 2006-2007 to 2010-2011, have been taken to cover the study period. In recent years, the textiles have played a pivotal role in the economic activities of Bangladesh with the increasing trend of globalization and trade liberalization. The main reason for selecting this period was that this period covered the recent role and importance of the textile business in Bangladesh and this period examined the current trends of social involvement of this industry and ecological balance and economic performances. Another important consideration of this choice was the limitation of availability of data and information.

3.3 Selection of Respondents

Textile is a composite of spinning, knitting, dyeing, weaving, and apparel mills. Random, purposive and multistage sampling techniques have been used for selecting the sample units or respondents of the study. First of all, BTMA enlisted fifteen medium and large sized textile mills have been selected purposively as sample mill so as to analyze and overview the sample mills' social responsibility towards its stakeholders. These fifteen sample mills have been selected among the country's top and leading positioned textile mills like Beximco and Square Textile in Bangladesh. Besides these, the fifteen sample mills have covered the spinning, knitting, dyeing, weaving and apparel sectors of textile

industry and have had available features to represent the total population for fulfilling the objectives. The main reason behind this selection is that the performance of top level textile mills concerning social responsibility issues got help to imagine about the other lower level textile mills' position in that cases. Next ,the researcher have chosen one hundred and twenty executives(corporate managers) randomly among the total three hundred top level managers from the fifteen sample mills as per annual report(2011) of BTMA for the justification of strategic management practices of Bangladesh through the analysis of their opinions. Further, the researcher has selected one hundred and fifty workers purposively in order to investigate the perceptions about the physical working environment, quality of work life and their health status. These workers who have been working there for twelve years and above have been chosen on the basis of their length of services. The numbers of these types of experienced workers are not huge in number, that is, about one thousand and eight hundred workers of the total sample mills as per annual report of BTMA. These sample workers can be considered as representative of the total population in fulfilling the objectives required for the study. The researcher further has taken fifty stakeholders that were selected from the references of the authorities of selected sample mills. The consumers, shareholders, scholars, and the other officials were selected randomly from the surroundings of the researcher due to the lack of time and unidentified large number of population. These interviewees were selected for their opinions regarding the performance of social, economic, and environmental responsibility of sample mills of Bangladesh.

3.4 Selection of Sample

The researcher has selected textile mills from different areas of Bangladesh such as Dhaka, Savar, Gazipur, Narayangonj, Norshindi, Kushtia and Rajshahi. In reality all these areas are abundant with numerous number of textile and apparel mills in Bangladesh. In view of the limited resources and time, the researcher could not investigate all the textile and apparel mills in Bangladesh. At the same time, the law of statistical regularity maintains that reasonable number of sample chosen for investigation must be capable of representing the characteristics of the population. Since it is a survey type research, the researcher selected 15 textile mills from all these areas stated above. These samples were selected on the basis of purposive sampling to make it representative of the large and medium size textile mills and availability of data. It is to note that 20% of the total mills

in Bangladesh are large in size. 30% are medium size and the remaining 50% are small scale mills (Alam, 2000, Managing Director, Famano Textile Mills Ltd.). The following Table-3.2(a_1) shows the name and sample size of the sample mills:

Table 3.4(a_1)
Name and Sample size of the sample mills

SL No.	Name of Sample Companies	Type of Respondent		Total Respondent
		Executive Chosen	Worker Chosen	
01	Square Textile Mills Ltd. (STML)	8	10	18
02	Beximco Synthetics Ltd. (BSL)	8	10	18
03	Dhaka Dyeing & Manufacturing Company Ltd. (DDML)	8	10	18
04	Tamijuddin Textile Mills (TTML)	8	10	18
05	H.R. Textile Mills (HTML)	8	10	18
06	Maksons Spinning Mills (MKSML)	8	10	18
07	CMC Kamal Textile (CMTML)	8	10	18
08	Altex Industries Ltd (AIL)	8	10	18
09	Malek Spinning Mills (MSML)	8	10	18
10	R.N. Spinning Mills (RSML)	8	10	18
11	Alhaj Textile Mills (ALTML)	8	10	18
12	Apex Weaving & Finishing Mills (AWML)	8	10	18
13	Tallu Spinning Mills (TSML)	8	10	18
14	Anlima Yarn Dyeing Ltd. (AnTML)	8	10	18
15	Apex Spinning Mills Ltd. (ASML)	8	10	18
Total		120	150	270
16	Shareholders	10		10
17	Consumers	10		10
18	Professionals	10		10
19	Scholars	10		10
20	Employee	10		10
Total		50		320

Senior executives and officers, workers, and other stakeholders have been interviewed for this study. 120 executives and 150 workers and 50 stakeholders were selected purposively for taking interview. Executives and workers were selected from 15 sample companies. Fifty stakeholders include 10- consumers, 10 shareholders, 10 professionals, 10 scholars and 10 employees. Scholars were selected from BTMA officials, DOE official, Textile Engineer, environmentalists, teachers from Textile University.

3.5 Preparation of Questionnaire

The researcher had collected data through field survey which was started on 16th April 2012 and this was conducted by researcher himself with the help of a questionnaire. Pilot survey was done for pre testing the questionnaire and in this way some faults and misunderstandings in the questionnaire were eliminated and some critical questions were rearranged according to the suggestions of the supervisor and co supervisor. The questionnaire was designed in the light of field experience gathered during pilot survey. The researcher presented a title registration seminar presented in the institute of environmental science (IES) and presented a research proposal with a major chapter. A number of scholars, teachers, and researchers from IESs and different departments of Rajshahi University participated in that seminar. They suggested on various issues and offered some recommendations for the improvement of the questionnaire. The field survey with regard to data collection in the selected mills, head office and factory was completed by the end of February, 2013.

3.6 Method of Data Collection

Though it was time consuming and expensive, yet the researcher personally has visited each textile mill for several times in order to collect the primary and secondary data. The researcher has contacted the persons dealing with relevant records after obtaining due permission from project head, explained the nature of data required, made appointment of time convenient to the concerned individuals and collected relevant data, accounting records etc of each sample industry. Collected data were both qualitative and quantitative and all the data were collected in the light of the objectives of the study.

3.6.1 Primary Data

Primary data were collected from the selected 15 textile mills through interview method with the help of structured questionnaire and these were open ended and closed ended questionnaire. There were eight sets of questionnaire for different departmental executives and workers of the textile mills. These questionnaires were framed in the light of research objectives and presented before embarking on interviews with the general managers, deputy general managers, or managers of administration, production, sales, human resource and finance and accounts, workers, MIS (Management Information System) department of sample industries. The researcher also conducted interviews with

the executives of BTMA (Bangladesh Textile Mills Association). Officials of DOE (Department of Environment, under Ministry of Environment, Dhaka), and Stakeholders relating to textile industry. Stakeholders in this respect indicate consumers, communities (beneficiaries directly or indirectly by textile mills) and Scholars. Each respondent was contacted personally and data were collected after making them convinced about the objectives and importance of the study. The respondents were also assured in a way that the collected data will be used only for academic research and their identity and information given by them would be kept completely confidential.

3.6.2 Secondary Data

The main sources of secondary data are MIS reports, annual budget statements, organizational manuals, official documents, publications and office memorandum of the selected sample mills, secondary data were also collected from BTMC head office, and DOE office. The other important sources were existing literatures, reviews, reports. Ph.D Thesis Research on Textile Industry, Journal published by BTMA head office, Economic Survey of Bangladesh, Statistical Year Book published by Bangladesh Bureau of Statistics, Government Publications, Bangladesh Bank and World Bank reports and Internet Network facilities. The researcher also visited the central library of Rajshahi University, The Seminar Library of IES and IBS of Rajshahi University, BIM, BIDS.

3.7 Techniques of Data Analysis

The informative data collected by the survey have been processed and analyzed through the application of statistical tools and other mechanisms. Both primary and secondary have been analyzed, examined and tested, evaluated and interpreted critically as follows –

a) Industry's social responsibility factors and environmental protection strategies have been analyzed through both primary and secondary data. Data collected from different sources have been analyzed by rates, ratios, percentages and by other statistical techniques in a tabular form in order to analyze the present scenario of social and environmental responsibility by the industry.

b) Industry's external environmental factors have been analyzed through opinion survey of the executives only regarding socio-cultural environment, political legal environment, economic environment, technological and ecological environmental factors, frequency tables, correlation, and likert type scale have been used to analyze the external environment of the industry.

c) Industry's internal environmental factors have also been analyzed through opinion survey of the executives using frequency tables, correlation and likert type scale.

d) Industry's external and internal environmental factors have also been analyzed by SWOT matrix.

e) Major statistical tests like mean value, standard Deviation (SD), Co-efficient of variation (CV), Growth Rate (GR), Minimum level and Maximum level, correlation, 't' test have been used to show the relationships of the relative quantitative and qualitative variables as well as testing of hypothesis. Frequency tables and chi-squares tests and regression analysis have been applied to qualify the qualitative data regarding the opinions of the executives of sample industries.

f) Applying various economic viability factors and financial indicators like liquidity ratios, profitability ratios, activity ratios and leverage ratios have been used to analyze economic condition and financial position of the sample textile mills.

3.8 Statistical Tools and other Mechanisms Employed in this Study

All data were processed through microcomputer using Statistical Package for Social Sciences (SPSS). The data required for this study have been analyzed through the selected statistical tools and model parameters. These are as follows –

(a) Major Statistical Tools:

(i) Mean Deviation

(ii) Standard Deviation

(iii) Coefficient of Variation

(iv) Pearson's Correlation and Cross Tabulation

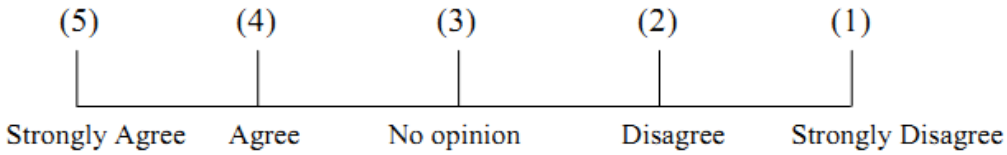
(v) Chi-square test and T-test

(vi) Multiple Regressions Analysis

(b) Non Statistical Tool:

Likert-Scale:

In Likert type scales, the respondent is asked to respond to each of the statements in terms of several degrees, usually five degrees of agreement or disagreement. Each response is given a numerical score, indicating its favorableness or adverseness, and the scores are totaled to measure the respondent's attitude. This scale is illustrated as under:



Likert Scale

In this study, this scale will be used only for the analysis of executives' opinion. Total executive respondents are 120. So, total score of any individual would fall between 120 and 600, if the score happens to be below 360, it shows unfavorable significant opinion to the given weight of view, a score above 360 would mean favorable/significant attitude to the given weight and a score of exactly 360 would be suggestive of a neutral attitude i.e. 120 to 360 = unfavorable or insignificant opinion, 360 = neutral opinion and 361 to 480 = favorable/significant opinion and 481 to 600 = highly significant opinion.

3.9 Reliability and Validity of Result

Cronbach's Alpha test was used to evaluate the result of the study. The result of the test shows that the value of Alpha is 0.984 which implies that the result of the test is highly reliable. The researcher also conducted split half test and the value of first part is 0.972 and that of second part is 0.978 which means that our reliability of the result is confirmed. The Guttman split half coefficient is 0.960 which also corroborates the same value. Although 150 workers, 120 executives and 50 stakeholders were interviewed in this study but Likert scale was applied only on 120 executives. This is why Cronbach's Alpha test was used only on 120 executives to justify the reliability of the result.

3.10 Limitation of the Study

This study is comparatively a new field of research. The study seeks to explore the multifarious problematic issues which create major hindrances on the way of sustainable development of textile industry. It is here to note that sustainable development strategies are essential to mitigate the sustainability issues. Sustainability strategies in reality, covers all the social, economic, and environmental and other sustainability issues. The questionnaire is set as per research objectives. It is mentionable that the researcher tried to incorporate all the problematic issues which are relevant of this study. Since present problems and future uncertainties that may be evolved in future need to be forecasted for sustainable development of this industry, this is why, it was difficult to set the questionnaire. It was also a difficult task for the researcher to anticipate sustainability issues and to identify internal

and external environmental factors required for analyzing the strategic management practices and it was a critical task to incorporate all the internal and external factors in the questionnaire which were essential to satisfy the objectives. But the researcher tried to minimize the problems which are found while conducting the research.

3.11 Difficulties Faced in Collecting Data

Researcher had to face a tough challenge regarding ecological and social responsibility issues of textile mills. In some cases, the respondents could not easily grasp the nature of questions but researcher has showed his patience in overcoming these problems. In reality, conducting the field survey was a critical task for taking interview of executives and workers because of their busyness and volume of work. It was a painstaking moment to collect annual report of five years from each sample mills for secondary data and the sufferings in some cases were beyond imagines to have these reports in hand. Data collection procedure was a time consuming event also because the respondents were unwilling to give interview without the permission of the authority .Besides respondents did not desire to attend the interview and avoidance of respondents was another problem and they referred the researcher to other respondents. In this case, the researcher convinced them by saying that the collected information would be used only for academic purpose and would not be disclosed. In most cases, the researcher contacted the respondents third or fourth times to collect data and information. In the first appointment, the researcher supplied the questionnaire to the respondents and in another appointment the respondent gave the interview and returned the questionnaire. But most of them failed to maintain scheduled time fixed by them. Beside this, many other bitter experiences had been gathered by the researcher in collecting the data.

3.12 Conclusion

In fine, it can be noted that this research has utilized both qualitative and quantitative data based on questionnaire survey for primary data and annual reports and other written documents of sample mills for secondary data Random, purposive and multi- stage sampling techniques have been used to collect data in this research. Some important statistical and non statistical tools have been applied for the analysis of data. Reliability and validity of this procedure were addressed through Cronbach’s Alpha test. The next chapter will be devoted to conceptual framework of this study.

CHAPTER FOUR
Conceptual Framework

Chapter Four
Conceptual Framework

4.0 Prelude

Textile industry is a composite of spinning, knitting, dyeing, weaving, finishing and apparels. During the past three decades, textile emerged as the biggest manufacturing sector and achieved remarkable growth. This sector fulfills almost cent percent domestic demand apart from fulfilling the external demand of our clothing and apparels to a large extent (BTMA, 2011). But multifarious issues concerning the textile industry are sustainability, sustainable development of this industry, long-term planning or strategic planning or strategic management or green management. An attempt has been made in this chapter to highlight the conceptual background, the major terminologies and different aspects of strategic management, sustainable management or green management for the future sustainability of this industry.

4.1 Concepts of Sustainability, Sustainable Development and Green Management

This study is based on some important theories and conceptions. Sustainable development and green management issues are the important consideration among them. There are some definitions regarding sustainability and sustainable development. Definitions of and approaches to sustainability vary depending on the view and interest of the definer, but each emphasizes that activities of firms existing in the environment should be ecologically sound, socially just, economically viable and humane, and that they will continue to be so for future generations (Newman, 2005). Sustainability is an economic, social and environmental concept. It is intended to be a means of configuring civilization and human activity so that society and its members are able to meet their needs and express their greatest potential in the present, while preserving biodiversity and natural ecosystems, any planning and acting for the ability to maintain these ideals indefinitely. Sustainability affects every level of organization, from the local neighborhood to the entire planet (Kalivas, 2005). Sustainable development is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”(Jin S., 2006)

Green Management

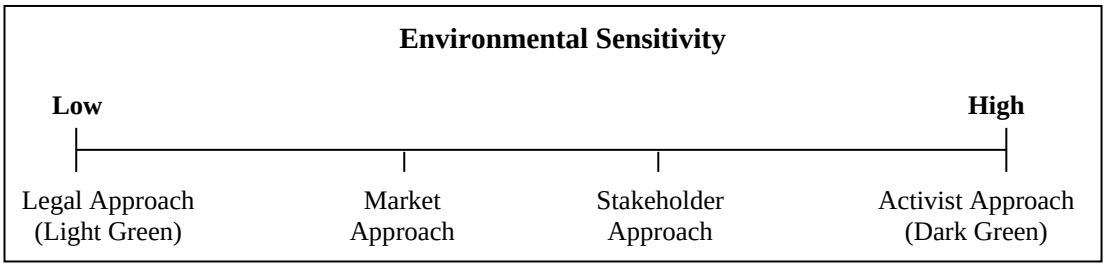
Until the late 1960s, few people paid attention to the environmental consequences of their decisions and actions. A number of environmental disasters brought a new spirit of environmentalism to individuals, groups and organizations. Increasingly, managers have begun to consider the impact of their organizations on the natural environment, which we call green management. In reality, green management is a form of management in which managers consider the impact of their organization on the natural environment (Robbins and Coulter, 2012).

How Organizations Go Green:

Managers and organizations can do many things to protect and preserve the natural environment. Some do no more than what is required by law-that is, they fulfill their social obligation. Others have radically changed their products and production processes.

One model uses the terms shades of green to describe the environmental approaches that organization may take which is shown below:

Table 4.1(a_1)
Green Approaches



Source: Based on R. E. Freeman, J. Pierce, and R. Dodd, Shades of Green: Business Ethics and Environment (New York: Oxford University Press, 1995).

The first approach, the legal (or light green) approach, is simply doing what is required legally. In this approach, which illustrates social obligation, organizations exhibit little environmental sensitivity. They obey laws, rules, and regulation without legal challenges, and that's the extent of their being green. As an organization becomes more sensitive to environmental issues, it may adopt the market approach and respond to environmental preferences of customers. Whatever customers demand in terms of environmentally friendly products will be what the organization provides.

In the stakeholder approach, an organization works to meet the environmental demands of multiple stakeholders, such as employers, suppliers, or community.

Finally, if an organization pursues an activist (or dark green) approach, it looks for ways to protect the earth's natural resources. The activist approach reflects the highest degree of environmental sensitivity and illustrates social responsibility.

Evaluating Green Management Actions

Fifteen hundred and above companies around the globe are voluntarily reporting their efforts in promoting environmental sustainability, using the guidelines developed by the Global Reporting Initiatives (GRI). As businesses become "greener" they often release detailed reports on their environmental performance. Another way that organizations show their commitment to being green is through pursuing standards developed by the nongovernmental international organizations for standardization (ISO). Although the ISO has developed more than 17000 international standards, it's probably best known for its ISO-9000 (quality management) and ISO-14000 (environmental management) standards. An organization that wants to become ISO-14000 complaint must develop a total management system for meeting the environmental challenges. This means it must minimize the effects of its activities on the environment and continually improve its environmental performances.

4.2 Concepts of Strategy and Strategic Management

This research is mainly based on the view of strategic management. By strategy; managers mean their large-scale, future-oriented plans for interacting competitive environment to achieve company objectives. A strategy is a company's game plan (Pearce and Robinson, 2006). Strategies mostly refer to a general program of action and deployment of emphasis and resources to attain organizations' objectives, which should be based on self appraisal and built up in the light of information of the environment in which management has to work (Dave, 1987).

According to Smith, *et.al.* (1988), 'Strategy is the overall game plan or map to help lead or direct the organizations toward the desired objectives. These overall game plan forms the basis for policies and procedures, which are more specific statements outlining what the firms will do in certain situation.

A strategy is a comprehensive plan for accomplishing an organization's goal and effective strategies are those that promote a superior alignment between the organization and its environment and the achievement of strategic goals (Griffin, 2012).

Strategic management is the set of managerial decisions and actions that determines the long-run performance of corporations. It includes environmental scanning, strategy formulation, implementation, and evaluation and control. The study of strategic management therefore, emphasizes monitoring and evaluating environmental opportunities and threats in the light of a corporation's strengths and weakness (Wheelen, 1995).

Strategic management is the set of decisions and actions that result in the formulation and implementation of plans designed to achieve a company's objectives. Because it involves long-term, future oriented, complex decision making and requires considerable resources, top management participation is essential (Pearce and Robinson, 2006).

According to Smith, *et.al.* (1988), Strategic Management is the process of examining both present and future environments formulating the organization's objectives and making, implementing and controlling decisions focused on achieving these objectives in the present and future environments." It is critical that management analyses both the external and internal environment. The firm's internal strengths and weaknesses can be deployed to take advantage of external opportunities and to minimize the external threats. They mentioned about the advantage of strategic management as-

i) it provides organizations with clear goals and directions.
ii) it helps management to focus on future opportunities and threats.
iii) this process helps relate a firm's decision making process to relevant environmental condition.
iv) it reduces the risks of catastrophic problems and increases the probability of a firm's taking advantages of environmental opportunities as they arise.

Certo and Peter (1988) define strategic management as a continuous, interactive process aimed at keeping an organization as an appropriately mentioned to its environment. Strategic management is a way of approaching business opportunities and challenges-it is a comprehensive and ongoing management process aimed at formulating and implementing effective strategies (Griffin, 2013)

Finally, it can be said that strategic management involves future oriented and long term plans that include environmental scanning, strategy formulation, implementation, evaluation and control.

4.3 Traditional Planning Vs. Strategic Planning

In this study, the researcher has emphasized on strategic planning instead of traditional planning because traditional planning practices are quickly becoming obsolete in our complex and changing environment. This type of planning has been characterized as being reactive, short-range, staff oriented, routinized, dominated by single issues, small-scale changes, hierarchical in nature, and generally lacking in community support. The events and issues that now must be addressed require new planning techniques.

The following Table shows the difference between traditional planning and strategic planning.

Table 4.3(b_1)
Traditional Planning Vs Strategic Planning

Traditional Planning	Strategic Planning
Short-range	**Long-range**
Routinized	Ambiguity, Complexity, Non routine
Single issue	Multiple Issues
Organizational Issue	**Community issues**
Hierarchical	Non-hierarchical
Small-scale change	Significant change
Resource driven	**Environment driven**
Staff oriented	**Community-oriented**
Management orientation	Political-orientation
Operator focus	Policy focus

Source: Roger L. Kemp, "The need for strategic planning in the public and non-profit sector", the Chittagong University Studies, Commerce, Vol, 50(1989), p. 170.

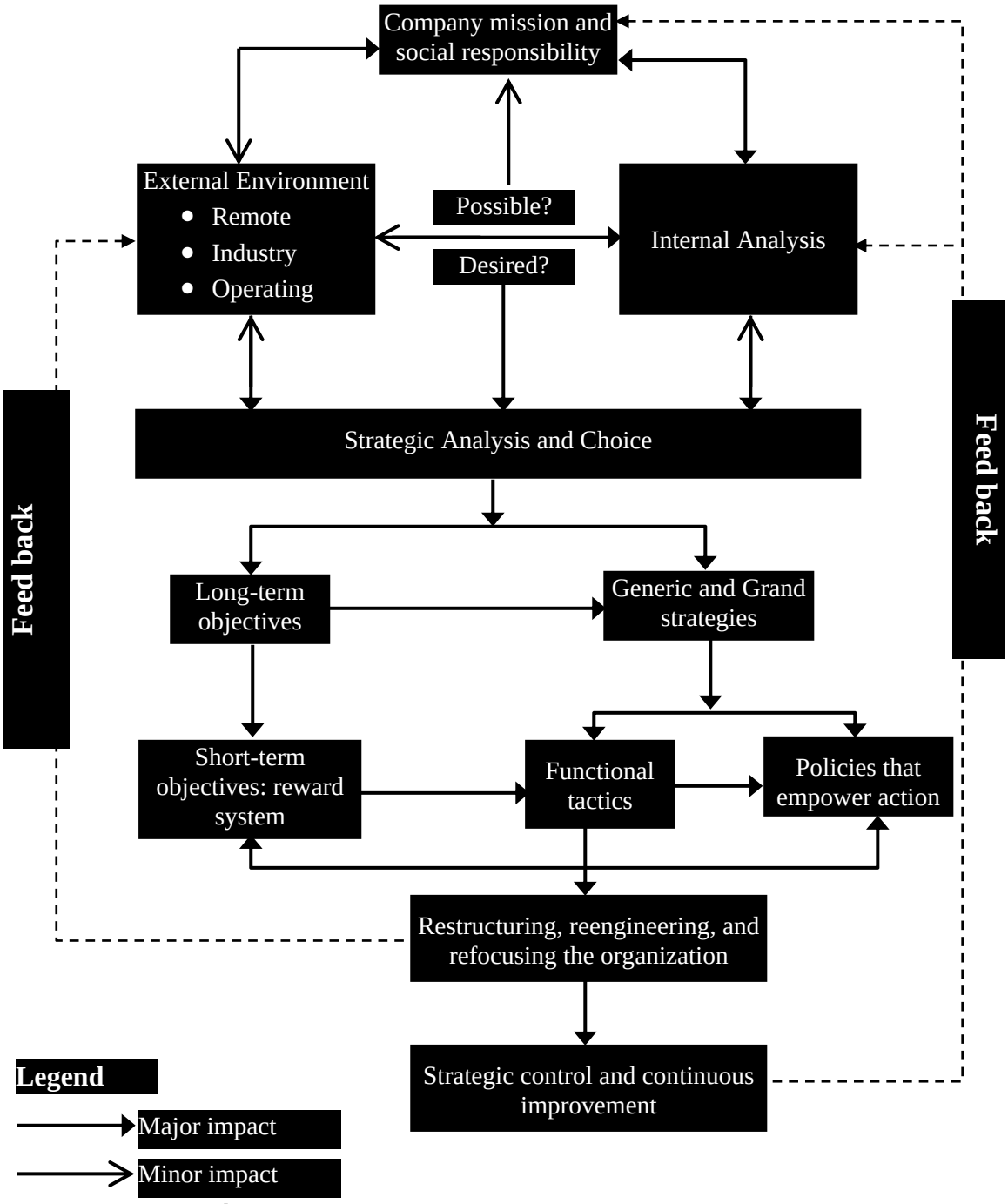
Long-range strategic planning has become a common practice in the private sector. Strategic planning must be applied to the public sector to enable officials to successfully adapt to the future. Unlike traditional planning, strategic planning is proactive, long-range and community oriented. Additionally, it involves multiple issues, is non hierarchical in nature, and help achieve consensus on the issues and problems facing an organizations (Roger, 1987).

4.4 Strategic Management Process

A process is the flow of information through interrelated stages of analysis toward the achievement of an aim. In the strategic management process the flow of information

involves historical, current, and forecast data on the operations and environment of the business. Managers evaluate these data in the light of the values and priorities of influential individuals and groups often called stakeholders that are vitally interested in the actions of the business. Thus, the strategic management model in exhibit 4.4 (c_1) depicts a process (Pearce and Robinson, 2006).

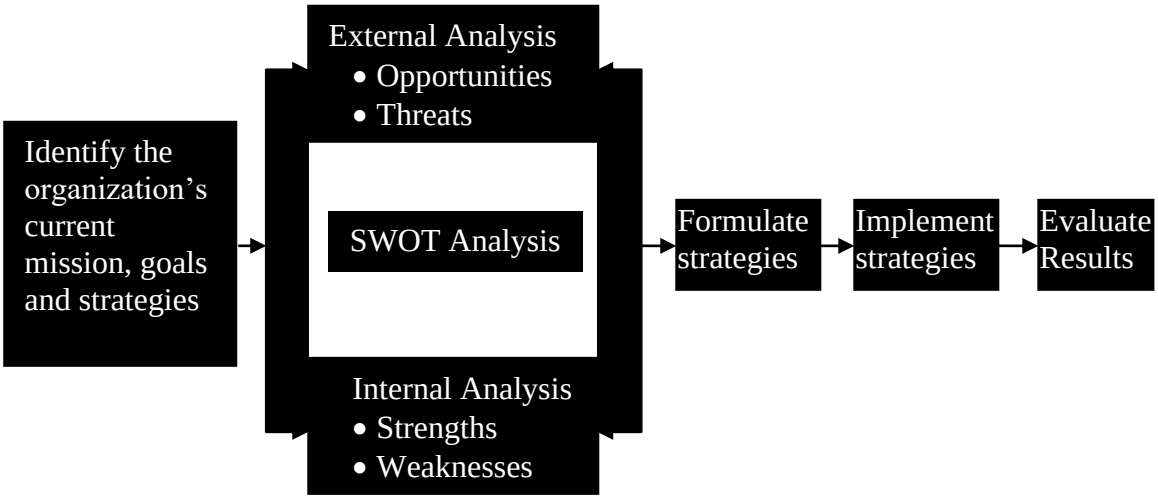
Figure 4.4(c_1)
Strategic Management Model



Source: Pearce & Robinson, 2006.

According to **Stephen R. Robbins and Mary Coulter (2012),** the strategic management process, stated by the figure below, is a six-step process that encompasses strategy planning, implementation and evaluation, although the first four steps describe the planning that must take place, implementation and evaluation are just as important. Even the best strategies can fail if management doesn't implement or evaluate them properly.

Figure 4.4(c_2)
The Strategic Management Process



Source: Robbins, S. P., and Coulter M., 2012-13.

The six steps of strategic management process are stated below:

Step-one: Identifying the Organization's Current Mission, Goals, and Strategies.

It is important for managers to identify the current mission, goals and strategies. And managers have a basis for assessing whether they need to be changed.

Step-two: Doing an External Analysis

Environmental analysis is a critical step in the strategic management process. Once the managers have analyzed the environment, they need to pinpoint opportunities and threats.

Step-three: Doing an Internal Analysis

An internal analysis provides important information about an organization's specific resources and capabilities. After completing an internal environmental analysis, managers should be able to identify organizational strengths and weakness. The combined external and internal analyses are called a SWOT analysis. After completing SWOT analysis,

managers will be prepared to formulate appropriate strategies-that is, strategies that (1) exploit an organization's strengths and external opportunities, (2) buffer or protect the organization from external threats, or (3) correct critical weaknesses.

Step-four: Formulating strategies

There are three main types of strategies managers formulate: corporate, business, and functional. Top level managers typically are responsible for corporate strategies, middle-level managers for competitive strategies, and lower-level managers for functional strategies. As managers formulate strategies, they should consider the realities of the external environment and their available resources and capabilities and design strategies that will help the organization achieve its goals.

Step-five: Implementing strategies

Once strategies are formulated, they must be implemented. No matter how effectively an organization has planned its strategies, performance will suffer if the strategies aren't implemented properly.

Step-six: Evaluating Results

The final step in the strategic management process is evaluating results.

From the above discussions, the following inter related stages of strategic management process can be summarized as under-

4.4.1 Company Mission and Social Responsibility

The mission describes the company's product, market and technological areas of emphasis in a way that reflects the values and priorities of the strategic decision makers.

Social Responsibility is a critical consideration for a company's strategic decision makers since the mission statement must express how the company intends to contribute to the societies that sustain it. A firm needs to set social responsibility aspirations for itself, just it does in other areas of corporate performance.

The various stakeholders of a firm can be divided into inside stakeholders and outside stakeholders. The insiders are the individuals or groups that are stockholders or employees of the firm. The outsiders are all other individuals or groups that the firm's

actions affect. The outsiders often demand that insiders' claims be subordinated to the greater good of the society i.e., to the greater good of outsiders. They believe that such issues as pollution, the disposal of solid and liquid wastes, and the conservation of natural resources should be principal considerations in strategic decision making. To better understand the nature and range of social responsibilities for which they must plan, strategic managers can use a continuum that encompasses four types of social commitment; economic, legal, ethical and discretionary social responsibilities.

Economic responsibilities are the most basic social responsibilities of business. The essential responsibility of business is assumed to be providing goods and services to society at a reasonable cost. In discharging that economic responsibility, the company also emerges as socially responsible by providing productive jobs for its work force, and tax payments for its local, states and federal government.

Legal responsibilities reflect the firm's obligations to comply with the laws that regulate business activities. The consumer and environmental movements focused increased public attention on the need for social responsibility in business by lobbying for laws that govern business in the areas of pollution control and consumer safety.

Ethical responsibilities reflect the company's notion of right or proper business behavior. Ethical responsibilities are obligations that transcend legal requirements.

Discretionary responsibilities are those that are voluntarily assumed by a business organization. They include public relations activities, good citizenship and full corporate social responsibility (Pearce and Robinson, 2006).

There are three principal reasons why managers should be concerned about the socially responsible behavior of their firms. First, a company's right to exist depends on its responsiveness to the external environment. Second, the governments threaten increased regulations if business does not evolve to meet changing social standards, third, a responsive corporate social policy may enhance a firm's long-term viability. Underscoring the importance of these factors to the firm is the implicit belief that long-run profit maximization is inexorably linked to corporate social responsibility (Pearce and Robinson, 2006).

4.4.2 Environmental Analysis

The environmental context of business today is changing in unprecedented ways. Managers must have a deep understanding and appreciation of the environments in which they and their organizations function. Without this understanding, they are like rudderless ships-moving along, but with no way of maneuvering or changing direction (Griffin, 2012). To illustrate the importance of the environment to an organization, consider the analogy of a swimmer crossing a wide stream. The swimmer must assess the current, obstacles, and distance before setting out. If they are not properly understood, the swimmer might end up too far upstream or down stream. The organization is like a swimmer, and the environment is like the stream. Thus just as the swimmer needs to understand conditions in the water, the organization must understand the basic elements of its environment to properly maneuver among them. To do so, however, the manager must first thoroughly understand the nature of the organization's environment (Beinhocker, 1999). The environment of an organization is generally divided into three distinct levels:

- The external or remote environment
- The operating environment
- The internal environment

a) The external Environment

The external environment is everything outside an organization's boundaries that might affect it. Every organization exists within a complex network of environmental forces. All firms are affected by these components. These external environmental components are-

- Economic Environment
- Social Environment
- Political-legal Environment
- Technological Environment
- Ecological Environment

Economic Environment: The economic dimension of an organization's external environment is the overall health and vitality of the economic system in which the organization operates. Particularly important economic factors for business are monetary policy, fiscal policy, general economic growth, inflation, interest rates, and

unemployment (Griffin, 2012). In their decision making, managers must consider the external economic environment: capital, labor, price levels, government fiscal and tax policies, the needs of customers, unemployment, inflation, interest rates etc.

Social Environment: The social environment is made up of the attitudes, desires, expectations, degrees of intelligence and education, beliefs and customs of people in a given group or society. Managers should understand the social beliefs prevailing in a country. Otherwise they may be criticized for not being responsive to the social attitudes, beliefs, and values of particular individuals, groups or societies (Weihrich and Koontz, 2009).

The Political-Legal Environment: The political legal dimension of the external environment refers to government regulation of business and the relationship between government and business. The legal system partially defines what an organization can and can not do. Pro or anti business sentiment in government influences business activity. Political stability has ramifications for planning.

Technological Environment: The technological component of the general or external environment includes new approach to producing goods and services; new procedures as well as new equipment. The probability for continued technological advances provides both opportunities and threats for entire industries and for specific firms. Firms must also be alert for new technologies that can directly or indirectly make their products obsolete (Smith, *et.al.,* 1988).

Ecological Factors: The most prominent factor in the remote or external environment is ecological factors. The government has made numerous interventions into the conduct of business for the purpose of bettering the ecology. Business is involved in society's ecological crisis, so they are being held responsible for cleaning up the environmental damage. Increasingly, managers are being required by the government or are being expected by the public to incorporate ecological concerns into their decision making. Ecology and environmental quality are of interest to all people and it is evident that environmental pollution and its resulting endangerment of the ecology has become a major item on the political agenda (Davis and Blomstrom, 2012)

b) The Operating Environment

The operating environment, also called the competitive or task environment, comprises factors in the competitive situation that affect a firm's success in acquiring needed resources or in profitably marketing its goods and services. Among the most important of these factors are the firm's competitive position, the composition of its customers, its reputation among suppliers and creditors, and its ability to attract capable employees. Harvard Professor Michael E. Porter provided five forces that shape competition in an industry. His well defined analytic framework helps strategic managers to link remote factors to their effects on a firm's operating environment.

Michael E. Porter's five forces include the threat of new entrants, the bargaining power of suppliers, the bargaining power of buyers, the threat of substitute products, and rivalry among existing firms. However, the operating environment is typically much more subject to the firm's influence or control than the remote environment. Thus, firms can be much more proactive in dealing with the operating environment than in dealing with the remote environment.

c) The internal environment

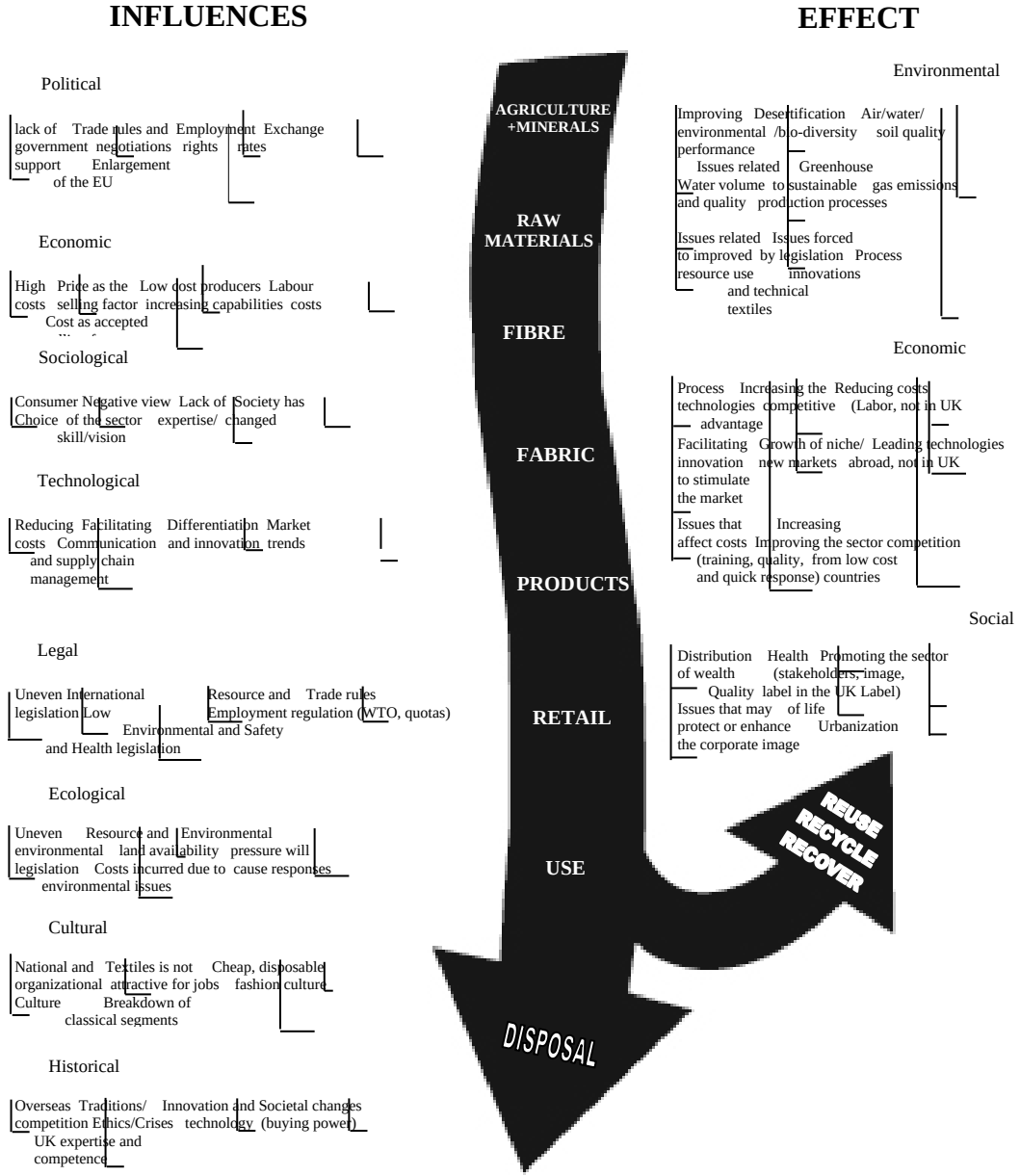
The internal environment is that level of an organization's environment which exists inside the organization. It not only indicates what resource the firm has but also evaluates how well management has used them. The internal environment includes production factors, finance and accounting factors, marketing and distribution factors, research and development factors, human resource factors and organizational culture and physical work environment.

Strategic managers are frequently frustrated in their attempts to anticipate the environment's changing influences. Different external and internal components affect different strategies at different times and with varying strengths.

4.4.2.1 Major Influential Forces in the Textile Chain

The textile sector has been influenced by its production processes.The Delphi panel's comments (Allwood, 2006) on the forces influencing the textile sector and its consequences are summarized in the figure below:

Figure 4.4.2.1(a_1)
Major Influential Forces in the Textile Chain



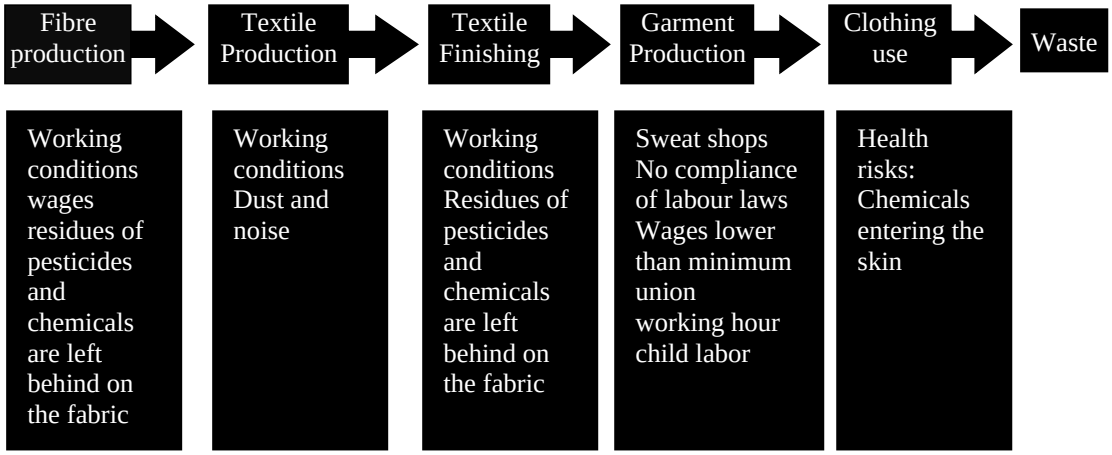
Source: Allwood, *et.al.*, 2006.

The influences are grouped according to the categories of PESTLECH (Political, economic, social, technological, legal, environmental, cultural and historical factors) uses in business strategy analysis. The effects of the sector are grouped according o ‘triple bottom line’ common in discussion about sustainability.

4.4.2.2 Social Issues in the Textile Chain

In the textile industry from production of fibre until the garment production some social issues like unhygienic working condition, workers' health and safety issues are very much relevant. The following figure shows the social issues in the textile chain.

Figure 4.4.2.2(b_1)
Social Issues in the Textile Industry



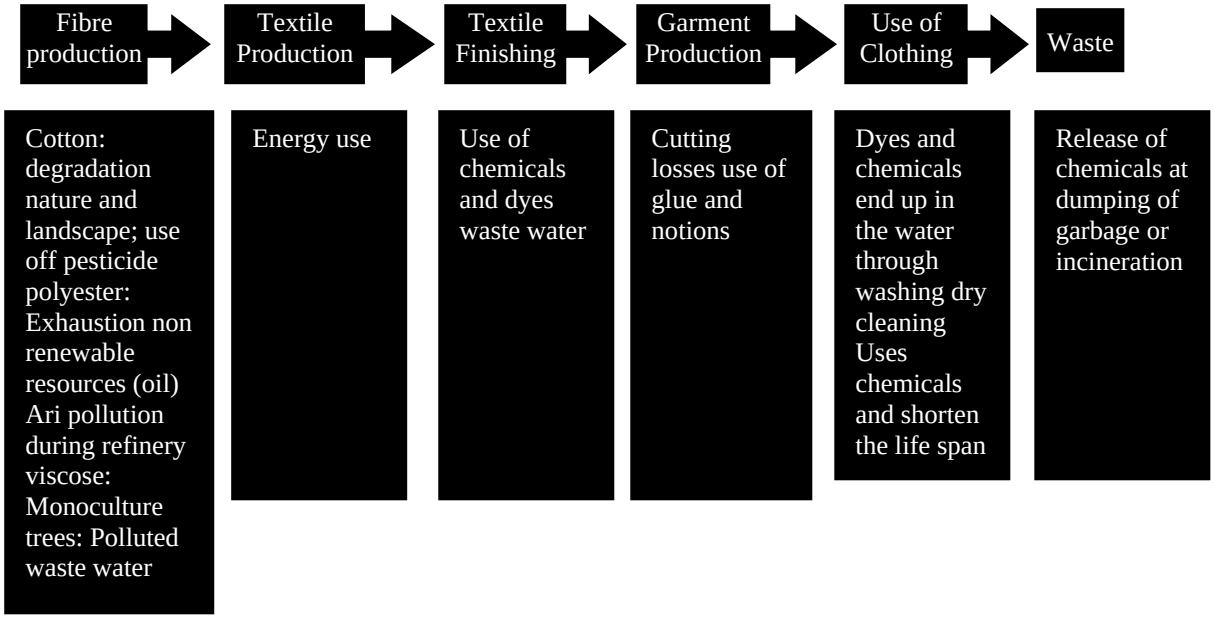
Source: Yperen, 2006.

Now a days, brand companies and retailers take some responsibilities for the labour conditions in their supply chains. Many have developed codes of conduct on labour standards to be implemented in their overseas work places. But in reality the working condition in the third world countries is often still quite grim. Wages are too low to live on and 80 hour work weeks are common. Excessive overtime is closely linked with low pay as workers are forced to work long hours to earn enough to live on. The health and safety of the workers, the majority of them are women, is constantly being undermined (Ypern, 2006). Problems found in the textile industry are health risks due to: pesticides and chemicals; fire safety and evacuation routes; ergonomic facilities, temperature, noise and dust; and storage of chemicals etc. Workers have no security of employment; women are discriminated and harassed. In many countries, there is also evidence of bonded or child labor. Workers are often not allowed to form trade unions, because the right to organize or collective bargaining is not recognized in the country where they work. Generally, the most frequently found problems in the textile supply chain are in the field of working conditions and labor standards.

4.4.2.3 Environment Issues in the Textile Chain

The textile industry comprises a large number of mechanical and chemical processes. Each process uses its own groups of chemicals. Each process, therefore, has a different impact on the environment. This impact starts with the use of pesticides during the cultivation of natural fibres or the emissions during the production of synthetic fibres. A number of the following processes (Ypern, 2006) are applied to process the fibres and to reach the final stage of textile end product using thousands of different chemicals. The following figure shows the environmental issues in the textile chain.

Figure 4.4.2.3(c_1)
Environmental Issues in the Textile Chain



Source: Yperen, 2006.

This process from the environmental point of view can be summarized as under:

- **Spinning:** During the spinning of fibres, dust and other particles are dispersed into the air. Dust can cause respiratory problems.
- **Washing/Scouring:** This process removes natural and acquired impurities from cotton, linen and wool fibres and fabrics. Agents used in the scouring process are detergents, soaps, alkalis, anti-static compounds, wetting agents, foamers, defoamers and lubricants.
- **Sizing/desizing:** Before weaving, the yarn is strengthened by sizes. Sizes can either be starch based on synthetic. Common synthetic sizes are acrylates, polyvinyl alcohol (PVA) and carboxymethyl cellulose (CMC). After the weaving, the starch is removed from the textiles; this is known as desizing. This can be done by means of enzymes, by oxidation.

- **Weaving and Knitting:** Most textiles are made by weaving or knitting the fibres. Sometimes the fibres are dyed before the process of weaving or knitting, sometimes after, weaving and knitting are dry operations, but cooling and humidifying water are used in a mill. This process makes a lot of noise and dust and workers should be protected.
- **Bleaching:** Fabrics are often whitened by bleaching prior to dyeing or printing. Hydrogen per oxide, sodium chlorite and sodium hypochlorite are the most common bleaching agents. Fabrics made from synthetic fibres often do not need to be bleached. Blends of synthetic and cotton fibres are commonly bleached. Wool is often bleached by using hydrogen peroxide or bisulphate. From an environmental point of view, the negative aspects of the bleaching are the use of water, energy and chemicals. Especially chlorine compounds have a bad effect on the environment. The best option is not to bleach the fabrics.
- **Mercerising:** After the bleaching, the bleaching chemical has to be removed before the dye is applied; otherwise, the bleach and dye react to each other. The traditional method of removing the bleach is by rinsing the fabric in water a number of times, which uses a lot of water. Mercerizing is mostly done with caustic soda (NaOH) that will get into the waste stream.
- **Dyeing/Printing:** The dyeing and printing processes are very polluting and use a vast quantity of water. Lost of different chemicals are used. From a health and environmental point of view, the use of dyeing chemicals should be minimized.
- **Finishing:** Finishing is the treatment of fabrics in order to achieve special characteristics. Halogenated compounds such as bromated disphenylethers and compounds containing heavy metals used as flame-retardants are very problematic from an environmental point of view the use of all preservation compounds (DDT, DDE, Metalic salts) should be avoided. Mechanical processes such as UV-treatment, heat sterilization and dry storage are better alternatives to chemical preservatives.
- **Garment production and use:** At the garment production the main environmental problem is the cutting losses, package materials and use of notions, such as buttons and zippers, which can contain heavy metals.

4.4.2.4 Trade Issues in the Textile Chain

The Bangladesh textile and garment industry is the country's biggest export earner representing 76% of export income. This sector has grown from practically nothing since the 1970s, increasing by 20% per annum (ILO,2000). Despite concerns before the ending of quotas in 2005, the Ready-Made-Garment (RMG) industry in the post MFA (Multi-Fibre Agreement) world has not declined; the country has remained a successful producer and exporter of low-value basic items of clothing and is positioned among the leading garment exporting nations of the world (Allwood,2006). Before 1 January 2005 the international textile market was regulated by two major trade agreements-the MFA (1974-1994) and the Agreement on Textile and clothing (ATC, 1995 to 2005). The MFA existed from 1974 until 1994 imposing quotas on the export of certain textile products from developing to developed countries. The quotas were applied to trade in textiles and garments made from wool, cotton and synthetic fibres. The quotas were implemented to protect industry in developed countries from low cost competition from developed countries. The Bangladesh textile and garment industry faces two major challenges. Firstly, the memorial of MFA quotas brings opportunities to expand market share but also brings tough competition. Key factors that have to be addressed to strengthen the competitiveness of the Bangladeshi clothing and textile industry include; the unreliable and inadequate power supply; export diversification; image building such as marketing and branding; lead time reduction; quick access to supply of raw material; fast logistic; availability of bank loans, environmental reforms to address water pollution and waste management (World Bank, 2006).

