

2.1 Introduction

The studies related to the manufacturing and the textile industry conducted in India and other parts of the world have been reviewed and presented in this chapter. The researcher has developed the models for the thesis based on the review of previous studies. The present chapter describes the literature review part of the study comprising five sections, part 2.2 and 2.3 depict the institutional changes and various initiatives of state and central government respectively. Section 2.4 deals with the studies on the growth of the textile manufacturing industry. Section 2.5 discusses the existing literature on the operational performance of various textile and other manufacturing companies. Section 2.6 considers the various studies on the financial performance of manufacturing units. Section 2.7 briefs the studies on the problem of the various textile and other manufacturing companies. Section 2.8 concludes the literature review chapter.

2.2 Institutional changes: the evolution of the textile sector

The textile sector, which is based on agricultural yield, is a major contributor to the Indian economy. It has attracted the attention of other economies of the world by the traditional strength of its products. The government of India upgrades the industry from time to time by conducting ‘Research & Development’ (R&D) and bringing institutional changes to meet the international requirement of Indian textile products. Various institutions such as statutory bodies, export promotion councils, an advisory body, autonomous body, research associations, registered societies, etc., have been established to promote the textile sector of India. Some major institutions established by the government of India for various segments of the textile sector are described herewith:

2.2.1 The British India Corporation (BIC) Limited (1920)

A public limited company, the BIC which was formed on February 24, 1920, was acquired by the Indian government on June 11, 1981. Two units owned by BIC; (1) Cawnpore Woolen

Mills Branch, Kanpur (2) New Egerton Woolen Mills Branch, Dhariwal mainly manufactured Blankets, Uniform cloth, Woolen Suiting, Lohis, Shawls, Rugs, etc. These products of above mentioned two woolen mills identified as 'Lalimli' and 'Dhariwal' brands respectively. It was declared a Sick Company in 1992 because of its weak financial position. Although, Board of Industrial and Financial Reconstruction (BIFR) (B.I.C. limited was referred to BIFR) approved 210.51 crores to rehabilitate it in the year 2002 but it couldn't work (Public sector Undertakings (PSU): MoT, 2021).

2.2.2 Indian Jute Industries' Research Association – IJIRA (1937)

IJIRA was established in 1937 to provide various services and support to Indian Jute Industry. It promotes jute in the domestic market and also encourages export to other countries. One of the responsibilities of IJIRA is to facilitate several training programs on various related topics for industry and public sector organisations (PSU: MoT, 2021).

2.2.3 Central Silk Board – CSB (1948)

The CSB was established in the year 1948. It is being administered by the Ministry of Textiles. The CSB is looking after all the sericultural activities and is accountable for thriving the skilled industry in India. It formulates policies for silk import and export. It also promotes research in the silk sector to enhance the quality of Indian silk (Statutory body: MoT, 2016).

2.2.4 Ahmadabad Textile Industry's Research Association - ATIRA (1950)

ATIRA was established in the year 1947 and launched by Sardar Vallabhbhai Patel in the year 1950. It is located near many renowned educational and research institutions like Gujarat University, Indian Institute of Management Ahmedabad, and Physical Research Laboratory. This research association covers the activities starting from fibre to finished fabric in technical as well as traditional textile. It promotes scientific studies in the textile sector and seeks excellence in engineering, technology, and management to make the textile product competitive and sustainable (Textile Research Associations: MoT, 2019).

2.2.5 Central Cottage Industries (CCI) Corporation of India Limited (1952)

The CCI Association took over the Central Cottage Industries Emporium (established in the year 1952) in the year 1964. The main purpose of CCIC is to promote Indian handicrafts and handlooms across the globe (PSU: MoT, 2021).

2.2.6 The Cotton Textiles Export Promotion Council - TEXPROCIL (1954)

The TEXPROCIL was established as a non-profit body in the year 1952. It has the responsibility of export promotion, linking the supplier with the international buyers, and arranging interaction between them. It supplies regular updated information on the export environment, competitive advantage, and position of India in the international market. It also promotes market research and supports the organisations of international trade fairs in India. In addition to this, it extends support to comprehend different social and environmental business practices and policy & trade issues (Technical Textile Conclave: MoT, 2019).

2.2.7 Bombay Textile Research Association - BTRA (1954)

The BTRA was established on April 21, 1954. Its main purpose was to meet the technological needs of the Indian textile industry and achieve the National Science & Technology goals. Manufacturing units of man-made fibre, textile units, dyes, and chemical auxiliary industries are BTRA members (Textile Research Associations: MoT, 2019).

2.2.8 The Synthetic & Rayon Textiles Export Promotion Council - SRTEPC (1954)

The SRTEPC, set up in 1954, is one of India's oldest Export Promotion Councils. The Council has played a significant role in export culture and promotes Indian man-made fibre and textiles. Although export of these items was ignored in 1960, it grew substantially in 2013-14. India exports to nearly 140 countries at present. The Council envisages exports of Rs. 55,000 crores (US\$ 9 billion) by the end of the 12th five year plan (2016-17) (Export promotion councils: MoT, 2019).

2.2.9 The Handicrafts & Handlooms Exports Corporation (HHEC) of India Limited (1958)

Indian handicraft development corporation limited was renamed ‘The handicrafts & Handlooms Exports Corporation of India Limited’ in the year 1962. It promotes exports of Indian handicraft and handloom by ensuring purity and quality handloom and handicraft products, decorative leather items, antiques, jewellery, gems, etc. (PSU: MoT, 2021).

