CHAPTER I

INTRODUCTION AND DESIGN OF THE STUDY

INTRODUCTION

The economic growth of a country depends mainly on the constructive and continuous industrial growth. Industrial sector consist of small, medium and large scale industries including the co-operative sector. The management of these industries, either the co-operative sector or the other sectors, considerably gained importance right from the inception of the business to achieve the above said economic growth.

India is a land of lofty mountains and mighty rivers. No other country in the world is so rich in economic grandeur as India is and the panorama of contrasting landscape at different stages of evolution has always attracted the attention of the world. As one of the oldest civilizations with rich natural resources, the country has been self-sufficient in agricultural production which has been the reason for rapid growth of industrialisation. No doubt, the process of rapid development has been blessed with the best natural resources\(^1\). The economic development of a country raises the material conditions of life, not of some, but of all.

Textile industry is one of the oldest and most firmly established major industries in India. During the Indus Valley Civilization, Indians produced raw cotton and started the art of spinning. In the Rigveda, there are references to cotton cloth. Woollen and silk clothes were worn by people of the age. The Mahabharata talks of fabric, with pearl woven borders, and Kautalya in his Arthashasthra, refers to extensive textile industry all over the country.

The pioneers of Indian textile industry were, undoubtedly, men of vision and enterprise. India became an agricultural colony for manufacturing industries. Britain needed it as a source of raw materials for its industries. While India had been for centuries the largest exporter
of hand woven cotton goods in the world, it has now been transformed into an importer of machine-made British cotton products and exporter of raw cotton.

Cotton, like food and shelter, has become one of the basic necessities of the civilised human world. Yarn is the main raw material used for the production of cloth. The country in general, and the state in particular, had been producers of both yarn and cloth since time immemorial. India is regarded as one of the birth places of both yarn and hand-made cloth. The yarn, required for weaving to produce cloth, was hand-spun by the artisans. The cloth produced by hand is called as Swadeshi cloth. With the invention of the spinning machine by Jenny in England in the nineteenth century, the cost of production of yarn and cloth became incredibly cheap.

The idea of starting factory production of cotton cloth and yarn in India took shape during the first two decades of the nineteenth century. The textile mills in India were started by British nationals and, among Indians, by the Parsis, the Hindus and the Muslims. Bombay took the lead in establishing a large number of textile mills in rapid succession since 1854.

The partition of India resulted in the division of the most fertile and irrigated land of Sind and west Punjab to Pakistan. Before partition in India in the year 1946-47, out of the total 1,49,01,000 acres of the land were under cotton cultivation, about 1,16,71,000 acres were in the Indian union, which meant that about 22 percent of the land was in Pakistan. Out of a production of 43 lakhs bales in 1946-47 in the undivided India, Indian union accounted for 26.5 lakhs bales as against 1.65 lakhs bales. Out of 423 textile mills in the country remained with India. The consumption of cotton by the mills of Indian union was 38.6 lakhs bales, and as such, India had to import cotton from other countries and it was dependent specially on Pakistan cotton to the extent of 9.8 lakhs tones. India imported nearly 12 lakhs bales yearly from other countries.
The textile and clothing industry in India accounts for 14 percent of the manufacturing sector output, around 30 percent of export earnings and employs about 28 percent of total industrial employment. Its net foreign exchange earning is also one of the highest - around 75 percent of the exports. The Indian textile industry consists of widely diversified sectors with organised Integrated Mill sector, Medium and Small Scale Powerloom sector, Handloom sector, Hosiery sector and Spinning mill sector spread all over India.

It has a significant presence in the world textile economy by virtue of its production of textile fibres or yarns. The Indian industry accounts for about 21 percent of the world spindleage, the second largest after China and three percent of the world rotorage. With almost 5.7 million looms (including handlooms), the industry has the highest loomage; about 64 percent of world loomage, excluding handlooms, the industry contribute 42 percent of the world loomage. The contribution of this industry to the world production of textile fibres and yarns, including jute, at 6 million tones is about 12 percent. It is the largest producer of silk and the third largest producer of cotton, cotton yarn and cellulosic fibre or yarn. It is also the fifth largest producer of synthetic fibre or yarn.