Secondly, working conditions for workers in the clothing and textiles sector are generally poor. The 'National Garment Workers Federation in Bangladesh (NGWF) represents and supports garment workers. It aims at ensuring that workers' fundamental rights-such as fair wages and basic needs-are covered and acknowledged. The NGWF also negotiates with the government, demanding that it regulates the impact of future trade agreements in a growing and unstable industry. In Bangladesh as in other EPZ (Export Processing Zones), the wages of the government workers are fixed below the country's standard manufacturing wage. While the national minimum wage is US $ 20 per month, the clothing industry workers monthly wage is set at US $ 14 (www.waronwant.org). A ready supply of low skilled labour, along with a very low standard of living, allows the garment

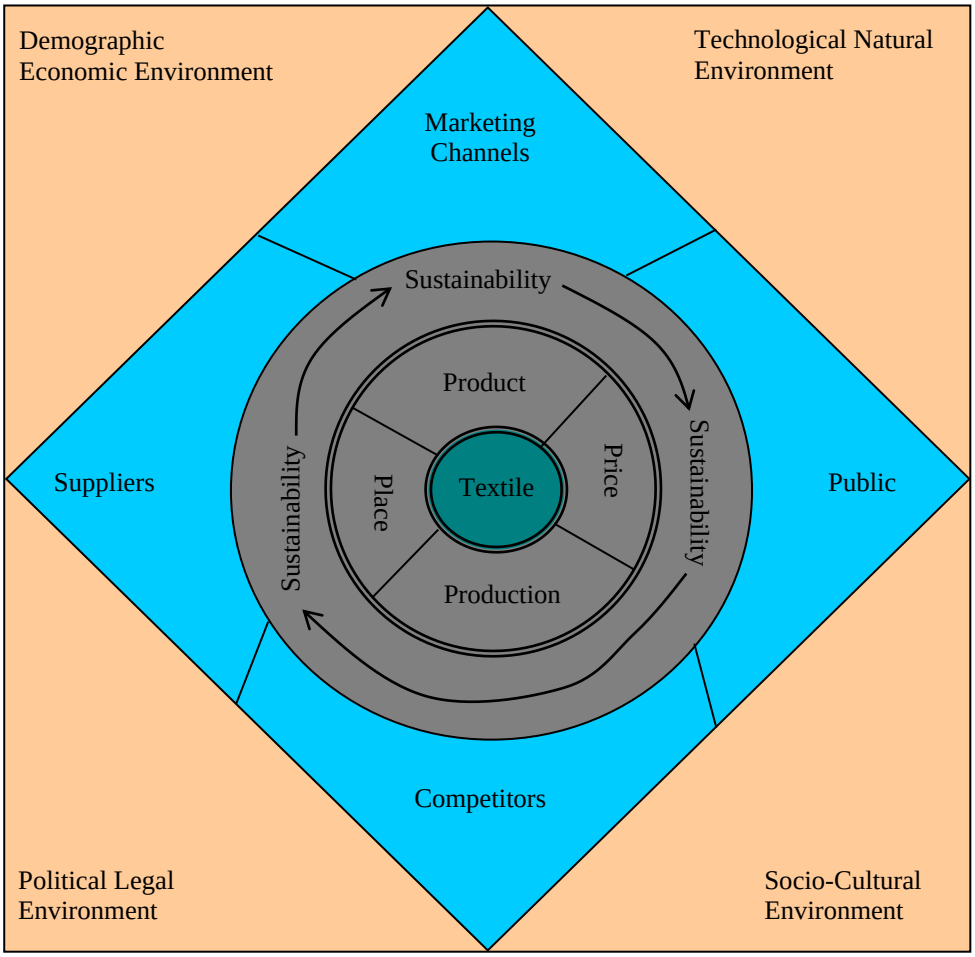
wage to be kept at a low level. This low labor costs play an important part in the competitive advantage. According to reports from Labour Behind the Labour (LBL), Oxfam and Ethical Trading Initiative (ETI), Bangladeshi Clothing and Textiles Workers are also exposed to low safety standards. Problems such as faulty electric wiring, unsafe buildings, locked or blocked emergency exits and in one case, a single narrow staircase to evacuate over a thousand workers, have led to several factory disasters. As a result many workers have been killed and many of them were injured since 1990 (including Rana Plaza disaster and Tajrin Fashion, Dhaka, Savar, 2013).

Employees and citizens have reacted to these circumstances with disruptive protests and demonstrations. Most recently workers have demanded a reasonable rise (30%) in their salary. According to Oxfam, major income and job losses were expected for Bangladesh after the removal of quotas on 1 January 2005 (Oxfam, 2004). Africa has been suffering over 250000 job losses during the quota removal period. The Bangladesh clothing and textile industry has been unexpectedly flourishing after the quota removals in 2005 (ADB, 2006). Even though Bangladesh is a distant production platform country, the USA followed by the EU constitutes her main markets and buy 96% of her knitwear and woven apparel (World Bank, 2006)

4.4.2.5 Sustainability Issues in the Textile Chain and Sustainable Business Movement

Sustainability is a rich, dynamic and a new concept. The shift in textile industry's focus towards social and environmental responsibility has been prevalent during the last decade, reflecting a change in societal value. It is reasonable to believe that this phenomenon is advanced through a collective change in society and business towards post-modern values that span from social to environmental concerns with an increasing consideration of present and future generations (Jin S., 2006). The multi-dimensional construct of sustainability is introduced by emphasizing the interdependence among economic, environmental, and social dimensions in responsible behavior. A model illustrated by figure below addresses the relationship between sustainability and apparel and textile industry.

Figure 4.4.2.5(d_1)
Relationship between sustainability and textile and apparel industry



Source: Jin S., 2006.

This model stated above promotes an understanding of the interdependence of major systems, such as the relationship between production and consumption of textiles and apparel in the global environment, the need for long-term thinking/visioning, an understanding of the value of diversity in cultural, social and economic and natural systems, and an understanding of the different approaches to sustainable solutions (legal, economic, managerial, scientific and technological, design and educational .

Sustainable Business Movement

The followings are the lists of organizations and networks that are engaging with businesses in order to integrate sustainability into their core strategies:

BALLE: BALLE stands for Business Alliance for Local Living Economics. This organization truly follows the ‘think globally act locally” philosophy.

Business for social responsibility (BSR) is a global organization that helps member companies achieve success in ways that respect ethical values, people, communities and the environment.

CERES is the largest coalition of environment, investor, and advocacy groups working together for sustainable prosperity. These groups form a community of forward-looking companies that have committed to continuous environmental improvement.

GRI stands for Global Reporting Initiative .This institution works to develop global sustainability reporting guidelines. The guidelines are intended for Natural Capital Institute "The Natural Capital Institute researchers initiate projects relating to the relationship between human and living systems, with particular emphasis on natural capital, green business, biomimicry, innovative design and social justice."

Social Venture Network (SVN) promotes new models and leadership for socially and environmentally sustainable business in the 21st century.

World Business Academy is an academy of Business Executives and Entrepreneurs dedicated to building a better world, "who are promoting the notion that business must adopt a new tradition of responsibility for the whole. The "Academy" works on researching sustainable business strategies, and provides a collaborative network for progressive business leaders.

World Business Council on Sustainable Development (WBCD) is an international trade association of multi-national companies that provide business leadership toward sustainable development, and promote the role of eco-efficiency, innovation and corporate social responsibility.

Sustainable business is designed for companies that show exceptional leadership by committing to address the ecological crisis as it relates to their industry. Sustainable Business helps green business grow (Jin S., 2006)

4.4.3 Situation Analysis

Situation analysis requires that corporate mangers attempt to find a strategic relation between external opportunities and internal strengths while working around external threats and internal weaknesses. The starting point in formulating strategy is usually

SWOT analysis. SWOT is an acronym that stands for strengths, weaknesses, opportunities, and threats. SWOT analysis is a careful evaluation of an organization's internal strengths and weaknesses as well as its environmental opportunities and threats. In SWOT analysis, the best strategies accomplish an organization's mission by (1) exploiting an organization's opportunities and strengths while (2) neutralizing its threats and (3) avoiding or correcting its weaknesses (Griffin, 2012).

The SWOT matrix illustrates how management can match the external opportunities and the threats facing the particular corporation with its internal strengths and weaknesses to yield in four sets of possible strategic alternatives (Wright, 1992).

Table-4.4.3(a_1)
SWOT matrix

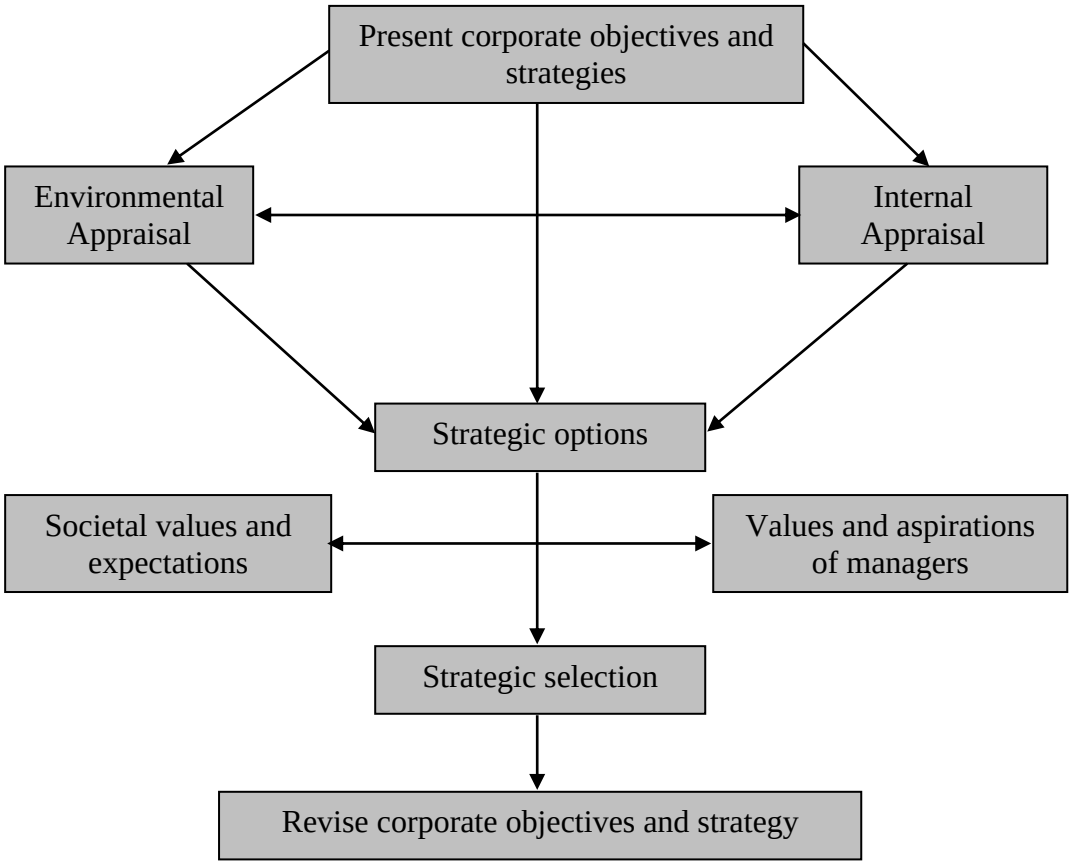
Internal factors / **External factors**	**Strengths (S)**	**Weaknesses (W)**
Opportunities (O)	SO strategies General strategies here that use strengths to take advantages of opportunities	WO strategies General strategies here that take advantages of opportunities overcoming weakness
Threats (T)	ST strategies General strategies here that use strengths to avoid threats	WE strategies General strategies here that minimize weaknesses and avoid threats.

Source: Wheelen *et.al*., 1995.

4.4.4 Formulation of Strategy

Strategy formulation is an important part of strategic management and in this stage, new strategies have been determined for the organization. Strategy formulation can be viewed as a decision making process which is primarily concerned with: the development of the organization's objectives; the commitment of its resources; and environmental constraints, so as to achieve its objectives. This process has got several elements that are depicted in the following figure 4.4.4(a_1).

Figure 4.4.4(a_1)
Strategy Formulation Model



Source: Bowman, *et.al*., 1987.

4.4.5 Implementation of strategy

In the implementation stage, strategies have been executed within the organization. The formulation stage determines what the strategy is, and the implementation stage focuses on how the strategy is achieved. The first concern in the implementation of the chosen strategy is to translate that strategy in to action throughout the organization. There are four tools for accomplishing this which are as follows:

- Objectives/action plans
- Functional tactics, to create competitive advantage.
- Empowerment of employees through policies
- Compensation/reward system.

In implementing the strategy, firm's managers must direct, and control actions and outcomes and adjust to change, and must be aware about choice of strategy.

4.4.6 Strategic Evaluation and Control

Strategic controls are designed to uplift the company toward its long term strategic goals. Mainly, there are four types of strategic control such as premise controls, implementation controls, strategic surveillance, and special alert control. All four types are designed to meet top management's need to track the strategy as it is being implemented, to detect underlying problems, and to make necessary adjustments. These strategic controls are linked to the environmental assumptions and the key operating requirements necessary for successful strategy implementation (Pearce and Robinson, 2006). Operational control systems require systematic evaluation of performance against predetermined standards or targets. A critical concern here is identification and evaluation of performance deviations, with careful attention paid to determining the underlying reasons for and strategic implications of observed deviations before management reacts.

Designing an effective strategic control system requires four steps. (Hill and Jones, 1998)

i) Establish the standards or targets against which performance is to be evaluated;

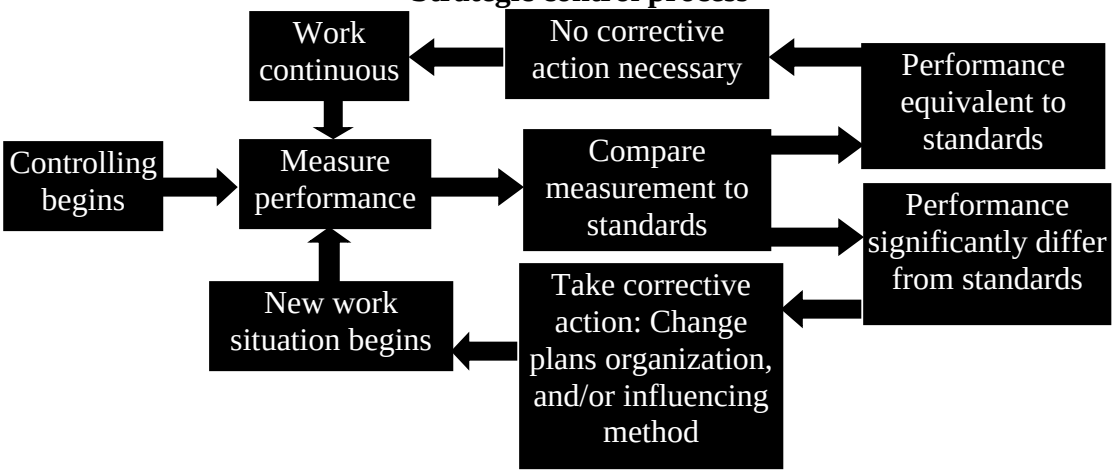
ii) Create the measuring or monitoring systems that include whether the targets are being reached.

iii) Compare actual performance against the established targets.

iv) Initiate corrective action when it is decided that the target is not being achieved.

A general model for the control strategic process is depicted below:

Figure-4.4.6(a_1)
Strategic control process



Source: Certo and Peter, 1998.

CHAPTER FIVE
Data Analysis and Interpretation

SECTION ONE
Overview and Analysis of Social Responsibility Strategies of Textile Industry in Bangladesh

Chapter Five
Data Analysis and Interpretation

Section-5.1: Overview and Analysis of Social Responsibility Strategies of Textile Industry in Bangladesh

5.1.0 Prelude

The term business typically refers to the development and processing of economic values in society (Davis *et.al*., 1984). Social responsibility is defined as the obligation of decision makers to pursue actions which protect and improve the welfare of the society as a whole, rather than only their own interests. Since business firms have to depend on society for their capital, consumers, employees and infra structural supports, so, business organizations have had manifold responsibilities toward various components of society such as employees, consumers, community, environment, government, shareholders and other stakeholders. Society expects business to help solve a number of general social problems and to show much more concern for social effects, which arise directly from performance of business's economic functions (Davis *et.al*., 1984) Society, on the other hand, depends mostly on business organizations for the supply of necessary goods and services, employment and revenues. So business and society interact in a system framework. These mutual interactions and responsibilities are the fundamental needs for the smooth functioning of both business and society. If business and society get stuck on the legalisms of social responsibility, they will drift into inaction (Davis *et.al*., 1984). This is why social responsibility of business is the precondition of socioeconomic development because the activities of business organization create unpleasant socio-economic condition and environmental degradation in many ways. But if the firms do their operations fairly and contribute to the society reasonably within their ability, then it would not create unsustainable socio-economic condition for the society (Davis *et.al*., 1984). However, the textile business as a business organization has got manifold responsibilities toward its stakeholders. Some of these are legal obligatory and some of these are voluntary in nature. The contribution of business to the social programs develops socio-economic conditions of its stakeholders which assist production and consumption of its goods and services. The textile mills' contribution to the employees will thus increase their productivity and efficiency, their contribution to consumers will

create goodwill and increase market share and their contribution to government, environment and community will create healthy society which is fundamental for healthy business. Thus the social responsibilities of business are beneficial to both business and society. So, it is necessary to investigate and evaluate the social responsibility strategies of this industry. In this section, the researcher has attempted to evaluate the present scenario of managing social responsibility of sample mills toward the various components of society or toward its stakeholders.

5.1.1 Analysis of Scenario of Social Contribution of Textile Industry toward Community in Bangladesh

Community support is essential to operate business activities. Business is not only an economic adventure but also a social institution. Community is the ultimate judge of business activities. Business and community are inter-related for mutual interest. This mutual interdependence refers to social responsibility of business to the community.

However, the activities of textile industry like other business activities have multidimensional impact on the community. Waste water, effluent from dyeing and washing activities and other business functions create environmental pollution. Slum problem, fire hazard, social unrest, pressure on public utility services are the results of this industrialization. It is not possible to solve all of these social problems by the community alone. So, this industry has had some responsibilities to solve these problems for minimizing adverse impact of its functions. Contribution to the community is also considered as a long term investment for its future sustainability. It enhances goodwill and public image.

5.1.1(a) Analysis of Responsibility of Sample Mills in compliance with the Contribution to Community Welfare

Major areas of performing social responsibilities of textile industry to the community are as follows: contribution to the social and cultural organizations, health care, sports, religious programs, forestation, relief fund, publication for journal and souvenir, grants for research, employment for disadvantaged people, charitable organizations and infrastructural development etc. An attempt has been made in this section to evaluate the social responsibility performance of textile business to the community in Bangladesh. The present scenario of responsibility of sample companies to the community is shown in the Table below–

Table-5.1.1(a_1)
Responsibility of Fifteen Sample Mills toward Community According to the Contribution to Community Welfare

(In million Taka)

Types of Contribution	Year	Net Profit (Tk.)	Total Contribution (Tk.)	As % of Total
Sports, cultural, advertisement support, religion, forestation, education, donation for charity fund, donation for disabled, environmental protection and others	2006-07	693.52	12.69	1.83
	2007-08	775.68	12.41	1.60
	2008-09	597.14	11.26	1.88
	2009-10	782.50	12.42	1.58
	2010-11	1946.62	15.81	0.813

Source: Annual Report (2006-07 to 2010-11).

It is observed from the Table-5.1.1(a_1) that in 2006-07, the 15 sample mills contributed Tk. 12'69 million which was 1.83% of total net profit of them. It was followed by 1.60% in 2007-08, 1.88% in 2008-09, 1.58% in 2009-10, and 0.813% in 2010-11. A closer look into the Table indicates that the net profit increased from Tk. 693.52 million in 2006-07 to Tk. 775.68 million in 2007-08 but actual contribution of overall sample mills was rather going down remarkably. And the net profit have increased from 597.14 million in 2008-09 to 782.50 million in 2009-10 and the net profit of 15 sample mills have also increased from Tk. 782.50 million in 2009-10 to tk. 1946.62 million in 2010-11, but the actual contribution of overall sample mills have decreased. So, it can be concluded that the contribution of sample companies toward community was not up to the mark in Bangladesh during that period.

5.1.1(b) Analysis of Stakeholders' Opinion about Social Responsibility of Sample Mills toward Community in Bangladesh.

Stakeholders are aggregated interest groups that include Shareholders, consumers, professionals, scholars and employees etc. Here it is to note that scholars include textile engineer, teachers of textile university, government officials of department of Environment, BTMA officials etc. However, stakeholders' perceptions regarding the level of performance about community contribution of sample mills in the area of sports support, cultural support, religion, education, health care issues, forestation, employment, charitable donation, donation for disabled, environmental protection etc. have been shown in the Table below:

Table-5.1.1(b_1)
Stakeholders' opinion regarding the level of satisfaction for the sample mills' responsibility toward community.

Contribution Areas	Major Stakeholders	Level of Satisfaction				Total Stakeholders
		Satisfactory	Moderately	Minimum	Do not perform	
Sports Health care, Cultural, Religion, Forestation, Education, Charitable donation, Donation for Disabled, Environment protection, Employment etc.	Shareholders	01	02	05	02	10
	Employees	02	03	03	02	10
	Consumers	01	03	03	03	10
	Scholars	02	02	04	02	10
	Professionals	01	02	05	02	10
	Total	07	12	20	11	50
	As % of Total	14%	24%	40%	22%	100%

Source: Field Survey, 2010-11.

It is shown in the Table 5.1.1 (b_1) that 14 percent stakeholders thought that social responsibility of textile companies to the community was satisfactory in Bangladesh. 24 percent (12 respondents) out of total stakeholders said that textile industry moderately discharged their social responsibility to the community. 40 percent stakeholders opined that Textile business discharged minimum responsibility to the community and 22 percent stakeholders said that textile business in Bangladesh did not perform its responsibility toward community.

From the above discussion, it is revealed that textile business was not properly discharging their responsibility to the community in Bangladesh during that period.

5.1.2 Sample Mills' Responsibility toward their Employees:

Employees are the most important interest groups of the business firms. Employees are dependent on the business firms for their employment and income. Business firms are also dependent on the productivity and efficiency of employees. This interdependent relation between business firms and employees creates some responsibilities to each other. Harmonious relationship between employers and employees is a fundamental factor of economic growth of the business firms and the economic progress of the society. Mutual understanding and responsibility are essential for the common interest of both business firms and employees and also for socio-economic development of society (Mukharji, 1969).

Hostile relations between employers and employees create industrial conflict, business failure, jobless situation, strike, and violence that fosters unstable socio-economic environment. So, both business firms and employees have responsibilities to maintain peace and co-operative relations between them.

Textile mills as a business firm also have social responsibilities to the employees to pay fair wages, salaries, and allowances, to provide training, to ensure job security and welfare, and to provide sound working environment for keeping strong workers' health.

5.1.2(a) Analysis of Responsibility of Sample Mills in compliance with the Payment of Wages and Salaries.

Business firms provide salaries, wages, allowances and other benefits to the employees because they sacrifice their time, labor and efficiency for the business firms. But the amount of salary, wages and allowances would be sufficient for an employee to pass his or her life and livelihood. Otherwise it will create labor unrest. So, an attempt has made to analyze the present condition of fifteen sample companies according to the payment of wages and salaries to the employees which is shown in the Table-5.1.2 (a_1) below:

Table-5.1.2(a_1)
Responsibility of sample mills toward employees according to the payment of wages and salaries.

Rate of wages	Number of companies that pay wages	As % of total	Rate of salary	Number of companies that pay salaries	As % of Total
2500-3000	05	33.33	6000-7000	00	00.00
3000-3500	08	53.33	7000-8000	2	13.33
3500-4000	02	13.33	8000-9000	05	33.33
4000-5000	00	00.00	10000-above	08	53.33

Source: Annual Report (2006-07 to 2010-11).

Table 5.1.2 (a_1) indicates that 05 mills pay minimum wages at the rate of Tk. 2500 to Tk. 3000 (That was 33.33% of total observed companies). Two mills pay wages at the rate of Tk. 3500 to Tk. 4000 which was 13.33% of total sample companies. A closer look into the Table shows that maximum sample mills pay minimum wages which was Tk. 3000 to Tk. 3500. According to the market price and cost of living, minimum wages of Tk. 3000 to 3500 was not sufficient for the employees to maintain minimum standard of living.

5.1.2(b): Analysis of Responsibility of Sample Mills toward Employees according to the Contribution to Employee Welfare and to the Payment of Allowances.

Allowances and Welfare programs are the financial or non financial payments given to employees for specific purpose. This program help achieve long-term interest of the company. Textile firms like other business firms have also responsibilities to take welfare programs. The contribution of sample mills regarding employee welfare is shown in the Table below:

Table-5.1.2(b_1)
Responsibility of sample mills according to the contribution in employee welfare.

Types of Welfare Programs	No. of Companies contribute	As % of Total	Number of Companies Not Contribute	As % of Total
Provident Fund	06	40	09	60
Leave and Gratuity	03	20	12	80
Festival Bonus	08	53.33	07	46.67
Medical Allowance	11	73.33	04	26.66
House rent	07	46.66	08	53.34
Conveyance	15	100	00	00.00
Recreation & Refreshment	05	33.33	10	66.67
Insurance	04	26.66	11	73.33
Compensation	02	13.33	13	86.66
Retirement Benefit	00	00	00	00.00
Maternity Benefit	00	00	00	00.00
Canteen Subsidy	03	20	12	80
WPPF & WWF	14	93.33	01	6.66

Source: Field Survey, 2010-11.

The Table shows that 40% of the sample mills contributed to Provident Fund and 60% percent of the sample companies did not contribute to Provident Fund. The Table indicates that no sample mill provided any retirement benefit to the employees and there was no pension provision in the observed companies. Only 7 companies contributed in house rent which was 46.66 percent of the total observed companies. Five companies contributed in recreation and refreshment allowances which was 33.33% of the total observed companies and only four companies provided insurance facility among fifteen sample mills. A closer look into the Table indicates that some of the mills granted maternity leave facility but no one paid any financial support in this regard. Here it is to note that sample companies are those that are large and leading mills in the textile industry of Bangladesh. If this scenario is witnessed for this type of leading companies then it is commonly anticipated about the present position of the other small and medium sized textile mills of Bangladesh.

5.1.2(c): Analysis of Social Responsibility of Sample Mills in accordance with the Facilities of Physical Working Environment.

In this section, attention has been given to physical working conditions and work place safety. Absence of effective governmental interventions means the industry characteristically involves long work hours, cramped quarters, poor ventilation, absence of appropriate toilet facilities and clear drinking water, fire hazard, poor wages and lack of protection from harassment, assault and rape in travel to and from factories (Khatun, 1998). Textiles managers must have some strategies with regard to improving quality of work life not only for their efficiency gain but also for minimizing long term health problems. An attempt has been made in this section to evaluate the work place facility adequacy among 150 textile workers of 15 sample mills in Bangladesh which is shown in the Table below.

Table 5.1.2(c_1)
Responsibility of sample mills according to the workers' perception about level of adequacy for physical working environmental facilities.

Physical Working Environment Facilities	Level of Adequacy							
	Sufficient		Barely Adequate		Inadequate		Unavailable	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Workspace	14	9.33	78	52	54	36	04	2.66
Common Room facility	11	7.33	72	48	62	41.33	05	3.33
Duty Physician	10	6.66	68	45.33	66	44	06	4.00
Children Care Area	08	5.33	77	51.33	60	40	05	3.33
Change Room	11	7.33	69	46.0	60	40	10	6.66
Latrines	10	6.66	63	42	66	44	11	7.33
Dining Room	13	8.66	64	42.66	61	40.66	12	8
Prayer Room	12	8	72	48	58	38.66	08	5.33
Exhaust	15	10	67	44.66	53	35.33	15	10
Emergency Power	13	8.66	72	48	54	36.00	11	7.33
Emergency Exit	16	10.66	70	44.66	54	36	10	6.66
Window and Ventilation	16	10.66	70	44.66	55	36.66	08	5.33
Drinking water	17	11.33	63	42	57	38	13	8.66
Lighting	27	18	66	44	49	32.66	08	5.33
First Aid Facility	15	10	68	45.33	57	38.00	10	6.66
Fans	18	12	68	45.33	52	34.66	12	8.00
Fire Extinguisher	19	12.66	66	44	51	34	14	9.33

Source: Field Survey, 2010-11.

It is observed from Table 5.1.2 (c_1) that most of the workers perceive seating arrangement and inadequate space for movement as their primary problems; this is followed by inadequacy of pure drinking water (38%), common room (41.33%), duty physician (44%), children care area (40%) emergency exit (36%), window and ventilation (56.66%) and fire extinguisher (34%). According to the Factories Act of 1965 and 1979, latrines and urinals must be provided in sufficient numbers i.e. one latrine for every 25 workers for both men and women workers. But only 6.66% of total 150 workers have informed about the sufficiency of such facilities in the sample mills.

5.1.2(d): Analysis of Health Implications of Physical Working Environment Condition of Sample Mills.

In this research, attention was given to health implications of specific working conditions, work place safety and industry compliance with wage guidelines. Occupational health hazards are a companion of the textile workforce. Unhygienic work place, factory and fabric and cotton dust, huge sound menace, washing and dyeing effluent, waste disposal system and others generate pollution and create health hazards for workers. The following Table-5.1.2 (d1) shows perception of principal reasons for occupational health problems among 150 textile workers of 15 sample companies in Bangladesh.

Table-5.1.2(d_1)
Workers' perception of principal reasons for occupational health problems in Sample Mills.

Type of Health Hazard Sources	Frequency Among Total Respondents who perceive the factors as the source of hazard	As % of Total	Frequency Among Total Respondents who do not hold the perception	As % of Total
Factory's Cotton Dust and Fabric Dust	124	82%	26	18%
Huge Sound from Machine Operation	67	44.66%	83	55.33%
Washing and Dyeing Effluent	51	34%	99	66%
Seating Arrangement Congestion	43	28.66%	107	71.33%
Waste Disposal	44	29.33%	106	70.66%
Suffocation-Closed Window	39	26%	111	74%
Unavailability of Pure Drinking Water	29	19.33%	121	80.66%
Inadequate Number of Latrines	29	19.33%	121	80.66%

Source: Field Survey, 2010-11.

It is observed from the Table-5.1.2 (d_1) that 82% of total respondents think that cotton and fabric dust can be said to be the principal reasons behind the major health problems. 44.66% say that noise pollution by huge sound from machine operation is the principal reason for occupational health problems for the workers but others don't think so. 34% claimed the washing and dyeing effluent, 28.66% told the seating management congestion, 29.33% identified the waste disposal system as principal reason; 26% mentioned the suffocation closed window as principal reason for occupational health hazards.

In fine, the textile workers expressed two types of health problems: short term, temporary ailment, and long term health problems. Temporary health problems such as headache, fatigue and drowsiness, dizziness, allergic reactions, nausea, and depression, are attributed to the conditions related to closed doors and windows, frequent electricity failure, high humidity, inadequate number of fans, dust carried in on sandals, airborne cotton thread particles, and fabric dust, washing and dyeing chemicals, waste disposal, huge sound, waste water, are mainly responsible for long term health problems. Long term health problems include tuberculosis, asthma, repetitive intestinal tract infection, ulcers etc. The following Table-5.1.2 (d_2) shows the rank ordered health problems suffered by 150 workers of 15 sample companies in Bangladesh.

Table 5.1.2(d_2)
Rank-ordered health problems suffered by 150 textile workers of 15 sample mills.

Short-term Health Problems	Frequency Among the respondents	As % of Total	Long Term Health Problems	Frequency	As % of Total
Fatigue from Boredom	96	64	Asthma and Lung Disease	81	54%
Headache	91	60.66	Diabetes	52	34.66%
Skin Irritation	66	44	Low Blood Pressure	45	30%
Vomiting Tendency	47	31.33	High Blood Pressure	44	29.33%
Nervous Breakdown	45	30	Ulcer	40	26.66%
Allergy	42	28	Memory Loss	38	25.33%
Diarrhea	40	26.66	Jaundice	36	24%
Depression	28	18.66	Rheumatic Fever	27	18%
Hair Loss	27	18	B Sudden Blindness	25	16.66%
Muscle Spasms	27	18	Leukemia	24	16%
Sneezing	26	17.33	Repetitive intestinal tract infection	24	16%
Panic	26	17.33	Menstrual irregularities	22	14.66%
Drowsiness	25	16.66	Leukemia	22	14.66%
Night Fever	24	16.00	Loss of Sexual Desire	21	14%
Eye Soreness	23	15.33	Repetitive Strain injuries	20	13.33%
Coughing	22	14.66	Schizophrenia	20	13.33%
Back Strain	22	14.66	Sexual and Venereal Disease	17	11.33%
Nausea	22	14.66	Inarticulateness inattention	16	10.66%
Insomnia	21	14	Hysteria	11	7.33%
Sudden Insanity	20	13.33	Sterility	09	6%

Source: Field Survey, 2010-11.

It is revealed from the Table-5.1.2(d_2) that 64% the textile workers have been suffering from fatigue as short-term health problem and the rest of the workers have not suffered from this problem. It was followed by 60.66% as headache, 44% as skin irritation, 26.66% as diarrhea, and 14.66% by nausea diseases. On the other hand, 54% of total respondents have been suffering from Asthma and lung diseases as long term health problems and the rest of the workers do not suffer from these diseases.

It was followed by 34.66% from diabetes, 30% from low blood pressure, 14% from loss of sexual desire, 14.66% as menstrual irregularities and 14.66% as mental health problems that respondents associate with work in the textile industry including depression, sudden insanity etc. 18.66% of total respondents succumb to depression and 13.39% to sudden insanity. If the textile managers showed responsible behavior to the workers by providing hygienic work environment then the health hazards could be minimized to a great extent.

5.1.2(e): Analysis of Responsibility of Sample Mills regarding the Social, Occupational and Residential Insecurity of Workers

The researcher interviewed textile workers who expressed three types of insecurities; occupational, social, and residential. Some occupational insecurities lead to social insecurities for the workers. Occupational and social insecurity of workers are two entwined realities among them. Sudden closure of factories and dismissals compel workers to default on their living space rent, to turn to informal money lenders who lend at high interest rates, and to withdraw children from day care centers and schools. They become more vulnerable to sexual harassment and breakdown of conjugal relationships (Rahman,2003). Occupational insecurities include dismissal from job, fire hazard, sudden closure of factories, loss of skills, conflict with management people, uncertainty of future occupation, occupational health problems, and beating and physical abuse in factory etc. These insecurities appear as major causes of tensions for textile workers. Fire hazard and consequent stampede is a serious problem in textile and garment factories. Major social insecurities are drug addiction, fear of breakdown in marital relationships, trafficking, and entrapment: drug bearing, using, selling; fear of unwanted pregnant, rape, killing, and unavailability of day care centre for children etc. Residential and social insecurities foster frustration among workers from despair. Residential insecurities are slum eviction, isolation from neighborhood people and theft, burglary at residence while absent etc. However, the following Table shows the perceptions of textile workers regarding social, occupational, and residential insecurity in Bangladesh.

Table-5.1.2(e_1)
Perceptions of textile workers regarding social, occupational and residential insecurity

Type of Insecurity		Frequency Among Total Respondents who feel secured	As % of Total	Frequency Among Total Respondents who do not feel secured	As % of Total
Occupational	Dismissal	82	54.66%	68	45.33%
	Fire Hazard	87	58%	63	42%
	Sudden Closure of Factory	50	33.33%	100	66.66%
	Loss of Skills or Fear of Deskilling	39	26%	111	74%
	Conflict with Management People	29	19.33%	121	80.66%
	Uncertainty of Future Occupation	92	61.33%	58	38.66%
	Occupational Health	90	60%	60	40%
	Beating and Physical Abuse in Factory	48	32%	102	68%
Social	Drug Addiction	59	39.33%	91	60.66%
	Fear of Break down in Marital Relationship	78	52%	72	48%
	Trafficking	56	37.33%	94	62.66%
	Entrapment: Drug Bearing, Using, Selling	47	31.33%	103	68.66%
	Hatred by Neighborhood People	61	40.66%	89	59.33%
	Fear of Unwanted Pregnancy	57	38%	93	62%
	Rape, Gang rape, Killing	41	27.33%	109	72.66%
	Unavailability of Day care Center for Children	65	43.33%	85	56.66%
Residential	Slum Eviction	67	44.66%	83	55.33%
	Isolation from Neighborhood People	72	48%	78	52%
	Theft, Burglary at Residence while Absent	72	48%	78	52%

Source: Field Survey, 2010-11.

It is revealed from the Table 5.1.2(e_1) that social, occupational and residential insecurities have waggled the whole textile mills' workers with a great menacing to crumple the normal cycle of their life. About 61.33% (92 respondents) of total 150 workers opined that they have been suffering from the uncertainty of future occupation but 38.66% (i.e. 58) did not at one with them. 60% of the total respondents have been suffering from disappointment caused by insecurity concerning occupational health but 40% of them did not coincide with them. It was followed by 58% in fire hazard, 54.66% in dismissal from jobs, 33.33% in sudden closure of factory, 26% in loss of skills, and 19.33% in conflict with management people. It is also seen from this Table that most of the workers have

been worrying for social insecurity .About 52% of them felt insecurity from the fear of breakdown in marital relationships and 48% of them did not agree with them. This was followed by 43.33% in unavailability of day care centre for children, 40.66% in hatred by neighborhood people, 39.33% in drug addiction, 38% in unwanted pregnancy, 37.33% in trafficking, 27.33% in rape and killing. It is also observed that 48% of the total workers (150) feel upset for the isolation from neighborhood people, and 48% of total workers felt insecurity from theft and burglary while absent from residence but rest of the workers (52%) did not comply with them. Among the total workers (150), 44.66% felt insecurity from slum eviction.

5.1.2(f): Analysis of Stakeholders' Opinion about Sample Mills' Responsibility toward Employees.

The opinion of fifty stakeholders regarding the level of satisfaction about social responsibility of sample mills toward employees is shown in the following Table

Table-5.1.2(f_1)
Opinion of stakeholders regarding the level of satisfaction for social responsibility of sample mills toward employees.

Contribution Areas	Major Stakeholders	Level of Satisfaction				Total Stakeholders
		Satisfactory	Moderately	Minimum	Do not perform	
Salary and wages, Allowances, Workplace condition, Welfare fund, training and promotion etc.	Shareholders	01	03	06	00	10
	Employees	00	03	06	01	10
	Consumers	02	02	04	02	10
	Scholars	02	01	05	02	10
	Professionals	02	04	03	01	10
	Total	07	13	24	06	50
	As % of Total	14%	26%	48%	12%	100%

Source: Field Survey, 2010-11.

It is shown in the Table 5.1.2 (f_1) that 14 percent (07 respondents) out of total stakeholders (50) think that social responsibility of textile companies to the employees is satisfactory in Bangladesh, 26 percent stakeholders say that textile industry moderately discharge their social responsibility to the employees. 48 percent stakeholders opine that Textile business discharges minimum responsibility to the employees and 12 percent stakeholders say that textile businesses in Bangladesh have not performed its responsibility toward employees.

From the above discussion, it is revealed that textile business is not properly discharging its responsibility to the community in Bangladesh.

5.1.3 Sample Mills' Responsibility toward Government in Bangladesh.

Government regulates business within legal and administrative framework in order to ensure public interests. Government supports business by offering favorable trade policy, conducive rules and regulations, taxation policy, money and banking supports and infrastructure for smooth functioning of its operations. On the other hand, business generates taxes for government, goods and services for people and capital and profit for itself. So, business and government are interdependent social institutions. Thus, the textile industry as a business organization has some responsibilities toward government through paying reasonable taxes, fees, utility bills for getting better utility services, infrastructural supports and safety programs. However, this section deals with all these issues to examine the scenario of responsibilities to textile industry toward government.

5.1.3(a): Analysis of Responsibility of Sample Mills regarding the Payment of Government Taxes, Fees and Utility Bills.

The present scenario of social responsibilities of sample companies to the government according to their payment of government taxes, fees, and utility bills is shown in the Table-5.1.3 (a_1) given below –

Table-5.1.3(a_1)
Responsibility of sample mills toward government according to the payment of government taxes, fees and utility bills.

(In millions Tk.)

Year	Total Number of sample companies	Net Profit	Total amount of government taxes and fees paid by sample companies	Total amount of utility bills paid by sample companies
2006-07	15	693.52	250.80	229.61
2007-08	15	775.68	168.80	236.77
2008-09	15	597.14	132.39	409.98
2009-10	15	782.60	151.34	601.21
2010-11	15	1946.62	260.12	756.70

Source: Field Survey, 2010-11.

The Table-5.1.3 (a_1) indicates that 250.80 million were paid as taxes and fees and 229.61 million as utility bills in 2006-07 by sample companies. It was followed by 168.80 million as taxes and fees and 236.77 million as utility bills in 2007-08. It also displays that Tk.

132.39 million as fees and taxes and Tk. 409.98 million as utility bills paid by sample companies in 2008-09 and it was followed by Tk. 151.34 million as fees and taxes and Tk. 601.21 million as utility bill paid by fifteen sample mills in 2009-2010 and Tk.260.12 as fees and taxes and Tk. 756.70 as utility bills paid by sample mills in 2010-11.

It is revealed that net profit has increased by 148.84% in 2010-11 from 2009-10 and at the same time government fees and taxes paid by the sample companies in 2010-11 has not increased at the same rate i.e. 72.85%. According to this analysis, it is observed that textile businesses in Bangladesh discharge its responsibilities to government but the provision of tax should be increased.

5.1.3(b): Stakeholders' Opinion about Social Responsibility of Textile Industry toward Government in Bangladesh.

An attempt has been made to examine the social responsibility of the sample companies in terms of utility bills such as government taxes, fees, and gas, water, electricity bills etc. through the opinion survey of stakeholders on these issues to justify the situation. The following Table shows the opinion of stakeholders regarding the level of satisfaction for the responsibility of fifteen sample companies toward government in Bangladesh.

Table-5.1.3(b_1)
The opinion of stakeholders regarding the level of satisfaction for the responsibility of fifteen sample mills toward government in Bangladesh.

Contribution Areas	Major Stakeholders	Level of Satisfaction				Total Stakeholders
		Satisfactory	Moderately	Minimum	Do not perform	
Government Taxes, fees and Gas, Water, Electricity etc. utility bills.	Shareholders	02	04	04	00	10
	Employees	01	04	04	01	10
	Consumers	02	02	04	02	10
	Scholars	03	02	02	03	10
	Professionals	01	02	04	03	10
	Total	09	14	18	09	50
	As % of Total	18%	28%	36%	18%	100%

Source: Field Survey, 2010-11.

It is shown in the Table 5.1.3 (b_1) that 18 percent stakeholders think that social responsibility of textile companies to the government is satisfactory in Bangladesh, 28 percent stakeholders say that textile industry moderately discharge its social responsibility to the government. 36 percent stakeholders opine that Textile business discharge minimum responsibility to the government and 18 percent stakeholders say that textile business in Bangladesh did not perform its responsibility toward government.

From the above discussion, it is revealed that textile businesses are not properly discharging its responsibility to the government in Bangladesh.

5.1.4 Scenario of Social Responsibility of Textile Industry to the Consumer in Bangladesh.

Consumers today depend upon hundreds of businesses to satisfy their needs and wants. Business firms, on the other hand, depend on consumers for the consumption of goods and services. Since citizens as consumers are dependent upon business to satisfy their needs, business must assume responsibilities to consumers (Davis and Blomstom, 2012). But consumer satisfaction is essential for profit making organization, otherwise, it may create consumers unrest which may result in social movement. In 1960, consumers' unrest resulted in a social movement in USA to project consumers' interests and to establish consumers' rights which was called as consumerism. While dissatisfaction with product quality and reliability has been a major source of consumer frustration and thus has contributed to the growth of the consumer movement, dissatisfaction with services also has been a major contributing force (Davis and Blomstrom, 2012).

Business is a key subsystem in our modern society. Business can never be given unilateral responsibility for total well-being in our pluralistic society, but it does play a central role in a private enterprise economic system and is instrumental in shaping economic decisions. Samuelson (1970) points out that every society must answer three fundamental economic questions: 1. What commodities shall be produced and in what quantities? 2. How shall goods be produced? 3. For whom shall goods be produced? In the free world, businessmen play a key role in answering the questions just mentioned. Businessmen should decide how factors of production shall be combined and then choose the best production process so that products and services may be produced at the lowest cost and thereby offered to consumers at the lowest price (Davis and Blomstrom, 2012). Consumers association of Bangladesh (CAB) is working for formulation of legislatives for imposing legal obligations and responsibilities on the business firms. However, textile firms have some responsibilities to produce quality product that must meet the consumers' needs and the products must be reasonably priced with a dependable quality.

5.1.4(a): Analysis of Stakeholders' opinion about Social Responsibility toward Consumers in Bangladesh.

Major areas of performing social responsibilities of textile industry to the consumers are as follows: reasonable price, ecologically signified product, quality and durable product, hygienic and fashionable product etc. An attempt has been made in this section to evaluate the social responsibility performance of textile business to the consumers in Bangladesh through the opinion survey of the stakeholders on these issues to justify the situation. The present scenario of responsibility of sample mills to the consumers has been shown in the Table below–

Table-5.1.4(a_1)
The opinion of stakeholders regarding the level of satisfaction for social responsibility toward consumers.

Contribution Areas	Major Stakeholders	Level of Satisfaction				Total Stakeholders
		Satisfactory	Moderately	Minimum	Do not perform	
Reasonable price, Supply of product, Ecologically signified product ,Variety, Quantity ,Quality and longevity of product , Hygienic and fashionable product	Shareholders	02	03	03	02	10
	Employees	02	04	03	01	10
	Consumers	01	02	04	03	10
	Scholars	02	01	06	01	10
	Professionals	01	01	05	03	10
	Total	08	11	21	10	50
	As % of Total	16%	22%	42%	20%	100%

Source: Field Survey, 2010-11.

It is shown in the Table 5.1.4 (a_1) that 16 percent stakeholders think that social responsibility of textile companies to the consumers is satisfactory in Bangladesh, 22 percent stakeholders say that textile industry moderately discharge their social responsibility to the consumers. 42 percent stakeholders opine that Textile business discharge minimum responsibility to the consumers and 20 percent stakeholders say that textile business in Bangladesh did not perform its responsibility toward consumers.

From the above discussion, it is revealed that textile business is not properly discharging their responsibility to the consumers in Bangladesh.

CHAPTER FIVE
Data Analysis and Interpretation

SECTION TWO
Investigation and Evaluation of Environment Protection Strategy of Sample Mills

Section Two- 5.2: Investigation and Evaluation of Environment Protection Strategy of Sample Mills

5.2.0 Prelude

Environments mean the surroundings within which we live. Environment refers to the earth's natural and physical resources along with the habits, values, philosophies and practices of people for utilizing these resources to meet the human needs. Business firms extract and process these resources to create utility for the satisfaction of human needs (Dalton E, 1982). Naturally, environments throw influence on the activities of our life. As business organization is surrounded by environmental factors so it cannot avoid their influence. Thus, organizational management is to try to adapt itself to its environments so that it can run its operations in the right way (Rashiduzzaman, 2011). Business organizations, on the other hand, are involved directly in providing goods and services that have had obvious environmental impacts (Doane and Gillivary, 2001). Many of the world's largest corporations are realizing that business activities must no longer ignore environmental concerns. Every activity is linked to thousands of other transactions and their environmental impact, therefore, corporate environmental responsibility must be taken seriously and environmental policy must be implemented to ensure a comprehensive organizational strategy (Pearce and Robinson, 2006). Since every business activities have got an adverse impact on the environment, so, textile business is not exception to that. This industry pollutes environment in several stages of its functions. The major environmental issues, occupational health issues and major social issues are associated with the textile sector. And the major sources of these issues are energy used in laundry, production of fibers, use of toxic chemicals, release of chemicals in waste water, solid waste arising from yarn manufacturing, fiber dust, hazardous chemicals, noise, child labor, low pay, sexual harassment etc (Allwood, *et.al*., 2006). So, this industry has had responsibilities to keep ecological balance and to protect environment from pollution for greater human interests.

5.2.1 Analysis of Scenario of Environment Protection Management System of Sample Mills According to the Achievement of Generic Management System Standard Certificate

Environment pollution creates ecological imbalance, destroy plant and animal and produce health's hazards for human being. As a major contributor to ecological pollution, business now is being held responsible for damaging the ecological balance. Increasingly,

managers are being required by the government or are being expected by the public to incorporate ecological concerns into their decision making (Robinson, 2006). Environmental legislation impacts corporate strategies worldwide. Many companies fear the consequences of highly restrictive and costly environmental regulations. However, some manufacturers view these new controls as an opportunity, capturing markets with products that help customers satisfy their own regulatory standards. Despite the clean up efforts to date, the job of protecting the ecology will continue to be a top strategic priority usually because corporate stockholders and executives choose it, increasingly because the public and government require it. In order to keep the pulse of the textile industry beating, we must go back to the basics and protect our natural and human resources so that we can manufacture sustainable, high quality goods for future generations (Gur and Kale, 2009). Government should make some interventions into the conduct of business for the purpose of bettering the ecology. Textile mills, in this respect, should achieve management standard certificate in order to manage/discharge environmental responsibility. Major management standard certificates are OHASAS-18001, ISO-14001, ISO-9001, Eco-Tex, BSTI, GOTS etc. OHASAS-18001 is occupational health and safety management system and this generic management system standard assures the continuous improvement of occupational health and safety performance. It impacts our occupational safety, work place conditions, sanitary facilities and risk management, ISO-14001 is environment management system and this generic management system standard assures environmental management. It continues to reduce textiles environment impact on the entire production process. ISO-9001 is a quality assurance system and this generic management system standard assures the quality of an organization's management system. This impacts the continuous improvement of product quality and increase customer orientation. Eco-tex promotes product responsibility and consumer health and this Table guarantees ecological standards of textiles during production. Global Organic Textile Standard (GOTS) is a non profit business organization who focuses on facilitating the growth of a global organic cotton industry. It also reduces the usage of synthetic fertilizer and pesticides in the cultivation of cotton (Gur and Kale, 2009). An attempt has been made in this section to evaluate and investigate the scenario of environment protection strategies of sample mills according to the achievement of standard certificates which is shown in Table below-

Table 5.2.1(a_1)
Scenario of environment protection system of 15 sample mills according to the achievement of standard certificate

Name of standards	Meaning of Standards	Number of companies certified by the standard	As % of Total	Number of companies not certified by the standard	As % of Total
OHASAS-18001	This standard assures the continuous improvement of occupational health and safety performance.	05	33.33	10	66.66
ISO-14001	This standard assures environmental management that continues to reduce the industry's environmental impact on the entire production process.	10	66.66	05	33.33
ISO-9001	This assures the quality of an organization's management system	11	73.33	04	26.66
Eco-Tex	This label guarantees ecological standard and promotes product responsibility and consumer health	05	33.33	10	66.66
BSTI	This standard assured the quality of product	15	100	00	00

Source: Field Survey, 2010-11.

Table-5.2.1(a_1) shows that only 5 companies achieved OHASAS-18001 standard certificate which was 33.33 percent of total observed companies. But this standard assures the continuous improvement of occupational health and safety performance. A closer look into the Table shows that maximum companies did not have eco-tex standard certificate but this label guarantees ecological standard and promotes product responsibility and consumer health. A question was made to them about it. But the answer to this question was that these standards need not to be maintained by those companies that are not engaged with exporting. But the people of our country like foreign people are also demanding to have eco-textiles products for keeping ecological standard and consumer health.

5.2.2 Analysis of Textile Mills' Responsibility According to Their Contribution to National Pollution Load

Production of economically competitive products is the driving force behind any successful business. But production frequently requires the use of various chemicals throughout the manufacturing process. The purchase and storage of these chemicals, their use in the process and the ultimate disposal of the waste generated by the manufacturing process can present many challenges (Lawrence, 1996). Such challenges involve ecological crisis, disposal costs, waste management, and worker health and safety. Threats to life supporting ecology caused principally by human activities in an industrial

society can be defined as pollution. Specific concerns include global warming, loss of habitat and biodiversity, as well as air, water and land pollution (Pearce and Robinson, 2006). Air pollution is created by dust particles and gaseous discharges that contaminate the air and water pollution occurs principally when industrial toxic wastes are dumped or leak into the nation's water ways. Land pollution is caused by the need to dispose of ever-increasing amounts of wastes. Everyday packaging is a major contributor to this problem. Land pollution is more dauntingly caused by the disposal of industrial toxic wastes in undergrounds sites. However, the contribution to national pollution load varies among the industrial sub-sectors. The distribution of industrial sub-sectors according to their contribution to national pollution load has been shown in the following Table:

Table 5.2.2(b_1)
Scenario of distribution of industrial sub-sectors according to their contribution to national pollution load

Types of Industry	% of Toxic chemical to land	% of toxic chemical to Air	% of Toxic metal to water
Textile	14.02	21.72	8.20
Tanneries	15.64	8.40	1.56
Non Ferous metal	12.01	6.52	6.10
Iron & Steal	12.09	3.04	53.55
Sugar & Refineries	2.02	0.61	0.00
Chemicals	6.25	2.59	8.09
Cement	0.09	0.01	0.00
Fertilizers/Persticides	10.03	10.68	2.09
Vegetables Oil	4.65	1.15	0.06
Tobacco	0.53	7.71	0.00
Drug/Medicine	8.99	8.65	0.58
Chemical Products	1.76	5.58	6.31
Total	88.02	76.64	86.55

Source: Heltige,M. and Brandon,C., 1997.

Table 5.2.2(b_1) indicates that 88.02 percent of national pollution load of toxic chemical to land has been occurred by the business firms of industrial sub sectors. And 14.02 percent pollution of total 88.02 percent of toxic chemical to land has been made by the textiles only which are the second highest among total industrial sub sector. A closer look into the table shows that 76.64 percent of national pollution load of toxic chemical to air has been occurred by industrial sub sectors. Among them textile firms contributed. 21.72 percent of national pollution load of toxic chemical to air which is the highest among them. Besides this, 8.20 percent toxic metal has been released to the water by the textiles among the total 86.55 percent national pollution load of toxic metal to water. Which has become a great threatening for us?