2.2.10 Textiles Committee (1964)

In the year 1964, the Textile Committee was constituted under the Textiles Committee Act 1963 to ensure the quality of textiles in domestic and international markets. The textile committee helped in establishing the standards for textiles and supported research in technical and economic fields throughout the country (Statutory body: MoT, 2016).

2.2.11 Handloom Export Promotion Council - HEPC (1965)

The HEPC was formed in the year 1965. Initially, the number of members was only 96 but now its membership has been increased to 1400 nationwide. It promotes the export of all the handloom items such as home furnishing, floor covering, fabrics, etc. HEPC assists Indian handloom exporters and overseas customers in trade promotion and marketing. It also organises/participates in buyer-seller meets and international trade fairs (Export promotion councils: MoT, 2019).

2.2.12 National Textile Corporation (NTC) Limited (1968)

The NTC was established to manage the operations of the sick private textile companies that had been taken over by the government. Thus, by 1995, 119 units were under the control of NTC Ltd. It has sold surplus assets to support the modernisation of all the mills. NTC has built 3 Composite Textile Greenfield Units in Achalpur, Ahmadabad, and Hassan (Karnataka). NTC is now entering into collaborations with global leaders for setting up technical textile projects (PSU: MoT, 2021).

2.2.13 Cotton Corporation of India - CCI (1970)

The CCI, a public sector organisation was established in 1970. In 1985, it was the only government organisation authorised to conduct price support operations when the price of Kapas (seed cotton) reached the support price level. It was formed to conduct business activities and meet the export requirements of cotton. (PSU: MoT, 2021).

2.2.14 Jute Corporation of India (JCI) Ltd (1971)

JCI is a PSU started in the year 1971. It is responsible for implementing the Minimum Support Price (MSP) policy for the producers of the jute and managing the raw jute market. To build a price support operation, it buys raw jute at MSP from marginal and small farmers without any quantitative limit. (PSU: MoT, 2021).

2.2.15 Northern India Textile Research Association - NITRA (1974)

The NITRA was formed in the year 1974 for undertaking applied scientific research and extending services to the Indian textile sector. It deals in the area of technical consultancy, workforce training, research & development, and quality assessment of material. It encourages entrepreneurs and provides necessary facilities for the incubation of new ideas/technologies. NITRA aimed to maintain the quality, product development, and dissemination of information relating to protective textiles (Textile Research Associations: MoT, 2019).

2.2.16 National Jute Manufactures Corporation Ltd - N.J.M.C. (1980)

The N.J.M.C. was incorporated on 3rd June 1980 as a wholly-owned undertaking of the Government of India. The main purpose of N.J.M.C. was to produce jute items for government food processing agencies. But due to its continuous loss since its inception, the Company was referred to B.I.F.R. in 1992 (PSU: MoT, 2021).

2.2.17 All India Powerloom Board (1981)

All India Powerloom was set up in the year 1981 as an Advisory Board to the Government of India. The Board suggests the government for improving the Powerloom sector in India. It also works to enhance efficiency, productivity, and welfare of the labour (Advisory body: MoT, 2019).

2.2.18 National Handloom Development Corporation (N.H.D.C.) Limited (1983)

The Government of India established the NHDC in the year 1983 under the Companies Act, 1956. It ensures the supply of different kinds of yarn to the handloom sector. It also supports the handloom sector by supplying superior dyes and relevant materials (PSU: MoT, 2021).

2.2.19 Indian Silk Export Promotion Council - I.S.E.P.C. (1983)

The I.S.E.P.C. was established in the year 1983 under the Companies Act and is sponsored by the Ministry of Textiles. It frames the policies for the silk sector in consultation with the government. It assists entrepreneurs by expanding worldwide business opportunities for the silk industry in India. The ISPEC conduct market research and interact with the buyers to create their interest in Indian silk product. The council also hosts seminars and workshops on trade and policy issues (Export promotion councils: MoT, 2019).

2.2.20 Export Promotion Council for Handicrafts - E.P.C.H. (1986)

The E.P.C.H. was established in 1986-87 under the companies act. It was set up to support and increase the export of handicrafts. It provides a platform to promote exports of Handicrafts from the country and ensures high quality of handicrafts goods & services. There are a wide variety of services provided by the Council of member exporters and importers to promote the handicrafts sector (Export promotion councils: MoT, 2019).

2.2.21 National Institute of Fashion Technology - NIFT (1986)

NIFT was established in the year 1986. It was started in association with the Fashion Institute of Technology in New York. It aims to develop the human resource for the textile industry. It

is a pioneering institute in India to impart fashion education and it has centres throughout the country (Statutory body: MoT, 2016).

2.2.22 Central Wool Development Board - CWDB (1987)

The CWDB was set up in the year 1987 in Rajasthan. The main goal of this board was to synchronise the different interests among various strata of the woolen industry. It works as an advisory body to the Ministry of Textiles for the growth and development of the woolen sector (Registered societies: MoT, 2016).

2.2.23 All India Handloom Board (1992)

All India Handloom Board was set up in the year 1992. It advises the government on how to improve and promote the handloom sector of India. It also provides its assistance to the government regarding policy formulation for the growth of the handloom sector (Advisory body: MoT, 2019).