**SPINNING**

It is an ancient textile art in which plant, animal or synthetic fibers are twisted together to form yarn. For thousands of years, fiber was spun by hand using simple tools - the spindle and distaff. Only in the High Middle Ages did the spinning wheel increase the output of individual spinners, and mass-production arose only in the 18th century with the beginning of the Industrial Revolution. Hand-spinning remains a popular handicraft.

There seems little doubt that one of the earliest textile fibres available, for spinning into yarn and then weaving into cloth, was wool from sheep. The two stage spinning process requires that a fleece is opened to form a sliver of fibres which can be drawn out to produce an
increasingly fine thread. This is then twisted to form a yarn. Our early ancestors probably twisted a few fibres from a lock of wool to form an extending length of yarn which would be wound into a ball. At a later stage, the yarn was wound on to a stick and a simple flywheel added at the lower end to produce a spindle. From this the spinning wheel developed, invented first in India and then reaching Europe some time in the 14th century.

Spinning is the conversion of fibers into yarn. These fibers can be natural fibers (cotton) or manmade fibers (polyester). Spinning also entails production of manmade filament yarn (yarn that is not made from fibers). Final product of spinning is yarn. Cotton value chain starts from Ginning that adds value to it by separating cotton from seed and impurities. Spinning is the foundation process and all the subsequent value additions i.e., Weaving, Knitting, Processing, Garments and Made ups, depend upon it. Any variation in quality of spinning product directly affects the entire value chain.

COTTON DEFINITION

Cotton is probably one of the most common fabrics you are likely to have in your home as clothing. Cotton is a natural fiber and is used in a wide variety of clothing and home furnishings. Cotton can easily be washed and/or dry cleaned. Cotton is a good strong fabric that is absorbent and easy to work with. Cotton has a tendency to wrinkle very easily, so cotton and polyester are always in demand. Many people prefer the year-round "breathing" and lack of pilling of one hundred percent cotton.

COTTON - SPINNING

Spinning is the process of transforming cotton fibre into yarn or thread. The cotton fibres go through various stages in preparation for spinning. Spinning draws out the short fibres from the mass of cotton and twists them together into a long, apparently continuous thread. Most Indian spinning machines are types of chakra, which means wheel. A
portable version of the chakra, still used today, was designed by Mahatma Gandhi as part of the khadi movement to develop Indian self-sufficiency. The finest threads used for muslin are spun on a hand spindle called a takli.

COTTON AND TEXTILE INDUSTRY

Cotton dominates the handloom industry in the country, accounting for 83 percent of overall production. Cotton blends account for another 5 percent while non-cotton cloth is only 12 percent. The textile industry of the state today is cotton based to the extent of 89 percent. Tamil Nadu produces only 1/6th of its cotton requirements and the balance is met by purchases from up-country markets.

YARN

Yarn is a long continuous length of interlocked fibres, suitable for use in the production of textiles, sewing, crocheting, knitting, weaving, embroidery and rope making. Thread is a type of yarn intended for sewing by hand or machine. Modern manufactured sewing threads may be finished with wax or other lubricants to withstand the stresses involved in sewing. Embroidery threads are yarns specifically designed for hand or machine embroidery.

COTTON YARN

Cotton was independently domesticated in the Old and New Worlds. The fiber is most often spun into yarn or thread and used to make a soft, breathable textile. The use of cotton for fabric is known to date to prehistoric times; fragments of cotton fabric dated from 5000 BC have been excavated in Mexico and Pakistan. Although cultivated since antiquity, it was the invention of the cotton gin that so lowered the cost of production that led to its widespread use, and it is the most widely used natural fiber cloth in clothing today.
**BLENDED YARN**

A very widely used man made creation, this blended yarn has a major role to play in today’s world. Blending, in yarn production, process of combining fibres of different origins, length, thickness, or colour to make yarn. Blending is accomplished before spinning and is performed to impart such desirable characteristics as strength or durability, to reduce cost by combining expensive fibres with less costly types, or to achieve special colour or texture effects. Fabrics made from such fibres are called blends. Blending also refers to the process of combining small amounts of the same fibre taken from different lots to achieve a uniform result.