5.2.3 Analysis of Scenario of Managing Environment Responsibility of Sample Mills According to the Environment Management Strategy

Environment is affected in many ways by the functions of business organizations. So they need to take protection strategy as to what pollution can be minimized. Many strategies and policies are existing in this respect. Among them, pollution control strategy, pollution prevention strategy, cleaner production strategy, environment management plan, environment monitoring plan, waste management strategy and product recycling strategy are very much well known. Pollution control strategy is that whenever pollution is generated then the companies try to dispose of it but pollution prevention strategy is better than pollution control strategy. Pollution prevention (also known as source reduction) is the act of eliminating the pollutant before it is generated (Lawrence, 1996). Pollution prevention or source reduction is a philosophy that prevents or reduces pollution at the source through cost-effective changes in design and production. It includes practices that reduce the use of hazardous and non hazardous materials, energy, water, and other resources, in addition to practices that protect natural resources through conservation or use that is more efficient. Such changes-(i) offer industry substantial savings in reduced raw materials, pollution control, liability costs. (ii) Protect the environment and (iii) reduce risks to worker health and safety. Recycling and reuses are also considered to be a form of pollution prevention, because post-processing materials, which would normally be disposed of, are reintroduced into the generating process (Lawrence, 1996). This not only extends the life of the waste raw materials but minimizes the introduction of additional raw material into the process. However, numerous pollution control or waste management strategies applied only after wastes have been generated. Many waste management practices used to date have merely collected pollutants and moved them from one environmental medium to another. Companies should recognize that transferring hazardous wastes to another environmental medium is not effective pollution or waste management strategy. So it is necessary to examine the scenario of sample mills' responsibility according to the environment management strategy.

Table-5.2.3(c_1)
Scenario of managing environment responsibility of sample mills according to the environment management strategy

Type of Protection strategy	Frequency Among total Sample mills	As % of Total	Frequency among total sample mills who don't adopt this strategy	As % of Total
Pollution Control Strategy	14	93.33	01	6.66
Pollution Prevention Strategy	03	20.00	12	80.00
Cleaner Production Strategy	03	20.00	12	80.00
Environment Management Plan	07	46.66	08	53.33
Environment Monitoring Plan	07	46.66	08	53.33
Waste Management Strategy	10	66.66	04	26.66
Product Recycling Strategy	02	13.33	14	93.33

Source: Field Survey, 2010-11.

The Table-5.2.3(c_1) indicates that fourteen companies adopted pollution control strategy which was 93.33 percent of total companies. Only three companies have taken pollution prevention strategy which was 20% of the total companies and the same contribution is for the cleaner production strategy. Only seven companies which was 46.66 percent of total 15 companies had environment management plan and environment monitoring plan. Waste management strategy had been adopted by only 10 companies which was 66.66 percent of total sample companies. A closer look into the Table shows that only two companies which were 13.33 percent of the total observed companies have got product recycling strategy. So, it can be said that overall environment protection strategy is not up to the mark in the textile industry.

5.2.4 Analysis of Opinion of Stakeholders regarding the Level of Satisfaction on Environment Responsibility of Sample Companies to the Environment.

The opinion of stakeholders regarding the level of satisfaction on environment responsibility of sample companies to the environment has been shown in the following Table:

Table-5.2.4(d_1)
Scenario of stakeholders' opinion regarding the level of satisfaction on environment responsibility of sample companies to the environment

Contribution Areas	Type of stakeholders	Level of Performance				Total Stakeholders
		Satisfactory	Moderately	Minimum	Do not perform	
Waste Disposal System, Pollution Control or prevention, Effluent Treatment Problem, Ecological Problem	Shareholders	02	03	04	01	10
	Employees/ Workers	01	05	02	02	10
	Consumers	00	02	06	02	10
	Scholars	03	01	04	02	10
	Professionals	02	01	04	03	10
	Total	08	12	20	10	50
	As % of Total	16%	24%	40%	20%	100%

Source: Field Survey, 2010-11.

It is shown in the Table-5.2.4(d_1) that 16 percent stakeholders think that social responsibility of textile companies to the environment is satisfactory in Bangladesh, 64 percent stakeholders say that textile industry moderately discharge their social responsibility to the environment. 12 percent stakeholders opine that Textile business discharge minimum responsibility to the environment and 08 percent stakeholders say that textile business in Bangladesh did not perform its responsibility toward environment.

From the above discussion, it is revealed that textile businesses are not properly discharging its responsibility to the environment in Bangladesh.

CHAPTER FIVE
Data Analysis and Interpretation

SECTION THREE
Analysis and Evaluation of Financial and Economic Sustainability Strategies of Sample Mills

Section Three-5.3: Section Three: Analysis and Evaluation of Financial Strategies and Economic Sustainability Strategies of Sample Mills

5.3.0 Prelude

Financial planning of a company has close links with strategic planning. The company's strategy is a central theme that establishes effective and efficient match between its resources, opportunities and risks created by environmental change (Pandey, 2006). Thus, financial analysis is the starting point for making plan before using any sophisticated forecasting and planning procedures. Understanding the past is a prerequisite for anticipating the future (Pandey, 2006). It provides a mechanism of integrating goals of multiple stakeholders. Financial plan should be developed within the overall context of the strategic planning. Financial analysis is one of the most important tools for assessing the strength of an organization within its industry. Managers, investors, and creditors all employ some form of this analysis as the beginning point for their financial decision making (Pearce and Robinson, 2006). Economic sustainability, on the other hand, forces us to look on the internal and external implications of sustainability management. This means that managing economic-sustainability must include (Doane and Gillivary, 2001). (i) the financial performance of a company; (ii) how the company manages its tangible and intangible assets; (iii) its influence on the wider economy; and (iv) how it influences and manages social and environmental impacts. However, management should be particularly interested in knowing financial strengths of the firm to make their best use and to be able to spot out financial weaknesses of the firm to take suitable corrective actions. The future plans of the firm should be laid down in view of the firm's financial strengths and weaknesses. Management is interested in evaluating every aspect of the firm's performance. They have to protect the interests of all parties and see that the firm grows profitably.

In view of the requirements of the various users of ratios, we may classify them into the following four important categories:

- Liquidity ratios
- Leverage ratios
- Activity ratios
- Profitability ratios

Liquidity and leverage ratios represent an assessment of the risk of the firm. Activity and profitability ratios are measures of the return generated by the assets of the firm. Each of these ratios is analyzed below:

5.3.1 Analysis of Liquidity Ratios for the Measurement of Firm's Ability to Meet the Current Obligation

Liquidity ratios are used as indicators of a firm's ability to meet its obligations as and when they become due. The best-known liquidity ratio is the current ratio: current assets divided by current liabilities. The current ratio of the sample mills has been shown by the following Table-5.3.1(a_1).

Table 5.3.1(a_1)
Analysis of Current Ratio

Year / Mills	2006-07	2007-08	2008-09	2009-10	2010-11	Company Average	Industry Average	SD	Max	Min	t-test
DDML	1.04	1.35	1.14	1.41	1.41	1.27	2.00	0.17	1.41	1.04	16.719**
BSML	1.68	2.09	2.09	1.92	2.35	2.03	2.00	0.25	2.35	1.68	18.338**
STML	1.51	1.26	1.42	1.47	1.57	1.45	2.00	0.12	1.57	1.26	27.494**
MKSML	0.73	0.88	1.22	1.26	2.67	1.35	2.00	0.77	2.67	0.73	3.925
AnTML	1.08	0.96	0.98	0.49	0.42	0.79	2.00	0.31	1.08	0.42	5.733
AIL	0.90	0.66	0.61	0.91	0.83	0.78	2.00	0.14	0.91	0.61	12.597**
RSML	1.03	1.35	1.08	3.15	0.94	1.51	2.00	0.93	3.15	0.94	3.633
HTML	0.97	0.98	0.93	0.98	1.01	0.97	2.00	0.03	1.01	0.93	75.597**
AWML	0.90	0.94	0.76	0.89	1.07	0.91	2.00	0.11	1.07	0.76	18.336**
TTML	0.99	0.98	1.17	1.09	1.06	1.06	2.00	0.08	1.17	0.98	30.365**
MSML	1.26	1.44	1.23	3.20	2.02	1.83	2.00	0.83	3.20	1.23	4.935
TSML	1.07	1.38	1.20	1.80	1.60	1.41	2.00	0.30	1.80	1.07	10.677**
AlTML	1.45	1.31	1.55	1.43	2.47	1.64	2.00	0.47	2.47	1.31	7.801
CMTML	0.87	0.52	0.41	0.60	3.51	1.18	2.00	1.31	3.51	0.41	2.014
AsKML	0.94	1.11	1.11	1.13	1.10	1.08	2.00	0.08	1.13	0.94	30.939**
** t test is significant at 5% level of significance (2 tailed)											

Source: Annual Report of 15 sample mills from 2006-07 to 2010-11

Table-5.3.1(a_1) shows the average current ratios of 15 sample mills during the period from 2006-07 to 2010-11. The average current ratio of DDML, STML, MKSML, AnTML, AIL, RSML, HTML, AWML, TTML, MSMI, TSML, AlTML, AsKML were 1.27, 2.03, 1.45, 1.35, 0.79, 0.78, 1.51, 0.97, 0.91, 1.06, 1.83, 1.41, 1.64, 1.18 and 1.08 respectively. The highest current ratios of all the sample mills were 1.41, 2.35, 1.57, 2.67, 1.08, 0.91, 3.15, 1.01, 1.07, 1.17, 3.20, 1.80, 2.47, 3.51 and 1.19 respectively and on the other hand lowest ratios were 1.04, 1.68, 1.26, 0.73, 0.42, 0.61, 0.94, 0.93, 0.76, 0.98, 1.23, 1.07, 1.31, 0.41 and 0.94 respectively. Standard deviation was maximum in case of CMTML (i.e., 1.31) and the

lowest was observed in case of HTML (0.03). A current ratio of 2 times is considered as standard norm. The analysis shows that none of the sample mills had reached the standard norm except for BSML (2.03) and they are far behind standard which implies that the ability to meet current obligation are at stake. The values indicate that variation in the current ratio was only significant in case of DDML, BSML, STML, AIL, HTML, AWML, SML and ASKML and others had insignificant variation during the period.

5.3.2 Analysis of Leverage Ratios for the Evaluation of Long-term Financial Position of the Sample Mills

A firm should have a strong long term financial position. To judge the long-term financial position of the firm, financial leverage, or capital structure ratios are calculated. These ratios indicate mix of funds provided by owners and lenders (Pandey,2006). Leverage ratios identify the source of a firm's capital-owners` or outside creditors'. However, the most commonly used leverage ratios are debt to total asset ratio and debt to equity ratio among the total leverage ratios. The debt to total asset ratio is calculated by total debt divided by total assets and debt to equity ratio is computed by dividing long term debt by the stakeholders' equity (Robinson, 2006). The major leverage ratios of the sample mills have been shown by the following Table:

Table 5.3.2(b_1)
Analysis of Debt to total asset ratio

Year / Mills	2006-07	2007-08	2008-09	2009-10	2010-11	Company Average	Industry Average	SD	Max	Min	t-test
DDML	0.33	0.38	0.31	0.33	0.23	0.32	0.35	0.05	0.38	0.23	12.944**
BSML	0.63	0.32	0.3	0.3	0.22	0.35	0.35	0.16	0.63	0.22	4.979
STML	0.22	0.21	0.23	0.3	0.04	0.20	0.35	0.10	0.30	0.04	4.65
MKSML	0.6	0.94	0.3	0.81	0.32	0.59	0.35	0.29	0.94	0.30	4.639
AnTML	0.43	0.43	0.54	0.65	0.66	0.54	0.35	0.11	0.66	0.43	10.767**
AIL	0.18	0.25	0.1	0.31	0.21	0.21	0.35	0.08	0.31	0.10	5.988
RSML	0.21	0.22	0.38	0.15	0.38	0.27	0.35	0.11	0.38	0.15	5.67
HTML	0.23	0.19	0.17	0.17	0.17	0.19	0.35	0.03	0.23	0.17	15.949**
AWML	0.5	0.16	0.47	0.93	0.47	0.51	0.35	0.27	0.93	0.16	4.117
TTML	0.3	0.39	0.46	0.53	0.08	0.35	0.35	0.17	0.53	0.08	4.517
MSML	0.2	0.12	0.18	0.01	0.17	0.14	0.35	0.08	0.20	0.01	3.983
TSML	0.23	0.38	0.42	1.76	0.57	0.67	0.35	0.62	1.76	0.23	2.423
AlTML	0.36	0.29	0.3	0.36	0.41	0.34	0.35	0.05	0.41	0.29	15.604**
CMTML	0.6	0.49	0.27	0.22	0.11	0.34	0.35	0.20	0.60	0.11	3.752
AsKML	0.6	0.59	0.56	0.52	0.62	0.58	0.35	0.04	0.62	0.52	33.151**

Source: Annual Report of 15 sample mills from 2006-07 to 2010-11.

The Above Table-5.3.2(b_1) shows the debt to total assets ratios of sample mills during the period from 2006-07 to 2010-11. The average debt to total assets ratios was highest in case of TSML (i.e. 0.67) and the lowest ratios was observed in case of MSML (i.e. 0.14). A ratio of 35% (0.35) debt to total assets has been considered as standard norm. So debt to total assets ratios were quite satisfactory in case of BSML, MKSML, AnTML, AWML, TTML, TSML, AsKML but the rest of the sample mills were not able to maintain the standard norm during that period and they are below the norm which indicates that fund contributed by the creditors are always in danger for them. Standard deviation (SD) indicates the variation in debt to total assets ratios that was highest in case of TSML (0.62) and the lowest was observed in case of HTML i.e. 0.03. The t value indicates that variation in the debt to total asset ratios was significant only in case of DDML, AnTML, HTML, AlTML, AsKML and others had insignificant variation during the study period.

Table-5.3.2(b_2)
Analysis of Debt equity Ratios

Year / Mills	2006-07	2007-08	2008-09	2009-10	2010-11	Company Average	Industry Average	SD	Max	Min	t-test
DDML	1.22	1.27	1.04	0.9	0.29	0.94	0.50	0.39	1.27	0.29	5.356
BSML	1.73	0.44	0.48	0.42	0.32	0.68	0.50	0.59	1.73	0.32	2.565
STML	0.44	0.41	0.41	0.55	0.75	0.51	0.50	0.14	0.75	0.41	7.897
MKSML	1.7	0.9	0.38	0.33	0.45	0.75	0.50	0.58	1.70	0.33	2.918
AnTML	0.78	0.78	1.17	1.85	1.94	1.30	0.50	0.56	1.94	0.78	5.175
AIL	0.58	0.98	0.46	1.61	1.21	0.97	0.50	0.47	1.61	0.46	4.616
RSML	2.77	0.96	0.54	0.25	0.17	0.94	0.50	1.07	2.77	0.17	1.96
HTML	0.81	0.74	0.73	0.71	0.73	0.74	0.50	0.04	0.81	0.71	43.244**
AWML	0.98	0.91	1.85	2.42	1.52	1.54	0.50	0.63	2.42	0.91	5.463
TTML	1	0.85	2.68	3.01	0.1	1.53	0.50	1.26	3.01	0.10	2.722
MSML	0.04	0.95	0.28	0.01	0.03	0.26	0.50	0.40	0.95	0.01	1.464
TSML	1.06	1.94	2.67	3.92	4.01	2.72	0.50	1.27	4.01	1.06	4.782
AlTML	0.89	0.98	0.95	1.85	1.8	1.29	0.50	0.49	1.85	0.89	5.952
CMTML	0.33	1.12	0.42	0.24	0.11	0.44	0.50	0.39	1.12	0.11	2.514
AsKML	0.3	0.2	0.13	0.04	0.0007	0.13	0.50	0.12	0.30	0.00	2.48
** t values is significant at 5% level (2 tailed)											

Source: Annual Report of 15 sample mills from 2006-07 to 2010-11.

The above Table shows the debt-equity ratios of the sample mills during the period from 2006-07 to 2010-11. Average debt-equity ratios was highest in case of TSML ie. 2.72 followed by AWML (1.54), TTML (1.53), AnTML (1.30), AlTML (1.29), AlL (0.97), DDML (0.94), RSML (0.94), MKSML (0.75), HTML (0.74), BSML (0.68), STML (0.51), CMTML (0.44), MSML (0.26) and AsKML (0.13). The ratio 0.50 is considered as standard norm. Most of the sample mills (12 mills) among the total sample mills were able to maintain

the standard norm which indicate that fund provided by the owners was higher than the funds provided by the creditors. Standard deviation indicates the variation in debt-equity ratios of sample mills during the period that was highest in TSML i.e. 1.27 and the lowest was observed in case of HTML (0.04). The t values indicate that variation in the debt-equity ratios was significant only in case of HTML at 5% level of significance having 4 degrees of freedom and others had got insignificant variation during the study period.

5.3.3 Analysis of Activity Ratios to Evaluate the Firm's Efficiency in utilizing its Assets

Activity ratios are employed to evaluate the efficiency with which the firm manages and utilizes its assets. Several activity ratios can be calculated to judge the effectiveness of asset utilization (Pandey, 2006). Among the total activity ratios, asset-turnover ratio, fixed asset turn over ratios and inventory-turn over ratios are very much well known. The asset turnover ratio indicates how efficiently management is employing total assets. It is calculated by dividing sales by total assets. The ratio of sales to fixed assets is a measure of the turnover on plant and equipment. It is calculated by dividing sales by net fixed assets. Another activity ratio is inventory turnover, estimated by dividing sales by average inventory. However, these activity ratios of the sample mills have been exhibited by the following Tables.

Table 5.3.3(c_1)
Analysis of asset – turnover ratio

Year / Mills	2006-07	2007-08	2008-09	2009-10	2010-11	Company Average	Industry Average	SD	Max	Min	t-test
DDML	0.35	0.65	0.64	0.43	0.26	0.47	0.50	0.17	0.65	0.26	5.983
BSML	0.33	0.31	0.27	0.35	0.5	0.35	0.50	0.09	0.50	0.27	8.958
STML	0.72	0.52	0.7	0.67	0.72	0.67	0.50	0.08	0.72	0.52	17.699**
MKSML	0.65	0.45	0.35	0.43	0.29	0.43	0.50	0.14	0.65	0.29	7.1
AnTML	0.48	0.46	0.36	0.4	0.42	0.42	0.50	0.05	0.48	0.36	19.856**
AIL	0.13	1.23	1.06	0.52	0.9	0.77	0.50	0.44	1.23	0.13	3.877
RSML	0.52	0.62	0.57	0.84	0.52	0.61	0.50	0.13	0.84	0.52	10.326**
HTML	0.9	1.21	1.2	1.08	1.54	1.19	0.50	0.23	1.54	0.90	11.331**
AWML	1.52	1.38	0.84	4.3	0.12	1.63	0.50	1.59	4.30	0.12	2.296
TTML	1.53	0.54	1.06	1.39	0.41	0.99	0.50	0.50	1.53	0.41	4.42
MSML	0.94	0.69	0.09	0.09	0.48	0.46	0.50	0.37	0.94	0.09	2.743
TSML	0.98	0.92	0.65	0.62	0.62	0.76	0.50	0.18	0.98	0.62	9.577
AlTML	0.26	0.71	0.27	0.008	0.45	0.34	0.50	0.26	0.71	0.01	2.92
CMTML	0.58	0.53	0.69	0.6	0.33	0.55	0.50	0.13	0.69	0.33	9.118
AsKML	1.85	1.73	1.8	1.9	2.08	1.87	0.50	0.13	2.08	1.73	31.67**
** t values is significant at 5% Level of Significance											

Source: Annual Report of 15 sample mills from 2006-07 to 2010-11.

The above Table shows that the average asset-turnover ratios was highest in case of AsKML i.e. 1.87 and the lowest asset-turnover ratios was observed in case of AlTML (i.e. 0.34). A standard value for asset-turnover ratio is 0.50 as normal. It has been seen from this Table that among the total sample mills, STML, AIL, RSML, HTML, AWML, TTML, TSML, CMTML and AsKML have exceeded that standard value and others have not been able to maintain standard norm in all the years during the period. Standard deviation indicates the variation in asset-turnover ratios of sample mills that was the highest in case of AWML (i.e. 1.59) and the lowest was observed in case of AnTML (i.e. 0.05). The t-values indicate that the variation in the asset-turnover ratios was significant in case STML, AnTML, RSML, HTML and AsKML and the rest of them had insignificant variation during the period.

Table-5.3.3(C_2)
Analysis of fixed asset-turnover ratio

Year / Mills	2006-07	2007-08	2008-09	2009-10	2010-11	Company Average	Industry Average	SD	Max	Min	t-test
DDML	0.6	1.13	1.13	0.49	0.37	0.74	0.80	0.36	1.13	0.37	4.6
BSML	0.21	0.62	0.53	0.69	0.48	0.51	0.80	0.18	0.69	0.21	6.142
STML	1.61	1.28	1.7	1.92	2.16	1.73	0.80	0.33	2.16	1.28	11.708**
MKSML	1.26	1.16	0.75	1.147	1.172	1.10	0.80	0.20	1.26	0.75	12.31**
AnTML	0.47	0.44	0.33	0.38	0.38	0.40	0.80	0.06	0.47	0.33	16.196**
AIL	2.86	2.08	1.84	0.94	1.88	1.92	0.80	0.69	2.86	0.94	6.266
RSML	0.33	0.77	0.84	1.57	0.9	0.88	0.80	0.45	1.57	0.33	4.43
HTML	1.77	2.63	2.66	2.51	4.12	2.74	0.80	0.85	4.12	1.77	7.17
AWML	3.45	3.06	1.86	0.8	0.19	1.87	0.80	1.40	3.45	0.19	2.982
TTML	1.49	1.2	1.96	3.02	0.43	1.62	0.80	0.96	3.02	0.43	3.774
MSML	2.26	1.22	1.108	0.923	1.38	1.38	0.80	0.52	2.26	0.92	5.923
TSML	2.41	0.46	1.4	1.31	1.14	1.34	0.80	0.70	2.41	0.46	4.289
AlTML	0.55	1.32	0.54	0.016	0.833	0.65	0.80	0.48	1.32	0.02	3.062
CMTML	0.57	0.44	0.56	0.54	0.55	0.53	0.80	0.05	0.57	0.44	22.603**
AsKML	1.87	1.89	1.73	1.58	2.12	1.84	0.80	0.20	2.12	1.58	20.455**
** t values is significant at 5% LS											

Source: Annual Report of Sample Mills from 2006-07 to 2010-11.

The Table stated above shows the analysis of fixed asset-turnover ratios of 15 sample textile mills during the period from 2006-07 to 2010-11. The average fixed asset-turnover ratio was highest in case of HTML i.e. 2.74 and the lowest was observed in case of AnTML (0.40). A ratio of 0.80 fixed asset-turnover ratios has been considered as standard norm. Among the total sample mills, 10 mills had achieved this standard during that period but others were not able to utilize its fixed assets in generating sales. Standard deviation (SD) indicates the variation in the fixed asset-turnover ratios of sample mills that was the highest in case of AWML (i.e. 1.40) and the lowest in case of AnTML (i.e.

0.06). The t-values indicate that the variation in fixed asset-turnover ratios was significant in case of STML, MKSML, AnTML, CMTML and AsKML and the others had insignificant variation during the period.

Table-5.3.3(C_3)
Analysis of inventory-turnover ratio

Year / Mills	2006-07	2007-08	2008-09	2009-10	2010-11	Company Average	Industry Average	SD	Max	Min	T-test
DDML	1.67	2.71	3.39	2.37	2.11	2.45	0.35	0.65	3.39	1.67	8.449
BSML	1.16	1.18	1.03	1.2	1.17	1.15	0.35	0.07	1.20	1.03	37.972**
STML	4.48	2.4	4.11	2.73	4.27	3.60	0.35	0.96	4.48	2.40	8.388
MKSML	14.8	2.04	0.96	1.39	1.71	4.18	0.35	5.95	14.80	0.96	1.571
AnTML	2.75	2.79	1.95	2.83	2.61	2.59	0.35	0.37	2.83	1.95	15.839**
AIL	3.12	2.89	4.3	2.11	3.9	3.26	0.35	0.86	4.30	2.11	8.47
RSML	5.21	4.41	3.22	0.02	3.51	3.27	0.35	1.98	5.21	0.02	3.697
HTML	8.81	9.23	11.65	10.75	10.81	10.25	0.35	1.19	11.65	8.81	19.306**
AWML	1.95	1.99	2.25	1.5	0.55	1.65	0.35	0.67	2.25	0.55	5.496
TTML	1.74	1.64	1.34	1.74	1.84	1.66	0.35	0.19	1.84	1.34	19.297**
MSML	2.1	2.62	3.58	2.34	2.82	2.69	0.35	0.57	3.58	2.10	10.622**
TSML	1.88	0.34	2.72	2.83	3.07	2.17	0.35	1.12	3.07	0.34	4.344
AlTML	0.29	1.23	1.21	0.02	1.93	0.94	0.35	0.78	1.93	0.02	2.699
CMTML	0.3	2.59	2.55	4.55	3.45	2.69	0.35	1.56	4.55	0.30	3.844
AsKML	10.74	9.56	8.25	10.56	8.72	9.57	0.35	1.10	10.74	8.25	19.498**

** t values is significant at 5% Level of significance

Source: Annual Report of 15 Sample Mills during the period from 2006-07 to 2010-11.

The Table stated above shows that the average inventory-turnover ratio was highest in case of HTML (10.25) and the lowest for AlTML (0.94). A ratio of 0.35 for inventory-turnover ratio is considered as the reasonable norm for an efficient firm and higher inventory-turnover represents larger amount of profit. All the firms had reached this standard that means during the period, all sample mills had satisfactory inventory turnover ratio. Standard deviation indicates the variation in the inventory turnover ratio that was highest in case of RSML and the lowest was for BSML (0.07). The t-values indicate that the variation in the inventory-turnover ratios was significant in case of AnTML, HTML, TTML, MSML, ASKML and the others had insignificant variation during the period at 5% LS having 4 degrees of freedom.

5.3.4 Analysis of Profitability Ratios to Measure the Overall Performance and Effectiveness of the Sample Mills

A company should earn profits to survive and grow over a long period of time. Profits are essential, but it would be wrong to assume that every action initiated by management of a company should be aimed at maximizing profits, irrespective of concerns for customers,

employees, suppliers or social and environmental consequences. It is unfortunate that the word 'profit' is looked upon as a term of abuse since some firms always want to maximize profits at the cost of employees, customers and society. Except such infrequent cases, it is a fact that sufficient profits must be earned to sustain the operations of the business to be able to obtain funds from investors for expansion and growth and to contribute towards the social overheads for the welfare of the society (Pandey, 2006). However, the profitability ratios are calculated to measure the operating efficiency of the company. The major profitability ratios are net profit margin ratio, return on investment or assets and return on equity ratio. The net profit margin ratio is measured by dividing profit after tax by sales. The conventional approach of calculating return on investment (assets) is to divide profit after tax (PAT) by investments (total assets). The return on equity ratio is net profit after taxes divided by shareholders' equity (net worth) (Pandey, 2006). The major profitability ratios of the sample mills have been analyzed by the following Table:

Table-5.3.4(d_1)
Analysis of return on assets

Year / Mills	2006-07	2007-08	2008-09	2009-10	2010-11	Company Average	Industry Average	SD	Max	Min	T-test
DDML	0.013	0.017	0.018	0.028	0.025	0.020	0.15	0.01	0.03	0.01	8.449
BSML	-0.041	0.009	0.006	0.013	0.036	0.005	0.15	0.03	0.04	-0.04	37.972**
STML	0.097	0.04	0.048	0.086	0.086	0.071	0.15	0.03	0.10	0.04	8.388
MKSML	0.0814	0.093	0.117	0.231	0.096	0.124	0.15	0.06	0.23	0.08	1.571
AnTML	-0.024	2.69	2.06	0.029	0.037	0.958	0.15	1.31	2.69	-0.02	15.839**
AIL	0.76	0.25	2.38	-3.49	0.18	0.016	0.15	2.15	2.38	-3.49	8.47
RSML	0.01	0.06	0.098	0.41	0.331	0.182	0.15	0.18	0.41	0.01	3.697
HTML	0.027	0.026	0.025	0.029	0.05	0.031	0.15	0.01	0.05	0.03	19.306**
AWML	-0.114	0.425	0.162	0.034	0.028	0.107	0.15	0.20	0.43	-0.11	5.496
TTML	0.006	1.18	0.01	0.01	0.007	0.243	0.15	0.52	1.18	0.01	19.297**
MSML	0.036	0.034	0.051	0.007	0.015	0.029	0.15	0.02	0.05	0.01	10.622**
TSML	0.23	0.384	0.42	0.005	0.018	0.211	0.15	0.20	0.42	0.01	4.344
AlTML	0.021	0.02	-0.029	-0.044	0.084	0.010	0.15	0.05	0.08	-0.04	2.699
CMTML	-0.031	0.046	0.058	0.051	0.042	0.033	0.15	0.04	0.06	-0.03	3.844
AsKML	0.057	0.068	0.0168	0.017	0.013	0.034	0.15	0.03	0.07	0.01	19.498**
** t values is significant at 5% LS											

Source: Annual Report from 2006-07 to 2010-11.

The above Table shows that average return on assets was highest for TTML i.e. 0.24 and the lowest for BSML i.e. 0.005. A ratio of 0.15 is standard value for return on assets ratio. Among the total sample mills, only six mills (MKSML, AnTML, RSML, AWML, TTML, TSML) had reached the standard norms and others were not able to achieve standard norm and their return on investment was always far behind from the standard during the period.

Table-5.3.4(d_2)
Analysis of return on equity

Year / Mills	2006-07	2007-08	2008-09	2009-10	2010-11	Company Average	Industry Average	SD	Max	Min	T-test
DDML	0.049	0.058	0.057	0.084	0.045	0.06	0.19	0.02	0.08	0.05	8.616
BSML	0.042	0.009	0.006	0.014	0.05	0.02	0.19	0.02	0.05	0.01	2.665
STML	0.17	0.079	0.083	0.158	0.152	0.13	0.19	0.04	0.17	0.08	6.559
MKSML	0.238	0.165	0.104	0.208	0.049	0.15	0.19	0.08	0.24	0.05	4.447
AnTML	-0.044	4.83	4.44	0.082	0.107	1.88	0.19	2.52	4.83	-0.04	1.7
AIL	0.025	0.009	-0.102	0.176	0.01	0.02	0.19	0.10	0.18	-0.10	1.967
RSML	0.04	0.12	0.143	0.504	0.658	0.29	0.19	0.27	0.66	0.04	2.416
HTML	0.078	0.09	0.099	0.11	0.176	0.11	0.19	0.04	0.18	0.08	6.44
AWML	-0.115	-0.125	0.51	1.19	-0.449	0.20	0.19	0.65	1.19	-0.45	2.443
TTML	0.024	0.01	0.059	0.059	0.007	0.03	0.19	0.03	0.06	0.01	2.773
MSML	0.118	0.055	0.077	0.007	0.021	0.06	0.19	0.04	0.12	0.01	2.796
TSML	0.099	0.107	-0.092	0.036	0.081	0.05	0.19	0.08	0.11	-0.09	6.639
AlTML	0.221	0.129	-0.17	0.228	0.361	0.15	0.19	0.20	0.36	-0.17	1.003
CMTML	-0.017	0.243	0.087	0.055	0.044	0.08	0.19	0.10	0.24	-0.02	2.227
AsKML	0.139	0.165	0.033	0.034	0.033	0.08	0.19	0.07	0.17	0.03	2.752
** t values is significant at 5% LS											

Source: Annual Report from 2006-07 to 2010-11.

The above Table reveals that the average return on equity ratio was highest for AnTML (1.90) and the lowest for BSML and AIL (0.02 for each). A ratio of 0.19 returns on equity (Pandey,2006) has been considered as the standard norm but most of the sample mills failed to achieve standard norms except AnTML, RSML, AWML. Standard deviation (SD) indicates the variation in the return on equity that was the highest for AnTML (1.90) and the lowest was observed in case of DDML and BSML (i.e. 02 for each). The t-values indicate that the variation in return on equity was insignificant for all of the sample mills during the period.

Table-5.3.4(d_3)
Analysis of net profit margin ratio

Year / Mills	2006-07	2007-08	2008-09	2009-10	2010-11	Company Average	Industry Average	SD	Max	Min	T-test
DDML	0.037	0.026	0.026	0.066	0.093	0.05	.04-.06	0.03	0.09	0.03	3.79
BSML	0.045	0.02	0.014	0.027	0.07	0.04	.04-.06	0.02	0.07	0.01	3.473
STML	0.138	0.077	0.067	0.127	0.118	0.11	.04-.06	0.03	0.14	0.07	7.482
MKSML	0.056	0.074	0.123	0.174	0.076	0.10	.04-.06	0.05	0.17	0.06	4.693
AnTML	0.051	5.75	5.67	0.071	0.087	2.33	.04-.06	3.09	5.75	0.05	1.683
AIL	0.005	0.002	0.022	0.067	0.002	0.02	.04-.06	0.03	0.07	0.00	1.578
RSML	0.022	0.079	0.105	0.267	0.317	0.16	.04-.06	0.13	0.32	0.02	2.778
HTML	0.024	0.02	0.02	0.026	0.032	0.02	.04-.06	0.00	0.03	0.02	1.612
AWML	0.018	0.023	0.092	-0.989	0.922	0.01	.04-.06	0.68	0.92	-0.99	1.826
TTML	0.003	0.002	0.101	0.007	0.014	0.03	.04-.06	0.04	0.10	0.00	1.336
MSML	0.037	0.048	0.511	0.078	0.029	0.14	.04-.06	0.21	0.51	0.03	1.512
TSML	0.021	0.016	0.022	0.008	0.018	0.02	.04-.06	0.01	0.02	0.01	6.827
AlTML	0.041	0.026	0.11	0	0.183	0.07	.04-.06	0.07	0.18	0.00	2.17
CMTML	-0.053	-0.202	0.083	0.083	0.13	0.01	.04-.06	0.14	0.13	-0.20	4.231
AsKML	0.03	0.038	0.007	0.008	0.006	0.02	.04-.06	0.02	0.04	0.01	2.641

Source: Annual Report from 2006-07 to 2010-11.

The above Table reveals the analysis of net profit margin ratio of 15 sample mills during the period from 2006-07 to 2010-11. It has been shown in the table that the average net profit margin ratio was the highest in case of AnTML i.e. 2.33 and the lowest for AWML and CMTML (i.e. 0.01 for each). A profit margin ratio ranging from 4% to 6% has been considered as a reasonable norm (Pandey, 2006) but among the total sample mills, only eight mills (DDML, BSML, STML, MKSML, AnTML, RSML, MSML, AlTML) have achieved the standard norm and the others were not able to maintain the standard value. SD indicates the variation in net profit margin ratios that was the highest in case of AnTML and the lowest for TSML (0.01). The t-values indicate that the variation in the net profit margin was insignificant for the entire sample unit during that period.

5.3.5 Analysis of Sustainable Growth Rate of Sample Mills

Strategic financial planning stresses a balanced relationship between financial goals. It asks the question: What growth rate is sustainable given a company's established financial policies? Financial planning model involves considerations of growth, investment and financing (Pandey, 2006). A simple way of ascertaining the growth potential of a company, given its current financial conditions, is to examine the interaction between four financial policy goals expressed as ratios: target sales growth, target return on investment (net assets), target dividend payout, and target debt-equity (capital stricture). The sustainable growth model indicates the sales growth that can be supported by, and is consistent with, the firm's financial policies. The firm will have to revise its financial policies or resort to external equity if it intends to achieve a growth rate higher than the maximum sustainable growth. The firm on the other hand, can consider the alternatives of increasing pay out, reducing debt, or building up liquid assets when its achievable growth rate is lower. Sometimes companies will like to achieve growth that their current financial policies could sustain. However, sustainable growth may be defined as the annual percentage growth in sales that is consistent with the firm's financial policies (assuming no issue of fresh equity) (Boston Consulting Group,1968).

The following model of growth (Pandey,2006) can be used to determine the sustainable growth (gs) in sales:

$$\text{Sustainable Growth} = \frac{\text{Net margin}\times\text{retention}\times\text{leverage}}{\text{Assets to sales - (net margin}\times\text{retention}\times\text{leerage)}}$$

$$\Rightarrow gs = \frac{p\times b\times l}{a - (p\times b\times l)} \quad \text{..... (i)}$$

The sustainable growth approach as expressed in Equation (i) is generally applicable to a single product or single division company. A more general method of determining the sustainable growth rate in case of multi product or multi-division company is to calculate the sustainable growth rate at the corporate level in terms of growth in assets (Varadarajan, 1983). Thus, the growth that a firm can sustain, given its financial goals and policies, can be found out as follows:

$$\text{Sustainable growth} = \text{Assets turnover} \times \text{profit margin} \times \text{leverage factor} \times \text{Retention ratio } (1+\frac{D}{E})$$

$$\therefore\ gs = \frac{S}{NA} \times \frac{PBIT}{S} \times \frac{PAT}{PBIT} \times \frac{RE}{PAT}\ (1+\frac{D}{E}) \text{ ..... (ii)}$$

Where, S = Sales, NA = Net Assets, PBIT = Profit Before Interest and Taxes, PAT = Profit After Taxes, RE = Retained Earnings, D/E = Debt-Equity Ratio.

Notice that Equation (ii) includes all elements of a firm`s financial goals system (Varadarajan, 1983). The following Table-5.3.5 (a1) shows the sustainable growth rate calculation by using equation (ii):

Table-5.3.5(a_1)
Calculation of Sustainable Growth Rate

Name of Sample Mills	Asset Turnover	Profit Margin	Leverage Factor PAT ÷ PBIT	Retention Ratio RE ÷ PAT	$1 + \frac{D}{E}$	Sustainable Growth, gs = 1 × 2 × 3 × 4 × 5
DDML	0.26	0.32	0.84	1.03	1+0.29 =1.29	0.0928 =9.28%
BSML	0.50	0.086	0.81	1.00	1+0.32 =1.32	0.0459 =4.59%
STML	0.67	0.014	0.85	4.23	1+0.75 =1.75	0.0217 =2.17%
MKSML	0.29	0.076	0.68	1.00	1+0.45 =1.45	0.0184 = 1.81%
AnTML	0.42	0.102	0.85	0.17	1+1.94 =2.94	0.0036 =0.36%
AIL	0.90	0.004	0.46	1.00	1+1.21 =2.21	0.2593 =25.93%
RSML	0.52	0.330	0.95	1.36	1+0.17 =1.17	0.1523 =15.23%
HTML	1.54	0.037	0.84	1.84	1+0.73 =1.73	0.0163 =1.6%
AWML	0.12	0.013	1.00	4.77	1+1.20 =2.20	0.0170 =1.7%
TTML	0.41	0.014	0.85	3.17	1+0.10 =1.10	0.0970 =9.7%
MSML	0.48	0.037	0.77	6.9	1+0.03 =1.03	0.1161 =11.61%
TSML	0.62	0.021	0.86	2.07	1+4.01 =5.01	0.1506 =15.06%
AlTML	0.45	0.21	0.85	0.67	1+1.80 =2.80	0.0070 =0.70%
CMTML	0.33	0.15	0.86	0.15	1+0.11 =1.11	0.1462 =14.62%
AsKML	2.08	0.009	0.61	12.80	1+0.0007 =1.0007	0.0801 =8.01%

Source: Annual Report from 2006-07 to 2010-11.

The above Table-5.3.5(a_1) shows the calculation of achievable sustainable growth rate for the fifteen sample companies for current years. It has been shown in the table that sustainable growth rate was the highest in case AIL i.e. 25.99% because of having larger leverage factors (95%) and retention ratio (1.17%), compared to other sample mills. This was followed by RSML (15.23%), TSML (15.06%), CMTML (14.62%), MSML (11.60%), TTML (9.7%), DDML (9.28%), AsKML (8.01%), BSML (4.59%), STML (2.17%), MKSML (1.81%), AWML (1.7%), HTML (1.60%), and AlTML (0.70%), AnTML(0.36%). The lowest sustainable growth rate has been noticed in case of MKSML, AWML, HTML, AITML, AnTML. Since the achievable sustainable growth rate of these firms were lower, they can consider the alternatives of increasing payout, or reducing debt, or building up liquid assets or may revise its financial policies or resort to external equity they intend to achieve a growth rate higher than the maximum sustainable growth.

CHAPTER FIVE
Data Analysis and Interpretation

SECTION FOUR
Assessment of Strategic Management Practices of Sample Mills and Strategy Formulation and Implication for the Textile Industry in Bangladesh

Section Four-5.4: Assessment of Strategic Management Practices of Sample Mills and Formulation and Implication of Strategies for the Textile Industry

5.4.0 Prelude

In reality, company's strategies have been developed by the managers in the strategic management process. Strategic management is related with the formulation and implementation of plans which is designed to achieve the objectives and goals of a company. It is important task that includes environmental scanning, strategy formulation, strategy implementation and evaluation and control. In an external environmental analysis, managers need to examine both specific and general environment to see the trends and changes (Robbins and Coulter, 2012).

Once they have analyzed the environment, managers need to pinpoint opportunities that the organization can exploit and threats that it must counteract. After completing an internal environmental analysis, managers should be able to identify organizational strengths and weakness. The combined external and internal analyses are called SWOT analysis, which is an analysis of organization's strengths, weaknesses, opportunities and threats (Robbins and Coulter, 2012). The factors that are most important to the corporation's future are referred to as strategic factors or SWOT factors. After identifying the factors, the manager evaluates their interaction and determines the appropriateness of the corporate mission. As managers formulate strategies, they should consider the realities of the external environment and design strategies that will help the organization achieve its goal. This section has been analyzed on the basis of executives' opinions of selected textile mills through structured questionnaire with five-point Likert scale method. The opinions collected in this way have been depicted through different ways like frequency Tables with percentage to investigate about how the respondents response to each factor, correlations among factors to observe the interrelationship among the factors and the use of Likert scale for ranking the factors as per their impact in the sample companies.

5.4.1 Analysis of External Environment Factors

The modern executive must respond to the challenges posed by the firm's external environments factors that include; (1) social (2) economic (3) political (4) technological and (5) ecological factors. The executive often is compelled to subordinate the demands of the firm's internal and external environment to the multiple and often inconsistent

requirements of its stakeholders; owners, top managers, employees, communities, customers and country. To deal effectively with everything that affects the growth and profitability of a firm, executives employ management processes that they feel will position it optimally in its competitive environment by maximizing the anticipation of environmental changes and of unexpected competitive demand. In reality, strategist must be aware of the many variables within corporation's societal environments in undertaking environmental scanning.

These variables or forces are as follows —

- Socio-cultural factors that regulate and affect a firm involve the beliefs, values, morals, attitudes, opinions, motion, custom, and lifestyles of persons in the firms external environment as developed from cultural, ecological, demographic, religious, educational and ethnic conditioning (Pearce and Robinson, 2006).
- Political-legal factors that can have dramatic effects on organizations. Laws frame what organizations can and cannot. As a consequence, they can create both challenges and opportunities. For example, new pollution laws significantly increased the operating costs of any firm`s, tax laws can also have a profound effect on business (Hitt, *et.al.*, 2008).
- Economic factors that regulate the exchange of materials, money, energy and information.
- Ecology and Business Responsibility factor in the external environment expose that as a contributor to pollution, business is involved in society's ecological crisis (Davis and Blomstrom, 2012). So, business activities must no longer ignore environmental concerns. Therefore, corporate environmental responsibility must be taken seriously. Despite clean up efforts to date, the jobs of protecting the ecology will continue to be a top strategic priority.
- Technological factors in the external environment that can have brilliant or devastating effects on organizations. A specific technological innovation can spell the birth and growth of one firm and the decline and death of another (Hitt, *et.al*., 2008).

5.4.1(a) Factors Related to Socio – cultural Environment.

The socio- cultural dimension of the external environment includes the customs, values and demographic characteristics of the society in which the organization functions. Socio-cultural processes are important because they determine the products, services and

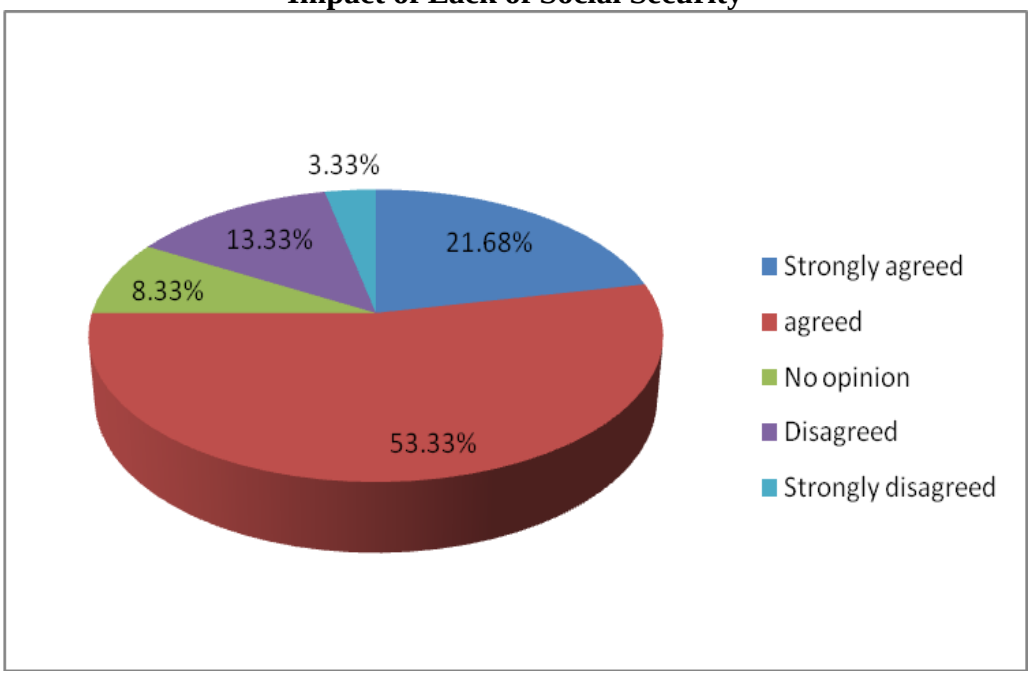
standards of conducts that the society is likely to value (Griffin, 2012). In some counties, for example, consumers are willing to pay premium prices for designer clothes, whereas the same clothes have virtually no market in other countries. Consumer tastes also change over time. Preferences for color, style, taste and so forth change from season to season. And socio – cultural factors influence how worker in a society feel about thin jobs and organizations. Appropriate standards of business conduct also vary across cultures. In reality, socio- cultural factors are important macro environmental factors that should be analyzed while formulating business strategy (Francis, 1997).

Socio- cultural environmental factors have got far reacting influences on the working of a business. So, every firm should analyze a broad range of these societal factors to determine potential threats and opportunities. For a business to be successful, its strategy should be the one that is appropriate in the socio-cultural environment (Smith, *et.al.*, 1988). On the basis of reviewed related literature and the opinions of interviewed executives, the following socio – cultural factors that affect strategic management and overall performance of sample mills have been detected as under:

- Lack of Social Security
- Lack of Proper Education and Training
- Labor Unrests
- Difference in Culture among Workers
- Lack of Accommodation and Recreation Facilities
- Job Commitment
- Lack of Co-operation among Workers

The opinions of corporate mangers regarding the impact of these socio – cultural factors stated above on strategic management are discussed below:

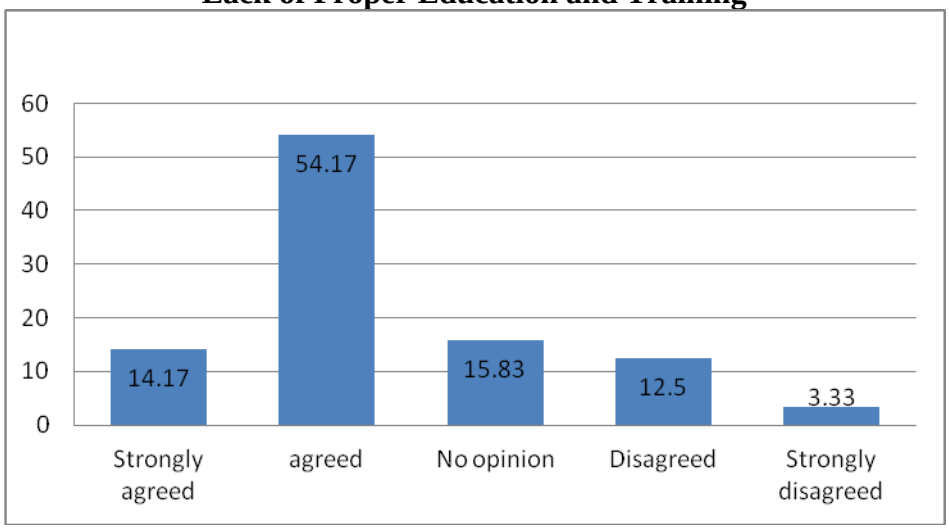
Chart-5.4.1 (a_1)
Impact of Lack of Social Security



Source: Table-01 in the Appendix-II

The chart-5.4.1(a_1) illustrated above displays the opinions of interviewed executives (corporate managers) on the lack of social security as an element of socio-cultural factors. It is signified from this chart that 21.68% (i.e. 26 respondents) out of total respondents (120) strongly agreed and 53.33% (64) out of total respondents agreed that lack of social security has an adverse impact on strategic management and overall performance of the sample mills. On the other hand, 13.33% (16 respondents) out of total respondents disagreed and 8.33% strongly disagreed that there is no adverse impact of lack of social security on overall performance of sample companies. Among the total respondents, only 3.33% (i.e.4 respondents) refrained from commenting on this issue. So, it may be concluded that lack of social security has a hostile impact on strategic management of the sample mills.

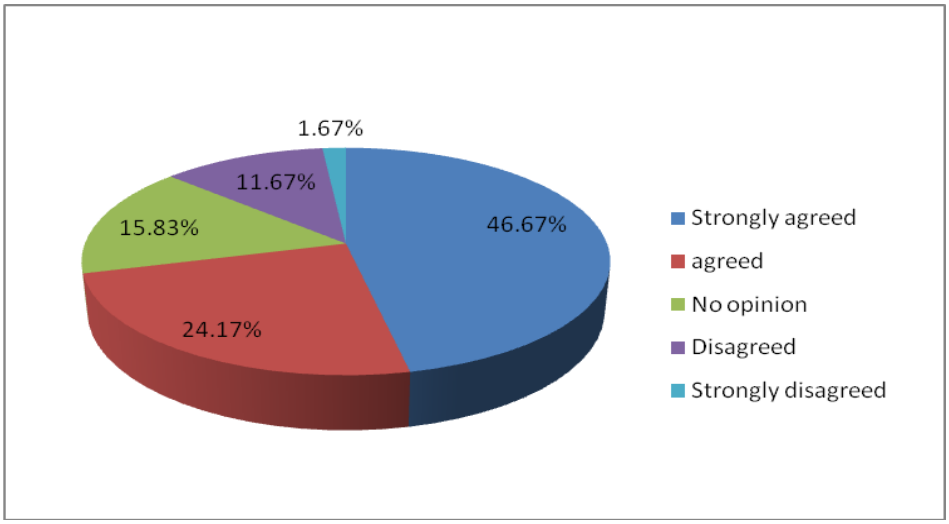
Figure-5.4.1(a_2)
Lack of Proper Education and Training



Source: Table-01 in the Appendix-II

It is betokened from the figure-5.4.1(a_2) that 14.17% (17 respondents) out of total respondents (120) strongly agreed and 54.17% of total respondents agreed that lack of proper education and training of workers has a hostile effect on strategic management and overall performance of the sample companies. On the contrary, 12.50% (i.e. 15 executives) out of total respondents strongly disagreed and 3.33% of total respondents strongly disagreed to the impact of this factor. So, from the opinion of the executives it can be defended that lack of proper education and training of workers has an adverse impact on strategic management and overall performance of sample mills.