2.2.24 Sardar Vallabhbhai Patel School of Textiles and Management - SVPISTM (2002)

The SVPISTM was established on December 24, 2002. The main purpose of this institute was to deal with problems of the post-MFA period and to assure excellence in textile education. It initiates research, consultancy, and knowledge management in the textile sector (Registered societies: MoT, 2016).

2.2.25 National Jute Board (NJB), Kolkata (2010)

The Jute Manufacturers Development Council and National Centre for Jute Diversification merged into the NJB in the year 2010. It takes steps to improve the productivity and efficiency of the jute sector and makes provisions for price stabilisation and better marketing. It also fosters research on improving quality, raw jute processing, and packaging. It promotes the jute industry by conducting research on production methods, equipment, materials, and product development (Statutory body: MoT, 2016).

2.2.26 Wool and Woolens Export Promotion Council

The Council helps foreign business individuals by connecting them with the local manufacturers/exporters. It encourages foreign buyers to visit India and learn about the Indian woolen industry's capabilities. It ensures the quality of Indian woolen products as per the international standards. It also monitors international fashion trends and updates the Indian exporters (Export promotion councils: MoT, 2019).

2.2.27 All India Handicrafts Board

All India Handicrafts Board is an advisory body to the Ministry of Textiles. It guides the government in the development of the handicraft sector by considering cultural, socio-economic, and artistic elements (Advisory body: MoT, 2019).

2.2.28 Cotton Advisory Board (C.A.B.)

The C.A.B. advises the government on different issues in the cotton textile industry such as the production and marketing of cotton. The board work as a medium for cooperation among the cotton growers, textile mill industry, and the government. The consultative committee of the board invites inputs from the cotton mills, cotton producers, and cotton traders. These inputs are placed before the CAB for consideration (Advisory body: MoT, 2019).

2.2.29 Jute Advisory Board

The Jute Advisory Board was reformed on June 23, 2014. It takes up the issues relating to the jute within the preview of Jute and Jute Textiles Control Order-2000, such as jute and Mesta output estimates (Advisory body: MoT, 2019).

2.3 Schemes and initiatives for the textile industry

There are two broad segments of the textile industry, i.e., organised and unorganised; the segments handicraft, handloom, sericulture, powerlooms come under the unorganised sector, and spinning, apparel, garments, and made-ups covered under the organised sector. However, the mill and woven sector of India is also one of the major contributors to the textile industry,

but the traditional textile sector (handicrafts, handloom, powerloom, etc.) at a small scale is the main source of employment for millions of people in semi-urban and rural areas of the country. The government is heavily concentrating on export, employment generation, and increment in the production of qualitative textile products by introducing and promoting various schemes such as make-in-India, 'skill, scale, and speed,' 'inclusive and participative growth,' Adarsh Gram Yojna, and 'Zero defect-zero effect' scheme and so on (MoT, 2020-21). During the years 2018-2020, the government of India announced a special package of US\$31 billion to boost textile exports, and create one million new jobs. Also 100 percent FDI was allowed in this sector under the automatic route (IBEF, 2021). In order to encourage the manufacturing and export of particular textile products of man-made fibres, the government has introduced a production-linked incentive scheme (Annual report: MoT, 2020-21). A new scheme for skill development namely, 'Scheme for Capacity Building in Textile Sector (SCBTS)' has been approved by a Cabinet Committee on Economic Affairs with an investment of Rs. 1300 crores (Annual report: MoT, 2020-21).

Further, technical textile, know India program (KIP), Comprehensive Handloom Cluster Development Scheme (CHCDS), Standardization of handicrafts Industry, 'Notification of 207 HSN (Harmonised System of Nomenclature) codes in technical textiles' are the significant initiatives taken by the government to give maximum benefits to the textile sector in India (MoT, 2018; Technical Textile, 2016).

The government has sanctioned 59 textile parks under the 'Scheme for Integrated Textile Parks (SITP) and 22 have been completed so far. The MOU between textile committee and Nissenken Quality Evaluation Centre, Japan has been signed on Sept., 2020. It will help in improving the quality of Indian textiles and garments.

The government of India supports manufacturing units in the adoption of upgraded technology. Also, industry-specific policies, investment in human resource practices, more

concentration on research & development, uniqueness of handicrafts has made Indian textile entrusted and desirable at the international level (Annual report: MoT, 2020-21). According to Union Textile Minister of India, Smriti Zubain Irani, the textile ministry of India has taken remarkable steps such as ease of doing business, promoting make in India brands, a panel discussion on technical textiles, compatibility with international markets, etc. to make India one of the most powerful economies of the world. A contemporary business environment requires an immediate response by taking appropriate initiatives in the form of potential schemes and policies to minimize the challenges related to 'development & growth' and even converting these challenges into opportunities. Ministry of Textile has constantly been working by its conducive policy environment, enabling industry and entrepreneurs to set up their new business through these policy initiatives and schemes (Annual report: MoT, 2020-21; Technical Textile Conclave MoT, 2019).

The government of Haryana has recognised that the state has an abundant supply of raw material, skilled labour, excellent existing infrastructure, and good agricultural yield, providing the opportunity to grow and develop industries (IBEF, 2021). The textile industry of the state is attaining growth by increased consumption and improved export. Haryana textile policy promotes and develops the textile sector by creating employment opportunities and meeting the international textile requisites by taking a step ahead (Haryana Textile Policy, 2019).