**SYNTHETIC YARN**

There are many synthetic yarns out there. Synthetic means man made or manufactured as opposed to natural. Sometimes you can make silk, cotton, linen, Angora, and Mohair in a factory. There are other kinds of synthetic yarns, such as rayon, nylon, acrylic and polyester. Some yarns contain blends of two or more of these fibers. In this modern age, there are some yarns that straddle that natural-synthetic line. These are yarns made of yams, soy, corn and bamboo. In other words these yarns are made with plant based materials, but are made in a factory.

**VISCOSE YARN**

Viscose yarn is yarn made from a cellulose base. It has a number of properties including a high tensile strength that can make it suitable for knitting and crocheting projects. It may also be labeled as rayon or viscose rayon yarn; viscose is actually the processed cellulose base used to make rayon, and is not itself a fiber.

Viscose rayon was the first manufactured fiber. It is not synthetic like polyester, because it is made from natural materials, but it is heavily processed. There are several production techniques used to turn viscose into rayon. The finished product has a high sheen, is very soft, and is also quite strong. However, viscose can also be brittle, is prone to pilling, and
needs to be washed with care to avoid scratching or otherwise damaging the fibers.

**ACRYLIC OR POLYESTER YARN**

Used for knitting and weaving, as well as for fashionable knitwear. This acrylic polyester yarn is also used in textures, which can be used for home furnishings. Acrylic or Polyester Yarn are available in cone and hank forms. The acrylic or cotton blended yarn is available in both the raw as well as the dyed mode.

**LINEN YARN**

Textiles in a linen weave texture, even when made of cotton, hemp and other non-flax fibers are also loosely referred to as "linen". Such fabrics generally have their own specific names other than linen; for example, fine cotton yarn in a linen-style weave is called Madapolam. The collective term "linens" is still often used generically to describe a class of woven and even knitted bed, bath, table and kitchen textiles. Linen textiles appear to be some of the oldest in the world: their history goes back many thousands of years. Fragments of straw, seeds, fibers, yarns, and various types of fabrics which date back to about 8000 BC have been found in Swiss lake dwellings. Today linen is usually an expensive textile, and is produced in relatively small quantities. It has a long "staple" (individual fiber length) relative to cotton and other natural fibers.

**NYLON YARN**

The cotton or nylon blended yarn is a very useful tool of the weaving and knitting industry. Nylon was intended to be a synthetic replacement for silk and substituted for it in many different products after silk became scarce during World War II. It replaced silk in military applications such as parachutes and flak vests, and was used in many types of vehicle tires.
CASHMERE YARNS

It is no small wonder that cashmere is one of the most precious and prized commodities in the world. It comes from the downy under fleece of the cashmere goat which makes its home in the highest and most inhospitable plateaux of Mongolia and Xinjiang. It takes the hair of one goat to make a scarf, two or three for a jumper depending on the weight; 60 percent of each fleece is discarded. However, it is what happens next that makes the difference between run-of-the-mill and quality cashmere.

SILK BLENDED YARNS

When it comes to silk, there are many options in terms of producing a blended yarn. One such effective combination is cashmere blended with silk. Silk blended stoles and scarves are some of the products generated from this particular yarn.

RING SPINNING

Ring spinning is a method of spinning fibres, such as cotton, flax or wool, to make a yarn. The ring frame is developed from the throstle frame, which in its turn is a descendant of Arkwright's water frame. Ring spinning is a continuous process, unlike mule spinning which uses an intermittent action. In ring spinning, the roving is first attenuated by using drawing rollers, then spun and wound around a rotating spindle which in its turn is contained within an independently rotating ring flyer. Traditionally ring frames could only be used for the coarser counts- but they could be attended by semi-skilled labour.