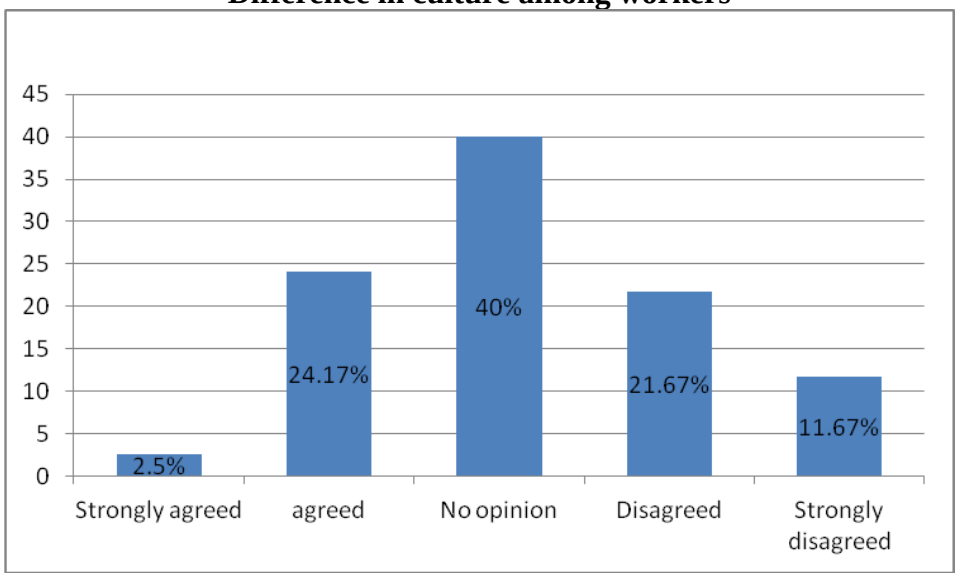
Chart-5.4.1(a_3)
Impact of Labor Unrest



Source: Table-01 in the Appendix-II

The chart-5.4.1(a_3) exhibits the opinions of 120 executives on labor unrests as an element of socio-cultural factors. It is evident from this chart that 46.67% of total respondents strongly agreed and 24.17% agreed that labor unrests have an adverse impact on overall performance of the sample mills of textile industry. Among the total respondents 15.83% (19) took no stand on this matter. But 11.67% of the total respondents disagreed and 1.67% strongly disagreed to the impact of this factor. So, from the opinions, it is evident that labor unrests have had severe negative impact on strategic management and overall performance of the sample mills of this industry.

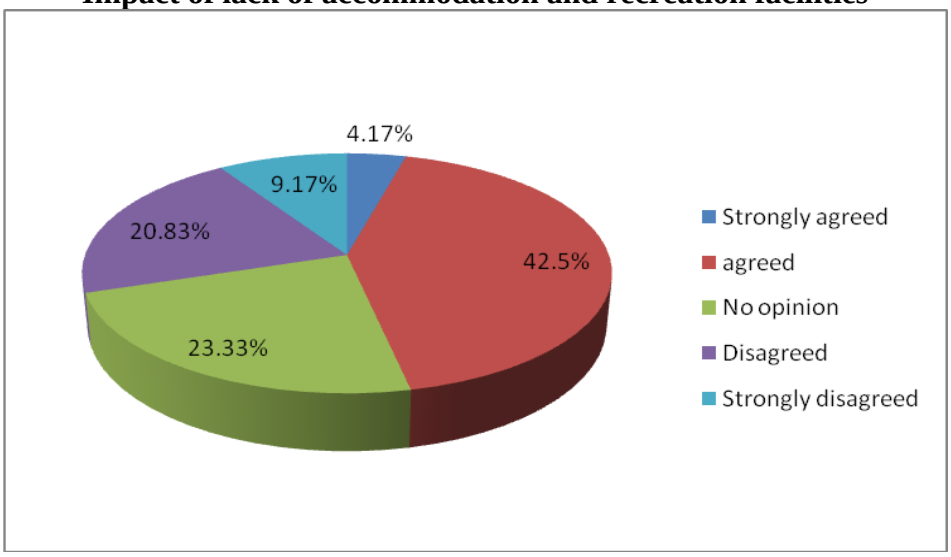
Figure-5.4.1(a_4)
Difference in culture among workers



Source: Table-01 in the Appendix-II

It is denoted from the figure-5.4.1(a_4) that 2.5% (3 respondents) out of 120 respondents strongly agreed and 24.17% of the respondents agreed that difference in culture among workers has an adverse effect on strategic management. 40% (i.e 48) of the total respondents expressed no opinions in this regard. On the other hand, 21.67% (26 respondent, of them disagreed and 11.67% (14) strongly disagreed to the impact of this factor. So, from the opinion of the executives it can be said that difference in culture among workers has had little impact on the overall performance of the sample mills of the textile industry.

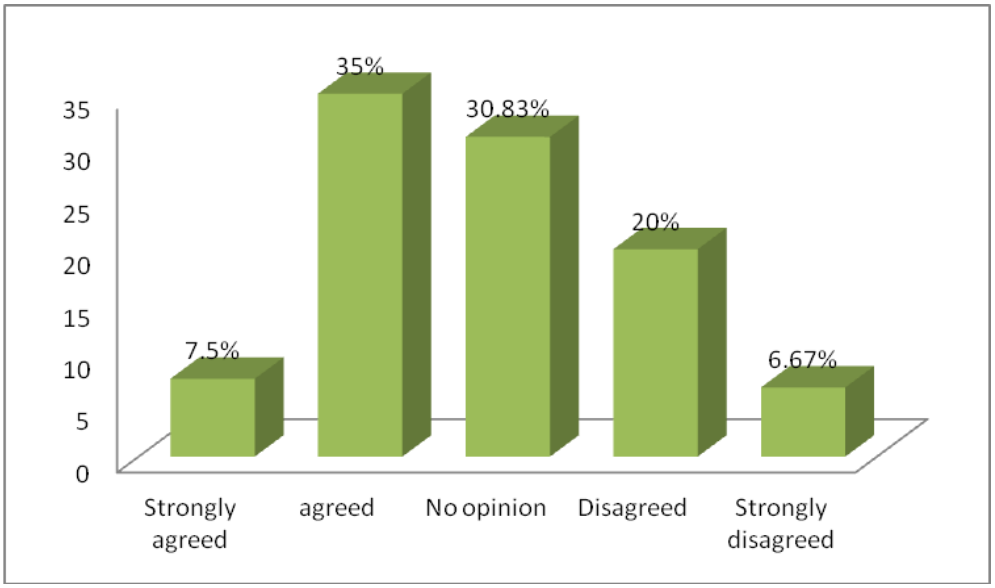
Chart-5.4.1(a_5)
Impact of lack of accommodation and recreation facilities



Source: Table-01 in the Appendix-II.

It is derived from the chart-5.4.1(a_5) that 4.17% (5 respondents) out of total respondents strongly agreed and 42.5% agreed that lack of accommodation and recreation facilities of workers has adverse impact on strategic management and overall performance of sample mills. Among the total respondents, 23.33% (28) made no comments on this issue. 20.83% out of them disagreed and 9.17% strongly disagreed to the impact of this factor. So, it can be inferred that lack of accommodation and recreation facilities of workers has had adverse impact on overall performance of the sample mills.

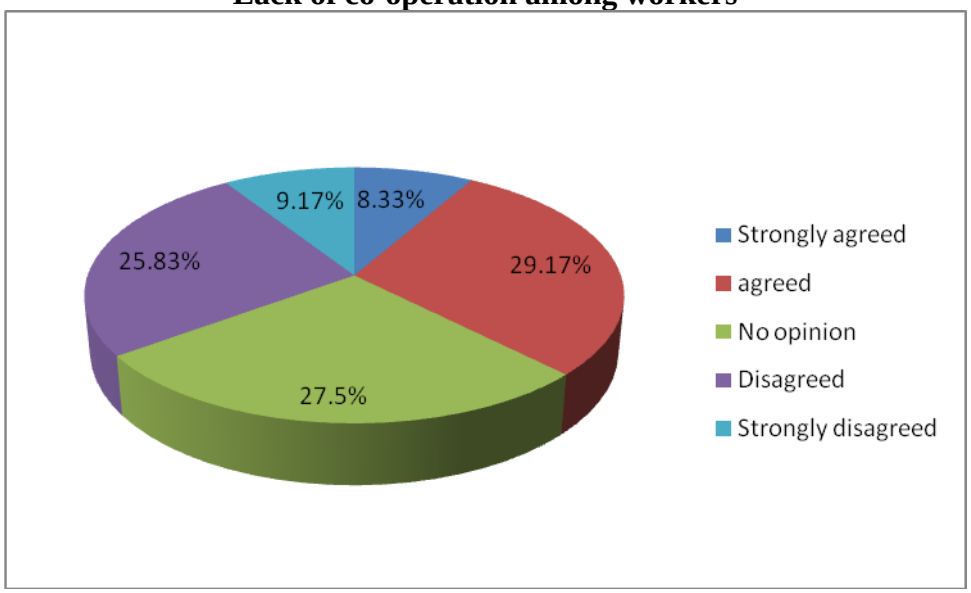
Figure-5.4.1 (a_6)
Lack of Job Commitment



Source: Table-01 in the Appendix-II.

The above figure-5.4.1(a_6) reveals that 7.5% of the total respondents (120) strongly agreed and 35% (42) agreed that lack of job commitment has got counter effect on strategic management and overall performance of the sample mills. Here it is to note that 30.83% out of total respondents gave no opinions in this regard. On the other hand, 20% (24) out of total respondents disagreed and 6.67% strongly disagreed to the impact of this factor. So, it can be affirmed that lack of job commitment has had hostile effect on the overall performance of the sample mills.

Chart-5.4.1 (a_7)
Lack of co-operation among workers



Source: Table-01 in the Appendix-II.

It is evident from the chart-5.4.1(a_7) that 8.33% (10) out of total respondents strongly agreed and 29.17% agreed that lack of co-operation among workers has an adverse impact on strategic management of the sample companies. On the other hand, 25.83% disagreed and 9.17% strongly disagreed to the impact of this factor. So, from the above result, it can be decided that lack of co-operation among workers has had adverse impact on strategic management and overall performance of the sample mills of this industry.

Table-5.4.1(a_8)
Correlations among socio-culture factors

	1	2	3	4	5	6	7
1	1	.964(**)	.441	.004	.728	.558	.415
2	.	1	.278	.259	.871	.744	.597
3			1	-.411	-.149	-.081	-.220
4				1	.630	.830	.844
5		.			1	.925(*)	.874
6						1	.946(*)
7							1

Note :
1. Lack of Social Security
2. Lack of proper education and training
3. Labor Unrest
4. Difference in culture among workers
5. Lack of accommodation and recreation facilities
6. Job Commitment
7. Lack of Co-operation among workers

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Source: Table-1 in the appendix-II

The above Table-5.4.1(a_8) shows the correlations among socio cultural factors of the sample companies. Lack of social security is positively correlated with all the socio cultural factors and a significant correlation exists between lack of social security and lack of proper education and training of workers at 1% level of significance (LS). Lack of proper education and training of workers is positively correlated with all the socio cultural factors but there is no significant relationship among them except with lack of social security. Labor unrest is negatively correlated with all the socio cultural factors except with lack of social security factors and with lack of proper education and training of workers. Difference in culture among workers is positively correlated with all socio cultural factors except with labor unrest. Lack of accommodation and recreation facilities is positively correlated with all socio cultural factors except with labor unrest. There is a significant relationship between lack of accommodation and recreation facilities and job commitment at the 5% level of significance. Lack of job commitment is positively correlated with all factors except with labor unrest. There is a significant relationship among lack of job commitment; lack of accommodation and recreation facilities and lack of cooperation among workers is positively correlated with all factors except with labor unrest. A significant relationship exists between lack of cooperation among workers and job commitment at the 5% LS.

Table-5.4.1(a_9)
Analysis of Socio-cultural factors through Likert scale

Factors	Scores	Comments	Rank
Labor unrest	483	HS	1
Lack of social security	452	S	2
Job Commitment	436	S	3
Lack of proper education and Training of workers	380	S	4
Lack of accommodation and recreation facilities	374	S	5
Lack of cooperation among workers	362	S	6
Difference in culture among workers	341	INS	7
Note : HS = Highly Significant (481-600) S = Significant (361-480) INS = Insignificant (Below 360)			

Source: Table-1 in the appendix-II

Table-5.4.1(a_9) exhibits socio-cultural factors with their scores and ranking as per Likert's five point scale. Among the socio-cultural factors, labor unrest has ranked top with the score 483 and highly significant. So, it has had adverse impact on overall performance of this industry. On the other hand, the impact of lack of social security (452), lack of proper education and training (476), lack of job commitment (380), lack of accommodation and recreation facilities (374) and lack of cooperation among workers (362) are also significant because their scores are greater than 360. But the impact of difference in culture among workers is not significant because its score is below 360. So, it may be agreed that all the socio-cultural factors stated above except difference in culture among workers are playing significant role in the overall performance of the mills. This is why; corporate managers need to consider these factors in their strategic management process for the long-term sustainability of this industry.

5.4.1(b) Factors Related to Political-legal Environment

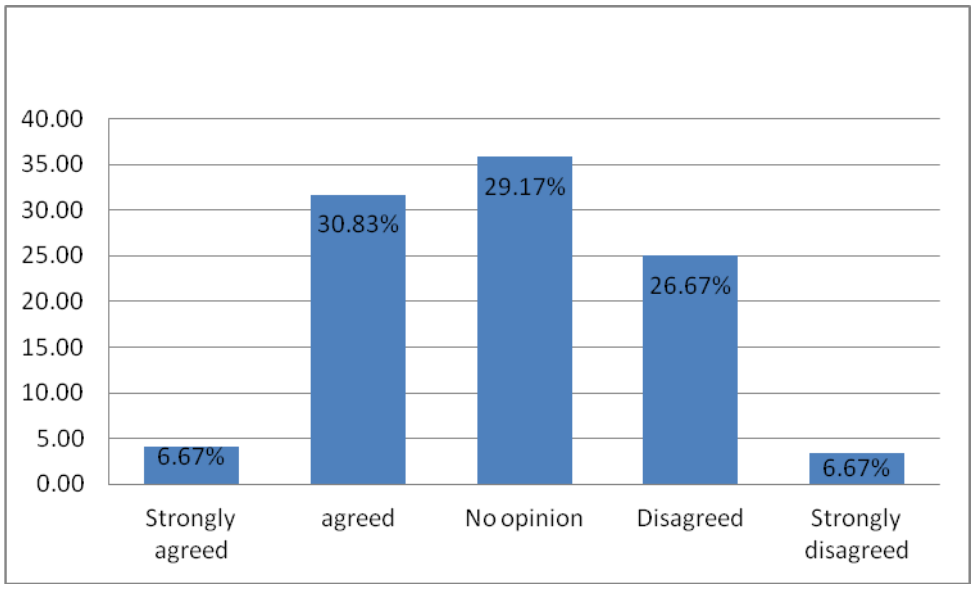
The direction and stability of Political factors are a major consideration for managers on formulating company strategy. Political factors define the legal and regulatory parameters within which firms must operate. The political-legal dimension of the general or external environment refers to government regulation of business and the relationship between business and government (Griffin, 2012). Political constraints are placed on firms through fair trade decisions, antitrust laws, tax programs, minimum wage legislation, pollution and pricing policies, administrative jawboning and many other actions aimed at protecting

employees, consumer's the general public and the environmental. Since such laws and regulations are most commonly restrictive, they tend to be reducing the potential profits of firms. However, some potential actions are designed to benefit and protect firms. Thus, political factors either may limit or benefit the firms they influence (Robinson, 2006). According to the reviewed literature and executives opinions, the following political-legal factors that affect strategic management and overall performance of the sample mills, have been detected.

- Political decisions regarding industry's operation
- Lack of political influence on trade unions
- Lack of government subsidy
- Tax programs

The opinions of executives regarding the impact of these political-legal factors on strategic management are analyzed below —

Figure-5.4.1 (b_1)
Political decisions regarding industry's operation

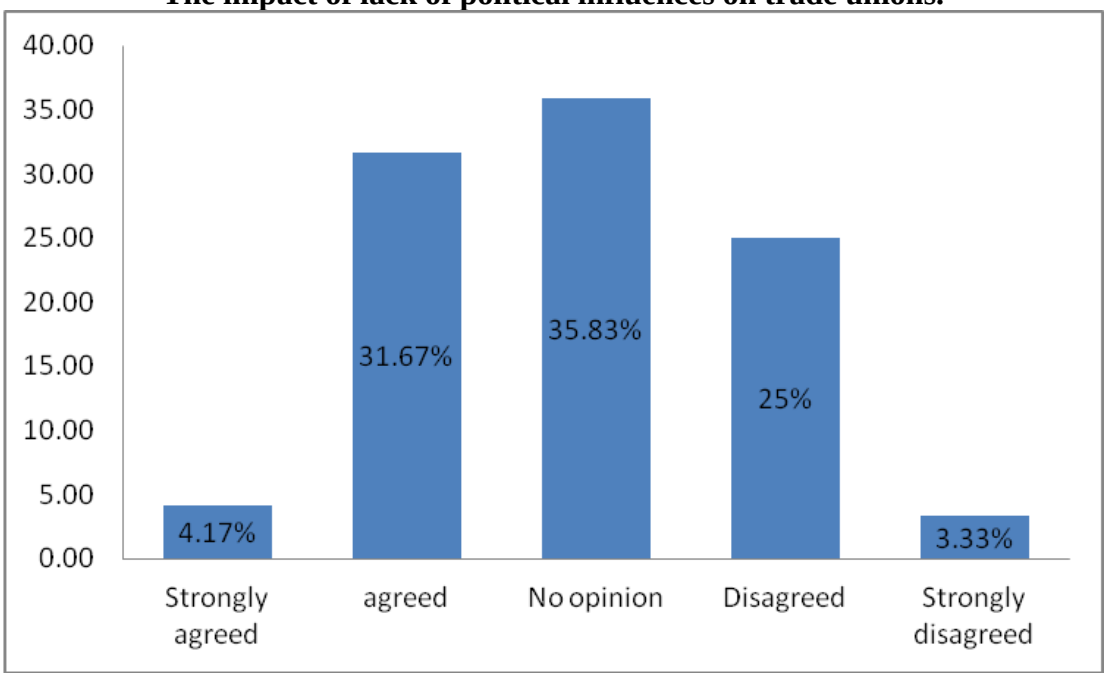


Source: Table-2 in the Appendix-II

The above figure-5.4.1(b_1) exhibits that 6.67% (08) out of total respondents (120) strongly agreed and 30.83% of total respondents agreed that political decisions over industry's operation have a hostile impact on firm's strategic management and overall performance of sample textile mills. 35 respondents (29.17%) out of total respondents expressed no opinions in this regard. But on the other hand, 26.67% of total respondents expressed no

opinions in this regard. But on the other hand, 26.67% of total respondents disagreed and 6.67% of total respondents strongly disagreed to the impact of this factor. So, from the above results, it can be concluded that political decisions regarding industry's operation have got somewhat unfriendly impact on overall performance of his industry.

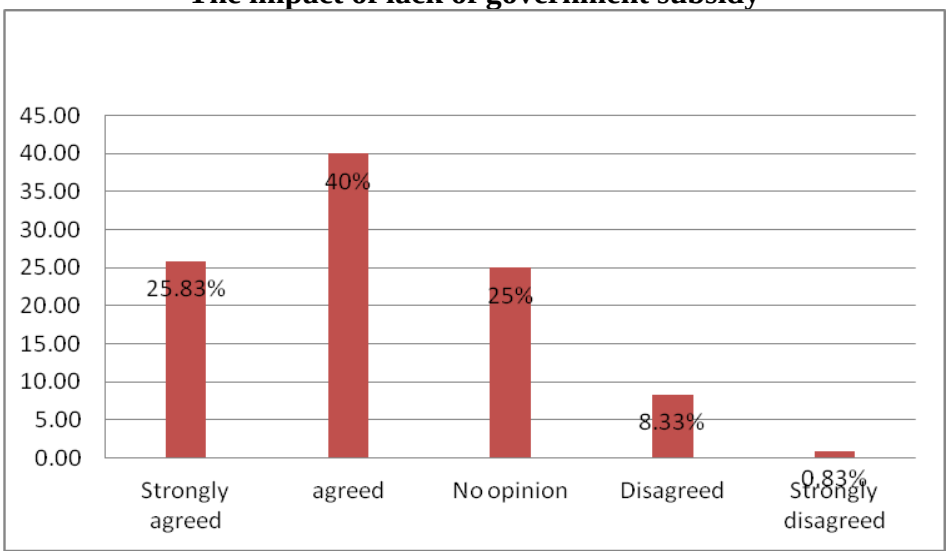
Figure-5.4.1 (b_2)
The impact of lack of political influences on trade unions.



Source: Table-2 in the Appendix-II

It is observed from the figure-5.4.1(b_2) that among the total respondents, 4.17% of them strongly agreed and 31.67% agreed that lack of political influences on trade unions has got adverse impact on the overall performance of sample mills. On the other hand, 25% (30 respondents) of them disagreed and 3.33% strongly disagreed to the impact of this factor. From the above results, it can be concluded that lack of political influences on trade unions has had negative impact on overall performance of the sample mills to a little extent.

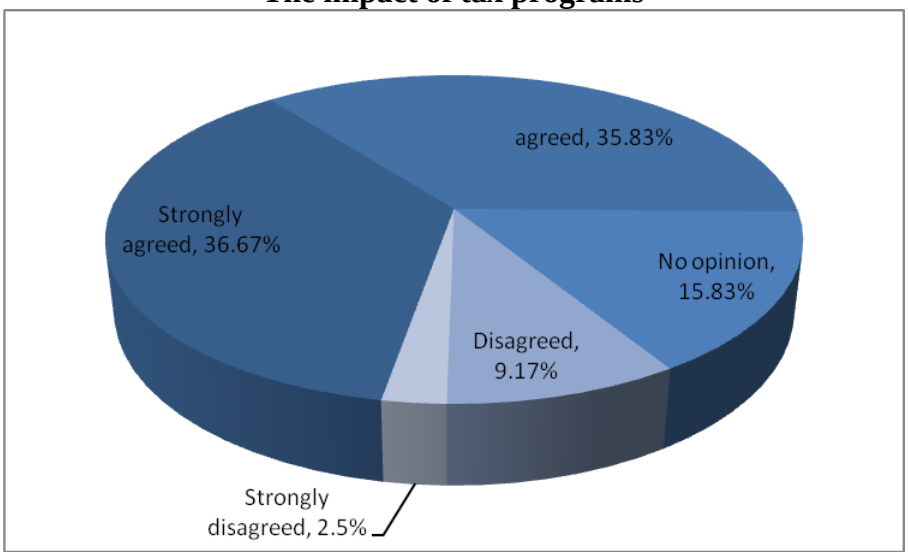
Figure-5.4.1 (b_3)
The impact of lack of government subsidy



Source: Table-2 in the Appendix-II

It is noticed from the above figure-5.4.1(b_3) that 25.83% (31 respondents) of total respondents (120) strongly agreed and 40% of them agreed that lack of government subsidy has an adverse impact on the strategic management of sample mills. On the contrary, 8.33% of them disagreed and 0.83% strongly disagreed to the impact of this factor and 25% abstained from providing any opinion. So, from the opinions of the executives, it can be defended that lack of government subsidy has got severe adverse impact on strategic management of textile mills.

Chart-5.4.1 (b_4)
The impact of tax programs



Source: Table-2 in the Appendix-II

The above Pie- chart-5.4.1(b_4) reveals that 36.67% (i.e. 44 executives) out of total executives and 35.83% of them agreed that tax programs have an adverse impact on strategic management of sample mills. On the other hand, 9.17% of them disagreed and 2.5% strongly disagreed to the impact of this factor. From the above results, it can be said that tax programs have had hostile effect on strategic management on sample mill of this industry.

Table-5.4.1(b_5)
Analysis of correlations among the political-legal environmental factors.

	1	2	3	4
1	1	.982(**)	.476	.095
2		1	.506	.097
3			1	.885(*)
4				1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
Note :
1. Political Decisions regarding industry's operation
2. Lack of political influences on trade unions
3. Lack of Government Subsidy
4. Tax Programs

Source: Table-2 in the Appendix- II

The above Table-5.4.1(b_5) shows correlations among political-legal factors of sample companies. Political decisions regarding industry's operations is positively correlated with all the political-legal factors and political decisions regarding industry's operation is highly correlated with the lack of political influences on trade unions at the 1% level of significance (LS). Lack of political influences on trade unions is positively correlated with all the factors. Lack of government subsidy is positively correlated with all the political-legal factors. There is a significant correlation between lack of government subsidy and tax programs at 5% level of significance. Tax programs are also positively correlated with all political-legal factors.

Table-5.4.1(b_6)
Analysis of Political-Legal Factors through Likert-Scale

Factors	Scores	Comments	Rank
Tax programs	474	S	1
Lack of government subsidy	458	S	2
Lack of political influences on trade unions	374	S	3
Political decisions regarding industry's operation	365	S	4
Note : HS = Highly Significant (481-600) S = Significant (361-480) INS = Insignificant (Below 360)			

Source: Table-2 in the Appendix- II

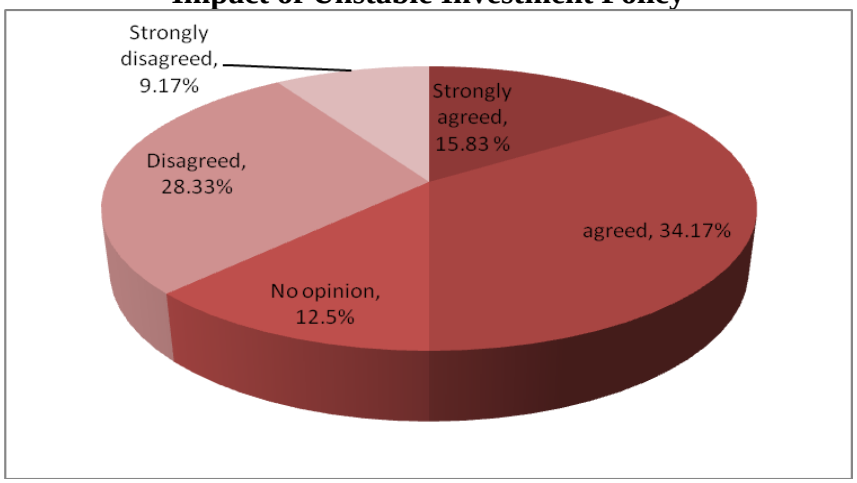
The Table-5.4.1(b_6) reveals that among the political-legal environment factors, tax programs has positioned high with the score 474 followed by lack of government subsidy (458), lack of political influences on trade unions (374), and political decisions regarding industry's operation (365). But the impacts of all these political-legal factors are significant because their scores are greater than 360. So, it can be decided that all the political-legal factors are highly responsible for the overall performance of this industry and this is why corporate managers need to consider these issues while they adopt decisions.

5.4.1(c) Factors Related to Economic Environment

Economic factors concern the nature and direction of the economy in which a firm operates. Because consumption patterns are affected by the relative affluence of various market segments, each firm must consider economic treads in the segments that affect its industry. On both the national and international level, managers must consider in general availability of credit, the level of disposable income and the propensity of people to spend. Prime interest rates, inflation rates and trends in the growth of the gross national product are other economic factors they should monitor (Robinson, 2006). It is to be noted that economic environment does not remain static and it changes over time. So the business house evaluates this environment in decision making so these economic factors largely govern the final result of operations (Solaiman, 1999).

Executives' opinions with regard to the impact of economic environment on the overall performance and sustainable development of this industry are described below —

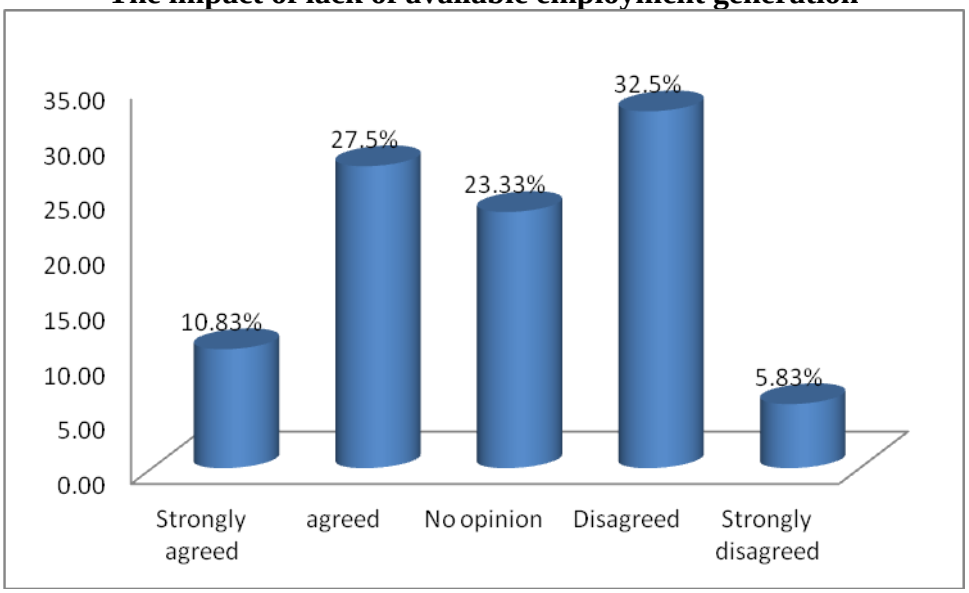
Chart-5.4.1(c_1)
Impact of Unstable Investment Policy



Source: Table-3 in the Appendix-II

The above Pie- chart-5.4.1(c_1) reveals the opinions of executives regarding the impact of unstable investment policy as an element of economic environment on the overall performance of the textile industry. It is evinced from this chart that among the total 120 executives, 15.83% (19) strongly agreed and 34.17% of them agreed that unstable investment policy has an adverse impact on the overall performance and strategic management of this industry. On the other hand, 28.33% of them disagreed and 9.17% strongly disagreed that there is no adverse impact of this factor. So, it may be commented that unstable investment policy has had hostile effect on strategic management and overall performance of this industry to some extent.

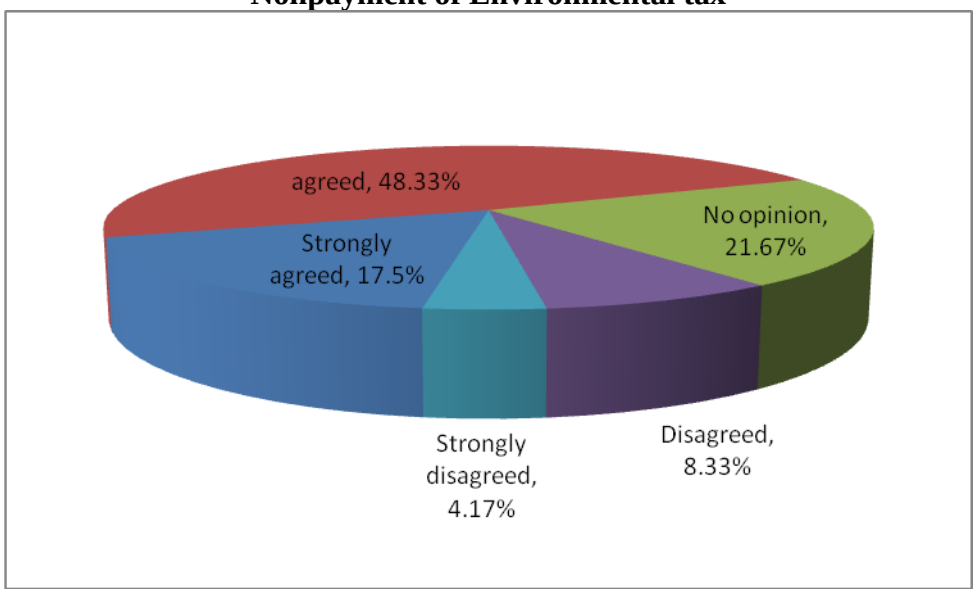
Figure-5.4.1 (c_2)
The impact of lack of available employment generation



Source: Table-3 in the Appendix-II

It is evident from the above figure-5.4.1(c_2) that 10.83% of the total respondents (120) strongly agreed and 27.5% agreed that lack of available employment generation has an adverse impact on strategic management and overall performance of this industry. Among the total respondents, 32.5% disagreed and 5.83% strongly disagreed to the impact of this factor. Here it is to note that 23.33% of the total respondents expressed no opinions in this regard. So, it can be said that lack of available employment generation has had hostile effect on strategic management to a little extent.

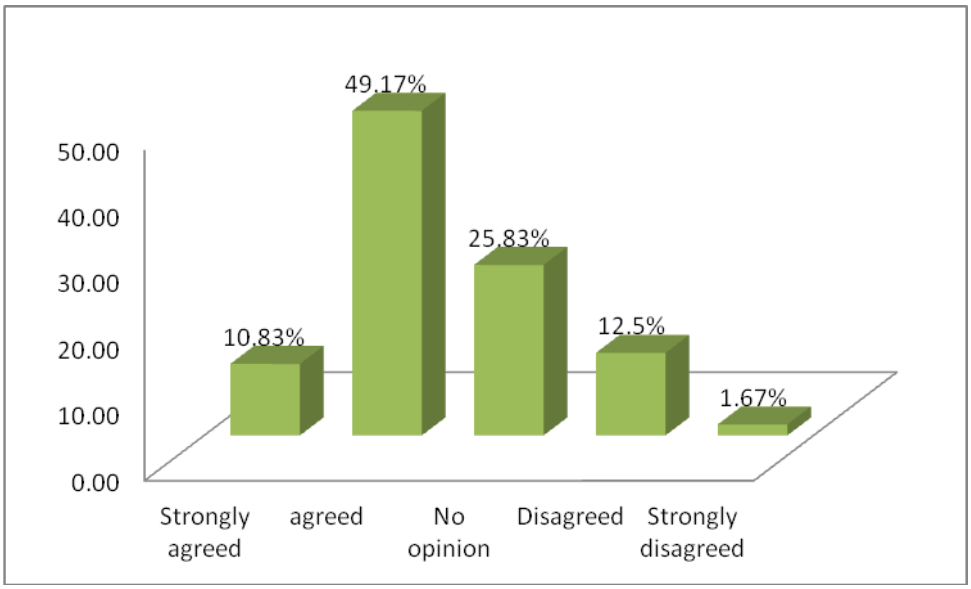
Chart-5.4.1 (c_3)
Nonpayment of Environmental tax



Source: Table-3 in the Appendix-II

It is apparent from the above Pie- chart-5.4.1(c_3) that 17.5% (i.e. 21) out of total respondents (120) strongly agreed and 48.33% agreed that non-payment of environmental tax has an adverse impact on strategic management of this industry. Among the total respondents, 21.67% (26) expressed no opinions on nonpayment of environmental tax as an element of economic environmental factor. But on the contrary, 8.33% disagreed and 4.17% of them strongly disagreed to the impact of this factor. So, it can be affirmed from the above results that nonpayment of environmental tax has a belligerent impact on strategic management of this industry.

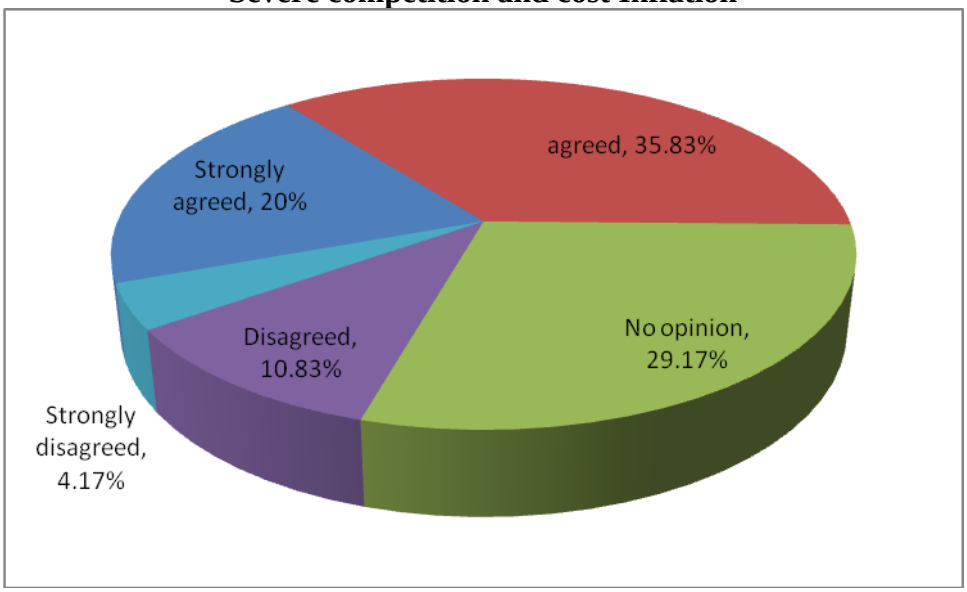
Figure-5.4.1 (c_4)
Shift in Demand



Source: Table-3 in the Appendix-II

It is derived from the figure-5.4.1(c_4) that 10.83% (i.e 13) out of total respondents (120) strongly agreed and 49.17% agreed that shift in demand has an adverse impact on strategic management and overall performance of this industry. Among the total respondents, 25.83% expressed no opinion in this respect. But on the other hand, 12.5% (15 respondents) disagreed and 1.67% (2) strongly disagreed that there is no impact of shift in demand on strategic management. So, it may be concluded that shift in demand has had severe negative impact on strategic management of textile industry.

Chart-5.4.1 (c_5)
Severe competition and cost Inflation



Source: Table-3 in the Appendix-II

The above Pie- chart-5.4.1(c_5) exposes that among the total 120 respondents, 20% (24) strongly agreed and 35.83% agreed that severe competition and cost inflation have had adverse impact on strategic management and overall performance of this industry. On the contrary, 10.83% disagreed and 4.17% strongly disagreed to the impact of this factor. So, from the opinions of the executives it can be said that severe competition and cost inflation have hostile effect on strategic management and overall performances of this industry.

Table-5.4.1(c_6)
Analysis of Correlations among Economic Environmental Factors

	1	2	3	4	5
1	1	.779	.637	.686	.451
2		1	.409	.587	.444
3			1	.968(**)	.917(*)
4				1	.916(*)
5					1

Note :
1. Unstable Investment Policy
2. Lack of available Employment Generation
3. Nonpayment of Environmental tax
4. Shift in Demand
5. Severe competition and cost Inflation
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Source: Table-3 in the Appendix-II

Table-5.4.1(c_6) shows correlations among economic environmental factors of the sample companies. Unstable investment policy is positively correlated with all economic environmental factors. Lack of available employment generation is also positively correlated with all economic factors. Nonpayment of environmental tax is positively correlated with all the factors. A highly correlation exists between nonpayment of environmental tax and shift in demand at 1% Level of Significance and there is a significant relationship between nonpayment of environmental tax and severe competition and cost inflation. Shift in demand is positively correlated with all the economic factors. This is also significantly correlated with severe competition and cost inflation at the 5% Level of Significance and highly correlated with nonpayment of environmental tax at the 1% Level of Significance. Severe competition and cost inflation is also positively correlated with all the economic factors and a significant correlation exists among severe competition and cost inflation, nonpayment of environment tax and shift in demand.

Table-5.4.1(c_7)
Analysis of Economic Environment Factors through Likert-Scale

Factors	Scores	Comments	Rank
Nonpayment of Environmental tax	440	S	1
Severe Competition & cost Inflation	428	S	2
Shift in Demand	426	S	3
Unstable Investment Policy	383	S	4
Lack of Available Employment Generation	366	S	5

Note :
HS = Highly Significant (481-600)
S = Significant (361-480)
INS = Insignificant (Below 360)
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Source: Table-3 in the Appendix-II

Table-5.4.1(c_7) shows economic environmental factors with their scores and ranking as per Likert's five point scale. The Table indicates that among the economic factors nonpayment of environmental tax has ranked top with the score 440 followed by severe competition and cost inflation (428), shift in demand (426), unstable investment policy (383) and lack of available employment generation (366). However the impacts of all these economic factors are significant because their scores are greater than 360. So, it can be said that as all the economic factors have had wide influence in the realm of strategic management process and have played a key role in the overall performance of the textiles mills, so the mills management should consider these factors in the decision making process.

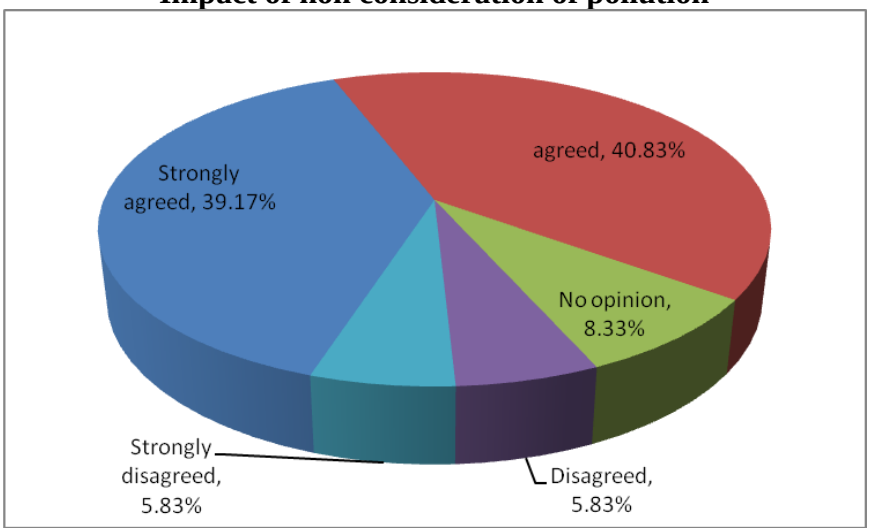
5.4.1(d) Factors Related to Ecology and Business Responsibility

The most prominent factor in the remote or external environment is often the reciprocal relationship between business and the ecology. The term ecology refers to the relationships among human beings and other living things and the air, soil and water that support them. Threats to our life supporting ecology caused principally by human activities in an industrial society are commonly referred to as pollution (Robinson, 2006). An ecosystem is a total ecological community, both living and non living. The key point about an ecosystem is its immense complexity and interrelatedness. Since these intricacies have not been understood by experts, businessman likewise often has not realized effects of their actions. This lack of understanding means that even the best of intentions may have unforeseen and undesirable results (Davis and Blomstrom, 2012). As a contributor to pollution, business is involved in society's ecological crisis. Pollution has

become serious because of compound growth of industrial revolution, a higher standard of living and population explosions. Pollution is found in all types of economic and political systems. It is not limited to one nation or social culture. The traditional operation of economics has tended to provide air and water as free goods to business. This system rewards degradation of environments and penalizes business that seeks to clean up the environment. To correct this situation, economic incentives, effluents standards and effluent charges will be applied. Cost benefit analysis will be used to guide decisions. Some of the effects on business will be more regulation, increased costs, more complex decisions, and improved social inputs and outputs and more system and global thinking (Davis and Blomstrom, 2012).

The impact of Non-consideration of pollution on future sustainability of this industry is shown below through a Pie- chart.

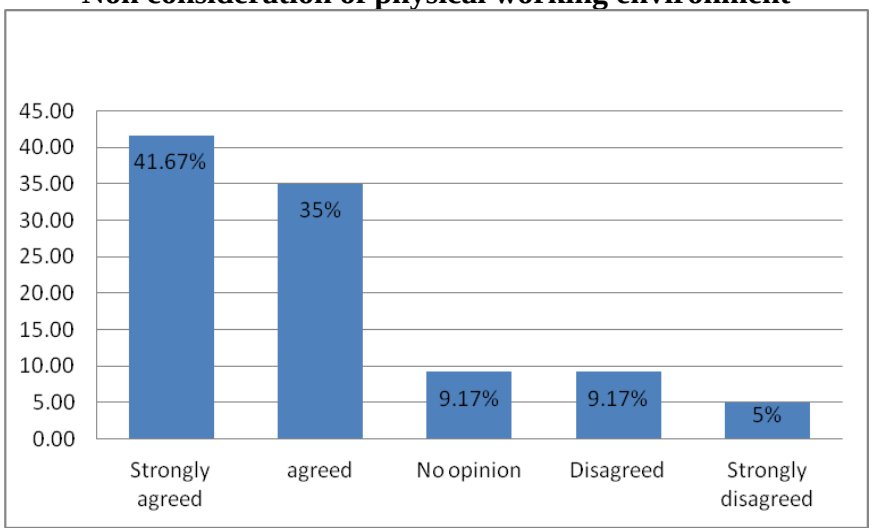
Chart-5.4.1 (d_1)
Impact of non consideration of pollution



Source: Table-4 in the Appendix-II

The above Pie-chart-5.4.1(d_1) shows the opinions of interviewed executives on non consideration of pollution as an element of social responsibility and ecological factors. It is apparent from the Pie- chart that 39.17% (47 respondents) out of total 120 respondents strongly agreed and 40.83% of them agreed that non consideration of pollution has an adverse impact on sustainable development of this industry. On the other hand, 5.83% of total respondents strongly disagreed and 5.83% of them disagreed equally to the impact of this factor. So, from the above results, it can be conferred that non-consideration of pollution has had severe negative impact on the future sustainability of this industry.

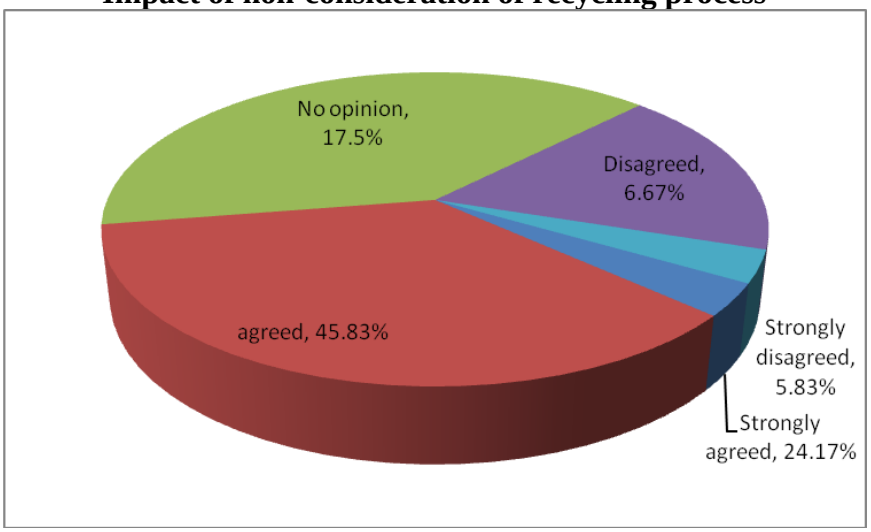
Figure-5.4.1 (d_2)
Non consideration of physical working environment



Source: Table-4 in the Appendix-II

The above figure-5.4.1(d_2) reveals that 41.67% (50) out of total respondents strongly agreed and 35% of the total respondents agreed that non-consideration of physical work environment has an adverse impact on sustainable development of this industry. On the other hand 9.17% of them disagreed and 4.16% strongly disagreed that there is no adverse impact of non consideration of physical working condition on sustainable development and overall performance of this industry. So, from the opinions of the executives, it can be concluded that non consideration of physical working environment has had severe negative impact on the overall performance and the future sustainability of textile industry.

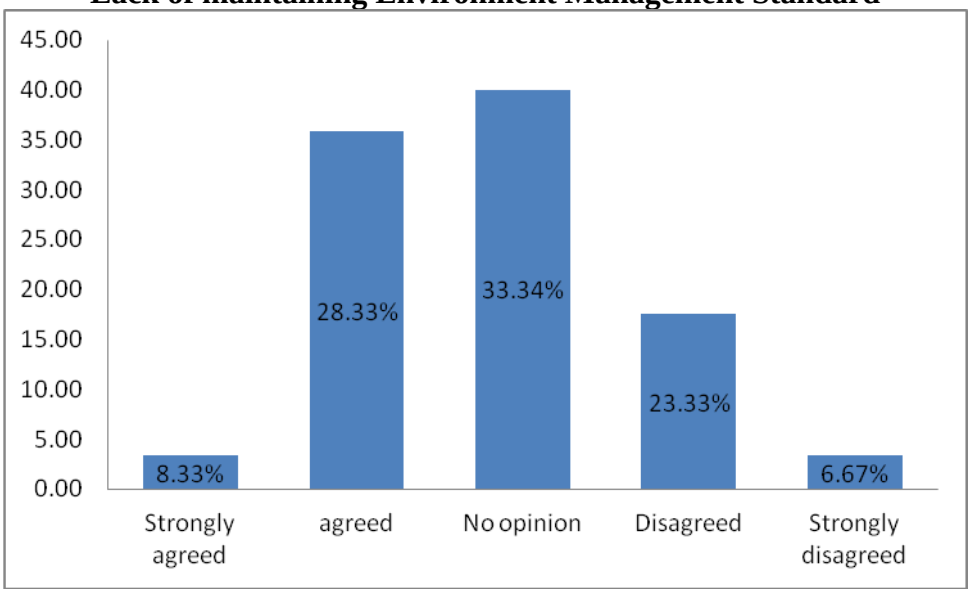
Chart-5.4.1 (d_3)
Impact of non-consideration of recycling process



Source: Table-4 in the Appendix-II

It is demonstrated from the above Pie-chart-5.4.1(d_3) that 24.17% (i.e. 29 respondents) out of 120 respondents strongly agreed and 45.83% of them agreed that non-consideration of recycling process for sustainable use of cotton has an adverse impact on the future sustainability of this industry. On the other hand, 17.5% of the total respondents have expressed nothings in this respect but 6.67% of them disagreed and 5.83% strongly disagreed that there is no impact of this factor. From the opinions of the executives, it can be illustrated that non consideration of recycling process for sustainable use of cotton has had hostile effect on the future sustainability of this industry.

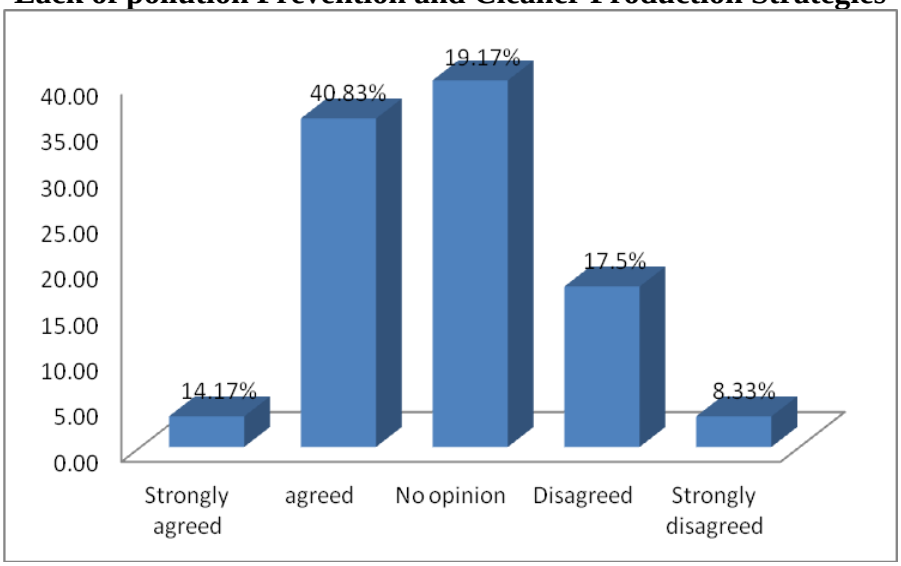
Figure-5.4.1 (d_4)
Lack of maintaining Environment Management Standard



Source: Table-4 in the Appendix-II

It is evinced from the figure-5.1.4(d_4) that among the total 120 respondents, only 8.33% strongly agreed and 28.33% of them agreed that lack of maintaining environment management standard has a hostile effect on the overall performance and sustainable development of sample mills. On the other hand, 33.37% of them provide no opinions on this factor but among them, 23.33% disagreed and 6.67% strongly disagreed that there is adverse impact of lack of maintaining environment management standard on sustainable development of this industry. So, from the above results, it can be decided that lack of maintaining environment management standard has got negative impact on the future sustainability of textile industry to a little extent.