2.4 Studies related to the growth perspective of the textile industry

Many researchers have used different methods to examine the productivity, growth, and trends of the textile industry and other manufacturing industries (Gorman, 2001; Kalamkar *et al.*, 2002; Rani, 2019; Shanthini and Radjaramane, 2018; Sheetal and Kumar, 2016). The existing literature has considered some common variables such as Production (Bloch and Madden, 1995; Kalamkar *et al.*, 2002; Rani, 2019; Shanthini and Radjaramane, 2018), Area

(Kalamkar *et al.*, 2002; Rani, 2019; Shanthini and Radjaramane, 2018), Export (Lam, 2013; Thangavelu and Owyong, 2003), Employment (Furlan *et al.*, 2014; Moreno and Coad, 2015; M. Rahman and Fatima, 2011), Labour and Capital (Bloch and Madden, 1995; Das *et al.*, 2019; Thangavelu and Owyong, 2003) to measure the productivity and growth.

Kalamkar *et al.* (2002) studied the area, production, and yield of bajra, rice, maize, cotton, jowar, gram, and sugarcane in India. They considered 49 years data from 1949-50 to 1997-98. The co-efficient of variability was used to measure the magnitude of variability. Further, they used decomposition analysis to find the contribution of area and productivity in production. They concluded that change in yield and production of key crops in India during the study period was positive and significant. Rani (2019) conducted a study on the trend of cotton production in Haryana over the period 1966-67 to 2014-15. The cotton cultivation has no consistent or continuous pattern in Haryana. The wide inconsistency of soil features, rainfall and temperature permit the agriculture of different types of crops like bajara, cotton, pulses, wheat and rice in Haryana. The significant improvement was noticed in cotton production over the study period and area. It was also found that cotton production increased eight times from 1966-67 to 2014-15. Shanthini and Radjaramane (2018) used 15 years secondary data spread from 2000-01 to 2015-16 to investigate the linear and compound growth of coconut production in southern India. They observed that, except for Kerala, the growth rates of area, output, and yield of coconut were positive and considerable.

Chandler (2015) formed a prescriptive model to assist the businessman in decision making about the growth potential of a company. This model further helps in deciding, whether innovation or imitation should be used as an entry strategy. A very less opportunities for new company were found in the mature industry. On the other hand, emerging companies can get growth benefits from the declining industry. The research suggested that innovation is most effective in the early and later stages of industry development. With limited success in the

maturity phase, both innovation and imitation are useful. Sadaf *et al.* (2022) has conducted a study on cotton production for the sustainable livelihood. It was found that cotton growers do not have proper access to all the five livelihood assets (financial assets, human assets, physical assets, natural assets, and social assets). Social assets found as the highest capacity asset for the sustainable livelihood. Angamuthu (2018) evaluated the area, production and yield of cotton in Tamil Nadu between 2007-08 and 2016-17. The Coefficient of Variation (CV), the Linear Growth Rate (LGR), and the CAGR were considered to calculate the annual average of cotton production. CAGR of cotton production in India was 2.01, whereas cotton production CAGR of Tamil Nadu was 2.17, which showed greater than India's cotton production growth. The yield of Tamilnadu was decreasing during the study period.

According to Global Market Report (2020) the trend of trade flows, consumption, and production. The report highlighted the potential for enhancing Voluntary Sustainability Standards (VSS) acquiescent production of cotton in less human developed countries considering three factors; presence of VSS, global cotton production share, and Human Development Index value. The analysis was conducted by using the data of VSS compliant cotton in the year 2016. This report analysed the comparison of growth rates of standard-complaint production vis a vis conventional production of cotton. It was also studied that how sustainable and conventional markets executed at the international level. It was found that which country was producing more VSS-compliant cotton as compared to the other countries. According to Majeed (1986) growth is an important mechanism for the survival of an economic system or a society. Cities are considered as an appropriate economic unit for employment growth and innovative activities (Rahman and Fatima, 2011). According to Bloch and Madden (1995) labour productivity reaches to its full potential when workers are equipped with the newest equipment. Still, when new and vintage equipment types are mixed, average labour productivity falls short of best practices. A small number of High Growth

Firms (HGFs) are most job creators and tend to be relatively young, but the possibility of repeating their HGF performance is low (Moreno and Coad, 2015). Thangavelu and Owyong (2003) stated that the export growth and scale economies contributed significantly to selected industries' productivity growth, such as clothing and textile. The higher the export industry's linkage effect, the greater the externality like GNP (Gross National Product) growth, Economic growth and the faster the development of export examined by Lam (2013). Production and productivity of all the crops positively increased except Jowar, Bajra, and grams in India (Kalamkar *et al.*, 2002). Thangavelu and Owyong (2003) found that industries with high levels of foreign direct investment (FDI) contributed the most to productivity growth in the manufacturing sector, both in terms of export performance and economies of scale.

2.5 Studies related to the operational performance of the manufacturing industry including the textile industry

Indian textile industry is emerging into a new market whereas the old market has slowly lost its identity but it can be improved by taking corrective initiatives at the sectoral level and unit level in particular (Propa, Banwet, and Goswami, 2018). The performance of the Indian textile industry is comparatively low (Behera, 2005; K. Narayanan, 2009; Najneen Shahid, 2013) and this industry is overall technically inefficient at the global level but it has a great potential to compete with its international rivals (K. Narayanan, 2009). The textile industry's efficiency-based performance has been examined widely by researchers across the globe by applying different tools and techniques.