OPEN END SPINNING

Open end spinning is a technology for creating yarn without using a spindle. The principle behind open end spinning is similar to that of a clothes dryer spinning full of sheets. If you open the door and pull out a sheet, it will spin together as you pulled it out. Sliver from the card from the rotor, is spun into yarn and wrapped up on a bobbin, all ready to go to
the next step. There is no roving stage or re-packaging on an auto-coner. This system is much less labour intensive and faster than ring spinning with rotor speeds up to 140,000rpm. The Rotor design is the key to the operation of the open-ended spinners. Each type of fiber may require a different rotor design for optimum product quality and processing speed.

SYNTHETIC

Synthetic is usually used in the sense of synthesis, the combination of two or more parts, whether by design or by natural processes. Furthermore, it may imply being prepared or made artificially, in contrast to naturally\textsuperscript{10}.

IMPORTANCE OF THE STUDY

The spinning mills in India, particularly in Tamil Nadu, have been growing at a rapid pace. The spinning industry is dominated by large units and it has been able to undergo significant modernization since the 1990s. The main factors behind the modernization include lowering of custom duties and other restrictions on imports of machinery, equipment and on imports and exports of raw cotton and yarn. The spinning industry which is dominated by medium and large units producing more than 90 percent of the output and total value added. During an early period of policy reform (1983–1990), the demand increased due to spurt in exports, which caused better utilization of existing spindles and led to reduction in idle capacity. During later phase (1990–2005), the investment in new spindles increased at a very rapid rate. This lead to rise in financial efficiency of the working spindles and relative productivity of working spindles compared to the most recent technology that improved over time.

Increase in financial effectiveness is imperative in order to make targeted sales and earnings. Improvement in performance efficiency is also essential to increase total production of the company. Like any other functional management in a firm financial performance is a vital functional
organ of the company. If financial performance does not operate well, the whole organisations activity will be ruined.

STATEMENT OF THE PROBLEM

The textile industry in Coimbatore, which accounts for a predominant part of the industry in southern India, is facing a crisis. A substantial part of the capacity of the spinning mills in and around the city, which manufacture yarn, remains idle. Thousands of mill workers have not received their wages for months. They face even more serious prospect of losing their jobs, as the danger of several units closing down in the immediate future appears to be real.

The small units are the worst affected. However, the larger mills have not been spared. The mills are burdened by mounting stocks of unsold yarn and their working capital base has been eroded. Moreover, many mills are in danger of defaulting on the repayment of term loans from banks and financial institutions. Mill owners complain that matters have been made worse by the "mismatch" between cotton and yarn prices and by the 15 percent increase in power charges, which was effected in Tamil Nadu in July 1998.

Industry sources said that owing to cash flow problems, mill managements had defaulted on payments to workers and to the Government. Only a few mills that supply yarn to niche markets have managed to stay afloat. Among these are some of the bigger mills which supply yarn to markets in Europe and the United States, which have so far escaped the effects of the global recession.

Many mills in Coimbatore have closed down, but the official figures in respect of closures do not adequately reflect this fact. Many more are running at reduced capacities, working fewer shifts. Trade union and management sources admit that a substantial portion of the capacity has remained idle for several months. Trade unions claim that 46 mills in the private, public and cooperative sectors have closed down in the last two years due to increase in cost of production and incurred heavy loss.
The crisis has engulfed other segments of the industry in and around the town. Some of India's leading textile machinery manufacturers, located in Coimbatore, which are already under pressure owing to the import of machinery at lower costs, are now battered by the severe demand recession sweeping the industry. The downturn in the machinery sector has, in turn, hit the foundries in Coimbatore, many of which have been traditional suppliers of spare parts for textile machinery.

Continuous technological upgradation and assimilation of the latest technology is essential for the spinning mills. The induction of innovative technology helps the spinning mills to reduce cost of production and increase its earnings. In a competitive business growth and success of spinning mills depends mainly on profitability of such mills. Hence the researcher would like to analyse the profitability of spinning mills.

SCOPE OF THE STUDY

The present study is directed towards analyzing the profitability of spinning mills in Coimbatore region. The study covers the various problems relating to profitability of the selected companies of Coimbatore from 2001-2002 to 2010-2011. The profitability of the sample companies is evaluated in terms of profitability, liquidity, financial health and value creation to its shareholders. The suggestion tendered in this study will definitely knock the doors of the government for the betterment of performance of spinning mills.