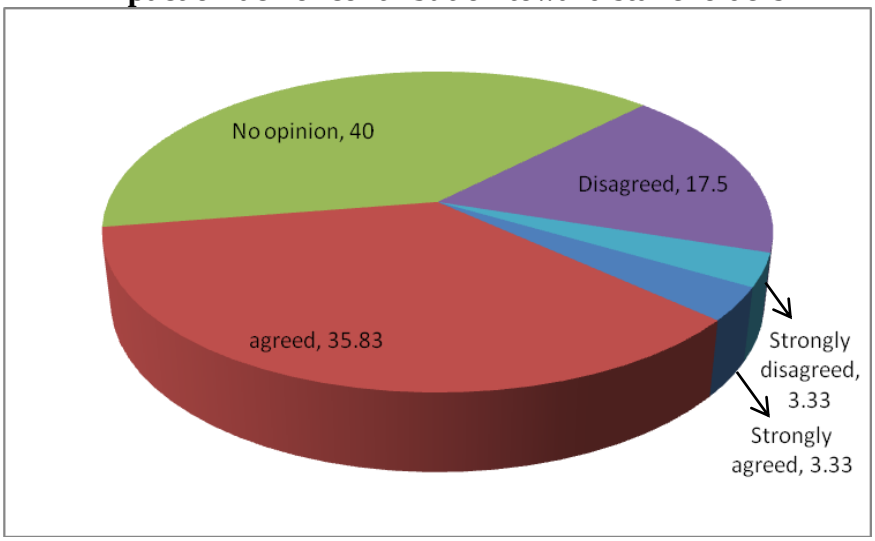
Figure-5.4.1 (d_5)
Lack of pollution Prevention and Cleaner Production Strategies



Source: Table-4 in the Appendix-II

It is signified from the above figure-5.4.1(d_5) that among the 120 respondents, 14.17% strongly agreed and 40.83% agreed that lack of pollution prevention and cleaner production strategies have an adverse impact on the overall performance and sustainable development of this industry. Out of them, 17.5% disagreed and 8.33% strongly disagreed to the impact of this factor. But 19.17% (i.e. 23 respondents) of total respondents did not provide opinions on this issue. However, from the above analysis, it is clear that lack of pollution prevention and cleaner production strategies have a hostile effect on sustainable development of this industry.

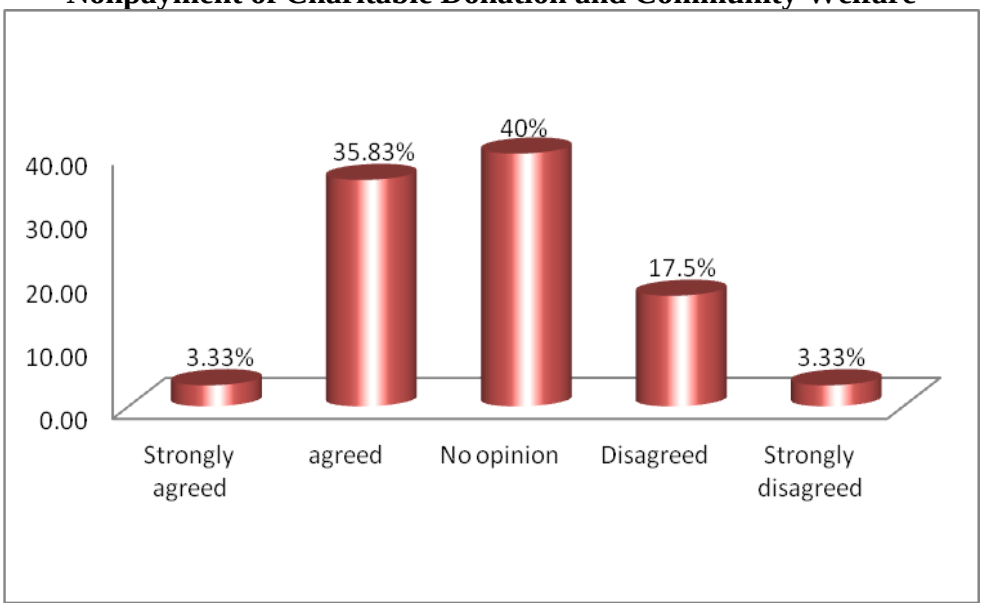
Pie-Chart-5.4.1 (d_6)
Impact of lack of contribution toward stakeholders



Source: Table-4 in the Appendix-II

The Pie- chart-5.4.1(d_6) stated above indicates that 35.83% (i.e. 43 respondents) out of total respondents (120) strongly agreed and 25.00% of them agreed that lack of contribution toward stakeholders has an inimical impact on industry's overall performance and sustainable development. On the other hand, 22.5% of total respondents showed no opinions on this issue. But 15% among them disagreed and 1.67% strongly disagreed to the impact of this factor. So, from the opinions of the executives, it may be affirmed that lack of contribution toward its stakeholders has belligerent consequences on the overall performance and the future sustainability of this industry.

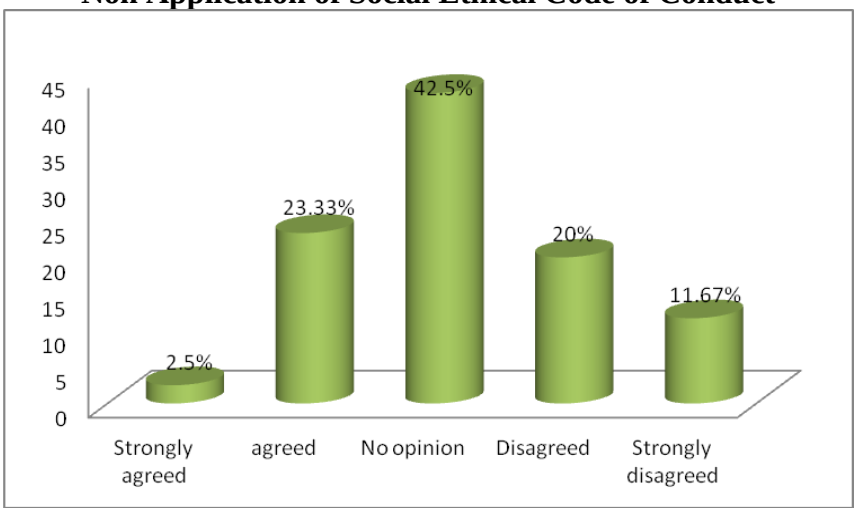
Figure-5.4.1 (d_7)
Nonpayment of Charitable Donation and Community Welfare



Source: Table-4 in the Appendix-II

It is denoted from the above figure-5.4.1(d_7) that 3.33% (04 respondents) out of total 120 respondents strongly agreed and 35.83% of them agreed that nonpayment of charitable donation and community welfare have an adverse impact on sustainable development of sample mills. But 40% (48) of them expressed no opinions on this issue. On the contrary, 17.5% of the total respondents disagreed and 3.33% strongly disagreed that there is no adverse impact of this factor. So, it may be affirmed that nonpayment of charitable donation and community welfare have an adverse impact on the overall performance and the future sustainability of the sample mills but its impact is not so strong.

Figure-5.4.1 (d_8)
Non Application of Social Ethical Code of Conduct



Source: Table-4 in the Appendix-II

The above figure-5.4.1(d_8) reveals that 2.5% (03) of the total respondents strongly agreed and 23.33% agreed that non application of social ethical code of conduct has a hostile impact on sustainable development of textile mills. Among the total respondents, 42.5% did not provide any opinions in this regard. But 20% of them disagreed and 11.67% strongly disagreed that there is no adverse impact of this factor. So, it can be concluded that non application of social ethical code of conduct has somewhat adverse impact on sustainable development but not to a great extent.

Table-5.4.1(d_9)
Analysis of Correlations among Social Responsibility and Ecological Factors

	1	2	3	4	5	6	7	8
1	1	.982(**)	.866	-.094	.589	.772	-.003	-.375
2		1	.776	-.150	.473	.839	-.088	-.441
3			1	.331	.884(*)	.642	.448	.077
4				1	.617	.212	.971(**)	.906(*)
5					1	.407	.670	.338
6						1	.222	-.053
7							1	.917(*)
8								1

Note :
1. Non consideration of Pollution
2. Non consideration of physical working Environment
3. Non consideration of Recycling Process
4. Lack of maintaining Environment Management Standard
5. Lack of pollution Prevention and Cleaner Production Strategies
6. Lack of contribution toward stakeholders
7. Nonpayment of Charitable Donation and Community Welfare
8. Non Application of social Ethical Code of Conduct

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Source: Table-4 in the Appendix-II

Table-5.4.1(d_9) shows the correlations among social responsibility and ecological factors. Non consideration of pollution is positively correlated with all the social responsibility and ecological factors except with non application of environment management plan, nonpayment of charitable donation and non application of social ethical code of conduct. There is significant relationship between non consideration of pollution and non consideration of physical working environmental condition at the 1% level of significance. Non consideration of physical working environment is positively correlated with all social and ecological factors except with lack of maintaining environment management standard, nonpayment of charitable donation and community welfare and non application of social ethical code of conduct. Non consideration of physical working condition is negatively correlated with them. Non consideration of recycling process is positively correlated with all social and ecological factors and there is significant correlation between non consideration of physical working condition and lack of pollution prevention and cleaner production strategy at the 5% level of significance. Non application of environment management plan is positively correlated with all factors except with non consideration of pollution and non consideration of physical working condition. There is a significant relationship between non application of environment management plan and nonpayment of charitable donation at the 1% level of significance and a significant correlation exists between non application of environment management plan and non application of social ethical code of conduct at the 5% level of significance. Lack of pollution prevention and cleaner production strategies is positively correlated with all the social responsibility and ecological factors. Lack of contribution toward stakeholders is positively correlated with all factors except with non application of social ethical code of conduct. Nonpayment of charitable donation is positively correlated with all the social and ecological factors except with non consideration pollution and non consideration of physical working environment. There is a significant relationship between nonpayment of charitable donation and non application of social ethical code of conduct. Non application of social ethical code of conduct is positively correlated with all social responsibility and ecological factors except with non consideration of pollution, non consideration of physical working environment and lack of contribution toward stakeholders. Non application of social ethical code of conduct is negatively correlated with them.

Table-5.4.1(d_{10})
Analysis of Ecology and Business Responsibility Factors through Likert-Scale

Factors	Scores	Comments	Rank
Non consideration of pollution	482	HS	1
Non consideration of physical working environment condition	479	S	2
Lack of contribution toward stakeholders	457	S	3
Lack of considering recycling process	451	S	4
Lack of pollution prevention and Cleaner production strategies	402	S	5
Nonpayment of charitable donation and community welfare	382	S	6
Lack of maintaining environment management standard	370	S	7
Lack of application of social ethical code of conduct	342	INS	8
Note : HS = Highly Significant (481-600) S = Significant (361-480) INS = Insignificant (Below 360)			

Sources: Table-4 in the Appendix-II

Table-5.4.1(d_{10}) shows likert-type scaling of social responsibility and ecological factors. In this Table, non consideration of pollution has positioned top of all other social responsibility and ecological factors with the score 482 which is greater than 480. So the impact of non consideration of pollution is highly significant and creates adverse impact on sustainable development of textiles. On the other hand, the impact of non consideration of physical working environmental condition (481) lack of contribution toward stakeholders (457), non consideration of recycling process (451), lack of pollution prevention and cleaner production strategy (402), nonpayment of charitable donation (382), and lack of maintaining environment management standard (370) are also significant because their scores are greater than 360. But the impact of non application of social ethical code of conduct is not significant because the score is below 360. So, it may be argued that all social responsibility and ecological factors except non application of social ethical code of conduct are highly responsible for future sustainability of this industry. So, the mill owners and executives should consider these issues while they prepare plan and should give highest priority on non consideration of pollution and physical work environment.

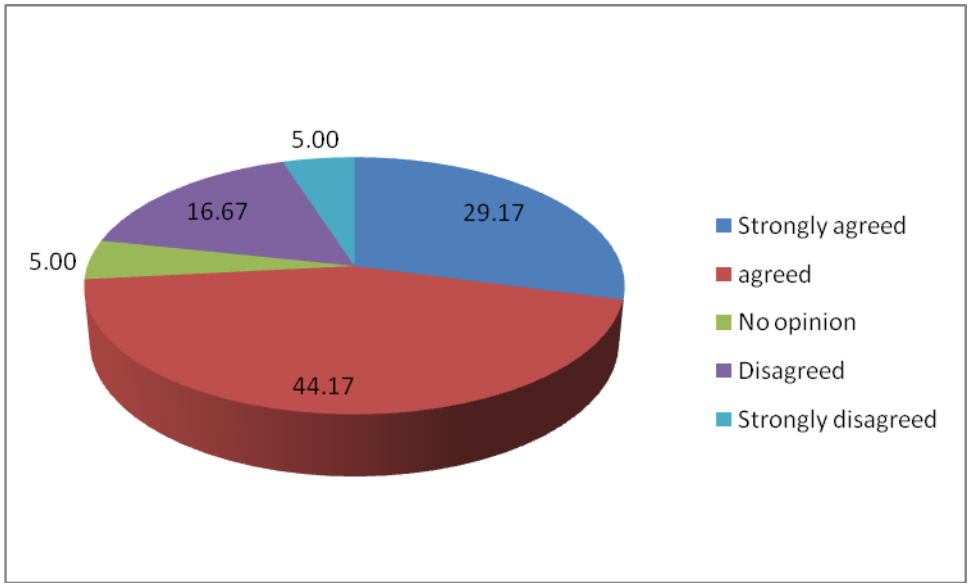
5.4.1(e) Factors Related to Technological Environment

The fifth set of factors in the remote or external environment involves technological change. To avoid obsolescence and promote innovation, a firm must be aware of technological changes that might influence its industry. A technological breakthrough can have a sudden and dramatic effect on a firm's environment. It may spawn sophisticated new markets and products or significantly shorten the anticipated life of a manufacturing facility. Thus, all firms and most particularly those in turbulent growth industries must strive for an understanding both of the existing technological advances and the probable future advances that can affect their products and services (Pearce and Robinson, 2006). However, according to the executive's opinions and on the basis of reviewed literature, the following technological factors that affect the strategic management and overall performance of the sample companies, have been identified which are as follows—

- Old Machinery
- Low Productivity of Machine and Labor
- Lack of Modern Technology

The opinions of executives regarding the impact of technological factors on strategic management and overall performance of the sample mills are discussed below:

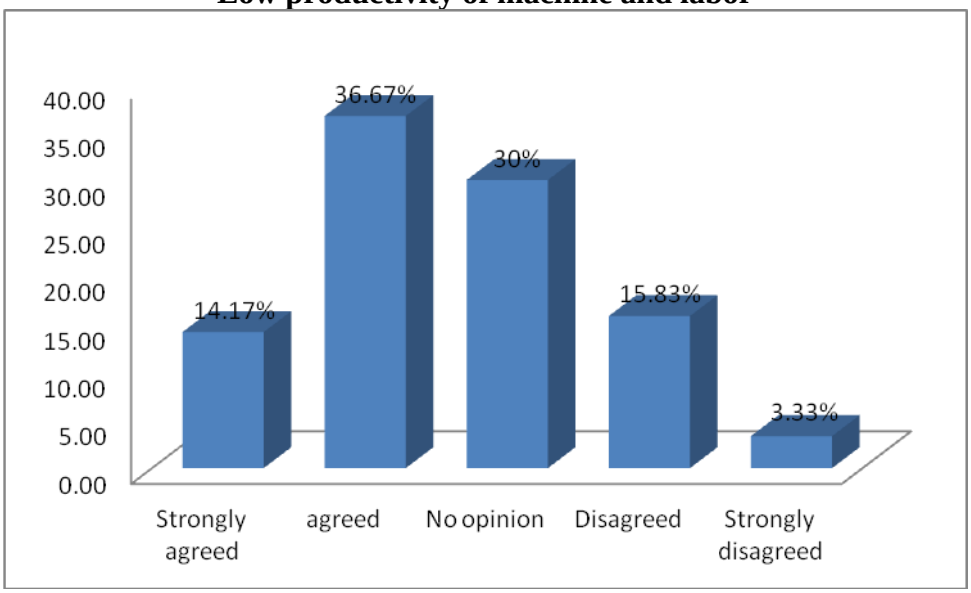
Chart-5.4.1 (e_1)
Impact of old machinery



Source: Table-5 in the Appendix-II

The above Pie-chart-5.4.1(e_1) reveals the opinions of interviewed executives regarding the impact of old machinery as an element of technological factors on strategic management and overall performance of this industry. Among the total respondents (120), 29.17% (35) strongly agreed and 44.17% agreed that old machinery has an adverse impact on strategic management. On the contrary, 16.67% of the total respondents disagreed and 5% strongly disagreed to the impact of this factor. So, from the above opinions, it can be concluded that old machinery has had severe hostile effect on strategic management and overall performance of this industry.

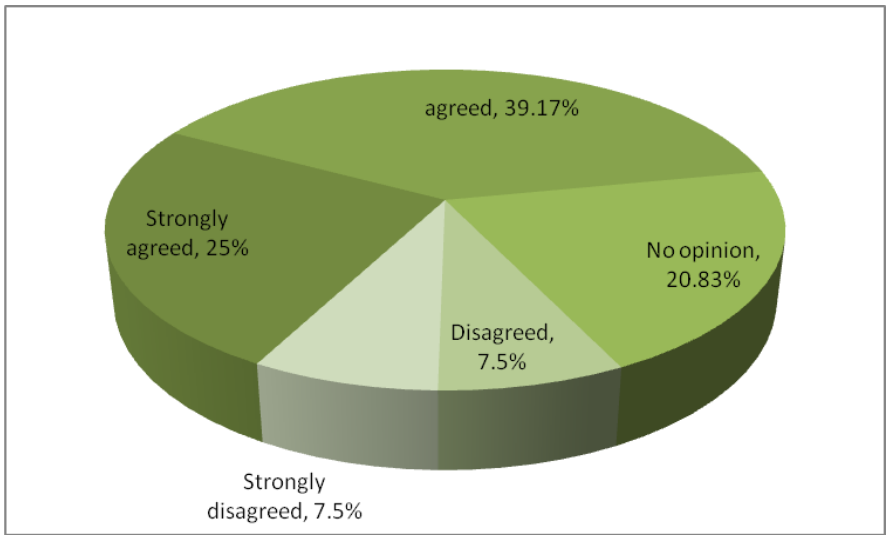
Figure-5.4.1 (e_2)
Low productivity of machine and labor



Source: Table-5 in the Appendix-II

It is indicated from the above figure-5.4.1(e_2) that 14.17% (i.e. 17 respondents) out of total respondents (120) strongly agreed and 36.67% agreed to the impact of low productivity of machine and labor on strategic management of this industry. Among the total respondents (120), 30% (36) expressed no opinions in this regard. But on the other hand, 15.83% (19) out of them disagreed and 3.33% strongly disagreed that there is no adverse impact of low productivity of machine. So, it may be said that low productivity of machine has an adverse impact on strategic management and overall performance of this industry.

Chart-5.4.1 (e_3)
Lack of modern technology



Source: Table-5 in the Appendix-II

It is evident from the above Pie-Chart-5.4.1(e_3) that 25% (30 respondents) out of total respondents (120) strongly agreed and 39.17% agreed that lack of modern technology has a hostile effect on strategic management of textile industry. Out of total respondents, 20.83% expressed no opinions in this regard. But on the other hand, 7.5% (09) of total respondents disagreed and 7.5% of them strongly disagreed to the impact of this factor. So, from the above results, it can be said, that lack of modern technology has an adverse impact on strategic management and overall performance of this industry.

Table-5.4.1(e_4)
Analysis of correlations among technological environment factors.

	1	2	3
1	1	.518	.813
2		1	.792
3			1

Note :
1. Old Machinery
2. Low productivity of machine and labor
3. Lack of modern technology

Source: Table-5 in the Appendix-II

The above Table-5.4.1(e_4) shows correlations among technological factors of sample companies. Old machinery is positively correlated with all the technological factors. But there is no significant relationship between them. Low productivity of machine and labor is positively correlated with old machinery and lack of modern technology. Lack of modern technology is also positively correlated with all the technology factors.

Table-5.4.1(e_5)
Analysis of Technological Environment Factors through Likert-Scale

Factors	Scores	Comments	Rank
Old Machinery	451	S	1
Lack of modern technology	440	S	2
Low productivity of machine	411	S	3
Note : HS = Highly Significant (481-600) S = Significant (361-480) INS = Insignificant (Below 360)			

Source: Table-5 in the Appendix-II

The above Table- 5.4.1(e_5) reveals that among the technological factors, old machinery has ranked top with the score 451 followed by lack of modern technology (440) and low productivity of machine (411). The impacts of all these technological factors are significant because all the scores are greater than 360. So, it can be commended that all the technological factors are responsible for the overall performance of this industry. So, mills` executives should consider technological factors in the strategic management process.

5.4.2 Analysis of Internal Environmental Factors of Sample Mills

Internal analysis has received increased attention in recent years as being a critical underpinning to effective strategic management. Indeed many managers have adopted a new perspective on understanding firm success based on how well the firm uses its internal resources (Pearce and Robinson, 2006). Strategist must look within the corporations to identify internal strategic factors because the analysis of industry's internal strategic factors help managers to identify company's internal strengths and weaknesses just to take advantages of opportunities and to avoid threats. Here the following internal environmental factors that affect the strategic management and sustainable development of the sample mills are described below —

- Management Control Strategy Factors
- Production Management Factors
- Marketing Environment Factors
- Finance and Accounting Factors

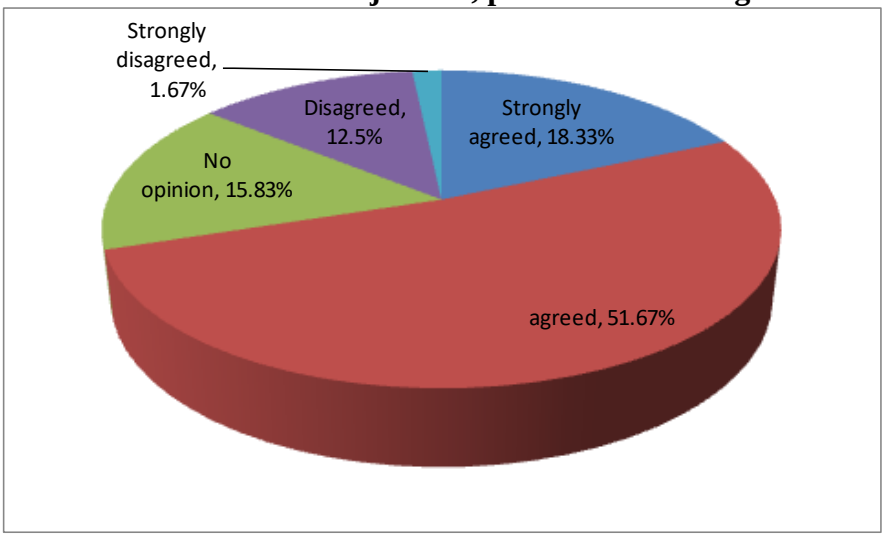
5.4.2(a) Factors Covering Management Control Strategy

The success or failure of any enterprise depends on its management. So, management should not be static and they should consider their internal strengths and weaknesses as well as external opportunities and threats. Management control activities should reflect the objectives and plans of the enterprise. According to the opinions of corporate managers and on the basis of reviewed literature, the following factors covering management control strategy that affect the strategic management and the future sustainability of this industry have been identified which are as follows:

- Lack of clear – cut objectives, policies and strategies
- Non consideration of social and environmental responsibility factors
- Non consideration of SWOT factors
- Inefficient management
- Non application of green management
- Labor unrest
- Absence of ethical standard
- Non co-operation of trade unions

The opinions of executives regarding the impact of the above mentioned factors on the strategic management and sustainable development of the sample mills are analyzed below:

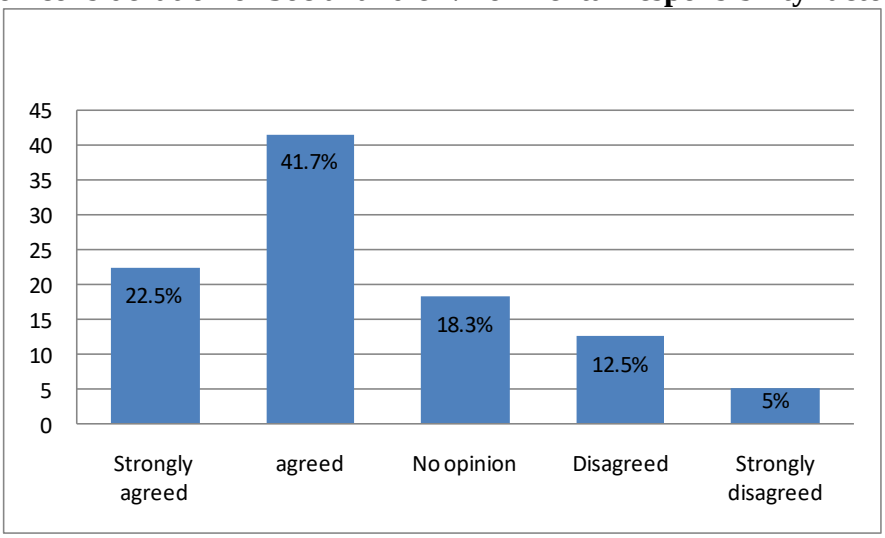
Pie-Chart-5.4.2 (a_1)
Lack of clear cut objectives, policies and strategies



Source: Table-6 in the appendix-II

The Pie-chart-5.4.2(a_1) illustrated above displays the opinions of interviewed executives (corporate managers) on the lack of clear cut objectives polices and strategies as an element of management control factors. This chart signifies that 18.33% (i.e. 22 respondents) out of total respondents (120) strongly agreed and 51.67% (62) out of total respondents agreed that lack of clear cut objectives, polices and strategies has an adverse impact on strategic management and overall performance of the sample mills. On the other hand, 12.5% out of total respondents disagreed and 1.67% of them strongly disagreed that there is no adverse impact of lack of clear cut objectives, polices and strategies on overall performance of sample companies. Among the total respondents, only 15.83% (19 respondents) opined nothings on this issue. So, it may be concluded that lack of clear cut objectives polices and strategies has a hostile impact on overall performance of the sample mills.

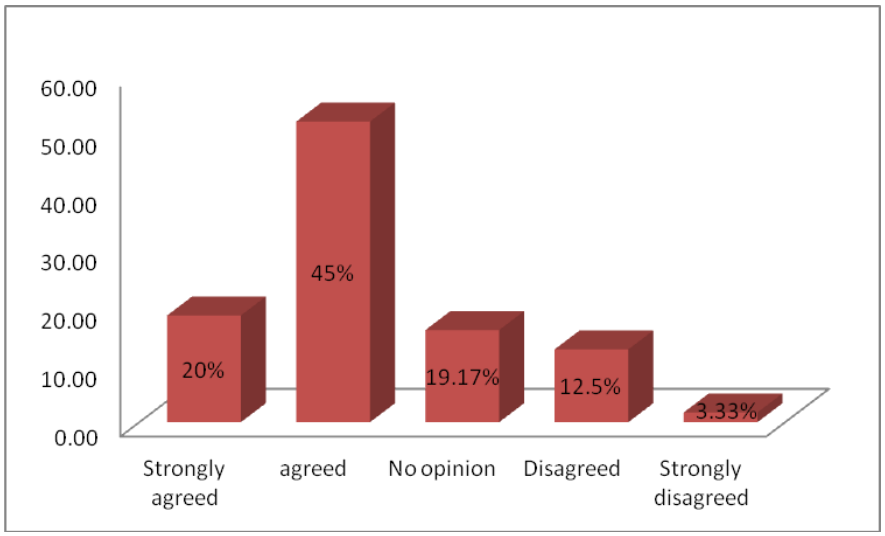
Figure-5.4.2 (a_2)
Non consideration of Social and environmental responsibility factors



Source: Table-6 in the appendix-II

It is betokened from the figure-5.4.2(a_2) that 22.5% (27 respondents) out of total respondents (120) strongly agreed and 41.7% of total respondents agreed that non consideration of social and environment responsibility factors has an hostile effect on overall performance of the sample companies. On the contrary, 12.50% out of total respondents disagreed and 5% of total respondents strongly disagreed to the impact of this factor. So, from the opinion of the executives it can be concluded that non consideration of social and environment responsibility factors has an adverse impact on sustainable development and overall performance of sample mills.

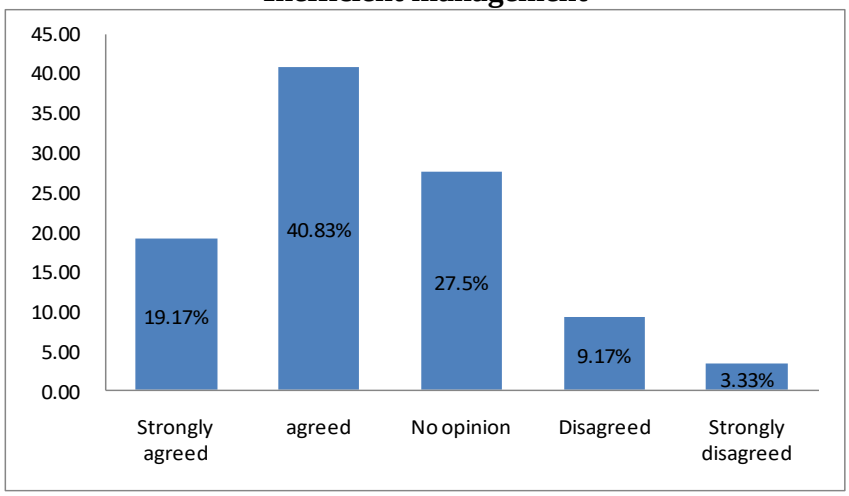
Figure-5.4.2 (a_3)
Non consideration of SWOT factors



Source: Table-6 in the appendix-II

The above figure-5.4.2(a_3) exhibits the opinions of 120 executives on non consideration of SWOT factors as an element of socio-cultural factors. It is evident from this chart that 20% of total respondents strongly agreed and 45% of them agreed that non consideration of SWOT factors has an adverse impact on overall performance of the sample mills of textile industry. Among the total respondents 19.17% (i.e. 23 respondents) took no stands on this matter. But 12.5% of the total respondents disagreed and 3.33% strongly disagreed to the impact of this factor. So, from the opinions, it can be defined that non consideration of SWOT factors has had severe negative impact on strategic management and overall performance of the sample mills of this industry.

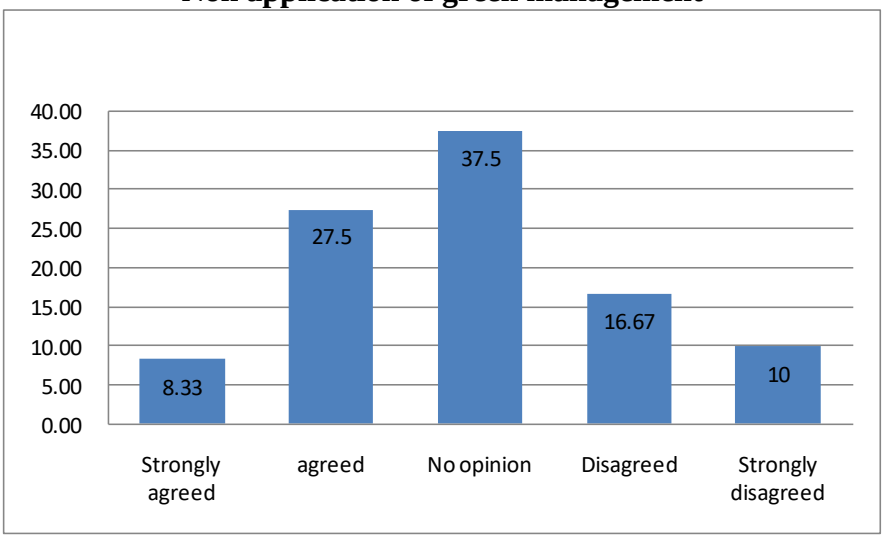
Figure-5.4.2 (a_4)
Inefficient management



Source: Table-6 in the appendix-II

It is denoted from the figure-5.4.2(a_4) that 1917% (23 respondents) out of 120 respondents strongly agreed and 40.83% of the respondents agreed that inefficient management has an adverse effect on strategic management. 27.5% (i.e 33 respondents) of the total respondents expressed no opinions in this regard. On the other hand, 9.17% (11 respondents) of them disagreed and 3.33% of them strongly disagreed to the impact of this factor. So, from the opinion of the executives, it can be said that inefficient management has had little impact on the overall performance of the sample mills of the textile industry.

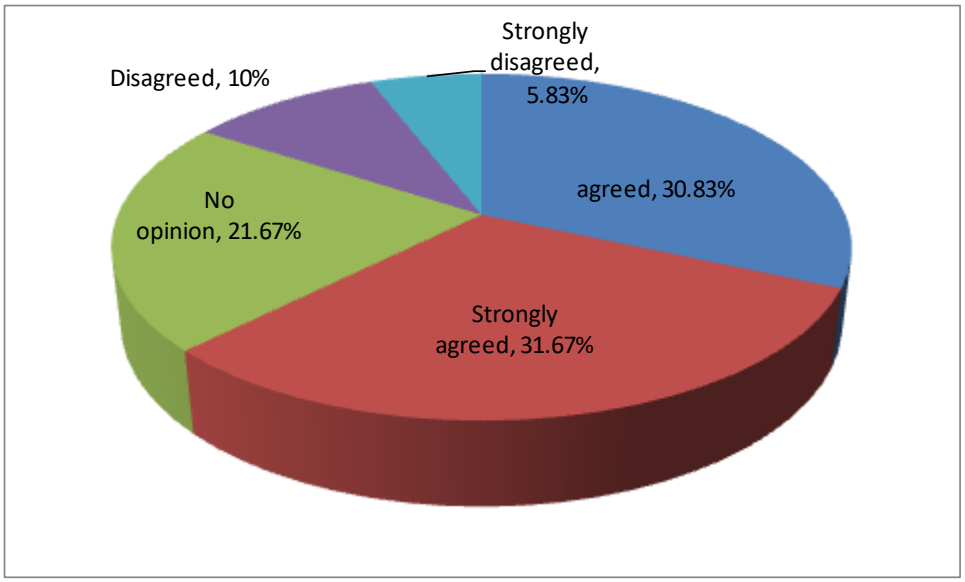
Figure-5.4.2 (a_5)
Non application of green management



Source: Table-6 in the appendix-II.

It is derived from the figure-5.4.2(a_5) that 8.33% (11 respondents) out of total respondents strongly agreed and 27.5% of them agreed that non application of green management has adverse impact on overall performance and sustainable development of sample mills. Among the total respondents, 37.5% (45 respondents) made no comments on this issue. 16.67% out of them disagreed and 10% strongly disagreed to the impact of this factor. So, it can be inferred that non application of green management has had adverse impact on overall performance of the sample mills.

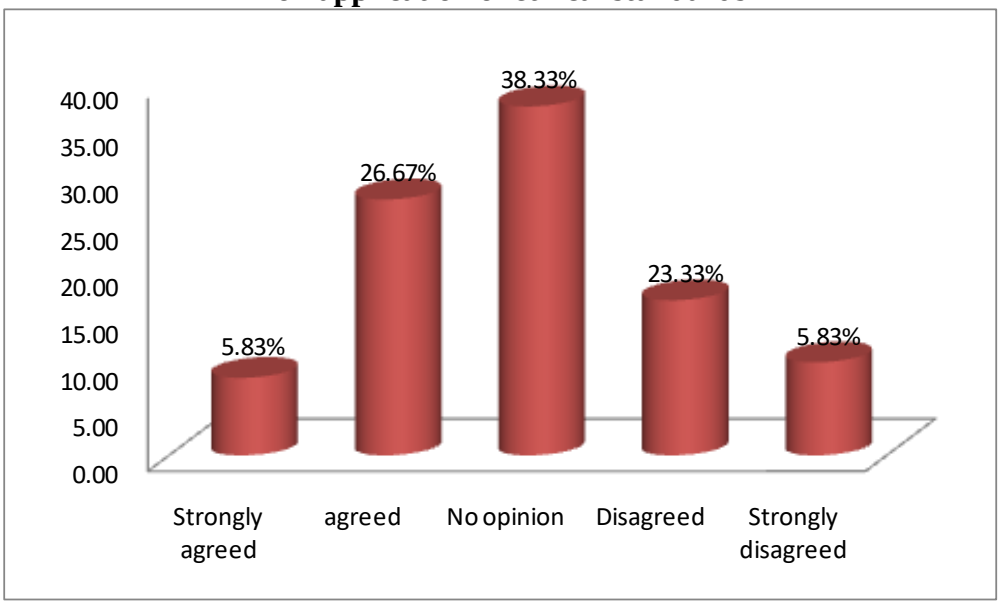
Chart-5.4.2 (a_6)
Labor unrest



Source: Table-6 in the appendix-II

The above Pie-Chart-5.4.2(a_6) reveals that 31.67% of the total respondents (120) strongly agreed and 30.83% of them agreed that labor unrest has got counter effect on strategic management and overall performance of the sample mills. Here it is to note that 21.67% out of total respondents gave no opinions in this regard. On the other hand, 10% (12 respondents) out of total respondents disagreed and 5.83% of them strongly disagreed to the impact of this factor. So, it can be affirmed that labor unrest has had hostile effect on the overall performance of the sample mills.

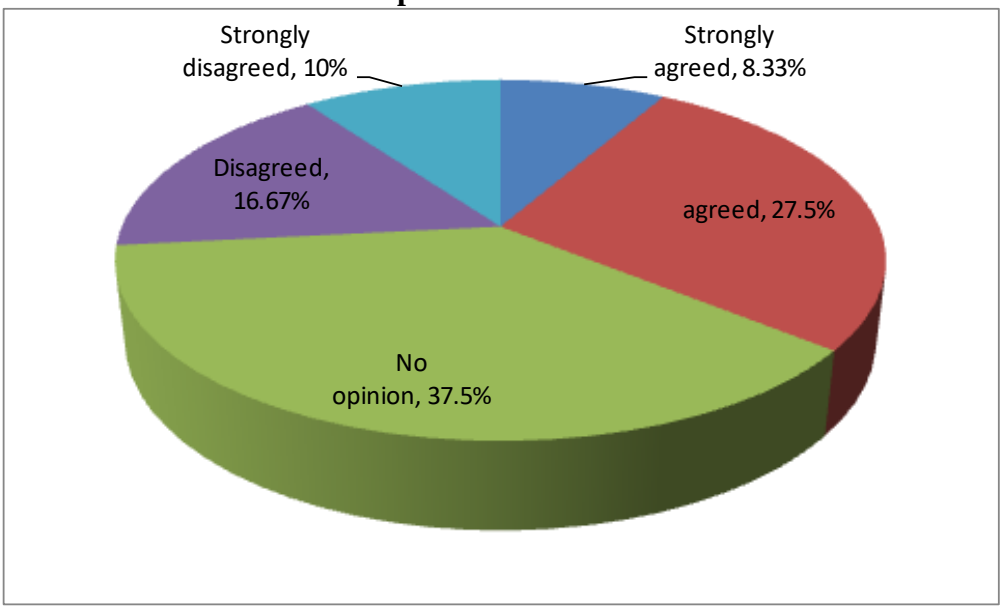
Figure-5.4.2 (a_7)
Non application of ethical standards



Source: Table-6 in the appendix-II

It is evident from the figure-5.4.2(a_7) that 5.83% (7 respondents) out of total respondents strongly agreed and 26.67% agreed that absence of ethical standards have an adverse impact on the future sustainability of the sample mills. On the other hand, 23.33% of them disagreed and 5.83% strongly disagreed to the impact of this factor. So, from the above result, it can be decided that absence of ethical standards has had adverse impact on sustainability and overall performance of the sample mills of this industry.

Pie-Chart-5.4.2 (a_8)
Non co-operation of trade unions



Source: Table-6 in the appendix-II

It is evident from the Pie-chart-5.4.2(a_8) that 8.33% (10 respondents) out of total respondents strongly agreed and 27.5% of them agreed that non co-operation of trade unions have an adverse impact on the future sustainability of the sample mills. On the other hand, 16.67% of them disagreed and 10% strongly disagreed to the impact of this factor. So, from the above result, it can be decided that non co-operation of trade unions has had adverse impact on sustainability and overall performance of the sample mills of this industry.

Table-5.4.2(a_9)
Analysis of correlations among management control strategic factors

	1	2	3	4	5	6	7	8
1	1	.984(**)	.993(**)	.908(*)	.544	.734	.371	.422
2		1	.995(**)	.936(*)	.531	.843	.343	.410
3			1	.947(*)	.594	.794	.416	.477
4				1	.767	.816	.582	.680
5					1	.354	.951(*)	.990(**)
6						1	.158	.256
7							1	.959(*)
8								1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
Note :
1. Lack of clear cut objectives, policies and strategies
2. Non consideration of Social and environmental responsibility factors
3. Non consideration of SWOT factors
4. Inefficient management
5. Non application of green management
6. Labor unrest
7. Non application of ethical standards
8. Non co-operation of trade unions

Source: Table-6 in the appendix-II

The above Table-5.4.2(a_9) shows the correlations among management control factors of the sample mills. Lack of clear-cut objectives, policies and strategies is positively correlated with all the management control factors and it is highly significant with the non consideration of social and environment responsibility factors and non consideration of SWOT factors at 1% level of significance and with inefficient management at 5% level of significance. Non consideration of social and environment responsibility is positively correlated with all the factors but it is highly significant and positively related with lack of clear-cut objectives, policies and strategies and with non consideration of SWOT factors at 1% level of significance and it is with inefficient management at 5% level of significance. Non consideration of SWOT factors is positively correlated with all the factors but is highly significant with lack of clear cut objectives, polices and strategies and non consideration of social and environmental responsibility factors at 1% level of significance and with inefficient management at 5% level of significance. Inefficient management is positively correlated with all the factors but it is highly significant with lack of clear-cut objectives, policies and strategic, non considerations of social and environmental responsibility factors and non consideration of SWOT factors at 5% level of significance. Non application of green management is positively correlated with all the factors and it is highly significant with non application of ethical standards at 5% level of

significance and with non co-operation of trade unions at 1% level of significance. Labor unrest is positively correlated with all the management control factors. Non application of ethical standards is positively related and is highly significant with non application of green management and with non co-operation of trade unions at 5% level of significance. Non co-operation of trade unions is positively related with all the factors bat it is highly significant with non application of green management (1% level of significance) and with non application of ethical standard (5% level of significance).

Table-5.4.2(a_{10})
Analysis of management control factors through Likert-scale

Factors	Scores	Comments	Rank
Lack of clear cut objectives, policies & strategies	447	S	1
Labor unrests	447	S	2
Non consideration SWOT factors	440	S	3
Non consideration of social and environmental responsibility factors	437	S	4
Inefficient management	436	S	5
Non application of Green management	378	S	6
Non application of trade unions	369	S	7
Non application of ethical standards	364	S	8
Note : HS = Highly significant (481-600) S = Significant (361-480) INS = Insignificant (Below 360)			

Source: Table-6 in the appendix-II.

Table-5.4.2(a_{10}) exhibits management control factors with their scores and ranking as per Likert's five point scale. Among the management control factors, lack of clear-cut objectives, policies and strategies has positioned top with score 447 along with labor unrests taking the same score. This is followed by non consideration of SWOT factors (440), non consideration of social and environmental responsibility factors (437), inefficient management (436), non application of green management (378), non application of trade unions (369), and non application ethical standards (364). All the factors are significant and have had significant impact on strategic management because their scores are greater than 360. So, corporate managers need to deliberate these factors in their decision making process for the long term sustainability of this industry.

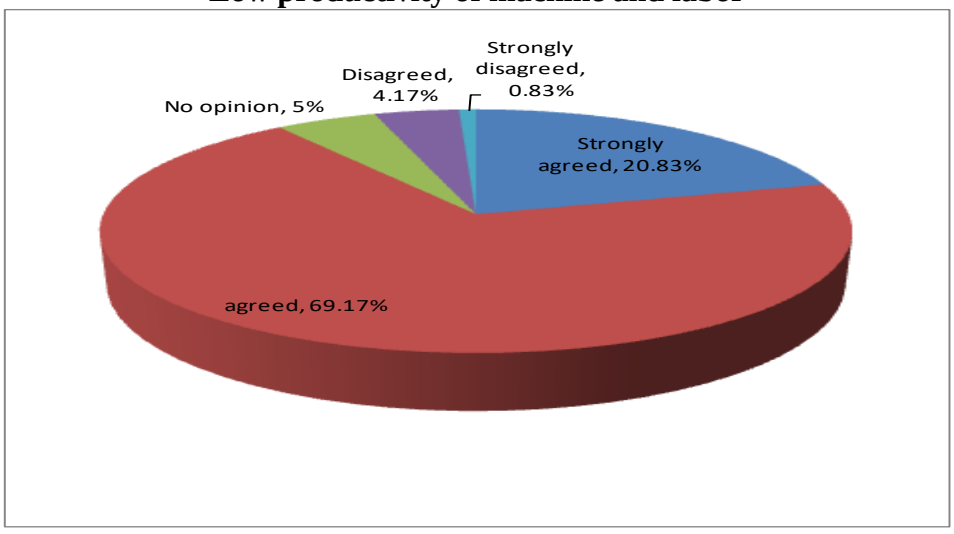
5.4.2(b) Factors Related to Production Environment

The function of production management is expected to produce the product or services and has responsibility for more resources (physical, human and financial) than any of the other functions (Bowman, 1987). The core function of production manager is to establish a system that will help produce required number of products or services with maintaining a quality at a given cost and within a certain period of time. However, on the basis of reviewed related literature and according to the executives opinions, the following factors related to production management that affect the overall performance and future sustainability of the sample mills, have been identified which are as follows —

- Low productivity of machine and labor
- Labor unrests
- Power failures
- Shortage of raw materials

The opinion of executives on the above mentioned production environment factors are discussed below —

Pie-Chart-5.4.2(b_1)
Low productivity of machine and labor

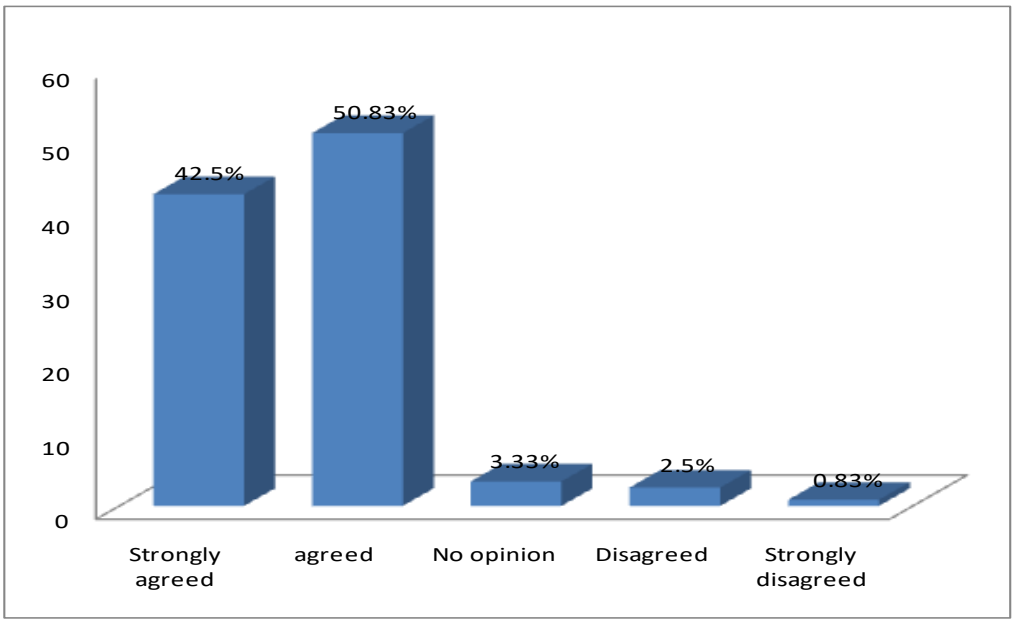


Source: Table-7 in the Appendix-II

The above Pie-chart-5.4.2(b_1) reveals the opinions of executives regarding the impact of low productivity of machine and labor as an element of production management factors on the overall performance of the textile industry. It is evinced from this chart that among the total 120 executives, 20.83% of them strongly agreed and 69.17% of them agreed that

low productivity of machine and labor has an adverse impact on the overall performance and strategic management of this industry. On the other hand, 4.17% of them disagreed and 0.83% strongly disagreed that there is no adverse impact of this factor. So, it may be concluded that low productivity of machine and labor has had hostile effect on strategic management and overall performance of this industry to a great extent.

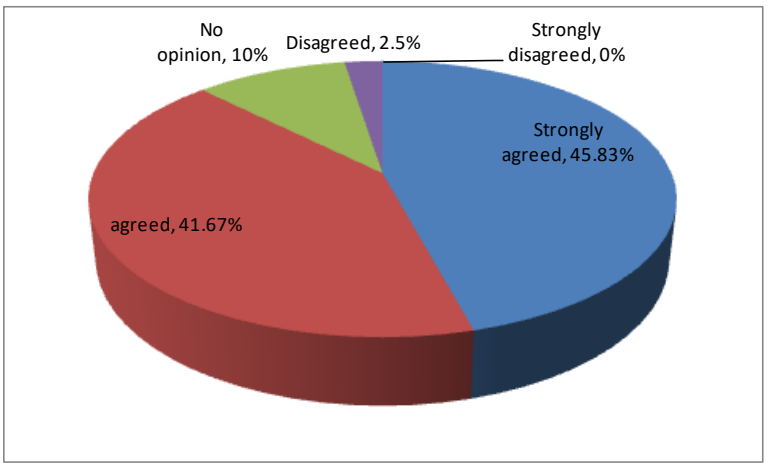
Figure-5.4.2 (b_2)
Labor unrests



Source: Table-7 in the Appendix-II

It is evident from the above figure-5.4.2(b_2) that 42.5% of the total respondents (120) strongly agreed and 50.83% of them agreed that labor unrest has an adverse impact on strategic management and overall performance of this industry. Among the total respondents, 2.5% of them disagreed and 0.83% strongly disagreed to the impact of this factor. Here it is to note that 3.33% of the total respondents expressed no opinions in this regard. So, it can be said that labor unrest has had hostile effect on strategic management to a great extent.

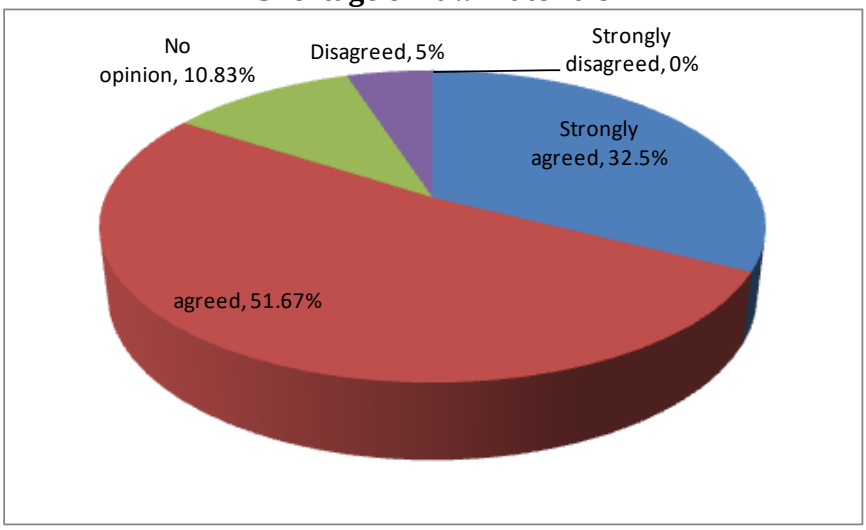
Pie-Chart-5.4.2 (b_3)
Power failures



Source: Table-7 in the Appendix-II

It is apparent from the above Pie-chart-5.4.2(b_3) that 45.83% (i.e. 55 respondents) out of total respondents (120) strongly agreed and 50% of them agreed that power failures has an adverse impact on strategic management of this industry. Among the total respondents, 10% (12 respondents) expressed no opinions on power failures as an element of production environment factors. But on the contrary, 2.5% of them disagreed and 00% of them strongly disagreed to the impact of this factor. So, it can be affirmed from the above results that power failures has a belligerent impact on strategic management of this industry.

Pie-Chart-5.4.2 (b_4)
Shortage of raw materials



Source: Table-7 in the Appendix-II

It is derived from the Pie-chart-5.4.2(b_4) that 32.5% (i.e 39 respondents) out of total respondents (120) strongly agreed and 51.67% of them agreed that shortage of raw materials has an adverse impact on strategic management and overall performance of this industry. Among the total respondents, 10.83% expressed no opinions in this respect. But on the other hand, 5% (6 respondents) disagreed and 00% strongly disagreed that there is no impact of shortage of raw materials on strategic management. So, it may be concluded that shortage of raw materials has had severe negative impact on strategic management of textile industry.