Bhandari and Ray (2012) observed the firm-level technical efficiency of the Indian textile industry by getting several years data through the Annual Survey of Industries (ASI). The grand frontier and group frontier have been used to evaluate the performance. The performance of public limited companies was found better. It was also found that the small

firms when consolidated with the larger firms then they exhibited better performance. Bhaskaran (2013) used the output-oriented BCC (Banker, Charnes, Cooper) technique of DEA to assess the financial and physical performance of four textile clusters in India: Ludhiana Cluster in Punjab; Ichalkaranji Textile Cluster in Maharashtra; Panipat Textile Cluster of Haryana; Tirupur Cluster in Tamilnadu. It was discovered that textile clusters are pursuing inclusive growth and sustainable development. It was suggested that the textile clusters should increase their sales and export, strengthen their infrastructure, technology, and marketing ties to reduce costs, enhance productivity, efficiency, and sustainability to compete in the global market. Gambhir and Sharma (2015) have studied whether the exporting enterprises are more productive in export intensive industries or the non-exporting enterprises. The firm-level panel data of 160 companies have been used for the period of five years (2007-08 to 2012-13) using the MPI (Malmquist productivity index) technique (output-oriented). It was found that exporting companies do better than non-exporting ones. Export promotion strategies in India's textile industry were found to be justified by the study's findings, which showed that exporting companies had higher productivity levels. Kapelko and Lansink (2014) evaluated the productivity changes in the global textile and garment industry for the period 1995 to 2004. The relative contributions of technical change, scale efficiency (SE) change, and technical efficiency (TE) change has been measured through bootstrapped Malmquist technique. Additionally, they also examined the variations in productivity changes among various business categories. Despite a decrease in TE and SE, both textile and garment companies exhibited an overall productivity improvement as a result of favourable technological change.

Karimi and Barati (2016) evaluated the financial performance of the companies which are listed on the Tehran Stock Exchange. The data of 72 companies have been collected from four different industries i.e. petrochemical, automotive, cement industries, and

pharmaceutical. The Bounded Adjusted Model (BAM) of negative DEA has been applied to the data and based on the results, and then companies were ranked. The efficiency level of companies in Tehran is found good with approx. 80 percent.

Chinese export-oriented companies are found better performers and registered more growth (Banerjee *et al.*, 2016) than India. Chinese carpet industry is a big threat to the Indian carpet industry in volume and pricing terms. On the other hand, Japan is prospering in its textile business by making a joint venture with Korea (Castley, 1996). US textile sector is not performing well in accordance with its productivity (Kouliavtsev *et al.*, 2006). The size of the textile industry in value-added terms is squeezing in Hong-kong because of the continuous decrement in the value added productivity of all manufacturing industries (Leung and To, 1999). After abolishing the MFA, a steep increase has been observed in the export of textile and clothing to the Indian textile Industry (Sharma and Prashaant, 2009). Process of International Opportunity Recognition of manufacturing firms engaged in export is enhanced by entrepreneurial capabilities such as learning, international networking and marketing capabilities (Mostafiz *et al.*, 2020). According to Joshi and Singh (2010) small-scale firms are found more productive instead of giant firms. Demand-side sustainability has been found to have a direct effect on the business performance of big companies in India's textile industry; on the other hand, small businesses can enhance their performance by concentrating exclusively on their internal sustainability issues (Shahi, *et al.*, 2020) as smaller and younger businesses grow their cash flow at a faster rate than mature or larger businesses (Oliveira and Fortunato, 2006). Additionally, The firms with less government intervention are more efficient than those which has a higher level of government intervention (Wu, 2016).

The performance of industries of the states of India was evaluated based on infrastructure and found stronger results rather than in developed countries particularly the United States of America (Mitra, A., Varoudakis, A. and Veganzones-Varoudakis, 2002). Tamilnadu, Panipat

in Haryana, Ludhiana in Punjab, and Maharashtra are the key representative states of the textile industry in India (Bhaskaran, 2013). Firms from West Bengal are average technically efficient (Bhandari and Ray, 2007), and overall clusters in India are also struggling with underperformance (Gupta, Gupta, and Dhamija, 2019). Public sector firms are found less efficient in comparison to private firms in the textile sector (Bhandari and Maiti, 2007) whereas Darji and Dahiya (2021) tested the financial aspect of the public and private limited textile companies in Haryana (Northern India) and found that public limited textile manufacturing companies have greater efficiency than the private limited textile manufacturing companies. Private sector firms of West Bengal are more efficient and technologically strong in comparison to the public sector firms (Bhandari and Ray, 2007). It was observed that Intellectual Capital (IC) has a positive association with profitability but the relationship was not significant with productivity and market valuation (Pal and Soriya, 2012). Ex-post analysis has been done by Badri and Rungta (2014) on the effects of removing the export subsidiaries and it was found that there has been a dearth of sufficient policies in the past. According to Jackson and Kilduff (1991) the textile industry needs to upgrade technology to make the firm capital intensive. Information Technology is found a significant growth predictor in fast-growing firms (Panda, 2015). The success of the ethnic entrepreneurs in Surat (India) is led by informal networks of businessmen based on cast, sect, and origin place (Menning, 1997).