Finance is one of the basic foundations of all kinds of economic activities. It is the master key which provides access to all the sources for being employed in manufacturing and merchandising activities. It has rightly been said that business needs money to make more money. However it is also true that money generate more money, only when it is properly managed. Hence, efficient management of every business enterprise is closely linked with the efficient management of its finance. Financing of a firm means providing money for investment in the form of fixed assets and also in the form of working capital for day to day operations.
Business finance mainly involves raising of funds and thus effective utilisation keeping in view the overall objective of the firm. This requires great caution and wisdom on the part of management. The management makes use of various financial techniques, devices etc for administering the financial affairs of the firm in most efficient way to improve profitability.

REVIEW OF LITERATURE

A literature review is an account of what has been published on a topic by accredited scholars and researchers. A literary review is a critical and in depth evaluation of previous research. It is a summary and synopsis of a particular area of research, allowing anybody reading the paper to establish why researcher is pursuing this particular research program. A good literary review expands upon the reasons behind selecting a particular research question. The study has been carried out with the following reviews:

Kranthi, Keshav Raj (2011) in his research says that, currently, about 90 percent of the cotton area in India is producing the American cotton species, About 70 percent of the 30 million bales produced in India consist of long-staple, superior-quality fiber, most of which are also exported.

The Economic Times (Online) (2011), "The industry is in a hand-to-mouth situation. We have no option but to extend our production cut till the unused stocks find takers," said chairperson of Confederation of Indian textile Industry (CITI) and MD of Ginni Filaments Shishir Jaipuria. Spinning contributes $10 billion to India's $62 billion textile and clothing sector. Price volatility of cotton that touched a record of 63 percent high of `62,000 per candy in the 2010-11 crop season and then came crashing at `44,000 per candy, destabilised the prices of yarn that moved from `204 per kg in October to `253 per kg in March and then fell to `185 per kg in May. India produced 3,500 million kg of cotton yarn and maintains a stock enough for 10-15 days.
According to the Controller General of Patents, Designs & Trade Marks, the present invention relates to a textile spinning device. More particularly, the invention is directed to obtaining yarn from the drafted roving with the aid of rotary member without the ring and ring traveler assembly, favorably at higher delivery speed without the imposition of any speed restriction by way of conventional limitation in the speed of the ring traveler. The invention is basically directed to spinning device provided to produce yarn from drafted roving at higher delivery speed.

Abdul Shakoor Khatri (Chairman of Chemicals Manufacturers Association of Pakistan and founder chairman of All Pakistan Textile Processing Mills Association) (2011), told that the country can take full advantage of cotton shortage in the regional and international markets by focusing on high value-adding textile products instead of exporting cotton and yarn.

Financial Express [New Delhi] (2011), According to a joint statement issued by Apparel Export Promotion Council, Clothing Manufacturers Association of India and Tirupur Exporters Association, the entire apparel and value-add industry has instead "appreciated the textile ministry's and the UPA governments' strong resolve to protect domestic consumers and domestic jobs by ensuring availability of raw materials, such as cotton and cotton yarn in sufficient quantity for home consumption".

Financial Express [New Delhi] (2011), As per analysis, the spinners may find it difficult to recover their cost, as the yarn would be produced utilising high priced cotton procured during October 2010 and March 2011. It is believed that the pressure on operating profit margins will be the highest in Financial year 2012, when most mills are likely to consume the highest priced cotton, said ICRA in a study. Due to the sharp drop in yarn prices since April, in sync with the falling cotton prices, the spread between yarn and raw material has almost halved in a short span of less than twelve months on account of consumption of high-cost inventory procured in the period from October 2010 to March 2011. Considering
that the average price of cotton from October 2010 to March 2011 was `123/kg, the spread declined from a high of `109/kg in December 2010 to `24/kg in July 2011 given the average price of `147/kg for 30s carded knitting cotton yarn.