Table-5.4.2(b_5)
Analysis of correlations among production environment factors

	1	**2**	**3**	**4**
1	1	.867	.754	.942(*)
2		1	.973(**)	.969(**)
3			1	.925(*)
4				1

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
Note:
1. Low productivity of machine and labor
2. Labor unrests
3. Power failures
4. Shortage of raw materials

Source: Table-7 in the Appendix-II

The above Table-5.4.2(b_5) displays correlations among production environment factors of sample mills. Low productivity of machine and labor is positively related with all the production environment factors and it is highly significant with shortage of raw materials at 5% level of significance (LS). Labor unrests is also positively and significantly correlated with power failures and shortage of raw materials at 1% level of significance. Power failures is positively correlated with all the factors but it is significantly related with labor unrest at (1% level of significance) and with shortage of raw materials at 5% level of significance. Shortage of raw materials is also positively correlated and this factor is significantly correlated with labor unrests at 1% level of significance and with low productivity of machine and labor as well as power failures at 5% level of significance.

Table-5.4.2(b_6)
Analysis of Production Environment Factors through Likert-Scale

Factors	Scores	Comments	Rank
Labor unrests	518	HS	1
Power failures	517	HS	2
Shortage of raw materials	494	HS	3
Low productivity of machine and labor	486	HS	4
Note: HS = Highly significant (481-600) S = Significant (361-480) INS = Insignificant (Below 360)			

Source: Table-7 in the Appendix-II

The Table-5.4.2(b_6) shows that among the production environment factors labor unrests has positioned top with the score 518 and this is followed by power failures (517), shortage of raw materials (494) and low productivity of machine and labor (486). The impacts of all these factors are highly significant because their scores are greater than 480. So, it can be concluded that all the production factors are highly responsible for the overall performance and for future sustainability of the sample mills and this is the way corporate managers need to consider these issues while they adopt strategic plan.

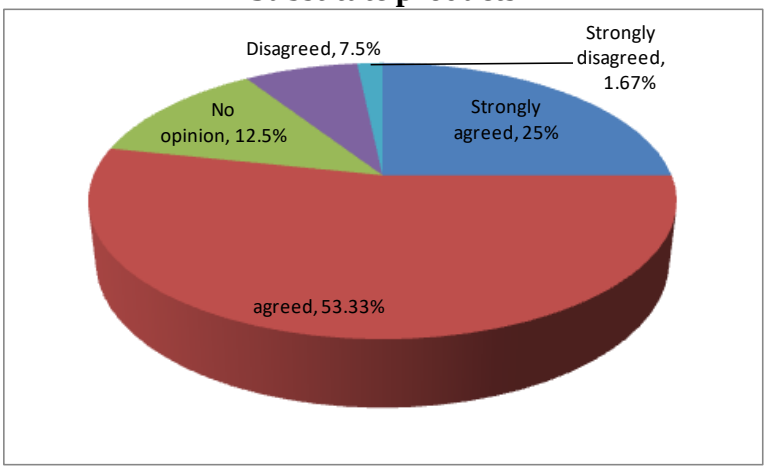
5.4.2(c) Factors Influencing Marketing Environment

Marketing function of an organization represents the most important interface between the entity and its external environments. The marketing manager is the company's primary link to the customer and must be concerned with the firm's market position and marketing mix (Wheelen, 1995). According to the opinions of executives and on the basis of reviewed literature, the following factors influence marketing environment which in turn affect strategic management and overall performance of the sample mills:—

- Substitute Products
- Lack of market research activities
- Lack of publicity and promotional activities
- Low prices of textile products

The opinions of executives regarding the impact of marketing environment factors on the overall performance of the sample mils are discussed below —

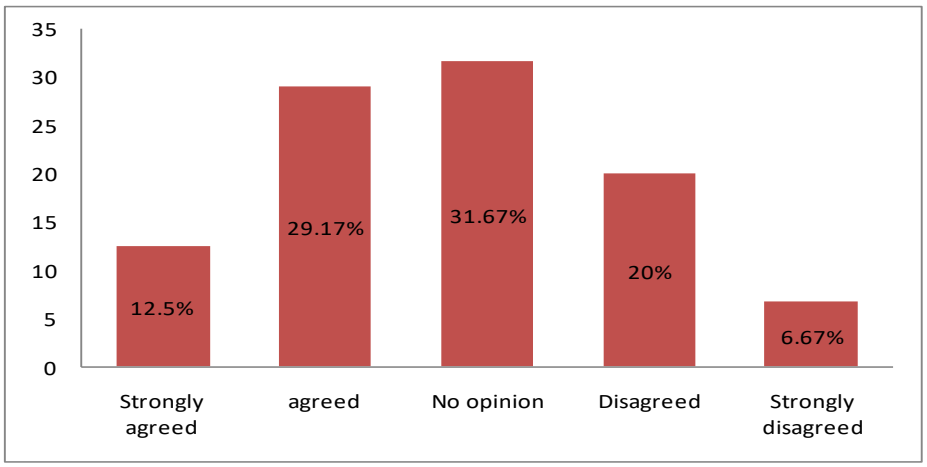
Pie-Chart-5.4.2 (c_1)
Substitute products



Source: Table-8 in the Appendix-II

The above Pie-chart-5.4.2(c_1) exhibits that 25% (i.e. 30 respondents) out of total respondents (120) strongly agreed and 53.33% of total respondents agreed that substitute products have a hostile impact on firm's strategic management and overall performance of sample textile mills. 12.5% (i.e. 15 respondents) out of total respondents expressed no opinions in this regard. But on the other hand, 7.5% of total respondents disagreed and 1.67% of total respondents strongly disagreed to the impact of this factor. So, from the above results, it can be concluded that substitute products have got somewhat unfriendly impact on overall performance of this industry.

Figure-5.4.2 (c_2)
Lack of market research activities

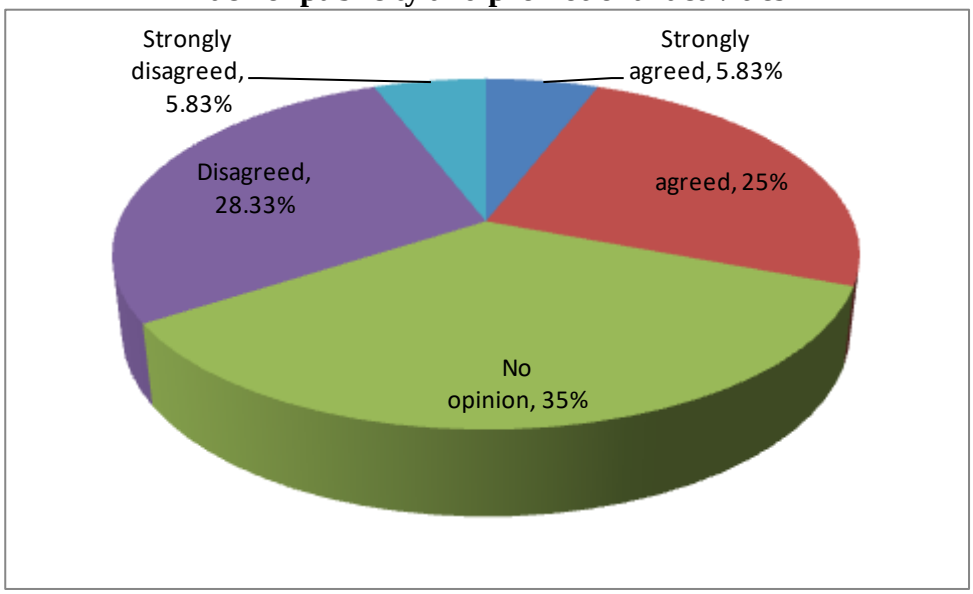


Source: Table-8 in the Appendix-II

It is observed from the figure-5.4.2(c_2) that among the total respondents, 12.5% of them strongly agreed and 29.17% agreed that lack of market research activities has got adverse

impact on the overall performance of sample mills. On the other hand, 20% (24 respondents) of them disagreed and 6.67% strongly disagreed to the impact of this factor. From the above results, it can be concluded that lack of market research activities has had negative impact on overall performance of the sample mills to some extent.

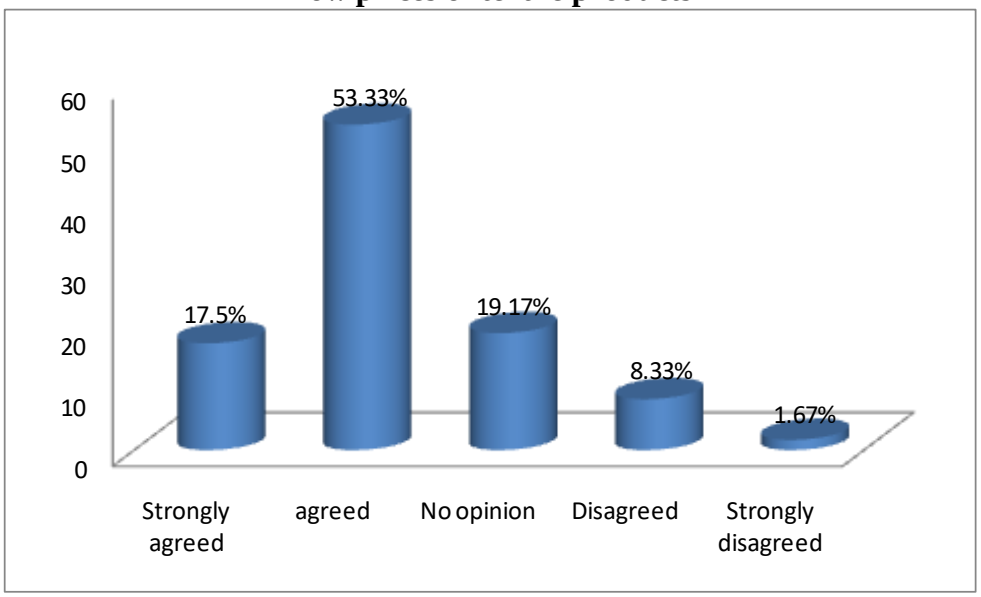
Pie-Chart-5.4.2 (c_3)
Lack of publicity and promotional activities



Source: Table-8 in the Appendix-II

It is noticed from the above Pie-chart-5.4.2(c_3) that 5.83% (07 respondents) of total respondents (120) strongly agreed and 25% of them agreed that lack of publicity and promotional activities has an adverse impact on the strategic management of sample mills. On the contrary, 28.33% of them disagreed and 5.83% strongly disagreed to the impact of this factor. So, from the opinions of the executives, it can be concluded that lack of publicity and promotional activities has got severe adverse impact on strategic management of textile mills.

Figure-5.4.2 (c_4)
Low prices of textile products



Source: Table-8 in the Appendix-II

The above figure-5.4.2(c_4) reveals that 17.5% (i.e. 21 executives) out of total executives strongly agreed and 53.33% of them agreed that low prices of textile products have an adverse impact on strategic management of sample mills. On the other hand, 8.33% of them disagreed and 1.67% strongly disagreed to the impact of this factor. From the above results, it can be said that low prices of textile products have had hostile effect on strategic management on sample mill of this industry.

Table-5.4.2(c_5)
Analysis of correlations among marketing environment factors

	1	2	3	4
1	1	.486	.126	.969(**)
2		1	.902(*)	.658
3			1	.329
4				1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
Note :
1. Substitute products
2. Lack of market research activities
3. Lack of publicity and promotional activities
4. Low prices of textile products

Source: Table-8 in the Appendix-II

Table-5.4.2(c_5) shows correlations among marketing environment factors of the sample mills. Substitute products are positively correlated with all the marketing environment factors but it is highly significant with low prices of textile products at 1% level of

significance. Lack of market research activities is also positively correlated with all the factors and this factor is significantly correlated with lack of publicity and promotional activities at 5% level of significance. Lack of publicity and promotional activities is positively related with all the factors and it is significantly correlated with lack of market research activities at 5% level of significance. Low prices of textile products are also positively related with all the factors but it is significantly correlated with substitute products at 1% level of significance.

Table-5.4.2(c_6)
Analyses of Marketing Environment Factors through Likert-Scale

Factors	Scores	Comments	Rank
Substitute products	471	S	1
Low prices of textile products	452	S	2
Lack of market research activities	385	S	3
Lack of publicity and promotional activities	356	INS	4
Note : HS = Highly significant (481-600) S = significant (381-480) INS = Insignificant (Below 360)			

Source: Table-8 in the Appendix-II

The above Table-5.4.2(c_6) indicates that among the marking environment factors substitute products has positioned top with the score 471 which is followed by low prices of textile products (452) and lack of market research activities (385). However, the impacts of all these factors are significant because their scores are greater than 360 but the impact of lack of publicity and promotional activities on overall performance and sustainable development of sample mills is insignificant because its score is lower than 360. So, it can be affirmed that as all the marketing environment factors except lack of publicity and promotional activities have had wide influence on the overall performance of sample mills. So, the mills′ management should consider these factors in the decision making process.

5.4.2(d) Factors Related to Financial and Accounting Aspect

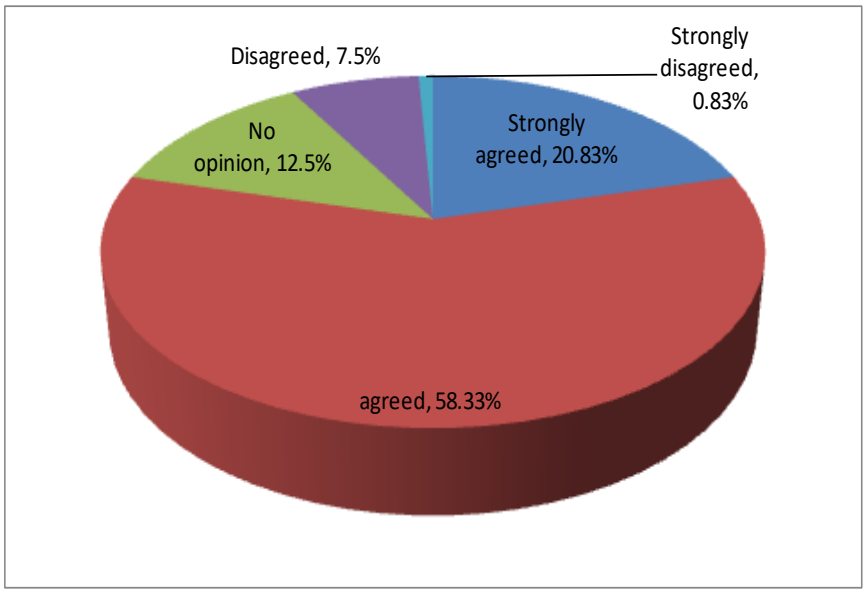
Management should be particularly interested in knowing financial strengths of the firm to make their best use and to be able to spot out financial weaknesses of the firm to take suitable corrective actions. The futures plans of the firm should be laid down in view of the firm’s financial strengths and weakness (Pandey, 2006). Thus, financial analysis is the

starting point for making plans, before using any sophisticated forecasting and planning procedures. Understanding the past is a prerequisite for anticipating the future. According to the opinion of executives and on the basis of reviewed literature, the following factors covering financial and accounting environment that affect strategic management and overall performance of the sample mills have been detected which are as follows: —

- Shortage of working capital
- High rate of banking interest
- Increased cost of production
- Lack of credit facilities

The opinion of executives in this regard are discussed below —

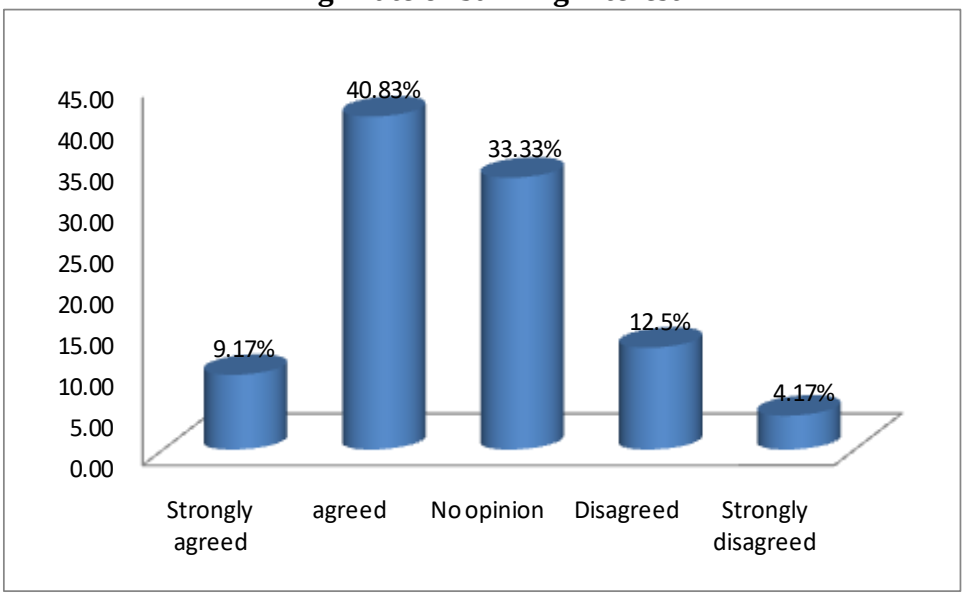
Pie-Chart-5.4.2 (d_1)
Shortage of working capital



Source: Table-9 in the Appendix-II

The above Pie- chart-5.4.2(d_1) reveals the opinions of executives regarding the impact of shortage of working capital on the overall performance of the textile industry. It is evinced from this chart that among the total 120 executives, 20.83% (39 respondents) strongly agreed and 58.33% of them agreed that shortage of working capital has an adverse impact on the overall performance and strategic management of this industry. On the other hand, 7.5% of them disagreed and 0.83% strongly disagreed that there is no adverse impact of this factor. So, it may be concluded that shortage of working capital has had hostile effect on strategic management and overall performance of this industry to a great extent.

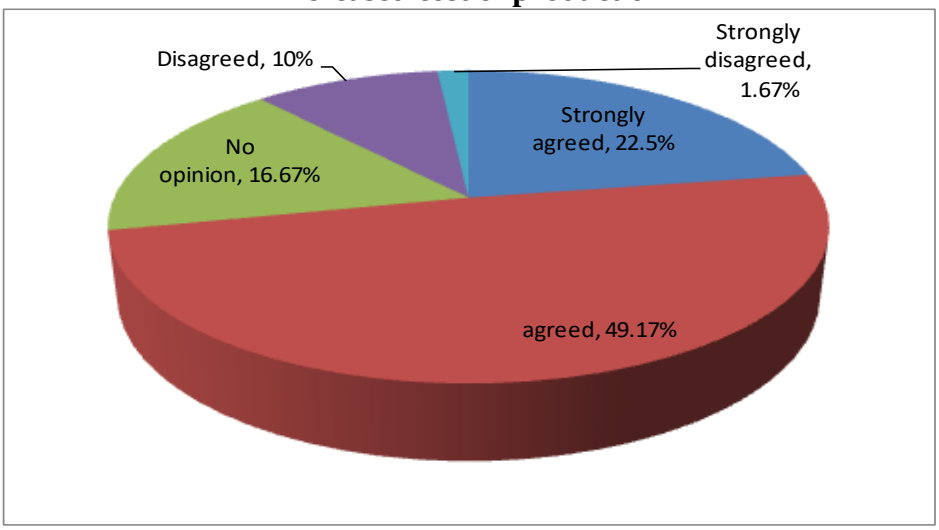
Figure-5.4.2 (d_2)
High rate of banking interest



Source: Table-9 in the Appendix-II

It is evident from the above figure-5.4.2(d_2) that 9.17% of the total respondents (120) strongly agreed and 40.83% agreed that high rate of banking interest has an adverse impact on strategic management and overall performance of this industry. Among the total respondents, 12.5% disagreed and 4.17% strongly disagreed to the impact of this factor. Here it is to note that 33.33% of the total respondents expressed no opinions in this regard. So, it can be said that high rate of banking interest has had hostile effect on strategic management to some extent.

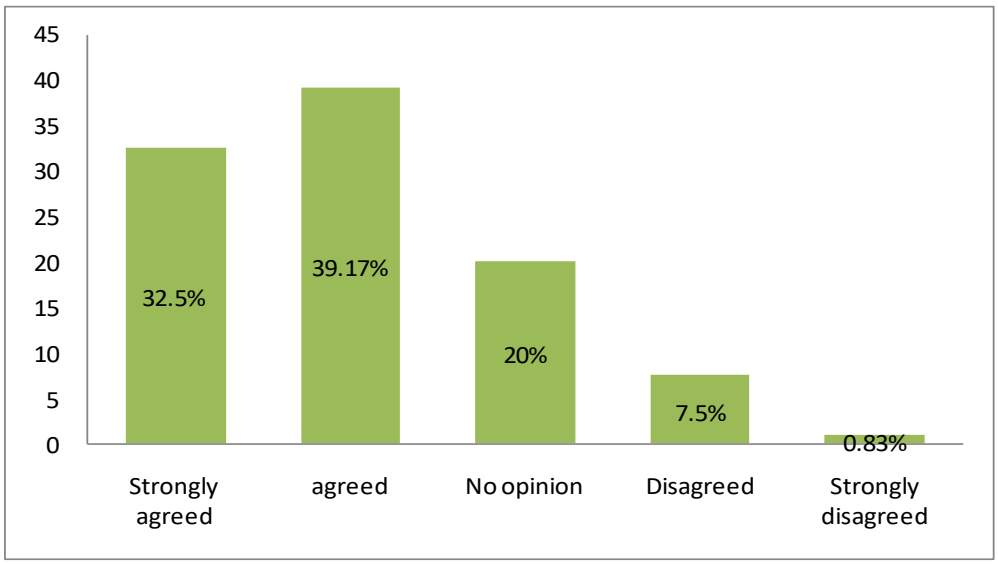
Pie-Chart-5.4.2 (d_3)
Increased cost of production



Source: Table-9 in the Appendix-II

It is apparent from the above Pie- chart-5.4.2(d_3) that 22.5% (i.e. 27 respondents) out of total respondents (120) strongly agreed and 49.17% agreed that increased cost of production has an adverse impact on strategic management of this industry. Among the total respondents, 16.67% of them expressed no opinions on increased cost of production as an element of finance and accounting factor. But on the contrary, 10% disagreed and 1.67% of them strongly disagreed to the impact of this factor. So, it can be affirmed from the above results that increased cost of production has a belligerent impact on strategic management of this industry.

Figure-5.4.2 (d_4)
Lack of credit facilities



Source: Table-9 in the Appendix-II

It is derived from the figure-5.4.2(d_4) that 32.5% (i.e. 39 respondents) out of total respondents (120) strongly agreed and 39.17% agreed that lack of credit facilities has an adverse impact on strategic management and overall performance of this industry. Among the total respondents, 20% expressed no opinions in this respect. But on the other hand, 7.5% (9 respondents) disagreed and 0.83% of them strongly disagreed that there is no impact of lack of credit facilities on strategic management. So, it may be concluded that lack of credit facilities has had severe negative impact on strategic management of textile industry.

Table-5.4.2(d_5)
Correlations among Financial and Accounting Factors

	1	2	3	4
1	1	.854(**)	.931(**)	.888(**)
2		1	.866(**)	.865(**)
3			1	.933(**)
4				1

** Correlation is significant at the .01 level (2 tailed)
1. Shortage of working capital
2. High Rate of Banking capital
3. Increased cost of production
4. Lack of credit facilities.

Source: Table-9 in the Appendix-II

The above Table-5.4.2 (d_5) exhibits correlations among finance and accounting factors. Shortage of working capital is positively and significantly correlated with all the factors. High rate of bank interest is also positively and significantly correlated with all the financial and accounting factors at 1% level of significance (LS). Increased cost of production and lack of credit facilities are also positively correlated and they are highly significant with all the factors at 1% level of significance.

Table-5.4.2(d_6)
Analysis of Finance and Accounting Factors through Likert-Scale

Factors	Scores	Comments	Rank
Lack of credit facilities	474	S	1
Shortage of working capital	469	S	2
Increased cost of production	457	S	3
High rate of banking interest	406	S	4

Note :
HS = Highly significant (481-600)
S = Significant (361-480)
INS = Insignificant (Below 360)

Source: Table-9 in the Appendix-II

The above Table-5.4.2(d_6) reveals finance and accounting factors with their scores and ranking as per Likert's five point scale. This Table indicates that lack of credit facilities has ranked top with the score 474 followed by shortage of working capital (469), increased cost of production (457) and high rate of banking interest (406). The impacts of all these factors are significant because their scores are greater than 360. So, mills` corporate managers should take into consideration these factors in the decision making process giving top priority on lack of credit facilities.

5.4.3 Environmental Searching and Industry Analysis

Environmental searching and industry analysis provide the information needed to identify opportunities and threats in a firm's environment, the first fundamental focus in SWOT analysis. SWOT is an acronym for the internal strengths and weaknesses of a firm and the environmental opportunities and threat facing that firm (Pearce and Robinson, 2006). Before formulating strategies, corporate managers must scrutinize the environments to identify possible external opportunities and threats and to identify the internal strengths and weaknesses. SWOT analysis is a widely used technique to aid strategic analysis. However, the process of SWOT analysis of the sample mills has been discussed below-

5.4.3(a) Analysis of Firm's Strengths

On the basis of reviewed literature and the opinions of interviewed corporate managers of the sample mills, the following factors exhibiting strengths have been detected which are explicated as under:

Table-5.4.3(a_1)
Analysis of sample mills strength factors through Likert -scale

Factors	Scores	Comments	Rank
Proper Action Against Population	485	HS	1
Good Physical Working Environment	484	HS	2
Efficient Workers	481	HS	3
Good Relation with Workers	481	HS	4
Good Quality of Products	475	S	5
Good Waste Management	431	S	6
Note: HS = Highly Significant (481-600) S = Significant (361-480) INS = Insignificant (Below 360)			

Source: Table 12 in the appendix-II

The above Table-5.4.3(a_1) shows the strengths of the sample companies according to the interviewed executives with their score and ranking as per likert scale. In this Table, proper action against pollution has positioned top with the score 485 which is greater than 480. So, the impact of proper action against pollution is highly significant and it is the strength of this industry. Accordingly, the impact of good physical working environment (484), efficient workers (481) and good relation with workers (481) are also highly significant and they are the strength of the sample companies. The impact of good quality of products (475) and good waste management (431) are significant because their score

are greater than 360 but below the 480. So, these two factors are also the strengths for the sample companies to some extent. So, it may be argued from the above analysis that the sample mills have got some strengths and corporate managers of these mills need to consider these factors exhibiting strengths in their decision making process to surmount its weaknesses and for future sustainability of this industry.

Table-5.4.3(a_2)
Correlations among strengths factors of the sample mills

	1	**2**	**3**	**4**	**5**	**6**
1	1	.904(**)	.934(**)	.892(**)	.812(**)	.872(**)
2		1	.931(**)	.888(**)	.803(**)	.880(**)
3			1	.938(**)	.814(**)	.913(**)
4				1	.822(**)	.969(**)
5					1	.837(**)
6						1

** Correlation is significant at the 0.01 level (2-tailed).
Note:
1. Good Quality of Textile Products
2. Efficient Workers
3. Good Relation with Workers
4. Good Physical Working Environment
5. Good Waste Management System
6. Proper Action Against Pollution

Source: Table 5.4.3(a_1)

The above Table-5.4.3(a_2) shows correlations among the factors exhibiting strengths of sample mills. Good quality of textile products is positively and significantly correlated with all the factors at 1% level of significant. Efficient workers, good relation with workers, good physical working environment factors, good waste management system and proper action against pollution are also positively and significantly correlated with each other at 1% level of significant (LS).

5.4.3(b) Analysis of Firm's Weaknesses:

The weaknesses for the sample mills have been selected from the analysis of industry's internal environment. For selecting the weaknesses of the sample mills, only the factors that have exceeded seventy percent and above of the total score (i.e. 437÷600×100=72.83%) have been considered there. However, the selected factors in this way may have a significant or highly significant impact on strategic management process. The following table shows the Likert-scale of sample mills' weaknesses.

Table-5.4.3(b_1)
Analysis of sample mills' weaknesses factors through Likert scale

Factors	Scores	Comments	Rank
Labor Unrest	518	HS	1
Power Failure	517	HS	2
Shortage of Raw Materials	494	HS	3
Law Productivity of Machine and Labor	486	HS	4
Lack of credit facilities	474	S	5
Substitute Products	471	S	6
Shortage of Working Capital	469	S	7
Increased Cost of Production	457	S	8
Low Prices of Textile Products	452	S	9
Lack of Clear cut Objectives, Policies and Strategies	447	S	10
Non consideration of SWOT factors	440	S	11
Non Consideration of Social and Ecological Factors	437	S	12
Note: HS = Highly Significant (481-600) S = Significant (361-480) INS = Insignificant (Below 360)			

Source: Table-6, Table-7, Table-8, and Table-9 in the Appendix-II

The above Table reveals that labor unrests has ranked top with the score 518 followed by power failures (517), shortage of raw materials (494), low productivity of machine and labor (486) and all the weaknesses factors stated above have a highly significant impact on the overall performance of the sample mills because their scores are greater than 480. Besides these, lack of credit facilities (474), substitutes products (471), shortage of working capital (469), increased cost of production (457), low prices of textile products (452) lack of clear cut objectives, policies, and strategies (447), non consideration of SWOT factors (440) and non consideration social and ecological factors (437) have a significant impact because their scores are greater than 360 but less than 480.It may be recalled that all the factors included in this Table have been considered only whose scores are greater than seventy percent and above of the total scores. So it can be said that there are several weaknesses in the sample mills and their impact are significant and some of them are highly significant. This is why mills' management should consider these factors in the decision making process and should strive to subjugate these weaknesses through adopting sustainable strategies.

Table-5.4.3(b_2)
Correlations among weakness factors of the sample mills

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	.902(**)	.849(**)	.811(**)	.783(**)	.805(**)	.793(**)	.842(**)	.779(**)	.757(**)	.792(**)	.799(**)
2		1	.870(**)	.774(**)	.853(**)	.844(**)	.822(**)	.866(**)	.830(**)	.837(**)	.853(**)	.854(**)
3			1	.845(**)	.876(**)	.901(**)	.879(**)	.924(**)	.846(**)	.861(**)	.886(**)	.897(**)
4				1	.859(**)	.880(**)	.915(**)	.802(**)	.866(**)	.823(**)	.832(**)	.833(**)
5					1	.941(**)	.934(**)	.933(**)	.959(**)	.958(**)	.939(**)	.946(**)
6						1	.964(**)	.909(**)	.918(**)	.909(**)	.905(**)	.920(**)
7							1	.883(**)	.925(**)	.918(**)	.915(**)	.915(**)
8								1	.913(**)	.904(**)	.899(**)	.911(**)
9									1	.969(**)	.932(**)	.918(**)
10										1	.955(**)	.936(**)
11											1	.973(**)
12												1

** Correlation is significant at the 0.01 level (2-tailed).

Note:

1. Labor Unrests
2. Power Failures
3. Shortage of Raw Materials
4. Low productivity of Machine and Labor
5. Lack of credit Facilities
6. Substitute Products
7. Shortage of working capital
8. Increased cost of production
9. Low prices of textile products
10. Lack of clear cut objectives policies and strategies
11. Non consideration of SWOT factor
12. Non Consideration of Social & Ecological Factors

Source: Table-5.4.3(a_1)

It has been found from the above Table that labor unrests, power failures, shortage of raw materials, low productivity of machine and labor, lack of credit facilities, substitute products, shortage of working capital, increased cost of production, low prices of textile products, lack of clear cut objectives, strategies and policies, non consideration of SWOT factors, non consideration of social and ecological factors are positively correlated with each other and they are highly significant at 1%Level of significance.

5.4.3(c) Analysis of Opportunity Factors:

On the basis of reviewed literature and the opinions of interviewed corporate managers of the sample projects the following opportunity factors favoring implementation of strategies are discussed below:

Table-5.4.3(c_1)
Analysis of sample mills opportunity factors through Likert-scale

Factors	Scores	Comments	Rank
1. Recycling Process	518	HS	1
2. Proper Handling of Environmental Issues	517	HS	2
3. Product Diversification	494	HS	3
4. Computerization	486	HS	4
5. Entrance into New Market	474	S	5
6. Effective Market Research and Promotional Activities	471	S	6
Note: HS = Highly Significant (481-600) S = Significant (361-480) INS = Insignificant (Below 360)			

Source: Table-1, Table-2, Table-3, Table-4, Table-5 in the Appendix-II

It is seen from the above Table-5.4.3(c_1) that recycling process has positioned top with the score 454 followed by proper handling of environmental issues (451), product diversification (449), computerization (436), entrance into new market (415), and effective market research and promotional activities (406). The impacts of all these factors on sustainable development of the sample mills are significant because their scores are greater than 360. So, the mills' management should bethink these opportunity factors for the future sustainability of this industry.

Table-5.4.3(c_2)
Correlations among opportunity factors of sample mills

	1	2	3	4	5	6
1	1	$.929^{(**)}$	$.868^{(**)}$	$.936^{(**)}$	$.888^{(**)}$	$.897^{(**)}$
2		1	$.845^{(**)}$	$.955^{(**)}$	$.883^{(**)}$	$.920^{(**)}$
3			1	$.853^{(**)}$	$.945^{(**)}$	$.859^{(**)}$
4				1	$.879^{(**)}$	$.910^{(**)}$
5					1	$.892^{(**)}$
6						1
** Correlation is significant at the 0.01 level (2-tailed). **Note:** 1. Recycling process 2. Proper handling of Environmental issues 3. Product diversification 4. Computerization 5. Entrance into New Markets 6. Effective Market Research and Promotional Activities						

Source: Table-5.4.3(c_1)

The above Table-5.4.3(c_2) reveals that recycling process, proper handling of environmental issues, product diversification, and computerization, entrance into new markets, effective market research and promotional activities are positively correlated with each other and they are highly significant at 1% Level of significance.

5.4.3(d) Analysis of Firm's Threats

The threats for the sample companies have been chosen from the analysis of industry's external environment. In respect of selecting the threat factors of the sample mills, only these factors have been considered here whose scores have exceeded seventy percent of the total score i. e. (436 ÷ 600) ×100 = 72.66% (Arafin,, 2006). However, the selected factors by this way have a significant and highly significant impact on the future sustainability of these mills. The following Table-5.4.3(d_1) shows the analysis of sample mills` threats by using likert-type scaling.

Table-5.4.3(d_1)
Analysis of threat factors of sample mills through Likert scale

Factors	Scores	Comment	Rank
1. Labor Unrests	483	HS	1
2. Non consideration of Pollution	482	HS	2
3. Non Consideration of Physical Working Environment	481	HS	3
4. Tax Programs	474	S	4
5. Lack of Government Subsidy	458	S	5
6. Lack of Contribution toward stakeholders	457	S	6
7. Lack of Social Security	452	S	7
8. Non consideration of Recycling Process	451	S	8
9. Old Machinery	451	S	9
10. Non Payment of Environmental Tax	440	S	10
11. Lack of Modern Technology	440	S	11
12. Lack of Job commitment	436	S	12
Note: HS = Highly Significant (481-600) S = Significant (361-480) INS = Insignificant (Below 360)			

Source: Ibid.

It is seen from the above Table-5.4.3(d_1) that labor unrests has positioned top with the score 483 followed by non consideration of pollution (482), non consideration of physical working environment (481) and all these factors concerning threats of the sample mills have a highly significant impact on the sustainable development of this industry because their scores are greater than 480. Besides these, tax programs (474), lack of government subsidy (458), lack of contribution toward stake holders (457), lack of social security (452), non-consideration of recycling process (451), old machinery (451), nonpayment of environmental tax (440), lack of modern technology (440) and lack of job commitment (436) have had significant impact on the future sustainability of this industry because

their scores are greater than 360 but lower than 480. So, it can be inferred that the sample mills have got some threats also, so, mills management need to bethink these factors in their strategic management process so as to overcome these threats for the future sustainability of this industry.

Table-5.4.3(d_2)
Correlations among threat factors of sample Mills

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	.909(**)	.942(**)	.944(**)	.888(**)	.862(**)	.884(**)	.912(**)	.909(**)	.895(**)	.911(**)	.914(**)
2		1	.965(**)	.946(**)	.865(**)	.829(**)	.899(**)	.920(**)	.910(**)	.888(**)	.912(**)	.889(**)
3			1	.946(**)	.869(**)	.850(**)	.918(**)	.917(**)	.935(**)	.893(**)	.917(**)	.917(**)
4				1	.907(**)	.870(**)	.909(**)	.932(**)	.938(**)	.905(**)	.920(**)	.923(**)
5					1	.842(**)	.887(**)	.940(**)	.905(**)	.933(**)	.961(**)	.889(**)
6						1	.806(**)	.823(**)	.844(**)	.820(**)	.877(**)	.859(**)
7							1	.937(**)	.944(**)	.917(**)	.926(**)	.874(**)
8								1	.933(**)	.948(**)	.962(**)	.892(**)
9									1	.895(**)	.921(**)	.910(**)
10										1	.954(**)	.881(**)
11.											1	.894(**)
12												1

** Correlation is significant at the 0.01 level (2-tailed).

Note :

1. Labor unrests
2. Non-consideration of Pollution
3. Non-consideration of physical working Environment
4. Tax Programs
5. Lack of Government subsidy
6. Lack of contribution toward stakeholders
7. Lack of Social security
8. Non-consideration of Recycling Process
9. Old machinery
10. Nonpayment of Environmental tax
11. Lack of modern technology
12. Lack of Job commitment

Source: Table-5.4.3(d_1)

It has been found from the above Table-5.4.3(d_2) that labor unrests, non consideration of pollution, non consideration of physical working environment, tax programmed, lack of government subsidy, lack of contribution toward stakeholders, lack of social security, non consideration of recycling process, old machinery, nonpayment of environmental tax, lack of modern technology and lack of job commitment are positively correlated with each other and these factors are highly significant at 1% level of significance.

5.4.4 Integrating External and Internal Environment Analyses:

Although a variety of tools and techniques can help integrate internal and external analyses, in this section we will follow SWOT analysis among the three well known ones: Product life cycle, portfolio and SWOT analysis.

5.4.4(a) Integration of External Strategic Factors

After scanning and analyzing the industry's external environmental factors, strategic managers may epitomize their analysis on a tabular form entitled 'analysis of external strategic factors' that helps managers organize external strategic factors into the generally accepted categories of opportunities and threats. It also aids in the analysis of how well the management is responding to these specific factors in the light of their perceived importance (weight) to the company. This method (Arafin, 2004) involves the following steps: First make out and enumerate opportunities and threats factors in column 1. Second, put down Likert score of each factor in column 2. Third, assign a weight for each factor from 1.0 (most important) to 0.0 (not important) based on the impact of each factor on the company's current strategic position. The sum total of all weights must be 1.00. The higher the weight, the more this factor becomes a priority for management. Fourth: ascribe a rating in column 4 for each factor from 5 (strongly agreed) to 1 (strongly disagreed) based on management current response to that particular factor. Each rating is a judgment for the analysis about how well the company's management is currently dealing with each external factor. Fifth, multiply the weight (column 3) with its rating (column 4) for each factor to obtain the weighted score in column-5. Sixth, add the weighted scores for all the external factors in column-5 to determine the total weighted score for the company. Total weighted score can range from 5.00 to 1.00, with 3.0 as average or neutral value, the total weighted score above average or neutral value will indicate positive responses by the company.

The total weighted score also indicates about how well the company is responding to current and expected strategic factors in its external environment. In reality, this method is the explication of a sample mills' management of the external strategic factors based on a prioritized listing (using weights). The table stated below shows the analysis for external strategic factors of the sample mills along with corresponding weights, rating and the total weighted score. This analytical method will be the same for internal strategic factors.

Table-5.4.4(a_1)
Abridgement of External Strategic Factors for Overall Sample Mills

External strategic factors	Likert scale score	Weight	Rating	Weighted score
1	2	3	4	5
Opportunities				
Recycling Process	454	0.058	4	0.232
Proper Handling of Environmental Issues	451	0.058	4	0.232
Product Diversification	449	0.058	4	0.232
Computerization	436	0.056	4	0.224
Entrance into New Market	415	0.053	4	0.212
Threats				
Labor Unrests	483	0.063	5	0.315
Non consideration of Pollution	482	0.062	5	0.310
Non Consideration of Physical Working Environment	481	0.062	5	0.310
Tax Programs	474	0.061	4	0.244
Lack of Government Subsidy	458	0.060	4	0.240
Lack of Contribution toward stakeholders	457	0.060	4	0.240
Lack of Social Security	452	0.059	4	0.236
Non consideration of Recycling Process	451	0.059	4	0.236
Old Machinery	451	0.059	4	0.236
Non Payment of Environmental Tax	440	0.059	4	0.228
Lack of Modern Technology	440	0.057	4	0.228
Lack of Job commitment	436	0.057	4	0.228
Total	7710	1.000	-	4.187

Source: Table-5.4.3(c_1) and Table-5.4.3(d_1)

The above Table-5.4.4(a_1) delineates external strategic factors (opportunities and threats) analysis for the 15 overall sample mills. It is seen from the above Table that among the opportunity factors, the weighted score is the highest in the factor of recycling process with 0.059 points and the lowest score is for the factor of entrance into new market with 0.053 point. So, it can be viewed that corporate managers of the sample companies should bethink recycling process for sustainable use of cotton as their top priority and entrance into new markets as their least priority to overcome sample mills weaknesses and threats. It is also seen in the table 5.4.4(a_1) that among the threat factors of the sample mills, the weighted score is the highest for the labor unrests with 0.063 points and the lowest for the lack of job commitment with 0.057 points. So, it can be assigned that corporate managers should consider labor unrests as their utmost threat and lack of job commitment as their minimal threat. In order to overcome these threats, they should take sustainable strategies and should practice strategic management process. From the above Table, we see that total weighted score is 4.187 which indicates that corporate managers are well respondents to their current and expected strategic factors in its external environment.

5.4.4(b) Integration of Internal Strategic Factors

After scanning the industry's internal environment and identifying strategic factors for the companies, strategic managers may summarize their analysis in a form entitled "abridgement of internal strategic factors analysis" that helps corporate managers to organize internal strategic factors into generally accepted categories of strengths and weaknesses. This also helps about how well the management is responding to these specific factors in the light of their perceived importance to the company. The following Table-5.4.4(b_1) shows abridgement of internal strategic factor analysis of the sample companies along with corresponding weights, rating and the total weighted score according to the similar way like external strategic factor analysis.

Table-5.4.4(b_1)
Abridgement of Internal Strategic Factors Analysis for Overall Sample Mills

Internal strategic factors	Likert scale score	Weight	Rating	Weighted score
1	2	3	4	5
Strengths				
Proper Action Against Population	485	0.057	5	0.285
Good Physical Working Environment	484	0.057	5	0.285
Efficient Workers	481	0.056	5	0.280
Good Relation with Workers	481	0.056	5	0.280
Good Quality of Products	475	0.055	4	0.220
Good Waste Management	431	0.050	4	0.200
Weaknesses				
Labor Unrest	518	0.061	5	0.305
Power Failure	517	0.061	5	0.305
Shortage of Raw Materials	494	0.058	5	0.290
Law Productivity of Machine and Labor	486	0.057	5	0.285
Lack of credit facilities	474	0.056	4	0.224
Substitute Products	471	0.056	4	0.224
Shortage of Working Capital	469	0.056	4	0.224
Increased Cost of Production	457	0.054	4	0.216
Low Prices of Textile Products	452	0.051	4	0.216
Lack of Clear cut Objectives, Policies and Strategies	447	0.053	4	0.212
Non consideration of SWOT factors	440	0.052	4	0.208
Non Consideration of Social and Ecological Factors	437	0.051	4	0.204
Total	8499	1.000		4.463

Source: Table-5.4.3(a_1) and Table-5.4.3(b_1)

The above Table-5.4.4(b_1) reveals that among the strengths factors, the weighted score is the highest in the factor of proper action against pollution with 0.057 points and the lowest score is in the factor of good waste management with 0.50 points. So, it can be

determined that corporate managers should bethink proper action against pollution as their special consideration and good waste management as their least preference just to overcome sample mills weaknesses. It is also seen in the Table-5.4.4($b_{1)}$ that among the weakness factors of the sample mills, the weighted score is the highest for labor unrests and for power failures with the same point 0.061 and the weighted score is the lowest for non consideration of social and ecological factors with 0.051 points. So, it may inferred that corporate managers should consider labor unrests and power failure as their extreme weaknesses and non consideration of social and ecological factors as their minimal weakness and they should take sustainable strategies and apply strategic management in order to surmount these weaknesses. From the Table we also see that the total weighted score is 4.463 which indicate that corporate managers are well respondents to their current and expected strategic factors in its internal environment.

5.4.5 Explication of Strategic Situation through SWOT Analysis:

SWOT is an acronym for the internal strengths and weaknesses of a firm and the environmental opportunities and threats facing that firm. As an important tool, SWOT analysis helps managers to overview the company's strategic situation and this analysis also fosters managers to find a sound "fit" between a firms' internal resources (strengths and weakness) and its external situation (opportunities and threats). A good fit maximizes a firm's strengths and opportunities and minimizes its weaknesses and threats (Robinson, 2006). Strategic managers must analyze internal strengths and weaknesses factors in the light of firm's previously considered external opportunities and threats and this can be defined as situation analysis which begins with the process of strategy formulation. Understanding key opportunities and threats facing firm and internal resources like strengths and weakness helps its managers identify realistic options from which to choose an appropriate strategy and clarifies the most effective niche for the firm (Pearce and Robinson, 2006).

5.4.6 Strategy Formulation and Generation:

The Table-5.4.4(a_1) and the Table-5.4.4(b_1) contain a total of 35 strategic factors; 6 for strengths, 12 for weaknesses, 5 for opportunities and 12 for threats. These are too many factors for management to use effectively in strategy formulation. So, strategic managers require condensing these factors into minimum number or less than 25 factors to get key strategic factors as shown in the Table-5.4.6(a_1). The Key strategic factors for overall sample mills involve the following steps: first select most important items from Table-

5.4.4(a_1) and Table-5.4.4(b_1) for the key strategic factors. Here we will pick up 5 factors of each category from Table-5.4.4(a_1) and able-5.4.4(b_1) according to their total weighted score. Thus we will set down 20 factors in the column 1 of key strategic factors as shown in the Table-5.4.6(a_1). Second, plot scores according to Likert five point analysis based on executives` opinions in column 2. Third, recapitulate the weights assigned to these factors in the Table-5.4.4(a_1) and Table-5.4.4(b_1) and weight each factor from 1.0 (most important) to 0.0 (not important) in column-3. The total weights must sum to 1.00. Fourth, rate each factor from 5 (strongly agreed) to 1 (strongly disagreed) in column 4 based on the opinions of executives of sample companies. Fifth, multiply the weight for each factor by its rating to obtain the weighted score in column 5. Thus the Table represents the firm's internal and external strategic factors on one form entitled key strategic factors as shown in the table 5.4.6(a1) which encloses the substantial factors and stipulates a ground for strategy formulation.

Table-5.4.6(a_1)
Key Strategic Factors of Overall Sample Mills

External strategic factors	Likert scale score	Weight	Rating	Weighted score
1	2	3	4	5
Opportunities				
Recycling Process	454	0.048	4	0.192
Proper Handling of Environmental Issues	451	0.048	4	0.192
Product Diversification	449	0.048	4	0.192
Computerization	436	0.046	4	0.184
Entrance into New Market	415	0.044	4	0.176
Threats				
Non consideration of Pollution	482	0.051	5	0.256
Non Consideration of Physical Working Environment	481	0.051	5	0.255
Tax Programs	474	0.050	4	0.200
Lack of Government Subsidy	458	0.048	4	0.192
Lack of Contribution toward stakeholders	457	0.048	4	0.192
Internal Strategic factors				
Strengths				
Proper Action Against Population	485	0.051	5	0.255
Good Physical Working Environment	484	0.051	5	0.255
Efficient Workers	481	0.051	5	0.255
Good Relation with Workers	481	0.051	5	0.255
Good Quality of Products	475	0.050	4	0.200
Weaknesses				
Labor Unrest	518	0.055	5	0.275
Power Failure	517	0.055	5	0.275
Shortage of Raw Materials	494	0.052	5	0.260
Law Productivity of Machine and Labor	486	0.052	5	0.260
Lack of credit facilities	474	0.050	4	0.200
Total	9452	1.00		4.52

Source: Table-5.4.4(a_1) and Table-5.4.4(b_1)

5.4.7 Originating a SWOT Matrix for the Sample Mills:

SWOT analysis has been a framework of choice among many managers for a long time because of its simplicity and its portrayal of the essence of sound strategy formulation matching a firm's opportunities and threats with its strengths and weaknesses. This matrix illustrates how management can match the external opportunities and threats facing a firm with its internal strengths and weaknesses to yield in four sets of possible strategic alternatives which is shown in the figure-5.4.7(a_1). The key strategic factors, which are illustrated in the Table-5.4.7 (a_1), have been used for developing a SWOT matrix. This matrix involves the following steps:

(1) In the encirclement of strengths (S), major factors concerning substantial internal strengths of sample mills have been set down/recorded.

(2) In the encirclement of weaknesses (W), critical internal weakness factors of the sample mills have been recorded.

(3) In the domain of opportunities (O), numerous environmental opportunity factors of the sample mills have been recorded here.

(4) In the area of threats (T), major environmental threats of the sample mills have been listed here.

(5) The diagram in exhibit 5.4.7(a_1) illustrates how SWOT analysis can be used to aid strategic analysis. Key external opportunities and threats are systematically compared with internal resources and competencies, that is, strengths and weaknesses-in a structured approach the objective is identification of one of four distinct patterns in the match between a firm's internal resources and external situation (Pearce and Robinson, 2006)

Cell-1 has formed "SO" strategies that supports aggressive strategies and indicate the ways that the sample mills use its strengths (S) to undertake the advantages of opportunities (O). This cell is the most favorable situation; the firm faces several environmental opportunities and has numerous strengths that encourage pursuit of those opportunities. This situation suggests growth oriented strategies to exploit the favorable match.

In cell-2; WO strategies have been formed just to take advantages of opportunities (O) by overcoming the firm's weaknesses (W). A firm in cell 2 faces impressive market opportunity but is constrained by weak internal resources. The focus of strategy for such a

firm is eliminating the internal weaknesses so as to more effectively pursue the market opportunity. This cell supports a turnaround oriented strategy.

Cell-3 encompasses ST strategies that consider the firm's strengths (S) as a way to avoid environmental threats (T). In cell 3, a firm faces an unfavorable environment. In this situation, strategies would seek to redeploy those strong resources and competencies to build long term opportunities in more opportunistic product market. This cell supports a diversification strategy.

Cell-4 is the least favorable situation, with the firm facing major environmental threats (T) from a weak resource position (W) (Pearce and Robinson, 2006). WT strategies have been developed in this cell as a way to minimize weaknesses by avoiding threats. This cell supports a defensive strategy. However the SWOT matrix have been shown in the following Table-5.4.7(a_1)

Figure-5.4.7(a_1)
SWOT Matrix

Internal Factors / **External Factors**	**Substantial internal Strengths (S)** • Proper Action Against Population • Good Physical Working Environment • Efficient Workers • Good Relation with Workers • Good Quality of Products	**Critical internal Weaknesses (W)** • Labor Unrest • Power Failure • Shortage of Raw Materials • Low Productivity of Machine and Labor • Lack of credit facilities
Numerous environmental opportunities (O) • Recycling Process • Proper Handling of Environmental Issues • Product Diversification • Computerization • Entrance into New Market	**Cell 1: SO strategies:** This cell supports an aggressive strategy; • Take advantage of entering into new markets by ensuring eco-textile products by efficient workers. • Take advantages of digitization for good relation with workers and for good communication and for productivity of machine • Create sound work environment by proper handling of environment issues	**Cell 2: WO strategies:** This cell supports a turn-around-oriented strategy: • Shortage of Raw Materials can be avoided by sustainable use of cotton through recycling process. • Ensure competitive advantage through the implementation of environmental & social policy
Major Environmental Threats (T) • Non consideration of Pollution • Non Consideration of Physical Working Environment • Tax Programs • Lack of Government Subsidy • Lack of Contribution toward stakeholders	**Cell 3: ST strategies:** This supports a diversification strategy • Provide pollution free environment • Ensure good physical working condition. • Provide good quality of products • Increase more contribution toward stake holders. • Faces tough competition and take competitive advantages of eco efficiency.	**Cell 4: WT strategies:** This cell supports a defensive strategy • Increase productivity and reduce tax barrier for sustainable development. • Enhance government assistance and credit facility for future sustainability. • Cut off labor unrests to increase productivity of labor. • Take benefits of eco-efficiency by reducing resource consumption and pollutions. • Emphasize on the contribution toward stakeholders for corporate social responsibility.