2.6 Studies related to the financial performance of the manufacturing industry including the textile industry

This section briefs the existing studies on the financial performance of the textile industry using different financial and non-financial variables. Chadwick (1984) indicated that a company should compare its performance to that of the industry it belongs to and identify its strengths and weaknesses for improved performance. Businesses identify their strengths and

weaknesses through financial statement data and financial ratio analysis and adjust their decision-making and operations accordingly (Samo and Murad, 2019). An appropriate selection of financial and non-financial variables and resolution of class imbalances enable enterprises to successfully assess their credit risk (Khemakhem and Boujelbene, 2018). Unlike relying solely on the financial variables, the combination of financial and non-financial variables provides a better accuracy (Balasubramanian *et al.*, 2019). The 'net asset value' (NAV), the long-term debt-equity ratio (LTDER), the return on investment (ROI), the RR, ROE, NPM, the age of the company, the promoters' pledged holdings, and institutional holdings are vital financial and non-financial indicators of financial analysis (Balasubramanian *et al.*, 2019). Leverage has been recognised as a key factor affecting the firm's financial performance (Kakani *et al.*, 2000). In line with this Danso *et al.* (2021) examined the effect of financial leverage and crisis on the performance of companies. The panel econometric technique was applied to the financial data of 2403 Indian firms to analyse the performance-leverage relationship. It was found that firm performance is significantly and negatively related to financial leverage. Also, the authors found that firm performance is low in the smaller firms than the larger firms.

Samo and Murad (2019) determined how financial leverage and liquidity impact the profitability of a company. The pooled panel regression and descriptive statistics technique were used on the financial data of 40 companies in the textile industry. The results revealed a positive relationship between profitability and liquidity whereas a negative relationship was found between profitability and financial leverage. This study suggests that a company should operate effectively to boost its financial condition, which further motivates investors to invest in the company. Balasubramanian *et al.* (2019) developed a corporate financial distress model of 96 listed companies (48 companies declared sick) in India using the financial and non-financial measures using conditional logit regression techniques. It is

revealed from the study that prediction accuracy is found more by selecting both the financial and non-financial variables instead of only financial variables. Gonzalez *et al.* (2019) used a meta-regression analysis to study the linkage of family firms with their financial performance. They observed the positive relationship between family involvement and financial performance.

Oliveira and Fortunato (2006) investigated whether liquidity problems confronted by business firms affect firm growth or not using the GMM-system estimator (A panel data technique developed by Blundell and Bond, 1988). It is found that younger and smaller companies are more sensitive to higher growth cash flow than larger and more experienced companies. Medcalfe and Miro (2021) analysed the relationship between financial performance and sustainable practices in fashion firms. They applied the Ordinary Least Square (OLS) method has been applied on secondary data available in the Baptist World Aid Australia Ethical Fashion report to conduct the analysis. Substantial evidence has been found that superior sustainable practices lead to improved financial performance and vice versa. Borhan *et al.* (2014) found that total assets turnover ratio (TATR) and growth in sales are significant variables in influencing financial performance when ROE or return on sales (ROS) is used as a measure of financial performance. Marimuthu (2012) states that decision-making, increased investment, and changes in the working capital are all dependent on the performance of the company. Fairfield *et al.* (2009) examined industry-specific models and found that they were significantly more reliable at forecasting a firm's growth but not its profitability. Highly leveraged, illiquid, and underperforming firms were even more likely than other firms to use specific bootstrapping techniques, and the techniques they used may be unfavorable to future firm performance (Ebben, 2009).

Indian textile manufacturing companies account for 64 to 84% of technical efficiency, and their technical efficiency varies according to their size and age whereas public sector firms in

India are found to be less efficient (Bhandari and Maiti, 2007). While the amount of debt or loans incurred is necessary for the survival of businesses (Jarrow, 2013). According to Khan *et al.* (2013) changes in the capital structure impact financial performance and stock returns in the textile industry. In the textile industry, logistics costs have become the primary factor that affects a firm's financial performance (Hai and Son, 2019). Shahi *et al.* (2020) explored the impacts of integrated sustainable supply chain management practices on the performance of the textile companies in India using Smart PLS 3.3.2. Large-scale textile companies in India have found that demand-side sustainability has a direct impact on their performance; yet, small enterprises can still enhance their performance by focusing solely on internal sustainability issues. The smaller and younger businesses grow their cash flow at a faster rate than mature or larger businesses (Oliveira and Fortunato, 2006). Maqbool and Zamir (2020) examined the linkage between corporate social responsibility (CSR) and institutional investors using financial performance as a mediating variable. They used panel regression on the data of twenty-nine banks (commercial) for nine years. It was found that financial performance is essential in determining investment avenues. Green innovations improve a company's financial performance (Kim, *et al.*, 2018).

According to Gupta and Kumar (2020) public and private limited companies have distinct working environments; policy recommendations intended for public limited companies may not apply to private limited companies and vice versa. Public enterprises are fostered to support the state's goals but the main goal of private limited companies is to make money for the shareholders. Khemakhem and Boujelbene (2018) conducted a study to evaluate the credit risk of companies by considering the variables i.e. financial, non-financial, and class imbalances. A credit scoring modal was used by them to find out the creditworthiness of the companies considering financial and non-financial variables of the companies. The Synthetic Minority Oversampling Technique (SMOT) was also utilised to solve class imbalance

issues and to enhance the classifier's performance. A decision tree and the artificial neural network have been framed to calculate the default risk. Solvency, repayment capacity, duration of credit, guarantee, loan number, profitability ratio, repayment capacity, size of the company, structure of ownership, and duration of the relationship with banks were found as the key factors in assessing the default. Moreover, the decision tree was showing highly reliable results than the artificial neural network in assessing the credit risk.