Source: Table-5.4.6(a_1)

The above figure-5.4.7(a_1) reveals the SWOT matrix of the sample mills, which is assembled by the combination of internal strengths and weaknesses with the environmental opportunities and threats. In the cell-1 from the above Table "SO" strategies emanate from harmonizing the firm's uppermost strengths factors with key

opportunities. Corporate managers substantially should pursue their strength to exploit opportunities. Thus like the sample mills executives may ensure any one or all of the SO strategies which support an aggressive strategy. That means the textile mills might take advantages of entering into new markets by ensuring eco-textile products, and take competitive advantages of digitization for better communication. WO strategies in cell 2 support a turnaround oriented strategy that emerges from the firms` weaknesses corresponding with the major opportunities. The firm in this regard should try to subjugate its weaknesses by taking advantages of opportunities. Thus in case of WO strategies corporate managers of sample companies may follow the strategies in cell 3. i.e. shortages of raw materials can be evaded through the recycling process for sustainable use of cotton, ensure competitive advantages by the implementation of social and environmental policy and strategy, ensure productivity of machine and labor through technological innovation "ST" strategies in cell 3 support a diversification strategy that originates from the coordination between the firms' internal strengths and environmental threats. The firm should apply its strengths to obviate threats. The sample mills' management substantially may follow the diversification strategies of cell 3 i.e. take advantages of good working condition by preventing pollution from working places, enhance social responsibility by contributing more toward its stakeholders and face tough competition by providing good quality and eco textile products. In cell 4, 'WT' strategies are originated from the combination of the firm's weaknesses with its threats. WT strategies support a defensive strategy through which firms should make endeavor to minimize their weaknesses and to avoid their threats. Accordingly, the sample mills management may pursue any one or all of the WT strategies i.e. emphasize on the contribution to stakeholders for corporate social responsibility, increase productivity and reduce tax barriers for sustainable development, enhance government assistance and credit facilities for future sustainability, cut off labor unrests through proper workers management strategy, take benefits of eco efficiency by reducing resource consumption and pollution. It is to note that the term eco efficiency describes that produce more useful goods and services while continuously reducing resource consumption and pollution. (Pearce and Robinson, 2006). Here it is to note that since this research is completely a new field of research. So, it was not possible for the researcher to make any comparison and discussion with the results of other study in the same field.

CHAPTER FIVE
Data Analysis and Interpretation

SECTION FIVE
Testing of Hypothesis

Section Five-5.5: Testing of Hypothesis

5.5.0 Prelude

Hypothesis is usually considered as the principal instrument in research. Generally, it is a mere assumption or some supposition to be proved or disproved. A hypothesis states what we are looking for and it is a proposition which can be put to a test to determine its validity. A hypothesis may be defined as a proposition or a set of proposition set forth as an explanation for the occurrence of some specified group of phenomena either asserted merely as a provisional conjecture to guide some investigation or accepted as highly probable in the light of established facts (Kotheri, 2010) It is a presumption based on some facts and it is a statement subject to verification. Thus a hypothesis directs and guides a researcher towards proper direction and assists him in the collection of necessary and relevant data pertaining to the problem under investigation. To test a hypothesis means to tell (on the basis of the data researcher has collected) whether or not the hypothesis seems to be valid (Kotheri, 2010) Hypothesis testing enables us to make probability statements about population parameters. The hypothesis may not be proved absolutely, but in practice it is accepted if it has withstood a critical testing (Kotheri, 2010).

Hypothesis testing helps decide on the basis of a sample data, whether a hypothesis about the population is likely to be true or false. Statisticians have developed several tests of hypotheses (also known as the tests of significance) for the purpose of testing of hypotheses which can be classified as parametric tests and non parametric tests. In hypothesis testing the main question is whether to accept the null hypothesis or not to accept the null hypothesis? Procedure for hypothesis testing refers to all those steps that we undertake for making a choice between the two actions i.e. rejection and acceptance of a null hypothesis, keeping the alternative hypothesis in view (Kotheri, 2010). However, in this section, some of the relevant null hypotheses and the alternative hypotheses have been utilized to prove or disprove the assumption as made earlier.

5.5.1 Hypothesis- 1

Ho: Socio-cultural Factors are not correlated with Management Control Factors.

Table-5.5.1(a_1)
Relationship between socio-cultural factors and management control factors

			Socio-cultural environment factors					Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed	Strongly disagreed		
Management Control Strategy Factors	Strongly Agreed	Count	18	2	0	0	0	18	
		Expected Count	3.0	7.5	4.5	3.7	1.3	20.0	
	Agreed	Count	0	43	1	0	0	44	Chi-square χ^2 = 388.742
		Expected Count	6.6	16.5	9.9	8.1	2.9	44.0	
	No Opinion	Count	0	0	26	6	0	32	degrees of freedom; d.f = 16
		Expected Count	4.8	12.0	7.2	5.9	2.1	32.0	
	Disagreed	Count	0	0	0	16	1	17	Sig. (2-sided) = .000
		Expected Count	2.6	6.4	3.8	3.1	1.1	17.0	
	Strongly disagreed	Count	0	0	0	0	7	7	
		Expected Count	1.1	2.6	1.6	1.3	0.5	7.0	
	Total	Count	18	45	27	22	8	120	
		Expected Count	18.0	45.0	27.0	22.0	8.0	120.0	

Source: Table-10 and Table-11 in the Appendix-II

The above Table-5.4.1(a_1) shows the relationship between socio-cultural factors and management control strategy factors through cross tabulation analysis and chi-square tests. Cross tabulation Tables provide important information about the relationship between the variables. Using chi-square test, the researcher can test the significance of association between two attributes. It is seen from the Table that calculated value of Pearson chi-square (χ^2) is 388.742 and its significance level is 0.000 (which is <0.05). So, the null hypothesis is rejected and it can be concluded that socio-cultural factors of the enterprises are positively related with the management control factors.

5.5.2 Hypothesis-02

Ho: Management Control Factors and Economic Environment Factors are not related with each other.

Table-5.5.2(a_2)
Relationship between management control factors and economic environment factors

			Economic environment factors					Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed	Strongly disagreed		
Management Control Factors	Strongly Agreed	Count	18	2	0	0	0	20	Chi-square χ^2 = 401.272 degrees of freedom; d.f = 16 Sig. (2-sided) = .000
		Expected Count	3.0	7.8	4.5	3.7	1.0	20.0	
	Agreed	Count	0	44	0	0	0	44	
		Expected Count	6.6	17.2	9.9	8.1	2.2	44.0	
	No Opinion	Count	0	1	27	4	0	32	
		Expected Count	4.8	12.5	7.2	5.9	1.6	32.0	
	Disagreed	Count	0	0	0	17	0	17	
		Expected Count	2.6	6.7	3.8	3.1	0.9	17.0	
	Strongly disagreed	Count	0	0	0	1	6	7	
		Expected Count	1.1	2.7	1.6	1.3	0.4	7.0	
	Total	Count	18	47	27	22	6	120	
		Expected Count	18.0	47.0	27.0	22.0	6.0	120.0	

Source: Table-10 and Table-11 in the Appendix-II

The Table-5.5.2(a_2) stated above illustrates about the relationship between the economic environment factors and management control factors through cross-tabulation and chi-square tests. It has been seen from the above Table that the calculated chi-square value is 401.272 and its level of significance is 0.00. So, it can be concluded that the null hypothesis is not accepted and economic environment factors are positively related with management control factors that means economic factors influence the sample mills' management activities.

5.5.3 Hypothesis-3

Ho: Economic Environment Factors are not correlated with Production Environment Factors.

Table-5.5.3(a_3)
Relationship between economic environment factors and production environment factors

			Economic environment factors					Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed	Strongly disagreed		
Production Environment Factors	Strongly Agreed	Count	18	25	0	0	0	43	Chi-square χ^2 = 175.038 degrees of freedom; d.f = 12 Sig. (2-sided) = .000
		Expected Count	6.5	16.8	9.7	7.9	2.2	43.0	
	Agreed	Count	0	22	27	15	0	64	
		Expected Count	9.6	25.1	14.4	11.7	3.2	64.0	
	No Opinion	Count	0	0	0	7	2	9	
		Expected Count	1.3	3.5	2.0	1.7	0.5	9.0	
	Disagreed	Count	0	0	0	0	4	4	
		Expected Count	0.6	1.6	0.9	0.7	0.2	4.0	
	Total	Count	18	47	27	22	6	120	
		Expected Count	18.0	47.0	27.0	22.0	6.0	120.0	

Source: Table-10 and Table-11 in the Appendix-II

The above Table depicts the relationship between the economic environment factors and production environment factors through cross tabulation and chi-square tests. It has been found from the above Table that the calculated chi-square value is 175.038 and its level of significance is 0.00. So, it can be said that the null hypothesis is rejected and economic environment factors are positively and significantly correlated with production environment factors, i.e. economic environment factors of the sample mills have had wide influence on its production management activities.

5.5.4 Hypothesis-4

Ho: Production Environment Factors are not correlated with the Sample Mills' Social and Ecological Factors.

Table-5.5.4(a_4)
Relationship of production environment factors with social responsibility and ecological factors

			Social Responsibility and Ecological Factors					Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed	Strongly disagreed		
Production Environment Factors	Strongly Agreed	Count	25	18	0	0	0	43	Chi-square χ^2 = 187.873 degrees of freedom; d.f = 12 Sig. (2-sided) = .000
		Expected Count	9.0	14.7	10.4	6.8	2.2	43.0	
	Agreed	Count	0	23	29	12	0	64	
		Expected Count	13.3	21.9	15.5	10.1	3.2	64.0	
	No Opinion	Count	0	0	0	7	2	9	
		Expected Count	1.9	3.1	2.2	1.4	0.5	9.0	
	Disagreed	Count	0	0	0	0	4	4	
		Expected Count	0.8	1.4	1.0	0.6	0.2	4.0	
	Total	Count	25	41	29	19	6	120	
		Expected Count	25.0	41.0	29.0	19.0	6.0	120.0	

Source: Table-10 and Table-11 in the Appendix-II

The above Table shows the relationship between production environment factors and social responsibility and ecological factors. It has been seen from the table that the calculated chi-square is 187.873 and its level of significance is 0.00. From the above analysis, it can be concluded that the null hypothesis is not accepted and the production environment factors are positively and significantly correlated with the sample mills' social responsibility and ecological factors, that means social responsibility and ecological factors of the sample mills have influenced its production management activities.

5.5.5 Hypothesis-5

Ho: Social Responsibility and Ecological Factors are not related with Sample Mills' Management Control Strategy Factors.

Table-5.5.5(a_5)

Relationship between management control factors and ecological and social responsibility factors

			Ecological Factors and Social Responsibility					Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed	Strongly disagreed		
Management Control Factors	Strongly Agreed	Count	20	0	0	0	0	20	Chi-square χ^2 = 400.343 degrees of freedom; d.f = 16 Sig. (2-sided) = .000
		Expected Count	4.2	6.8	4.8	3.2	1.0	20.0	
	Agreed	Count	5	39	0	0	0	44	
		Expected Count	9.2	15.0	10.6	7.0	2.2	44.0	
	No Opinion	Count	0	2	29	1	0	32	
		Expected Count	6.7	10.9	7.7	5.1	1.6	32.0	
	Disagreed	Count	0	0	0	17	0	17	
		Expected Count	3.5	5.8	4.1	2.7	0.9	17.0	
	Strongly Disagreed	Count	0	0	0	17	0	17	
		Expected Count	3.5	5.8	4.1	2.7	0.9	17.0	
	Total	Count	25	41	29	19	6	120	
		Expected Count	25.0	41.0	29.0	19.0	6.0	120.0	

Source: Table-10 and Table-11 in the Appendix-II

The above Table shows the relationship between management control factors and social responsibility and ecological factors. It has been found from this table that the calculated chi-square is 400.343 and its level of significance is 0.00. From the above analysis, it can be concluded that the null hypothesis is rejected and management control factors are positively and significantly correlated with the social responsibility and ecological factors, that means social responsibility and ecological factors have influenced management control strategies.

5.5.6 Hypothesis-6

Ho: Management Control Strategy Factors are not related with Political- legal Environment Factors.

Table-5.5.6(a_6)
Relationship between management control factors and political legal Factors

			Political legal environment factors					Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed	Strongly disagreed		
Management Control Factors	Strongly Agreed	Count	20	0	0	0	0	20	Chi-square χ^2 = 402.418 degrees of freedom; d.f = 16 Sig. (2-sided) = .000
		Expected Count	3.7	7.0	5.3	3.3	0.7	20.0	
	Agreed	Count	2	42	0	0	0	44	
		Expected Count	8.1	15.4	11.7	7.3	1.5	44.0	
	No Opinion	Count	0	0	32	0	0	32	
		Expected Count	5.9	11.2	8.5	5.3	1.1	32.0	
	Disagreed	Count	0	0	0	17	0	17	
		Expected Count	3.1	6.0	4.5	2.8	0.6	17.0	
	Strongly Disagreed	Count	0	0	0	3	4	7	
		Expected Count	1.3	2.5	1.9	1.2	0.2	7.0	
	Total	Count	22	42	32	20	4	120	
		Expected Count	22.0	42.0	32.0	20.0	4.0	120.0	

Source: Table-10 and Table-11 in the Appendix-II

The above Table depicts the relationship between management control factors and political legal factors through chi-square tests. It has been seen from this table that the calculated chi-square is 402.418 and its level of significance is 0.00. So, it can be affirmed that the null hypothesis is not accepted and political legal factors are positively and significantly correlated with management control strategy factors that means political legal factors have had profound impact on management control strategy.

5.5.7 Hypothesis-7

Ho: Political -legal Factors are not related with the Marketing Environment Factors.

Table-5.5.7(a_7)
Relationship between Political legal factors and marketing environment factors

			Political Legal Environment Factors					Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed	Strongly disagreed		
Marketing Environment Factors	Strongly Agreed	Count	18	0	0	0	0	18	Chi-square χ^2 = 409.013 degrees of freedom; d.f = 16 Sig. (2-sided) = .000
		Expected Count	3.3	6.3	4.8	3.0	0.6	18.0	
	Agreed	Count	4	42	2	0	0	48	
		Expected Count	8.8	16.8	12.8	8.0	1.6	48.0	
	No Opinion	Count	0	0	30	0	0	30	
		Expected Count	5.5	10.5	8.0	5.0	1.0	30.0	
	Disagreed	Count	0	0	0	19	0	19	
		Expected Count	3.5	6.7	5.1	3.2	0.6	19.0	
	Strongly Disagreed	Count	0	0	0	1	4	5	
		Expected Count	0.9	1.8	1.3	0.8	0.2	5.0	
	Total	Count	22	42	32	20	4	120	
		Expected Count	22.0	42.0	32.0	20.0	4.0	120.0	

Source: Table-10 and table-11 in the Appendix-II

The Table shows the relationship between political-legal factors and marketing environment factors through cross tabulation and chi-square test. It has been seen from the above Table that the calculated chi-square is 409.013 and its level of significance 0.00. So, it can be concluded that the null hypothesis is rejected and the political legal factors are positively and significantly related with marketing environment factors which means that political legal factors have influenced the marketing decisions.

5.5.8 Hypothesis-8

Ho: There is no significant relationship between Marketing Environment Factors and Economic Environment Factor of the Sample Mills.

Table-5.5.8(a_8)
Relationship between marketing environment factors and economic environment factors

			Economic Environment Factor					Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed	Strongly disagreed		
Marketing Environment Factors	Strongly Agreed	Count	18	0	0	0	0	18	Chi-square χ^2 = 414.717 degrees of freedom; d.f = 16 Sig. (2-sided) = .000
		Expected Count	2.7	7.1	4.1	3.3	0.9	18.0	
	Agreed	Count	0	47	1	0	0	48	
		Expected Count	7.2	18.8	10.8	8.8	2.4	48.0	
	No Opinion	Count	0	0	26	4	0	30	
		Expected Count	4.5	11.8	6.8	5.5	1.5	30.0	
	Disagreed	Count	0	0	0	18	1	19	
		Expected Count	2.8	7.4	4.3	3.5	1.0	19.0	
	Strongly Disagreed	Count	0	0	0	0	5	5	
		Expected Count	0.8	2.0	1.1	0.9	0.3	5.0	
	Total	Count	18	47	27	22	6	120	
		Expected Count	18.0	47.0	27.0	22.0	6.0	120.0	

Source: Table-10 and table-11 in the Appendix-II

The above Table shows the relationship between marketing environment factors and economic environment factors through chi-square tests. It has been shown from the above Table that the calculated chi-square is 414.717 and its level of significance is 0.00. So, it can be rightly said that the null hypothesis is rejected and marketing environment factors are positively and significantly correlated with economic environment factors, that means economic environment factors have had profound impact on marketing environment factors.

5.5.9 Hypothesis-9

Ho: Economic Environment Factors of the Enterprises are not related with Finance and Accounts Factors.

Table-5.5.9(a_9)
Relationship between economic environment factors and finance and account factors

			Finance and Accounts Factors					Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed	Strongly disagreed		
Economic Environment	Strongly Agreed	Count	18	0	0	0	0	18	Chi-square χ^2 = 221.902 degrees of freedom; d.f = 16 Sig. (2-sided) = .000
		Expected Count	3.9	8.4	3.8	1.7	0.3	18.0	
	Agreed	Count	8	39	0	0	0	47	
		Expected Count	10.2	21.9	9.8	4.3	0.8	47.0	
	No Opinion	Count	0	17	10	0	0	27	
		Expected Count	5.9	12.6	5.6	2.5	0.5	27.0	
	Disagreed	Count	0	0	15	7	0	22	
		Expected Count	4.8	10.3	4.6	2.0	0.4	22.0	
	Strongly Disagreed	Count	0	0	0	4	2	6	
		Expected Count	1.3	2.8	1.3	0.6	0.1	6.0	
	Total	Count	26	56	25	11	2	120	
		Expected Count	26.0	56.0	25.0	11.0	2.0	120.0	

Source: Table-10 and table-11 in the Appendix-II

The above Table reveals the relationship between economic environment factors and financial and accounting factors through cross tabulation and chi-square tests. In this Table, we have observed that the calculated chi-square is 221.902 and its level of significance is 0.00. So, the null hypothesis is rejected. We therefore said that financial and accounting factor is positively and significantly correlated with economic environmental factors. That means economic environment factors have influenced the corporation's financial and accounting factors.

5.5.10 Hypothesis- 10

Ho: Technological Environment Factors and Management Control Strategy Factors are not related with other.

Table-5.5.10(a_{10})
Relationship between technological factors and management control factors

			Technological Environment Factor					Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed	Strongly disagreed		
Management Control Factor	Strongly Agreed	Count	20	0	0	0	0	20	Chi-square χ^2 = 369.508 degrees of freedom; d.f = 16 Sig. (2-sided) = .000
		Expected Count	4.5	8.0	3.7	2.7	1.2	20.0	
	Agreed	Count	7	37	0	0	0	44	
		Expected Count	9.9	17.6	8.1	5.9	2.6	44.0	
	No Opinion	Count	0	11	21	0	0	32	
		Expected Count	7.2	12.8	5.9	4.3	1.9	32.0	
	Disagreed	Count	0	0	1	16	0	17	
		Expected Count	3.8	6.8	3.1	2.3	1.0	17.0	
	Strongly Disagreed	Count	0	0	0	0	7	7	
		Expected Count	1.6	2.8	1.3	0.9	0.4	7.0	
	Total	Count	27	48	22	16	7	120	
		Expected Count	27.0	48.0	22.0	16.0	7.0	120.0	

Source: Table-10 and table-11 in the Appendix-II

The Table stated above shows the relationship between technological factors and management control factors through chi-square tests. It has been shown from this Table that the calculated chi-square is 369.508 and its level of significance is 0.00. So, the null hypothesis is rejected. We therefore conclude that technological factors are positively and significantly related with the corporation's management control factors. That means the technological environment factors have had profound impact on management control factors.

5.5.11 Hypothesis-11

Ho: Industry's External Environmental Factors are not correlated with each other.

Table-5.5.11(a_{11})
Correlations among external environmental factors of sample companies

Factors	1	2	3	4	5
1	1	.957(**)	.953(**)	.982(**)	.930(**)
2		1	.974(**)	.964(**)	.940(**)
3			1	.967(**)	.959(**)
4				1	.932(**)
5					1

** correlation is significant at the 0.01 level (2 tailed)
Note:
1. Socio cultural factors.
2. Political legal factors.
3. Ecological and social responsibility factors.
4. Economic environment factors.
5. Technological environment factors.

Source: Table-10 in the appendix-II

The above Table illustrates correlations among external environmental factors of the sample companies. It is seen from the Table that socio-cultural factors, political-legal factors, social responsibility and ecological factors, economic factors and technological factors are positively correlated with each other and the relationship among them is highly significant at 1% Level of Significance. So, the null hypothesis is rejected and thus it can be concluded that all the external environment factors of the sample mills are positively correlated each other.

5.5.12 Hypothesis-12

Ho: Industry's Internal Environmental Factors are not related with each other.

Table-5.5.12(a_{12})
Correlations among internal environmental factors of the sample mills

Factors	1	2	3	4
1	1	.834(**)	.980(**)	.905(**)
2		1	.822(**)	.855(**)
3			1	.898(**)
4				1

5 correlation is significant at the 0.01 level (2 tailed)
Note:
1. Management control factor
2. Production environmental factors
3. Marketing environment factors
4. Finance and accounts factors

Source: Table-11 in the Appendix-II

It has been found in the above Table that management control factors, production environment factors, marketing environment factors and finance & accounts factors are positively and significantly correlated with each other at 1% level of significance. As a result, the null hypothesis (Ho) is rejected and it can be concluded that all the internal environmental factors are highly significant and they are positively correlated with each other.

5.5.13 Hypothesis-13

Ho: The Industry's SWOT Factors are not correlated with each other.

Table-5.5.13(a_{13})
Correlations among the SWOT factors of the same mills

	Strengths factors	Weakness factors	Opportunity factors	Threat factors
Strengths factors	1	.965(**)	.862(**)	.916(**)
Weakness factors		1	.881(**)	.933(**)
Opportunity factors			1	.906(**)
Threat factors				1

** Correlation is significant at the 0.01 level (2 tailed)

Source: Table-16 in the Appendix-II

The above Table indicates correlations among SWOT factors of the sample mills. The Table shows that among SWOT factors, strength, weakness, opportunity and threats are positively correlated with each other. So, the null hypothesis (Ho) is not accepted and it can be said that all the SWOT factors are highly significant and correlated each other.

5.5.14 Hypothesis-14

Ho: Strengths and Weakness Factors are not associated with the Industry's Internal Environment Factors.

Table-5.5.14(a_{14})
Analysis of regression equation of weaknesses on industry's internal environmental factors

	Un standardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
(Constant)	-.119	.077		-1.534	.128	R = 0.948
Management control factor	.150	.133	.176	1.131	.261	R square (R^2) = 0.898
Production environmental factors	.344	.078	.265	4.430	.000	Adjusted R square = 0.895
Marketing environment factors	.009	.132	.010	.066	.948	F-ratio=253.479
Finance and accounts factors	.532	.077	.536	6.875	.000	Sig.=0.000
Regression Equation, Y = -.119 + .150 x_1 +.344 x_2 +.009 x_3 + .532 x_4						

Note:
The multiple Regression Equation, $Y= a + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4$
Where,
Y = Dependent variable (Weakness)
a = Constant
B = Coefficient of independent variables
X_1 = Management control factors (independent variable)
X_2 = Production factors (independent variable)
X_3 = Marketing factors (independent variable)
X_4 = Finance and Accounting Factors (independent)

Source: Table-11and Table-16 in the Appendix-II

The above Table shows the influence of weakness on the industry's internal environmental factors of the sample mills according to executives` opinions. In this Table, we have the coefficient of correlation R= 0.948. So, it can be concluded that there exists a positive correlation between dependent variable and independent variables. Co-efficient of determination, R^2 = 0.898, F-ratio is 253.479 and its significance level is 0.000 which is less than 0.05.So, we can comment that our null hypothesis is rejected and also comment that 89.80% of the variability in the dependent variable can be explained by the independent variables, taken together. However, the regression equation comes to $Y = -.119 + .150x_1 + .344x_2 + .009x_3 + .532x_4$, which indicates that among the internal environmental factors, finance and accounting factors have maximum impact on firm's weakness factors followed by production environment factors, management control factors and marketing environment factors. So, it can be affirmed that the null hypothesis is rejected and weaknesses are positively related with all internal environmental factors.

Table-5.5.14(a_{15})
Analysis of regression equation of strengths on industry's internal environmental factors

	Un standardized Coefficients		Standardized Coefficients	t	Sig.	R = 0.936 R square (R^2) = 0.876 Adjusted R square = 0.872 Fratio=203.106 Sig.=0.000
	B	Std. Error	Beta			
(Constant)	.139	.076		1.826	.071	
Management control factor	.341	.131	.450	2.614	.010	
Production environmental factors	.188	.076	.162	2.458	.015	
Marketing environment factors	-.083	.130	-.104	-.635	.527	
Finance and accounts factors	.410	.076	.464	5.388	.000	
Regression Equation, $Y = .139 + .341x_1 + .188x_2 + .(-.083)x_3 + .410x_4$						

Note:
The multiple Regression Equation, $Y = a + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 \ldots\ldots B_nX_n$
Where,
Y = Dependent variable (strengths)
a = Constant
B = Coefficient of independent variables
X_1 = Management control factors (independent variable)
X_2 = Production factors (independent variable)
X_3 = Marketing factors (independent variable)
X_4 = Finance and Accounting Factors (independent)

Source: Table-11and Table-16 in the Appendix-II

The above Table shows the determination of regression of strengths on the industry's internal environmental factors of the sample companies according to the opinions of mills` executives. In this Table, the coefficient of correlation, R = 0.936, we conclude that there exists a positive correlation between dependent and independent variables. Coefficient of determination, $R^2 = 0.876$, F ratio is 203.106 and its significance level is 0.000 which is less than 0.05 , so it can be concluded that our null hypothesis is rejected and also comment that 87.60% of the variability in the dependent variable can be explained by the independent variable, taken together. However, the regression equation comes to $Y = .139 + .341x_1 + .188x_2 + .(-.083)x_3 + .410x_4$, which indicates that among the internal environmental factors, finance and accounting factors have maximum, impact on firm's strengths followed by management control strategy, production environment factors except with marketing management factors. So, it can be affirmed that the null hypothesis (Ho) is not accepted and can be concluded that strengths are positively correlated with all internal environmental factors except with marketing environment factors.

5.5.15 Hypothesis -15

Opportunity and Threat Factors are not related with the Industry's External Environment Factors.

Table-5.5.15(a_{16})
Analysis of regression equation of opportunity factors on industry's external environmental factors

	Un standardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
(Constant)	.403	.072		5.624	.000	R = 0.948
Socio-cultural factors	.129	.131	.161	.985	.327	R square (R^2) = 0.899
Political-legal factors	.098	.124	.115	.794	.429	
Social responsibility & ecological factor	-.440	.141	-.546	-3.130	.002	Adjusted R square = 0.895
Economic environment factors	.420	.156	.506	2.693	.008	F ratio=203.99
Technological environment factors	.578	.086	.724	6.756	.000	Sig.=0.000
Regression Equation, $Y = .403 + .129x_1 + .098x_2 + (-.440)\ x_3 + .420x_4 + .578x_5$						

Note:
The multiple Regression Equation, $Y = a + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5$
Where,
Y = Dependent variable (Opportunity)
a = Constant
B = Coefficient of independent variables
X_1 = Socio cultural factors (independent variable)
X_2 = Political-legal factors (independent variable)
X_3 = Ecology and business responsibility of factors (independent variable)
X_4 = Economic factors (independent)
X_4 = Technological factors (independent)

Source: Table-10 and Table-16 in the Appendix-II

The above Table shows the influence of opportunity factors on the industry's external environmental factors of the sample companies according to the executives` opinions. In this Table, we have the coefficient of correlation R = 0.948, we conclude that there exists a positive correlation between dependent and independent variables. Coefficient of determination, R^2 = 0.899, F ratio=203.99 and significance level is 0.000(<0.05). So, our null hypothesis is rejected, and also comments that about 89.9% of the variations in the dependent variable (opportunity) have been explained by the variation in the independent variable (external environment factors).The regression equation comes to $Y = 0.403 + 0.129x_1 + 0.098x_2 + (-.443)x_3 + .420x_4 + .578x_5$, which indicates that among the external environmental factors, technological factors have maximum impact on firm's opportunity factors followed by economic factors, socio cultural factors, political legal

factors. Ecological and social responsibility factors have negative impact on opportunity factors. So, it can be affirmed that the hypothesis is not accepted and can be concluded that opportunity factors are positively correlated with all external environmental factors except with ecological and social responsibility factor.

Table-5.5.15(a_{17})
Analysis of regression equation of threats on industry's external environmental factors

	Un standardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
(Constant)	-.040	.090		-.450	.654	R = 0.943
Socio-cultural factors	.151	.164	.158	.922	.358	R square (R^2) = 0.889
Political-legal factors	.151	.155	.149	.973	.333	
Social responsibility & ecological factor	-.020	.176	-.021	-.114	.910	Adjusted R square = 0.884
Economic environment factors	-.031	.195	-.031	-.157	.875	
Technological environment factors	.667	.107	.701	6.224	.000	F ratio=182.52 Sig.=0.000
Regression Equation, $Y = -.040 + .151x_1 + .151x_2 + (-.020)\ x_3 + (-.031)x_4 + .667x_5$						

Note:
The multiple Regression Equation, $Y = a + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5$
Where,
Y = Dependent variable (threats)
a = Constant
B = Coefficient of independent variables
X_1 = Socio cultural factors (independent variable)
X_2 = Political-legal factors (independent variable)
X_3 = Ecology and business responsibility of factors (independent variable)
X_4 = Economic factors (independent)
X_4 = Technological factors (independent)

Source: Table 10 & 16 in the Appendix-II

The above Table shows the influence of threats on the industry's external environmental factors of the sample companies according to the opinions of sample mills′ executives. In this Table, we have the coefficient of correlation R = 0.943, we conclude that there exists a positive correlation between dependent and independent variables. Coefficient of determination, R^2 = 0.889, which implies that about 88.9% of the variations in the dependent variable (threats) has been explained by the variation in the independent variable (external environment factors). Here the F ratio is 182.52 and its significance level is 0.000 which is lower than 0.05. So, it can be concluded that the null hypothesis (Ho) is rejected. However, the regression equation comes to $Y = -0.040 + 0.151x_1 + .151x_2$

$+(-.020)x_3+(-0.031)x_4+0.667x_5$ which indicates that among the external environmental factors, technological factors have maximum impact on firm's threats factors followed by socio cultural factors, political legal factors. But both ecological and social responsibility factors and economic factors have negative impact on threats factors. So, it can be affirmed that the null hypothesis is not accepted and can be concluded that threats factors are positively correlated with all external environmental factors except with ecological and social responsibility factors an economic factors.

5.5.16 Hypothesis-16

Ho: Weaknesses and Threats factors are not related with Ecological and Business Responsibility Factors.

Table-5.5.16(a_{18})
Relationship between weakness factors and ecological and business responsibility factors

			Weakness Factors					Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed	Strongly disagreed		
Ecological and Business Responsibility factors	Strongly Agreed	Count	25	0	0	0	0	25	Chi-square χ^2 = 245.018 degrees of freedom; d.f = 16 Sig. (2-sided) =.000
		Expected Count	6.7	12.5	3.3	2.1	0.4	25.0	
	Agreed	Count	7	34	0	0	0	41	
		Expected Count	10.9	20.5	5.5	3.4	0.7	41.0	
	No Opinion	Count	0	26	3	0	0	29	
		Expected Count	7.7	14.5	3.9	2.4	0.5	29.0	
	Disagreed	Count	0	0	13	6	0	19	
		Expected Count	5.1	9.5	2.5	1.6	0.3	19.0	
	Strongly Disagreed	Count	0	0	0	4	2	6	
		Expected Count	1.6	3.0	0.8	0.5	0.1	6.0	
	Total	Count	32	60	16	10	2	120	
		Expected Count	32.0	60.0	16.0	10.0	2.0	120.0	

Source: Table 10 & 16 in the Appendix-II.

The above Table shows the relationship between weaknesses factors and ecology and business responsibility factors through cross tabulation analysis and chi-square tests. Cross tabulation tables provide information about the relationship between the variables. Using chi-square test, the researcher can test the significance of association between two attributes. It is seen from the Table that calculated value of Pearson chi-square (χ^2) is 245.018 and its significance level is 0.00. The results, thus, do not support the null

hypothesis (Ho) and it can be concluded that weaknesses factors of the enterprises are positively related with ecology and business responsibility factors.

Table-5.5.16(a_{19})
Relationship between threat factors and ecological and business responsibility factors

Ecological and Business Responsibility factors			Threat Factors					Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed	Strongly disagreed		
	Strongly Agreed	Count	25	0	0	0	0	25	Chi-square χ^2 = 257.575 degrees of freedom; d.f = 16 Sig. (2-sided) = .000
		Expected Count	7.3	9.8	4.2	2.9	0.8	25.0	
	Agreed	Count	10	31	0	0	0	41	
		Expected Count	12.0	16.1	6.8	4.8	1.4	41.0	
	No Opinion	Count	0	16	13	0	0	29	
		Expected Count	8.5	11.4	4.8	3.4	1.0	29.0	
	Disagreed	Count	0	0	7	12	0	19	
		Expected Count	5.5	7.4	3.2	2.2	0.6	19.0	
	Strongly Disagreed	Count	0	0	0	2	4	6	
		Expected Count	1.8	2.4	1.0	0.7	0.2	6.0	
	Total	Count	35	47	20	14	4	120	
		Expected Count	35.0	47.0	20.0	14.0	4.0	120.0	

Source: Table 10 & 16 in the Appendix-II

The above Table shows the relationship between threat factors and ecology and business responsibility factors through cross tabulation analysis and chi-square tests. Cross tabulation tables provide information about the relationship between the variables. Using chi-square test, the researcher can test the significance of association between two attributes. It is seen from the Table that calculated value of Pearson chi-square (χ^2) is 257.57 and its level of significance is 0.000. So, the null hypothesis (Ho) is rejected and it can be concluded that threat factors of the enterprises are positively related with ecology and business responsibility factors.

5.5.17 Hypothesis-17

Ho: Weaknesses Factors are not related with Economic Environment Factors.

Table-5.5.17(a_{20})
Relationship between weakness factors and economic factors

			Economic Factors					Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed	Strongly disagreed		
Weakness factors	Strongly Agreed	Count	18	14	0	0	0	32	Chi-square χ^2 = 242.388 degrees of freedom; d.f = 16 Sig. (2-sided) = .000
		Expected Count	4.8	12.5	7.2	5.9	1.6	32.0	
	Agreed	Count	0	33	27	0	0	60	
		Expected Count	9.0	23.5	13.5	11.0	3.0	60.0	
	No Opinion	Count	0	0	0	16	0	16	
		Expected Count	2.4	6.3	3.6	2.9	0.8	16.0	
	Disagreed	Count	0	0	0	6	4	10	
		Expected Count	1.5	3.9	2.3	1.8	0.5	10.0	
	Strongly Disagreed	Count	0	0	0	0	2	2	
		Expected Count	0.3	0.8	0.5	0.4	0.1	2.0	
	Total	Count	18	47	27	22	6	120	
		Expected Count	18.0	47.0	27.0	22.0	6.0	120.0	

Source: Table 10 & 16 in the Appendix-II.

The above Table shows the relationship between economic factors and weaknesses factors through cross tabulation analysis and chi-square tests. Cross tabulation Tables provide information about the relationship between the variables. Using chi-square test, the researcher can test the significance of association between two attributes. It is seen from the Table that calculated value of Pearson chi-square (χ^2) is 242.388. And its level of significance is 0.000. So, the null hypothesis (Ho) is rejected and it can be concluded that weaknesses factors of the enterprises are positively related with the economic factors.

5.5.18 Hypothesis-18

Ho: Production Environment Factors are not related with the Threat Factors

Table-5.5.18(a_{21})
Relationship between production environment factors and threats factors

			Production Environment Factors				Total	
			Strongly Agreed	Agreed	No Opinion	Disagreed		
Threat factors	Strongly Agreed	Count	35	0	0	0	35	Chi-square χ^2 = 280.144 degrees of freedom; d.f = 12 Sig. (2-sided) = .000
		Expected Count	12.5	18.7	2.6	1.2	35.0	
	Agreed	Count	8	39	0	0	47	
		Expected Count	16.8	25.1	3.5	1.6	47.0	
	No Opinion	Count	0	20	0	0	20	
		Expected Count	7.2	10.7	1.5	0.7	20.0	
	Disagreed	Count	0	5	9	0	14	
		Expected Count	5.0	7.5	1.1	0.5	14.0	
	Strongly Disagreed	Count	0	0	0	4	4	
		Expected Count	1.4	2.1	0.3	0.1	4.0	
	Total	Count	43	64	9	4	120	
		Expected Count	43.0	64.0	9.0	4.0	120.0	

Source: Table 10 & 16 in the Appendix-II.

The above Table shows the relationship between production environment factors and threat factors through cross tabulation analysis and chi-square tests. Cross tabulation Tables provide a wealth of information about the relationship between the variables. Using chi-square test, the researcher can test the significance of association between two attributes. It is seen from the Table that calculated value of Pearson chi-square (χ^2) is 280.144. And the level of significance is 0.00. The results, thus, do not support the null hypothesis and it can be concluded that production factors of the enterprises are positively related with the threat factors.

5.5.19 Hypothesis-19

Ho: Ecological and Social Responsibility Factors are not related with the Industry's Internal Environmental Factors.

Table-5.5.19(a_{22})
Analysis of Regression Analysis of Ecological and Business Responsibility Factors on the Industry's Internal Environmental Factors

	Un standardized Coefficients		Standardized Coefficients	t	Sig.	R=0.981 R^2 = 0.962
	B	Std. Error	Beta			
(Constant)	-.188	.057		-3.307	.001	F ratio = 737.185
Management control factor	.357	.097	.347	3.662	.000	
Production environment factors	.014	.057	.009	.244	.807	
Marketing environment factors	.467	.097	.435	4.806	.000	Sig.=0.000
Finance and accounts factors	.254	.057	.211	4.464	.000	
Regression Equation, Y = -.188 + .357 x_1 +0.014x_2 +.467 x_3 + .254 x_4						

Note:
The multiple Regression Equation, $Y= a + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4$
Where,
Y = Dependent variable (Ecological and Business Responsibility)
a = Constant
B = Coefficient of independent variables
X_1 = Management control factors (independent variable)
X_2 = Production factors (independent variable)
X_3 = Marketing factors (independent variable)
X_4 = Finance and Accounting Factors (independent)

Source: Table-10 and Table-11in the Appendix-II.

The above Table shows the influence of ecology and business responsibility factors on the industry's internal environmental factors of the sample mills according to executives` opinions. In this Table, we have the coefficient of correlation R= 0.981, we conclude that there exists a positive correlation between dependent variable and independent variables. We also observe that the value of R^2 = 0.962, F ratio = 737.185 and its significance level is 0.000 (<0.05). So, we can comment that our null hypothesis (Ho) is rejected and also comment that 96.20% of the variability in the dependent variable can be explained by the independent variable, taken together. However, the regression equation comes to Y = -.188 + 0.357x_1 +0.014x_2 +0.467x_3+0.254x_4, which indicates that among the internal environmental factors, marketing factors have maximum impact on firm's ecology and business responsibility factors followed by management control factors and finance and accounting factors and production environment factors. So, it can be affirmed that the null hypothesis is rejected and ecology and business responsibility factors are positively related with all internal environmental factors.

5.5.20 Hypothesis-20

Ho: Economic Environment Factors are not related with the Industry's Internal Environment Factors

Table-5.5.20(a_{23})
Analysis of Regression Analysis of Economic Factors on Industry's Internal Environmental Factors

	Un standardized Coefficients		Standardized Coefficients	t	Sig.	R = 0.983 R square (R^2) = 0.966
	B	Std. Error	Beta			
(Constant)	.008	.053		.147	.884	Adjusted R square = 0.965
Management control factor	.282	.090	.282	3.135	.002	
Production environmental factors	-.047	.053	-.031	-.894	.373	
Marketing environment factors	.682	.090	.655	7.608	.000	F ratio =817.44
Finance and accounts factors	.096	.052	.082	1.827	.070	Sig. =0.000
Regression Equation, $Y = .008 + .282x_1 + (-.047)x_2 + .682\ x_3 + .0.096\ x_4$						

Note:
The multiple Regression Equation, $Y = a + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4$
Where,
Y = Dependent variable (Economic Factors)
a = Constant
B = Coefficient of independent variables
X_1 = Management control factors (independent variable)
X_2 = Production factors (independent variable)
X_3 = Marketing factors (independent variable)
X_4 = Finance and Accounting Factors (independent)

Source: Table-10 and Table-11 in the Appendix-II.

The above Table shows the determination of regression of economic factors on the industry's internal environmental factors of the sample mills according to executive's opinions. In this Table, we have the coefficient of correlation R= 0.983, we conclude that there exists a positive correlation between dependent variable and independent variables. We also observe that the value of $R^2 = 0.965$, F ratio = 817.44 and its significance level is 0.000 (<0.05). So, we can comment that our null hypothesis (Ho) is rejected and also comment that 96.50% of the variability in the dependent variable can be explained by the independent variable, taken together. However, the regression equation comes to $Y = .008+.282x_1+(-.047)x_2+.682x_3+.096x_4$, which indicates that among the internal environmental factors, marketing factors have maximum impact on firm's economic factors followed by management control factors and finance and accounting environment factors. Production factors have negative impact on economic factors. So, it can be affirmed that the null hypothesis is not accepted and economic factors are positively related with all internal environmental factors except production factors.

5.5.21 Hypothesis-21

Ho: Production Environment Factors are not with the Industry's External Environmental Factors.

Table-5.5.21(a_{24})
Analysis of Regression Analysis of Production Factors on External Environmental Factors

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			R = 0.849
(Constant)	.418	.094		4.429	.000	R square (R^2) = 0.722
Socio-cultural factors	.194	.172	.306	1.129	.261	Adjusted R square = 0.709
Political-legal factors	.220	.163	.327	1.348	.180	
Social responsibility & ecological factor	.161	.185	.253	.870	.386	F ratio =59.094
Economic environment factors	-.228	.205	-.348	-1.113	.268	Sig. =0.000
Technological environment factors	.204	.112	.324	1.817	.072	
Regression Equation, $Y = .418 + .194x_1 + .220x_2 + .161x_3 + (-.228)x_4 + .204x_5$						

Note:
The multiple Regression Equation, $Y = a + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5$
Where,
Y = Dependent variable (Production)
a = Constant
B = Coefficient of independent variables
X_1 = Socio cultural factors (independent variable)
X_2 = Political-legal factors (independent variable)
X_3 = Ecology and business responsibility of factors (independent variable)
X_4 = Economic factors (independent)
X_4 = Technological factors (independent)

Source: Table-10 and Table-11 in the Appendix-II.

The above Table shows the determination of regression of production factors on the industry's external environmental factors of the sample mills according to executive's opinions. In this Table, we have the coefficient of correlation R= 0.849, we conclude that there exists a positive correlation between dependent variable and independent variables. We also observe that the value of $R^2 = 0.722$, F ratio = 59.094 and its significance level is 0.000 (<0.05). So, we can comment that our null hypothesis (Ho) is rejected and also comment that 72.2% of the variability in the dependent variable can be explained by the independent variable, taken together. However, the regression equation comes to $Y = 0.418 + .194x_1 + .220x_2 + .161x_3 + (-.228)x_4 + .204x_5$, which indicates that among the external environmental factors, political-legal factors have maximum impact on firm's production factors followed by technological environment factors, socio cultural factors, and ecology and business responsibility factors. But economic factors have negative impact on production factors. So, it can be affirmed that the null hypothesis is rejected and production factors are positively related with all external environmental factors except economic factors.

CHAPTER SIX
Major Findings, Conclusions, and Strategic Implications and Recommendations

Chapter Six
Major Findings, Conclusion and Strategic implications and Recommendations

In this chapter, major findings and conclusions, strategic implications and recommendations based on elaborate analysis, evaluation and interpretation of qualitative and quantitative data and testing of hypothesis are presented as under.

6.1 Major Findings of the Study

The main purpose of this study is to assess the strategic management emphasizing on sustainability perspectives of the sample textile mills in Bangladesh with the impact of internal and external environmental factors on overall managerial activities and future sustainability of this industry. This research has been conducted in fifteen private sector textile mills under Bangladesh Textile Mills Association (BTMA). Although this industry has played a pivotal role in foreign earning and in employment generation but manifold problems have grasped this industry severely. Almost all of the respondents under this research hold the view that there are some external and internal environmental factors leading to these problems like old machinery, inefficient management, shortage of raw cotton, shortage of working capital, frequent power failures, substitute products, financial and liquidity shortage, increasing cost of production, decreasing demand and tough competition, labor unrests, low wage payment, ecological crisis, waste management problems, pollution hazards, fire hazards, unhygienic physical working environment, etc. In this context, an attempt has been made to find out the hindrances in strategic management or sustainable business strategies for the textile industry based on critical evaluation of both primary and secondary data. However, the major findings of this research are stated below:

Practices of Social Responsibility Strategies

The first objective was to overview and analyze the present scenario of social responsibility strategies of sample mills in Bangladesh, based on the workers′ perceptions, stakeholders′ opinions and annual report of five years from 2006-07 to 2010-11. From the evaluation of social contribution of 15 sample mills toward community during the period of 2006-07 to 2010-11, it has been found that the net profit had been

increasing during that period but the actual contribution of sample mill in the areas of health care issues, sports, cultural issues, religious purpose, education support, and forestation etc was rather going down remarkably. During the period of 2006-07, the social contribution by the sample mills was only 1.83% of total net profit and it was followed by 1.60% in 2007-08, 1.88% in 2008-09, 1.58% in 2009-10 and 0.813% in 2010-11. So, the social contribution of sample mills was not satisfactory. Besides, from the analysis of stakeholders′ opinion regarding the level of performance on the social responsibility of sample mills toward community, it has been seen that textile business were not responsible for community welfare.

From the analysis and evaluation of sample mills′ contribution toward employee, it has been found that social responsibilities of sample mills regarding the payment of wages were not satisfactory. Only 33.33% of the total sample mills pay minimum wages of the Tk. 2500 to 3000 per month and 53.33% of them pay minimum wages of Tk. 3000 to 3500 and none pays above the Tk. 4000 per month. But this minimum wages were not sufficient for the workers to maintain minimum standard of livings as per market price and cost of living. This fosters labor unrests and creates unsustainable socio-economic condition. According to the contribution to employee welfare in the area of provident fund, retirement benefit, pension provision, maternity leave, gratuity benefit, insurance, etc, it has been seen that most of the sample mills have failed to discharge its responsibilities toward community welfare during that period.

From the analysis and interpretation of the scenario of 15 sample mills according to the workers′ perceptions about the level of adequacy of physical working conditions, it has been found that most of the workers informed about the insufficiency of such facilities in the sample mills.

It has been observed from the analysis that 82% of the total workers thought that cotton and fabric dust were the principal reasons behind major health problems and it was followed by huge sound menace (44.66% of total respondents), washing and dyeing effluent (29.33% of total), lack of pure drinking water (19.33% of total), inadequate number of latrines (19.33% of total). It has also revealed that most of the textile workers have been suffering from short-term health problems such as fatigue from boredom (64% of total respondents), skin irritation (44% of total), allergy (42% of total), diarrhea (40%

of total), night fever (24% total), etc and long-term health problems such as, asthma and lung diseases (54% of total respondents), diabetes (34% of total), jaundice (36% of total) etc. So, it is apparent from this analysis that textile mills were unable to manage their responsibilities with regard to occupational health problems. It has been also seen from the analysis that most of the workers feel social, occupational, and residential insecurities such as dismissal from job (54.66% of the total respondents), fire hazards (58% of total), sudden closure of factory (33.33% of total), fear of unwanted pregnancy (38% of total), slum eviction (44.66% of total) etc.

Besides these, stakeholders′ opinion regarding the level of satisfaction on social responsibility of sample mills toward employees were not positive. So, it is very much clear that textile mills in Bangladesh did not discharge their responsibilities to the employees properly.

From the analysis and evaluation of sample mills′ contribution toward government according to the payment of government taxes, fees, and utility bills, it has been found that the total net profit of overall sample mills was increased but at the same time government fees, taxes, and utility bills paid by overall sample mills as per provision did not increase. Besides, stakeholders' perceptions about business responsibility of sample mills toward government expressed dissatisfaction. So, it can be said that textile mills did not discharge their responsibilities to the government properly during the period of 2006-07 to 2010-11.

From the investigation and evaluation of sample mills` responsibility toward consumers according to the stakeholders′ opinion, it has been seen that most of the stakeholders (42% of total) opined that textile business discharged minimum responsibilities and 20% of them told that the mills did not perform any responsibility to the consumers in Bangladesh and only 16% of them expressed their satisfaction about the responsibility discharged by sample mills during that period toward consumers.

So, from the above analysis, it can be concluded that social responsibility of sample mills toward its stakeholders (employees, consumers, government and communities) were not sufficient or satisfactory.

Practices of Environmental Protection Strategies

From the investigation and evaluation of environmental protection system according to the environmental standard certificate achieved by the sample mills in Bangladesh, it has been shown that 66.67% of the overall sample mills were not certified by OHASAS-18001 standard and this was followed by 66.66% in ISO-14001, 73.33% in ISO-9001, and 33.33% in Eco-tex certificate and most of the companies had got BSTI certificate but maximum companies did not have any Eco-tex certificate (66.66% of total). So, after evaluating this scenario, it can be concluded that sample mills did not discharge their environmental responsibility properly.

It has been seen in the distribution of industrial sub-sectors according to their contribution of national pollution load that textile industry has positioned top among industrial sub-sector for the pollution of toxic chemical to air (21.72% of total 76.64%), 14.02% of total pollution (88.02%) of toxic chemical to land which was second highest among them and 8.20% of total pollution (86.55%) of toxic metal to water had been released by the textiles. So, considering this situation, it can be concluded that textile mills are doing their activities unscrupulously and they are not practicing environmental protection strategy actively.

It has been also found from the analysis of scenario of sample mills according to their environment protection system that most of the sample mills (93.33% of total mills) had adopted pollution control strategy instead of taking pollution prevention strategy although pollution prevention strategy is better than controlling strategy in all aspect. Only 13.33% of total sample mills (15) had taken initiative for product recycling strategy but not yet adopted and the rest of them (86.67%) did not adopt this strategy, and only 20% of them had taken cleaner production strategy but rest of them (80%) did not follow the strategy. On the other hand, the opinions of 50 stakeholders about environmental responsibility to the environment had exposed that textile business discharged minimum responsibilities to the environment (40% of total stakeholders) and 20% of them opined that textile mills did not perform its responsibility totally. So, considering the above analysis, it can be argued that textile businesses are not environment friendly.

Evaluation of Financial Performance and Economic Sustainability Strategies

From the analysis of current ratios of 15 sample mills during the period from 2006-07 to 2010-11, it has been seen that the average current ratio was highest in case of BSML (i.e. 2.03), and the lowest was observed in case of AIL (i.e. 0.78). A current ratio of 2 times is considered as standard norm and this analysis showed that none of the sample mills had reached the standard norm except BSML. The others were far behind the standard which implies that the ability to meet current obligation were at stake during that period.

From the analysis of debt to total assets of 15 sample mills, it has been shown that the average debt to total assets ratios was highest in case of TSML (i.e. 0.67) and the lowest ratios was observed in case of MSML (i.e. 0.14). A ratio of 35% (0.35) debt to total assets has been considered as standard norm. So, debt to total assets ratios were quite satisfactory in case of BSML, MKSML, AnTML, AWML, TTML, TSML, AsKML but the rest of the sample mills were not able to maintain the standard norm during that period and they are below the norm which indicates that fund contributed by the creditors are always in danger for them. Standard deviation (SD) indicates the variation in debt to total assets ratios which was highest in case of TSML (0.62) and the lowest was observed in case of HTML i.e. 0.03. The t value indicates that variation in the debt to total asset ratios was significant only in case of DDML, AnTML, HTML, AlTML, AsKML and others had insignificant variation during the study period.