Studies using either DEA or regression have focused on the financial ratios to examine financial performance. Although ratio analysis is effective for analysing single inputs and outputs, it is not much useful for multiple factors within a production unit (Darko-Mensah, 2019). DEA is used in the study as it allows for the analysis of multiple inputs and outputs within a production unit (Morita, *et al.*, 2004). It is discovered that input-oriented Charnes, Cooper, Rhodes (CCR) and BCC techniques are the most used DEA techniques (Nassiri and Singh, 2010) because a firm using these techniques will have control over input variables to some extent to achieve the desired output level. The primary objective of any profit-making organisation is to maximise output while minimising costs. Thus, input-oriented CCR and BCC techniques associated with CRS (constant return to scale) and VRS (Variable Return to Scale) model of DEA and return to scale (RTS) are used here to analyse the financial performance of the textile industry in Haryana with financial ratios as variables. Profitability and leverage are viewed as indicators of a business's performance output, while liquidity ratios are used as input variables.

2.7 Studies related to the problems of the manufacturing industry including the textile industry

The enormous studies are available which deals with the problems of different industries but the researcher could find very less number of researches in the context of textile industry, particularly, in Haryana. The present study contribute to a better understanding of the

interconnectedness of Haryana's textile manufacturing industry's (India) most persistent problems. Many authors have used different models and techniques like ISM, MICMAC, Confirmatory Factor Analysis (CFA) to analyse the problems in the textile industry as well as in other manufacturing industries in India and world (Ananthanarayanan *et al.*, 2019; Kapse *et al.*, 2018; Lu, 2015; Medina *et al.*, 2019; Truett and Truett, 2016). Although India is one of the world's leading exporters of garment (Gambhir and Sharma, 2015; Panigrahi and Rao, 2018) but India's textile industry is facing serious competition from China, Bangladesh, and Sri Lanka in the low-cost clothing market (Badri and Rungta, 2014). As global rivalry intensifies, demand to offer products that are lower in cost, more diverse, faster in delivery, and environmental friendly become rise. Hence, it is imperative for manufacturing units to perform operations with maximum efficiency and effectiveness (Thanki and Thakkar, 2018). Panigrahi and Rao (2018) created the ISM model to assess the challenges associated with implementing sustainable supply chain strategies in textile MSMEs. The study used ISM to identify major impediments to sustainable supply chain practices (SSCP) adoption in textile MSME Supply Chain (SCs) in Eastern India, Odisha. The study built a framework for evaluating challenges to SSCP application in the textile supply chain and established a contextual relationship among the identified issues and the adoption of SSCP. Additionally, the study provides appropriate suggestive measures for addressing and overcoming barriers to achieving a sustainable textile SCs. Raut *et al.* (2019) used a multi-criteria decision-making approach to determine the interrelationships between the significant barriers to the sustainable growth of Textile & Apparel (T&A) supply chains and to rank the hurdles. They have used ISM model and MICMAC analysis to investigate the selected critical barriers. Ineffective government policies, inadequate infrastructure, a low level of integration, a lack of foreign investment, and demonetisation were identified as the top most significant obstacles. Shukla *et al.* (2018) presented a case of additive manufacturing and the critical

barriers which restrain its (additive manufacturing) implementation. To ascertain the mutual impact of barriers, ISM was used. Additionally, they also determined the severity of the obstacles and classified them according to their driving and dependence power. The findings were considered to be beneficial in assisting industry practitioners in determining the strategies necessary to overcome the most pervasive barriers. Garbie (2017) highlighted the challenges in the implementation of sustainability strategies in the companies located in Newly Industrialised Countries (NIC) both at Strategic and Tactical (STs) level. The study used ISM and Interpretive Ranking Processes (IRP) as modelling approaches to investigate the contextual relationships between STs and Performance Measures (PMs) individually. At the 'first phase', the most and least dominant factors were clarified and identified, at the 'second phase' STs rank was assigned in relation to PMs. The findings revealed that certain difficulties were more prevalent and significant than others. Literacy, globalisation, Sustainability awareness, international challenges, and competitive strategies have emerged as significant and driving elements for STs. The entire PMs is driven by remanufacturing and recycling aspects. Fares and Lloret (2022) have studied the maturity management in the fast fashion and also highlighted the important issues of textile industry. According to them, this study is helped for the retailers in developing the effective decision making and highlighted the important issued related to the textile.

The Portuguese textile and clothing industry show strong evidence of economies of scale. Also found that capital and labour are complementary inputs, while other input pairs are substitutes (Truett and Truett, 2019). The Spanish textile industry is struggling to cut costs in order to compete on the world stage, but the elimination of MFA, China's entry into the World Trade Organisation (WTO), and the introduction of the Euro have all increased competition and had a negative impact on the industry (Truett and Truett, 2016). Increasing textile exports and expanding textile trade between the United States and Japan on a two-way

basis have been suggested as the significant measures of Trans-Pacific Partnership (TPP) (Lu, 2015). The main focus of the R&D in the Indian textile industry is on improving the current situation of the industry. The un-organised sector & small and medium-sized units dominate the Indian textile industry, which is extremely fragmented. Access to cutting-edge technology and failures to reach global standards in a highly competitive export market are among the challenges faced by the Indian textile industry (Thanki and Thakkar, 2018).

The major challenges identified by the different authors are; lack of assistance from the regulating authority, demonetization (the removal of currency from circulation) (Raut *et al.*, 2019), high investment and low return (Majumdar and Sinha, 2018), poor infrastructure, low foreign investment, (Raut *et al.*, 2019) and expulse a lot of waste and dangerous chemicals in the environment (Narayanan, Sridharan and Kumar, 2019; Panigrahi and Rao, 2018), lack of top-level management commitment, a lack of coordination among departments, and a lack of funding are considered as the major challenges (Khaba and Bhar, 2018; Narayanan *et al.*, 2019). The lack of government initiatives, the lack of enthusiasm, the high cost of first adoption, and the lack of benchmark sustainability caused absence of top-level management commitment (Narayanan *et al.*, 2019; Ramesh *et al.*, 2010). Insufficient demand information considered as the one of the crucial problems (Yang and Zhang, 2017) and there is a special need to focus on strong barriers by considering social, environmental and economic aspects of sustainability (Kumar and Rahman, 2017). Absence of government regulatory assistance is majorly considered as the driving power (Majumdar and Sinha, 2018; Movahedipour *et al.*, 2017) whereas the lead time and inventory level were found as performance indicators (Azevedo *et al.*, 2013).

Top management's commitment, Green disposal initiatives and organisational capability are found the most important factor in success of green manufacturing (Digalwar *et al.*, 2017; Thanki and Thakkar, 2018). Customer satisfaction, operating costs, environmental costs and

delivery times are all taken into consideration while calculating autonomous measures (Azevedo *et al.*, 2013). Garbie (2017) found that educated consumers who understand environmental issues, international relations, globalisation, and competitive strategies are among the most important motivators. Singh and Samuel (2018) focused more on the retail environment, information and communication technology, technological adoption, and human resource management. Movahedipour *et al.* (2017) stated that companies aren't paying attention to their social responsibilities, which necessitates a strong government policy so that lack of government rules and a lack of corporate social responsibility found as the strong driving power. Key challenges identified by (Rahman *et al.*, 2020) include a lack of awareness of the ecological impact on business, a lack of consultancy/institutions/ training courses, a lack of social responsibility, lack of technical expertise and complexity in recognising environmental opportunities and the complexities of reuse. The most significant obstacles (Ali *et al.*, 2020) found "Geopolitical risk and country instability" and "poor leadership and a lack of senior executive backing". In order to reclaim market share, the majority of businesses are launching new technologies. Various companies encounter difficulties in obtaining financing, the inability to take advantage of economies of scale, and a lack of resources for R&D (Medina *et al.*, 2019). The lack of an incentive system for suppliers, the process and the technology, as well as the lack of flexibility to make the changes over green system are all essential factors to consider (Majumdar and Sinha, 2018). Lack of resources, lack of governmental initiatives (Bux *et al.*, 2019; Kumar *et al.*, 2020), and lack of standards/laws in manufacturing industry and CSR implementation process found as the most critical barriers (Bux *et al.*, 2019).

2.8 Conclusion

At first, the study focused on the institutional changes that were gradually introduced to develop the textile industry in India. Thereafter, various important schemes and policies of

central and state governments for the textile manufacturing industry were reviewed by the researcher. In the next section, researcher reviewed the extant literature on the growth of textile industry in India and found the different growth measures adopted in different studies considering the variable i.e. cotton production, area, capital, labour, etc. Earlier studies suggest that textile industry has shown a tremendous growth over thirty five years in India.

Afterward, the studies on efficiency-based performance of the textile industry were discussed and found that many researchers across the globe have examined efficiency-based performance by applying different tools and techniques. The present literature shows that the performance of the Indian textile industry is comparatively low and this industry is overall technically inefficient at the global level but it has a great potential to compete with its international rivals. Further, the researcher explored the existing works on the financial performance of textile industry. The existing studies claimed that an appropriate selection of financial and non-financial variables and resolution of class imbalances enable enterprises to successfully assess their credit risk. Unlike relying solely on the financial variables, the combination of financial and non-financial variables provides a better accuracy. It is further indicated that a company should compare its performance to that of the industry it belongs to and identify its strengths and weaknesses for improved performance. The last section briefs the existing literature on the problems faced by Textile Units. Different models and techniques like ISM, MICMAC, CFA have been used in various studies to deal with the problems in the textile as well as in other manufacturing industries in India and world. In some studies, it was reported that the operational problems are more severe. On the other hand, some studies have reported financial and people handling are more critical problems. Apart from this, contextual relationship between them is also very critical.

As evident from the above literature review that there is a lot of research work has been conducted on the Textile manufacturing sector in different countries employing a variety of

approaches. However, no specific study is available on Haryana in this context. The reason for focusing on Haryana is that India is a vast country with a diverse culture and significant divisions based on geography, religions, races, traditions, and values. Thus, it appears to be more appropriate to focus on a specific region of India (Haryana) rather than on the country as a whole, which may provide more relevant results for policy making purpose. Moreover, the problems, that an organisation confronts, may vary by country, even within a small area.