From the analysis of debt-equity ratios of sample mills, it is seen that average debt-equity ratio was highest in case of TSML ie. 2.72 followed by AWML (1.54), TTML (1.53), AnTML (1.30), AlTML (1.29), AlL (0.97), DDML (0.94), RSML (0.94), MKSML (0.75), HTML (0.74), BSML (0.68), STML (0.51), CMTML (0.44), MSML (0.26) and AsKML (0.13). The ratio of 0.50 is considered as standard norm. Most of the sample mills (12 mills) among the total sample mills were able to maintain the standard which indicates that fund provided by the owners was higher than the funds provided by the creditors. Standard deviation indicates the variation in debt-equity ratios of sample mills during the period which was highest in TSML i.e. 1.27 and the lowest was observed in case of HTML (0.04). The t values indicate that variation in the debt-equity ratios were significant only in case of HTML at 5% level of significance having 4 degrees of freedom and others had got insignificant variation during the study period.

From the analysis of asset-turnover ratios of total sample mills during the period of 2006-07 to 2010-11, it has been found that the average asset-turnover ratios was highest in case of AsKML i.e. 1.87 and the lowest asset-turnover ratios was noticed in case of AlTML (i.e. 0.34). A standard value for asset-turnover ratio is 0.50 as normal. It has been seen from this Table that among the total sample mills, STML, AIL, RSML, HTML, AWML, TTML, TSML, CMTML and AsKML have exceeded that standard value and others had not been able to maintain standard norm in all the year during the period. SD indicates the variation in asset-turnover ratios of sample mills which was the highest in case of AWML (i.e. 1.59) and the lowest was observed in case of AnTML (i.e. 0.05). The t-values indicate that the variation in the asset-turnover ratios was significant in case STML, AnTML, RSML, HTML and AsKML and the rest of them had insignificant variation during the period.

From the analysis of fixed asset-turnover ratios of 15 sample mills, it is observed that the average fixed asset-turnover ratios was highest in case of HTML i.e. 2.74 and the lowest was observed in case of AnTML (0.40). A ratio of 0.80 fixed asset-turnover ratios has been considered as standard norm. Among the total sample mills, 10 mills had achieved this standard during that period but others were not able to utilize their fixed assets in generating sales. Standard deviation (SD) indicates the variation in the fixed asset-turnover ratios of sample mills that was the highest in case of AWML (i.e. 1.40) and the lowest in case of AnTML (i.e. 0.06). The t-values indicate that the variation in fixed asset-turnover ratios was significant in case of STML, MKSML, AnTML, CMTML and AsKML and the others had insignificant variation during the period.

It has been seen from the analysis of inventory-turnover ratio of 15 sample mills that the average inventory-turnover ratios was highest in case of HTML (10.25) and the lowest for AlTML (0.94). A ratio of 0.35 for inventory-turnover ratio is considered as the reasonable norm for an efficient firm and higher inventory-turnover represents larger amount of profit. All the firms had reached this standard which means during the period, all sample mills had satisfactory inventory turnover ratio. Standard Deviation indicates the variation in the inventory turnover ratio which was highest in case of RSML and the lowest was for BSML (0.07). The t-values indicate that the variation in the inventory-turnover ratios was significant in case of AnTML, HTML, TTML, MSML, ASKML and the others had insignificant variation during the period at 5% LS having 4 degrees of freedom.

It has been observed from the analysis of return on investments (or assets) of sample mills during the period form 2006-07 to 2010-11 that the average return on assets was highest for TTML i.e. 0.24 and the lowest for BSML i.e. 0.005. A ratio of 0.15 is standard value for return on assets ratio. Among the total sample mills, only six mills (MKSML, AnTML, RSML, AWML, TTML, TSML) had reached the standard norms and others were not able to achieve standard norm and their return on investment were always far behind from the standard during the period.

It has been seen from the analysis of return on equity ratio of 15 sample mills that the average return on equity ratio was highest for AnTML (1.90) and the lowest for BSML and AIL (0.02 for each). A ratio of 0.19 for returns on equity has been considered as the standard norm but most of the sample mills were failed to achieve standard norms except AnTML, RSML, AWML. Standard deviation (SD) indicates the variation in the return on equity which was the highest for AnTML (1.90) and the lowest was observed in case of DDML and BSML (i.e. 02 for each). The t-values indicate that the variation in return on equity was insignificant for all of the sample mills during the period.

It has been seen from the analysis of net profit margin ratios of sample mills that the average net profit margin ratio was the highest in case of AnTML i.e. 2.33 and the lowest for AWML and CMTML (i.e. 0.01 for each). A profit margin ratio ranging from 4% to 6% has been considered as a reasonable norm but among the total sample mills, only eight mills (DDML, BSML, STML, MKSML, AnTML, RSML, MSML, AlTML) have achieved the standard norm and the others were not able to maintain the standard value. Standard Deviation indicates the variation in net profit margin ratios that was the highest in case of AnTML and the lowest for TSML (0.01). The t-values indicate that the variation in the net profit margin was insignificant for the entire sample unit during that period.

It has been seen from the analysis that sustainable growth rate was the highest in case of AIL i.e. 25.99% because of having larger leverage factors (95%) and retention ratio (1.17%), compared to other sample mills. This was followed by RSML (15.23%), TSML (15.06%), CMTML (14.62%), MSML (11.60%), TTML (9.7%), DDML (9.28%), AsKML (8.01%), BSML (4.59%), STML (2.17%), MKSML (1.81%), AWML (1.7%), HTML (1.60%), and AlTML (0.70%), AnTML(0.36%). The lowest sustainable growth rate has been noticed in case of MKSML, AWML, HTML, AITML, AnTML. Since the achievable sustainable

growth rate of these firms were lower, they can consider the alternatives of increasing payout, or reducing debt, or building up liquid assets or may revise its financial policies or resort to external equity they intend to achieve a growth rate higher than the maximum sustainable growth.

Industry's External Environmental Factors

On the basis of reviewed related literature and the opinions of interviewed executives, socio-cultural factors that affect strategic management and overall performance of the sample mills are lack of social security, lack of proper education and training, labor unrests, difference in culture among workers, lack of accommodation and recreation facilities, job commitment, and lack of co-operation among workers. Among the socio-cultural factors, labor unrests have highly significant but adverse impact on overall performance and strategic management of the sample mills, because its score is 483 (>480). On the other hand, lack of social security, lack of job commitment, lack of proper education and training of workers, lack of accommodation and recreation facilities of workers, and lack of co-operation among workers are also significant because their scores are greater than 360. But in case of difference in culture among workers and its impact is not significant because its score is below 360. So, corporate managers need to incorporate these factors in their strategic management processes for the long-term sustainability of this industry except difference in culture among workers.

From the analysis of political-legal factors, it has been seen that among. the political-legal environment factors, tax programs has positioned high with the score 474 followed by lack of government subsidy (458), lack of political influences on trade unions (374), and political decisions regarding industry's operation (365). But the impacts of all these political-legal factors are significant because their scores are greater than 360. So, it can be decided that all the political-legal factors are highly responsible for the overall performance of this industry and this is why corporate managers need to consider these issues while they adopt decisions.

From the analysis of economic environment factors, it is seen that among the economic factors, nonpayment of environmental tax has ranked top with the score 440 followed by severe competition and cost inflation (428), shift in demand (426), unstable investment policy (383) and lack of available employment generation (366). However the impacts of

all these economic factors are significant because their scores are greater than 360. So, it can be said that as all the economic factors have had wide influence in the realm of strategic management process and have played a key role in the overall performance of the textiles mills, so, the mills management should consider these factors in the decision making process.

From the analysis of ecology and social responsibility factors, it is found that among ecology and social responsibility factors, non consideration of pollution has positioned top of all other social responsibility and ecological factors with the score 482 which is greater than 480. So, the impact of non consideration of pollution is highly significant and creates adverse impact on sustainable development of textiles. On the other hand, the impact of non consideration of physical working environmental condition (481) lack of contribution toward stakeholders (457), non consideration of recycling process (451), lack of pollution prevention and cleaner production strategy (402), nonpayment of charitable donation (382), and lack of maintaining environment management standard (370) are also significant because their scores are greater than 360. But the impact of non application of social ethical code of conduct is not significant because the score is below 360. So, it may be argued that all social responsibility and ecological factors except non application of social ethical code of conduct are highly responsible for future sustainability of this industry. So, the mill owners and executives should consider these issues while they prepare plans and should give highest priority on the non consideration of pollution and physical work environment.

It has been seen from the analysis of technological environment factors that among the technological factors, old machinery has ranked top with the score 451 followed by lack of modern technology (440) and low productivity of machine (411). The impacts of all these technological factors are significant because all the scores are greater than 360. So, it can be argued that all the technological factors are responsible for the overall performance of this industry and the mill executives should consider technological factors in the strategic management process.

Industry's Internal Environment Factors

From the analysis of management control factors, it has been seen that among the management control factors, lack of clear-cut objectives, policies and strategies has positioned top with score 447 along with labor unrests taking the same score. This is

followed by non consideration of SWOT factors (440), non consideration of social and environmental responsibility factors (437), inefficient management (436), non application of green management (378), non application of trade unions (369), and non application of ethical standards (364). All the factors are significant and have had significant impact on strategic management because their scores are greater than 360. So, corporate managers need to deliberate these factors in their decision making process for the long term sustainability of this industry.

Form the analysis of production environment factors, it has been revealed that among the production environment factors, labor unrests has positioned top with the score 518 and this is followed by power failures (517), shortage of raw materials (494) and low productivity of machine and labor (486). The impacts of all these factors are highly significant because their scores are greater than 480. So, it can be conferred that all the production factors are highly responsible for the overall performance and for future sustainability of the sample mills and this is why corporate managers need to consider these issues while they adopt strategic plan.

It has been seen from the analysis of marketing environment factors that among the marketing environment factors, substitute products has positioned top with the score 471 which is followed by low prices of textile products (452) and lack of market research activities (385). However, the impacts of all these factors are significant because their scores are greater than 360 but the impact of lack of publicity and promotional activities on overall performance and sustainable development of sample mills is insignificant because its score is lower than 360. So, it can be affirmed that as all the marketing environment factors except lack of publicity and promotional activities have had wide influence on the overall performance of sample mills, so the mills′ management should ruminate these factors in the decision making process.

It has been also found from the analysis of finance and accounting factors that lack of credit facilities has ranked top with the score 474 followed by shortage of working capital (469), increased cost of production (457) and high rate of banking interest (406). The impacts of all these factors are significant because their scores are greater than 360. So, mill’s corporate managers should consider these factors in the decision making process giving top priority on lack of credit facilities.

Environmental Searching and Industry Analysis

From the analysis of sample mills′ strength factors, it has been observed that proper action against pollution has positioned top with the score 485 which is greater than 480. So, the impact of proper action against pollution is highly significant and it is the strength of this industry. Accordingly, the impact of good physical working environment (484), efficient workers (481) and good relation with workers (481) are also highly significant and they are the strength of the sample companies. The impact of good quality of products (475) and good waste management (431) are significant because their score are greater than 360 but below the 480. So, these two factors are also the strengths for the sample companies to some extent. So, it may be argued from the above analysis that the sample mills have got some strengths and corporate managers of these mills need to consider these factors exhibiting strengths in their decision making process to surmount its weaknesses and for future sustainability of this industry.

From the analysis of sample mills′ weakness factors, it has been seen that labor unrests have ranked top with the score 518 followed by power failures (517), shortage of raw materials (494), low productivity of machine and labor (486) and all the weakness factors stated above have a highly significant impact on the overall performance of the sample mills because their scores are greater than 480. Besides these, lack of credit facilities (474), substitutes products (471), shortage of working capital (469), increased cost of production (457), low prices of textile products (452) lack of clear cut objectives, policies, and strategies (447), non consideration of SWOT factors (440) and non consideration social and ecological factors (437) have a significant impact because their scores are greater than 360 but less than 480. Recall that all the factors included in this Table have been considered only whose scores are greater than seventy percent and above the total scores. So, it can be said that there are several weaknesses in the sample mills and their impact are significant and some of them are highly significant. This is why mills' management should ruminate these factors in the decision making process and should strive to subjugate these weaknesses through adopting sustainable strategies.

It has been seen from the analysis of sample mills′ opportunity factors that recycling process has positioned top with the score 454 followed by proper handling of environmental issues (451), product diversification (449), computerization (436), entrance into new market (415), and effective market research and promotional activities (406). The impacts of all these factors on sustainable development of the sample mills are significant because their scores are greater than 360. So, the mills' management should bethink these opportunity factors for the future sustainability of this industry.

It has been found from the analysis of threat factors of sample mills that labor unrests have positioned top with the score 483 followed by non consideration of pollution (482), non consideration of physical working environment (481) and all these factors concerning threats of the sample mills have a highly significant impact on the sustainable development of this industry because their scores are greater than 480. Besides these, tax programs (474), lack of government subsidy (458), lack of contribution toward stake holders (457), lack of social security (452), non-consideration of recycling process (451), old machinery (451), non- payment of environmental tax (440), lack of modern technology (440) and lack of job commitment (436) have had significant impact on the future sustainability of this industry because their scores are greater than 360 but lower than 480. So, it can be inferred that the sample mills have got some threats also. So, mills management need to bethink these factors in their strategic management process so as to overcome these threats for the future sustainability of this industry.

Integration of External Strategic Factors

From the analysis of abridgement of external strategic factors for overall sample mills, it is seen that among the opportunity factors the weighted score is the highest in the factor of recycling process with 0.059 points and the lowest score is for the factor of entrance into new market with 0.053 point. So, it can be denominated that corporate managers of the sample companies should bethink recycling process for sustainable use of cotton as their top priority and entrance into new markets as their least priority to overcome sample mills` weaknesses and threats. It is also seen in the Table 5.4.4(a_1) that among the threat factors of the sample mills, the weighted score is the highest for the labor unrests with 0.063 points and the lowest for the lack of job commitment with 0.057 points. So, it can

be assigned that corporate managers should consider labor unrests as their utmost threat and lack of job commitment as their minimal threat. In order to overcome these threats, they should take sustainable strategies and should practice strategic management process. From the above analysis, we have seen that total weighted score was 4.187 which indicates that corporate managers responded properly to their current and expected strategic factors in the external environment.

Integration of Internal Strategic Factors

From the analysis of abridgement of internal strategic factors for overall sample mills, it has been revealed that among the strength factors, the weighted score is the highest in the factor of proper action against pollution with 0.057 points and the lowest score is in the factor of good waste management with 0.50 points. So, it can be determined that corporate managers should bethink proper action against pollution as their special consideration and good waste management as their least preference just to overcome sample mills weaknesses. It is also seen that among the weakness factors of the sample mills, the weighted score was the highest for labor unrests and for power failures with the same point 0.061 and the weighted score was the lowest for non consideration of social and ecological factors with 0.051 points. So, it may be inferred that corporate managers should consider labor unrests and power failure as their extreme weaknesses and non consideration of social and ecological factors as their minimal weakness and they should take sustainable business strategies and apply strategic management in order to surmount these weaknesses. From the analysis, we have also noticed that the total weighted score was 4.463 which indicate that corporate managers responded well to their current and expected strategic factors in the internal environment.

Hypothesis Testing

From the opinions of the executives of sample mills in relation to industry's external environmental factors, it has been found that the null hypothesis is rejected and the external environmental factors (socio-cultural, political-legal, economic, ecological and social responsibility and technological factors) are positively correlated with each other and in case of industry's internal environmental factors (management control, production, marketing, financial and accounting factors) are also positively correlated with each other at 1% level of significance.

From the opinions of executives of sample mills in relation to SWOT factors, it has been seen that the SWOT factors among the sample mills were positively correlated with each other at 1% Level of significance.

From the chi-square tests of executive's opinions of the sample mills, it has been found that management control factors were positively related with socio-cultural factors at 1% level of significance having 16 degrees of freedom. Management control factors were also positively correlated with economic environment factors at 5% level of significance. Economic environment factors were also positively and significantly correlated with production management factors at 1% Level of significance having 12 degrees of freedom. Production environment factors, on the other hand, are positively and significantly correlated with ecology and business responsibility factors, at 1% Level of significance having 12 degrees of freedom. Ecological and business responsibility factors were also positively and significantly correlated with 1% Level of significance having 16 degrees of freedom.

Management control factors and political-legal factors are also positively and significantly related with each other at 1% Level of significance. Marketing environment factors are also significantly and positively correlated with political-legal factors and economic environment factors. Finance and Accounting factors are economic environment factors are significantly and positively correlated with each other at 1% Level of significance having 16 degrees of freedom. Technological factors and management control factors are also positively and significantly correlated with each other at 1% Level of significance. And industry's weakness factors are also positively and significantly correlated with ecology and business responsibility factors and with economic environment factors as well. Industry's threat factors are also significantly and positively related with produced in factors and with ecology and business responsibility factors.

From the regression analysis of executives' opinions, it has been tested that industry's weakness factors are positively related with all internal environmental factors but among the internal factors, finance and accounting factors had maximum impact on firm's weakness factors followed by production factors, management control factors and marketing environment factors. And industry's strength factors are positively correlated with all internal environmental factors except with marketing environment factors,

finance and accounting factors had maximum impact on strengths followed by management control factors, production environment factors except marketing environment factors.

From the analysis of regression of opportunity and threat factors on industry's external environmental factors, it has been tested that the null hypothesis is rejected i.e. the opportunity factors are positively related all the external environmental factors except ecological and social responsibility factors and threat factors are also positively correlated with all the external environmental factors except ecological and social responsibility factors and economic factors. Among the external factors, technological environment factors had maximum impact on industry's threat factors followed by socio-cultural factors, political legal factors, ecological and business responsibility factors and economic environment factors.

From the analysis of regression equation of ecological and business responsibility factors on the industry's internal environmental factors, it has been found that ecology and business responsibility factors are positively related with all the internal environmental factors and among the internal environmental factors, marketing environment factors have maximum impact on management control factors, finance and accounts, and production environment factors.

It has been tested from the analysis of regression analysis of economic factors on industry's internal environmental factors that economic environment factors were positively related with all the internal environmental factors except production environment factors and among the internal factors, marketing environment factors have maximum impact on economic factors followed by management control factors, financial and account factors except production environment factors.

It has been also found from the analysis of regression equation of production factors on external environmental factors that production environment factors were positively related with all the external factors except production environment factors and among the external factors, political-legal had maximum impact on industry's production environment followed by technological factors, socio-cultural factors but economic factors had minimum and negative impact on production factors.

6.2 Conclusions of the Study

The clothing and textiles sector is a significant part of the world's economy. Seven percent of total world exports are in clothing and textiles. Because of the size of the sector and the historical dependence of clothing manufacture on cheap labor, the textile and apparel industry in Bangladesh is subject to intense political interest and has been significantly shaped by international trading agreements. However, on the basis of overall analysis and interpretation of data, discussion with sample mills′ executives, workers′ perceptions and opinions of stakeholders, it can be concluded that although this industry has been unexpectedly flourishing but the overall activities are not functioning in a sustainable way. That is why, multifarious problematic issues like fire hazards, labor unrests, low wage payment issues, discrimination and harassment of women, building collapse, ecological crisis, workers′ health and safety issues, shortage of raw cotton issues, and shortage of working capital issues etc, have been arising frequently. The performances of textile mills entirely depend on the personal experiences, knowledge and forecasting power of corporate managers but they are not professionally qualified and they have lacked enough proficiency in the application of strategic management techniques and sustainable business strategies. The textile mills′ owners, on the other hand, are behaving irrationally and ignoring the interest of all parties like workers, society, environment, and other stakeholders due to their profit seeking mentality. The lack of proper ideas and learning about sustainable development strategies can be said to be the reason behind this type of mentality. That means, for the future sustainability of this vital industry, they need to be conscious on social responsibility, environment protection strategy, and economic sustainability. Though textile mills are facing acute and severe multifarious problems, sustainable strategic planning and its implementation through considering environmental factors (both external and internal) can still save this vital and pivotal sector. It has been stated that this industry is the victim of hostile environmental factors that is, industry's external environmental factors (socio-cultural, political-legal, economic, ecology and business responsibility, and technological factors) and industry's internal environmental factors (management control, production, marketing, and financial and accounting factors). Management has failed to forecast these environments in time and also failed to forecast future changes in local and international policy in this regard. So, it is recommended in concluding remarks that if the corporate

level managers are unable to forecast the future trends and developments in their business and accordingly they are not able to prepare the sustainable strategies to face the future environmental changes, it will not be possible for them to adjust with changes successfully. And unless the textile mills are equipped with professionally qualified managerial personnel and failed to avoid profit seeking tendency without creating social, economic, and environmental value and failed to practice sustainable business strategies or strategic management techniques in place of traditional planning, this industry will not be long lasting. So, the BTMA officials, governments, textile owners, and policy makers should come ahead to take proper strategy, policy, and effective long-range planning for the future sustainability of this vital and potential sector in Bangladesh. Our technological and technical resources, genius and talents, and experts should be deployed to explore new vistas of its potentiality. This sector has the capacity of building a still more glorious future of Bangladesh. In order to achieve this target and to reach this goal, we need a concerted effort, a committed leadership, sustainable strategic planning and a vigorous campaigning to secure effective participation and involvement of all concerned authorities and agencies actively to breathe into dynamism in the textile industry.

6.3 Strategic Implications and Recommendations

After scrutinizing the overall situation in the light of concluding remarks, findings of the study, and testing of hypothesis, based on quantitative and qualitative data, the following strategic implications and recommendations are presented for the effective management practices with sustainable strategies and its implementation for the substantial development of the textile industry in Bangladesh:

(1) Textile industry should achieve eco-tex standard certificate and eco-textile products need to be produced for keeping ecological standard and consumer health.

(2) In order to promote the best environmental and social performance of the supply of textiles, an “ideal” consumer would: buy second-hand clothing and textiles where possible; buy fewer but longer lasting garments and textile products; when buying new products, choose those made with least energy and least toxic emissions; only buy products made by workers who are paid a credible living wage with reasonable employment rights and conditions; lease clothes that would otherwise not be worn to the end of their natural life; wash clothes less often, at lower temperatures, and

using eco-detergents, hand-dry them and avoid ironing where possible; extend the life of clothing and textile products through repair; dispose of used clothing and textiles through recycling businesses who would return them for second-hand sale wherever possible, but otherwise extract and recycle the yarn or fibers. If consumers chose to behave in this way, both government and business would follow their behavior and provide the services and functions they demanded.

(3) Corporate social Responsibility (CSR) practices can be put into operation in many ways by the corporate managers though introducing work place codes to protect workers' rights for fair hours of work, pay, vacation and sick leave, to increase diversity and opportunity, to avoid discrimination and to ensure safe working premises.

(4) Management systems should be improved through increased stakeholder engagement, shared decision making and employee involvement.

(5) Textile products should contain limited amounts of substances harmful to health and the environment and should be processed with reduced use of water and air pollution.

(6) The goals of textile mills should not be just profitability; it should create social, economic and environmental value. Their profit seeking tendency should be avoided and they should contribute up to 5% of net profit to meet up their stakeholders′ all interests, which will bring no effect on their business functions.

(7) Textile mills should always try to keep sustainable growth rate if they want to sustain in the complex and competitive global markets. The shortage of raw cotton can be a great challenge for the corporate level managers so, they should implicate recycling strategy in the decision making process.

(8) Corporate managers must ensure that organizational design and structures actively promote and integrate sustainability issues in the textile chain. They also need to pay attention to the inclusion of economic sustainability within a management system framework. Because, economics is traditionally about how we allocate scarce resources. Economic sustainability then might be better described as the process of allocating and protecting scarce resources, while ensuring positive social and environmental outcomes.

(9) Corporate managers need to accept the need for broader financial and economic measures beyond the profit/ loss and balance sheet and they need to introduce green management and sustainable management practices within management

system framework. They also need to impose environmental tax for keeping ecological balance.

(10) Textile mills like other business organizations should have clear cut objectives, policies and strategies having organizational charts with manuals containing precise work distribution, definite delegation of authority and clear interpretation of responsibility which are basic requirements for sound organization.

(11) Product development and research should be a continuous process which not only helps management to find out market needs but also helps in creating some new needs and face competitors effectively.

(12) Marketing profile analysis is an important tool to find out the factors affecting price policies and decisions in international market. Committee must explicitly set pricing objectives in conformity with firm's overall marketing goals.

(13) Financial problems should be overcome through increased governmental subsidy and proper government initiatives for giving loan by banks at low interest rate.

(14) The emphasis and the priority should be given on good governance, total quality management (TQM), Management by objectives (MBO), and long-range planning.

(15) Management audit, ethical audit, cost audit need to be introduced at the corporate office.

(16) Government should formulate comprehensive textile policy and strategy covering all aspects of textile growing, trading, manufacturing, exporting, shipment, research development, training, campaigning for trade issues, infra-structural facilities, power supply, technical and technological, and foreign assistance, and assistance for hygienic physical working condition, pragmatic wage structure, incentive packages for outstanding mills′ management and individual performance to boost up social responsibility friendly and eco-friendly textile industry in Bangladesh.

(17) In order to have an improved and tranquil industrial relations, employee welfare facilities, better co-operation and trust between management and workers, improved and hygienic physical working environment, financial and non financial incentives should be ensured by mills′ management. Improved industrial relation is a must to attain higher productivity.

(18) Job commitment of employees should be developed through increasing motivation, promotion and ensuring job satisfaction for effective managerial control. Bonus system, pension scheme, retirement benefit, insurance coverage, gratuity facility need to be exercised pragmatically.

(19) Ecological crisis, pollution prevention, recycling issues, wage structure, fire hazards, labor unrests, physical working conditions, international agreement relating to GSP facility and quotas removal, should be taken as the highest priority immediately for sustainable development of this industry.

(20) Proper training facilities of mills′ executives and workers should be held on regular basis. Executives′ training will help them to face environmental threats and take the benefits of environmental opportunities-properly. In this context, exhibition, workshops, seminar should be arranged regularly.

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APPENDICES

Appendix-I

Questionnaires of the Study

Institute of Environmental Science

University of Rajshahi

Rajshahi.

Title: "Sustainable Strategies for the Textile Industry in Bangladesh".

(Information collected by this questionnaire would be confidential)

Date:

1. General Information

1.1 Name of the Industry:

1.2 Name and Address of the Respondent:

1.3 Age and Designation of the Respondent:

1.4 Educational Qualification:

1.5 No. of Service in Years:

1.6 Authorized and Paid-up Capital of the Company:

1.7 Name of Products:

1.8 Markets of Products: Domestic/Foreign:

2. Information about the Company's Personnel:

2.1 Number of employees working in the industry

Employees	Male	Female	Total
Executives			
Workers			

2.2 Amount of monthly maximum/minimum wages/salaries;

Employees	Minimum	Maximum
Executives		
Workers		

2.3 Does the company pay extra incentives for extra work?

a) Yes ☐ b)No ☐ if no, why?.....

2.4 Information about the extra facilities for employees: (Amount for last 5 years)

Year	Provident fund	Gratuity	Bonus	Medical	House rent	Conveyance	Recreation	Compensation	Maternity leave	Education	Others
2007											
2008											
2009											
2010											
2011											
Total											

2.5 Does the industry provide training for employees?

a) Yes ☐ b) No ☐

2.6 Information about the training for last 5 years?

Year	Types of Training	No. of Participants	Frequency
2007			
2008			
2009			
2010			
2011			
Total			

2.7 Information about the promotion for last five years (2007-20011)

Year	No. of Promoted Employees
2007	
2008	
2009	
2010	
2011	
Total	

If the company failed to provide promotion? Why-

2.8 Information about the resignation/suspension for last 5 years (2007-2011).

Year	Executives	Workers	Resignation/ Suspension	Reasons
2007				
2008				
2009				
2010				
2011				
Total				

2.9 Is there any Trade Union/CBA in this company?

a) Yes ☐ b)No ☐ if no, why.....

2.10 Information about the labor unrest during the last 5 years (2007-2011).

Year	No. of Labor unrest	Reasons
2007		
2008		
2009		
2010		
2011		
Total		

2.11 According to your opinion, what are the ways of solving the grievances? Information about the grievances of last 5 years.

Year	Grievances	Solved (Yes/No)	Measures for Solution
2007			
2008			
2009			
2010			
2011			
Total			

2.12 Is there any child labor in this firm?

a) Yes ☐ b) No ☐ If yes, why .....

2.13 Information about physical working environment

Working Environment	Level of Adequacy			
	Sufficient	Barely Adequate	Inadequate	Unavailable
Work Space				
Common Room				
Duty Physician				
Children Care Area				
Change Room				
Latrines				
Dining Room				
Prayer Room				
Exhaust				
Emergency Power				
Emergency Exit				
Window Ventilation				
Drinking Water				
Lighting				
First Aid & Facilities				
Fans				
Fire Extinguisher				

2.14 Information about worker's perception of principal reasons for occupational health problems

Health Hazard Sources	Please mark by rick (√)
Factory and Fabric Dust, Cotton Dust	
Huge Sound from Machine Operation	
Seating Arrangement Congestion	
Suffocation closed Window	
Unavailability of Pure Drinking Water	
Inadequate Number of Latrines	
Washing & Dying Clothes	
Waste Disposal	

2.15 Information about health problems suffered by workers of the industry.

Short Term Health problems	Please mark by Tick (√)	Long Term Health Problems	Please mark by Tick (√)
Skin Irritation		Asthma and Lung Disease	
Allergy		Ulcer	
Coughing		Leucorrhea-Least infection	
Drowsiness		Rheumatic Fever	
Sneezing		Menstrual Irregularities	
Depression		Repetitive Strain Injuries	
Nausea		Inarticulateness Inattention	
Vomiting Tendency		Diabetes	
Insomnia		Inarticulateness Inattention	
Panic		Repetitive Intestinal Tract Infection	
Back Strain		Sexual and Venereal Diseases	
Diarrhea		Loss of Sexual Desire	
Eye Soreness		Jaundice	
Hair Loss		Low Blood Pressure	
Muscle Spasms		Memory Loss	
Night Fever		Schizophrenia	
Nervous Breakdown		Leukemia	
Sudden Insanity		Sadden Blindness	
Headache		Hysteria	
Fatigue from Boredom		Sterility	

2.16 Is there any scope for employees to participate in company's decision making process?

a) yes ☐ b) no ☐

2.17 What kind of insecurities (social, occupational, residential) do you feel in your organization?

Social .....

Occupational .....

Residential .....

3. Information about the Community Welfare

3.1 Give the information of contribution to the community welfare activities for last 5 years:

Activities	2007	2008	2009	2010	2011
Education					
Sports					
Cultural					
Medical					
Relief					
Religious					
Donation to the charitable organization					
Employment creation for disabled					
Advertisement support for Journal					
Others					

4. Information about the Consumers

4.1 Is there any way of consumers' complain solution?

If yes, explain.....

If no, explain.....

4.2 Is the company's product approved by BSTI/ISO?

4.3 Are there any research activities to achieve consumers satisfaction and environment protection?

a) Yes ☐ or b) No ☐

4.4 What is the pricing strategy in your company?

4.5 Information about the quality improvement or new product development for last 5 years (2007-2011).

Year	Name of product	Type of improvement	New product Development
2007			
2008			
2009			
2010			
2011			

5. Information about Government

5.1 Do this firm maintaining government rules, regulations and registration fully?

If yes explain.....

If no explain.....

5.2 Does the firm regularly pay the government fees and taxes?

If yes, give details:

Year	Paid taxes	Paid Fees	Paid Electric Bill	Paid Gas Bill	Paid Water Bill	Paid Others Bill
2007						
2008						
2009						
2010						
2011						

If No, Give reasons.....

6. Information about Environmental Protection System:

6.1 Is the company aware about environmental rules? Please tick (√)

☐ Informed ☐ Not informed ☐ Abide by Rules

If not informed, give reasons .....

6.2 What steps has the firm taken to improve internal work environment?

Steps Taken.....

If no, give Reason.....

6.3 Is there any waste management system in this industry?

a) Yes ☐ b) No ☐

6.4 Which of the following strategies does the company take? (please tick)

a) Pollution control strategy ☐

b) Pollution prevention strategy ☐

c) Cleaner production strategy ☐

6.5 Does your industry have waste water treatment plant?

a) Yes ☐ b) No ☐

If no, why .....

6.6 What steps has the firm taken about dying effluent and waste disposal?

Steps taken .....

If no, give reason .....

6.7 Which of the following generic management system standard certified by your industry? (Please mark by Tick)

SL. No.	Name of Standard	Meaning	Tick (√)
01.	OHASAS 18001	This standard assures the continuous improvement of occupational health and safety performance.	
02.	ISO – 14001	This standard assures environmental management that continues to reduce the industry's environmental impact on the entire production process.	
03.	ISO – 9001	This assures the quality of an organization's management system	
04.	ECO-Tex	This label guarantees ecological standard and promotes product responsibility and consumer health	
05.	GOTS	Global Organic Textile Standard helps reduce the usage of synthetic fertilizer and pesticides in the cultivation of cotton	

6.8 What types of socio-economic and environmental problems would be raised out for not performing social and environmental responsibility?

6.9 Does your firm have environment management plan?

If yes, explain ..... if no, why .....

6.10 Does your firm have monitoring plan?

a) Yes ☐ b) No ☐

6.11 Information about Environmentalists:

i) Have the firm's waste water been damaged ecological balance by water pollution and soil degradation?

a) Yes ☐ b) No ☐

ii. What is the impact of cotton growing overwhelmingly?

iii. Is hemp viable or alternative to cotton?

a) Yes ☐ b) No ☐

7. Information about the satisfaction level of stakeholders regarding social and environmental responsibility performed by Textile Industry in Bangladesh:

7.1 Name and Address of the Respondent.....

7.2 Do you think your organization has social responsibility?

If yes, give reasons.....

If no, give reasons .....

7.3 Are there any special reasons for discharging social and environmental responsibility of business in Bangladesh?

If yes, give reasons.....

If no, give reasons .....

7.4 What are the problems of performing social and environmental responsibility?

7.5 What kind of measures is essential for performing social and environmental responsibility?

7.6 How far have social responsibility towards employees been performed by your firm?

☐ Satisfactory ☐ Moderately ☐ Minimum ☐ Do not perform

7.7 How far have social responsibility towards community (Contribution to charity, development worked), been performed by your organization?

☐ Satisfactory ☐ Moderately ☐ Minimum ☐ Do not perform

7.8 How far have social responsibility towards government (Payment of taxes, bills, fees, etc.) been performed by your firm?

☐ Satisfactory ☐ Moderately ☐ Minimum ☐ Do not perform

7.9 How far have social responsibility towards consumers (Reasonable price, quality, complain solution), been performed by your firm?

☐ Satisfactory ☐ Moderately ☐ Minimum ☐ Do not perform

7.10 How far have social responsibility towards environment (Pollution control, waste mgt etc) been performed by your firm?

☐ Satisfactory ☐ Moderately ☐ Minimum ☐ Do not perform

8.1 Information about Administration/Management Strategies:

8.1.1 Is everybody of your organization concerned about achieving objectives?

a) Yes ☐ b) no ☐

8.1.2 Please give an organization chart of your company?

8.1.3 Is there any planning committee?

a) Yes ☐ b) no ☐

8.1.4 What factors are considered to prepare a plan?

8.1.5 Whether your firm has a committee regarding social and environmental affairs?

a) yes ☐ b) no ☐

8.1.6 Has the board had work environment committee?

a) yes ☐ b) no ☐

8.1.7 Has the board had employee welfare and recreation committee?

a) yes ☐ b) no ☐

8.1.8 Are SWOT factors considered while making plan?

a) yes ☐ b) no ☐

8.1.9 What are the main responsibilities of top management?

8.1.10 What are the main problems of your firm?

8.1.11 What are your suggestions for overcoming those problems?

8.1.12 State the number of employees and workers (permanent/temporary) of the mill from 2005-06 to 2010-11.

8.1.13 State the no. of officers and workers who took training during the period of 2005-06 to 2010-11.

8.1.12 How much overtime was paid during 2005-06 to 2010-11?

8.1.15 Was there any unrest during 2005-06 to 2010-11?

8.1.16 Was there any recruitment from 2005-06 to 2010-11.

8.1.17 Do you agree that lack of clear cut objectives; policies and strategies has an adverse impact on overall performance?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.1.18 Do you agree that non consideration of social and environmental responsibility factors in decision making process has an adverse impact on overall performance and sustainable development?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.1.19 Do you agree that non consideration of SWOT factors in decision making process has an adverse impact on overall performance?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.1.20 Do you agree that inefficient management has an adverse impact on overall performance?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.1.21 Do you agree that non application of green management has an adverse impact on overall performance?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.1.22 Do you agree that labor unrest has an adverse impact on overall performance?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.1.23 Do you agree that non application of ethical standards has an adverse impact on overall performance and future sustainability?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.1.24 Do you agree that non-co-operation of Trade unions has an impact on overall performance?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.2 Socio-Cultural Environment

8.2.1 Do you agree that lack of social security has an impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.2.2 Do you agree that lack of proper education and training of workers has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.2.3 Do you agree that labor unrest has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.2.4 Do you agree that difference in culture among workers has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.2.5 Do you agree that lack of accommodation and recreation facilities has adverse impact on strategic Management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.2.6 Do you agree that job commitment has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.2.7 Do you agree that lack of co-operation among workers has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.3 Political Legal Environment

8.3.1 Do you agree that political decisions regarding industry's operations have an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.3.2 Do you agree that lack of political influences on trade unions have an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.3.3 Do you agree that lack of Government subsidy has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.3.4 Do you agree that tax programs have an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.4 Ecological and Social Responsibility Factors

8.4.1 Do you agree that non consideration of pollution (air, water, soil and sound) by the textile industry has an adverse impact on sustainable development?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.4.2 Do you agree that non consideration of physical working environmental condition by the industry has an adverse impact on overall performance and sustainable development?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.4.3 Do you agree that lack of considering recycling process for sustainable use of cotton as raw material has an adverse impact on ecological balance?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.4.4 Do you agree that lack of maintaining environment management standard (ISO-14001, ISO-18001, Eco-tex etc.) and monitoring plan have an adverse impact on sustainable development strategies?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.4.5 Do you agree that lack of pollution prevention and cleaner production strategies have an adverse impact on sustainable development strategies?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.5.6 Do you agree that lack of contribution toward stakeholders (toward workers, consumers, community, government) in the decision making process has an adverse impact on socio-economic condition and overall performance?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.7.7 Do you agree that nonpayment of charitable donation and community welfare by your firm has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.6.8 Do you agree that lack of application of social ethical code of conduct has adverse impact on sustainable development?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.5 Technological Environment

8.5.1 Do you agree that old machinery has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.5.2 Do you agree that low productivity of machine has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.5.3 Do you agree that lack of modern technology has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.7 Economic Environment

8.7.1 Do you agree that unstable investment policy has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.7.2 Do you agree that lack of available employment generation by your organization has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.7.3 Do you agree that non payment of environmental tax has an adverse impact on socio-economic development and strategic management?

8.7.4 Do you agree that shift in demand has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.7.5 Do you agree that severe competition and cost inflation have an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.8 Production Environment

8.8.1 Do you have any shortage of raw materials (Cotton)?

8.8.2 Do you follow the technique of EOQ?

8.8.3 State the total production days, hours of production and production hours lost from 2005-06 to 2010-11.

8.8.4 State budgeted and actual production (Volume) from 2005-06 to 2010-11.

8.8.5 State budgeted and actual cost of production (Taka) from 2005-06 to 2010-11.

8.8.6 State budgeted production capacity, actual capacity and capacity utilization from 2005-06 to 2010-11.

8.8.7 State production loss due to ideal capacity from 2005-06 to 2010-11.

8.8.8 State budgeted and actual production loss (value) from 2005-06 to 2010-11.

8.8.9 State budgeted and actual row material wastages (value) from 2005-06 to 2010-11.

8.8.10 Mention the quality of shortage of raw materials during the period from 2005-06 to 2010-11.

8.8.11 How do you measure your workers' and machine productivity?

8.8.12 Do you agree that low productivity of machine and labor has an adverse impact on overall production management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.8.13 Do you agree that labor unrests have an adverse impact on production management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.8.14 Do you agree that power failures have an adverse impact on overall production management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.8.15 Do you agree that shortage of row materials have an adverse impact on overall production management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.9 Finance and Accounts Aspects

8.9.1 Do you have any shortage of working capital?

8.9.2 Mention the shortage of working capital from 2005-06 to 2010-11.

8.9.3 Had you got any government subsidy from 2005-06 to 2010-11.

8.9.4 State loan taken and loan repayment from 2005-06 to 2010-11.

4.9.5 Do you agree that shortage of working capital has an adverse impact on overall financial management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

4.9.6 Do you agree that high rate of interest has an adverse impact on financial management and overall performance?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

4.9.7 Do you agree that increased cost of production has an adverse impact on overall financial management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

4.9.8 Do you agree that lack of credit facilities has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.10 Marketing Aspect

8.10.1 State budgeted and actual sales (Tk.) from 2005-06 to 2010-11.

8.10.2. State budgeted and actual sales price per ton from 2005-06 to 2010-11.

8.10.3 State budgeted and actual cost of sales (Tk.) from 2005-06 to 2010-11.

8.10.4 State ending inventory of finished goods (volume) from 2005-06 to 2010-11.

8.10.5 State actual and budgeted income/loss per ton from 2005-06 to 2010-11.

8.10.6 State opening and closing stock of raw material from 2005-06 to 2010-11.

8.10.7 Do you agree that substitute products have an adverse impact on overall marketing management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.10.8 Do you agree that lack of market research activities has an adverse impact on strategic management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.10.9 Do you agree that lack of publicity and promotional activities has an adverse impact on overall marketing management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.10.9 Do you agree that low prices of textile products have an adverse impact on overall marketing management?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.11 Opportunities

8.11.1 Do you agree that product diversification is an opportunity for future sustainability of your industry?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.11.2 Do you agree that proper handling of environmental issues is an opportunity of your industry?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.11.3 Do you agree that effective market research and promotional activities are on opportunity for future sustainability of your industry?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.11.4 Do you agree that recycling process for sustainable use of cotton materials is an opportunity for future sustainability of your industry?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.11.5 Do you agree that entrance into new markets through government initiative is an opportunity for future sustainability of your industry?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.11.6 Do you agree that computerization is an opportunity for future sustainability of your industry?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.12 Strengths

8.12.1 Do you agree that good quality of textile products is the strength of your industry?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.12.2 Do you agree that efficient workers are the strength of your industry?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.12.3 Do you agree that good relation with workers is the strength of your industry?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.12.4 Do you agree that a good physical working environment is the strength of your industry?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.12.5 Do you agree that good waste management system is the strength of your industry?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

8.12.6 Do you agree that proper action against pollution is the strength of your industry?

☐ Strongly Disagree ☐ Disagree ☐ No opinion ☐ Agree ☐ Strongly Agree

Thank you for your kind co-operation

Date and Signature

Appendix-II

Table-01
Executive Opinion on Socio-Cultural Factors

	1	2	3	4	5	6	7
Strongly agreed	26	17	56	3	5	9	10
Agreed	64	65	29	29	51	42	35
No opinion	10	19	19	48	28	37	33
Disagreed	16	15	14	26	25	24	31
Strongly disagreed	4	4	2	14	11	8	11
Total	120	120	120	120	120	120	120

Note:
1. Lack of Social Security
2. Lack of Proper Education and training of Workers
3. Labor Unrest
4. Difference in culture among workers
5. Lack of accommodation and recreation facilities
6. Job Commitment
7. Lack of Co-operation among workers

Source: Field Survey, 2010-11.

Table-02
Executive Opinion on Political-legal Environment

	1	2	3	4
Strongly agreed	8	5	31	44
Agreed	37	38	48	43
No opinion	35	43	30	19
Disagreed	32	30	10	11
Strongly disagreed	8	4	1	3
Total	120	120	120	120

Note:
1. Political Decisions regarding industry's operation
2. Lack of Political influences on trade unions
3. Lack of Government Subsidy
4. Tax Programs

Source: Field Survey, 2010-11.

Table-03
Executive Opinion on Economic Environment

	1	**2**	**3**	**4**	**5**
Strongly agreed	19	13	21	13	24
Agreed	41	33	58	59	43
No opinion	15	28	26	31	35
Disagreed	34	39	10	15	13
Strongly disagreed	11	7	5	2	5
Total	120	120	120	120	120

Note:
1. Unstable Investment Policy
2. Lack of Available Employment Generation
3. Non Payment of Environmental Tax
4. Shift in Demand
5. Severe Competition and Cost Inflation

Source: Field Survey, 2010-11.

Table-04
Executive Opinion on Social Responsibility and Ecological Factors

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Strongly agreed	47	50	29	10	17	43	4	3
Agreed	49	42	55	33	49	31	40	28
No opinion	10	11	21	40	23	27	48	51
Disagreed	7	11	8	28	21	18	21	24
Strongly disagreed	7	6	7	8	10	1	4	14
Total	120	120	120	120	120	120	120	120

Note:
1. Non Consideration of Pollution
2. Non Consideration of Physical Working Environmental Condition
3. Lack of Considering Recycling Process for Sustainable use of Cotton
4. Lack of Maintaining Environment Management Standard and Monitoring Plan
5. Lack of Pollution Prevention and Cleaner Production Strategies
6. Lack of Contribution toward Stakeholders
7. Non Payment of Charitable Donation and Community Welfare
8. Lack of Application of Social Ethical Code of Conduct

Source: Field Survey, 2010-11.

Table-05
Executive Opinion on Technological Environment

	1	**2**	**3**
Strongly agreed	35	17	30
Agreed	53	44	47
No opinion	6	36	25
Disagreed	20	19	9
Strongly disagreed	6	4	9
Total	120	120	120

Note:
1. Old Machinery
2. Low Productivity of Machine
3. Lack of Modern Technology

Source: Field Survey, 2010-11.

Table-06

Executive Opinion on Management Control Strategies

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Strongly agreed	22	27	24	23	11	38	7	10
Agreed	62	50	54	49	36	37	32	33
No opinion	19	22	23	33	43	26	46	45
Disagreed	15	15	15	11	20	12	28	20
Strongly disagreed	2	6	4	4	10	7	7	12
Total Respondents	120	120	120	120	120	120	120	120

Note:
1. Lack of clear cut objectives, Policies and Strategies
2. Non Consideration of Social and Environmental Responsibility Factors
3. Non Consideration of SWOT Factors
4. Inefficient Management
5. Non Application of Green Management
6. Labor Unrest
7. Non Application of Ethical Standards
8. Non Application of Trade Unions

Source: Field Survey, 2010-11.

Table-07
Executive Opinion on Production Environment

	1	**2**	**3**	**4**
Strongly agreed	25	51	55	39
Agreed	83	61	50	62
No opinion	6	4	12	13
Disagreed	5	3	3	6
Strongly disagreed	1	1	0	0
Total	120	120	120	120

Note:
1. Low Productivity of Machine and Labor
2. Labor Unrests
3. Power Failures
4. Shortage of raw materials

Source: Field Survey, 2010-11.

Table-08
Executive Opinion on Marketing Environment

	1	**2**	**3**	**4**
Strongly agreed	30	15	7	21
Agreed	64	35	30	64
No opinion	15	38	42	23
Disagreed	9	24	34	10
Strongly disagreed	2	8	7	2
Total	120	120	120	120

Note:
1. Shortage of raw materials
2. Lack of Market Research activities
3. Lack of Publicity and Promotional Activities
4. Low Prices of Textile Products

Source: Field Survey, 2010-11.

Table-09
Executive Opinion on Finance and Account Aspects

	1	**2**	**3**	**4**
Strongly agreed	25	11	27	39
Agreed	70	49	59	47
No opinion	15	40	20	24
Disagreed	9	15	12	9
Strongly disagreed	1	5	2	1
Total	120	120	120	120

Note:
1. Shortage of working capital
2. High Rate of Banking capital
3. Increased cost of production
4. Lack of credit facilities.

Source: Field Survey, 2010-11.

Table-10
External Environmental Factors

	1	**2**	**3**	**4**	**5**
	Socio-cultural Factors	Political-Legal Factors	Social Responsibility and Ecological Factors	Economic Factors	Technological Factors
Strongly agreed	18	22	25	18	27
Agreed	45	42	41	47	48
No opinion	27	32	29	27	22
Disagreed	22	20	19	22	16
Strongly disagreed	8	4	6	6	7
Total	120	120	120	120	120

Source: Field Survey, 2010-11.

Table-11
Internal Environmental Factors

	1	2	3	4
	Management Control Strategy	Production Environment Factors	Marketing Environment Factors	Finance and Accounts Factors
Strongly agreed	20	43	18	26
Agreed	44	64	48	56
No opinion	32	9	30	25
Disagreed	17	4	19	11
Strongly disagreed	7	00	05	02
Total	120	120	120	120

Source: Field Survey, 2010-11.

Table-12
Executive Opinion on Strengths Factors

	Strongly Agreed	Agreed	No opinion	Disagreed	Strongly Disagreed	Total
1	23	74	18	5	0	120
2	29	65	24	2	0	120
3	31	66	16	7	0	120
4	39	57	16	5	3	120
5	13	57	39	10	1	120
6	43	52	15	7	3	120

Note:
1. Good Quality of Textile Products
2. Efficient Workers
3. Good Relation with workers
4. Good Physical working Environment
5. Good waste Management system
6. Proper Action Against Pollution

Source: Field Survey, 2010-11.

Table-13
Executive Opinion on Weakness Factors

	Strongly Agreed	Agreed	No opinion	Disagreed	Strongly disagreed	Total
1	51	61	4	3	1	120
2	55	50	12	3	0	120
3	39	62	13	6	0	120
4	25	83	6	5	1	120
5	27	59	20	12	2	120
6	30	64	15	9	2	120
7	25	70	15	9	1	120
8	39	47	24	9	1	120
9	21	64	23	10	2	120
10	22	62	19	15	2	120
11	24	54	23	15	4	120
12	27	50	22	15	6	120

Note:
1. Labor Unrests
2. Power Failures
3. Shortage of Raw Materials
4. Low productivity of Machine and Labor
5. Lack of Credit Facilities
6. Substitute Products
7. Shortage of Working Capital
8. Increased cost of production
9. Low prices of textile products
10. Lack of clear cut objectives policies and strategies
11. Non consideration of swot factors
12. Non consideration of social and ecological factors

Source: Field Survey, 2010-11.

Table-14
Executive Opinion on Opportunity Factors

	Strongly Agreed	Agreed	No opinion	Disagreed	Strongly Disagreed	Total
1	22	61	21	16	0	120
2	20	65	25	6	4	120
3	14	42	42	20	2	120
4	21	68	18	10	3	120
5	15	48	38	15	4	120
6	12	67	29	9	3	120

Note:
1. Recycling Process
2. Proper Handling of Environmental Issues
3. Product Diversification
4. Computerization
5. Entrance into New Market
6. Effective Market Research and Promotional Activities

Source: Field Survey, 2010-11.

Table-15
Executive Opinion on Threat factors

	Strongly Agreed	**Agreed**	**No opinion**	**Disagreed**	**Strongly Disagreed**	Total
1	57	29	19	14	2	120
2	47	49	10	7	7	120
3	50	42	11	11	6	120
4	44	43	19	11	3	120
5	31	48	30	10	1	120
6	43	31	27	18	1	120
7	26	64	10	16	4	120
8	29	55	21	8	7	120
9	35	53	6	20	6	120
10	21	58	26	10	5	120
11	30	47	25	9	9	120
12	9	42	37	24	8	120

Note:
1. Labor Unrests
2. Non consideration of Pollution
3. Non Consideration of Physical Working Environment
4. Tax Programs
5. Lack of Government Subsidy
6. Lack of Contribution toward stakeholders
7. Lack of Social Security
8. Non consideration of Recycling Process
9. Old Machinery
10. Non Payment of Environmental Tax
11. Lack of Modern Technology
12. Lack of Job commitment

Source: Field Survey, 2010-11.

Table-16
Executive Opinion on SWOT Factors

	Strength Factors	Weakness Factors	Opportunity Factors	Threat Factors
Strongly Agreed	30	32	17	35
Agreed	62	60	59	47
No opinion	21	16	29	20
Disagreed	06	10	13	14
Strongly Disagreed	01	02	02	04
Total	120	120	120	120

Source: Field Survey, 2010-11.