**Indian Patents News [New Delhi] (2011)**, According to the Controller General of Patents, Designs & Trade Marks, in an apparatus for stripping fibre material from textile fibre bales of spinning material, for example cotton, synthetic fibres and the like, by means of a milling apparatus or the like, wherein a tower, which can be moved to and fro in relation to the fibre material by means of a carriage, which has a travel motor or the like, has at least one boom, which is provided with the milling apparatus and which extends in a transverse direction to the direction of movement, and the boom together with the stripping apparatus can be moved in the height direction of the tower by means of a lifting motor or the like, a movable distance sensor is provided for determination of the location in the length direction.

**Saxonhouse, Gary R; Wright, Gavin. The journal of economic history (2010)**, Using the records of British firms that supplied nearly 90 percent of world trade in cotton spinning machinery, we track the evolution and diffusion of spinning technology over more than over 50 years. In contrast to scenarios in which modern technologies supplant older methods, we observe two paradigms in competitive coexistence, each one supporting ongoing productivity growth through complementary improvements in machinery, organization, and workforce skills. International productivity differences were magnified under the skill-based mule, British spinners being the world's best. Global diffusion of ring spinning was driven by advances in fiber control, a "directed" technological response to the expansion of world trade.

**Varukolu, Venu; Park – Poaps, Haesum (2009)**, examines the status of technology adoption of Indian apparel manufacturing firms and the organizational factors that affect the level of technology adoption.
Design/methodology/approach - Fourteen technologies applicable to apparel manufacturing were examined. A survey with an online questionnaire to apparel manufacturers in India was conducted to collect the data. Findings - The most frequently adopted technology was the internet. The least frequently adopted technologies found in this study were robot-related. The level of a firm's technology adoption was found to be significantly related to firm size positively and its export orientation negatively. It was also moderately related to competitive advantage. The effects of top management commitment, cost of capital, and technical skills were not significant.

**Rupp, Jurg. Textile World (2009)**\(^\text{21}\), the report says that the centuries spinning has been linked with cotton. In 1779, when Samuel Crompton developed the spinning mule, it was not foreseeable that spinning would be as efficient as it is today. Here are some recent spinning process developments, with a focus on staple fiber yarns. Germany-based Oerlikon Schlafhorst's ring spinning product portfolio comprises roving frames for cotton spinning and classic and compact ring spinning machines. The ACP Quality Package combines Suessen's Active Cradle (AC) with the new PinSpacer to improve the drafting process in short-staple ring spinning. Japan-based Toyota Industries Corp claims its RX240 ring spinning frame series a the most versatile available. The Rieter R 40 rotor spinning machine is equipped with Suessen's SC-R SpinBox and the Savio FlexiRotorS 3000/Duo-Spinner rotor spinning machine is equipped with the SC-S Spinbox.

**Anonymous (2008)**\(^\text{22}\), Apart from the rising cost of virgin cotton (from which the wastes are obtained), which, in turn, pushed up the waste cotton prices as well, and the decline in the spinning wastes availability, the spawning OE rotor capacity has proved a drag on the industry. Added to these pressures is the bait from the international trade that offers higher rate for waste cotton from India, say the people connected with the OE spinning sector. The shortage of waste cotton felt in a small way in 2003 kept rising along side the growth witnessed in the number of OE units
since then, and according to Mr J Thulasidaran, Managing Director of The Rajarathina Mills Pvt., Ltd., a major OE yarn manufacturing unit in Coimbatore region, the multiplicity in the second-hand OE spinning machines, imported between 2004 and 2006 from the erstwhile Soviet bloc countries and East Europe, had added keg to waste cotton demand surge. The increased efficiency in minimising short fibres in cotton, achieved at the carding and combing stages leading to higher yarn realisation and lower cotton wastage, is attributed to low volume cotton waste generation by the ring spinning unit.

**Mcclatchy (2006)**\(^{23}\), The textile industry has the potential to create 50 lakh new jobs and is all set to become a $40-50 billion industry by 2015 in Tamil Nadu, according to a recent CII study on ‘Mapping of Human Resource Skills in Tamil Nadu’. Stating that textile industry is highly influenced by government policy support, globalisation, impact of WTO, development in retailing and technology and supply chain integration, CII said TN is well positioned to capitalise the post-WTO scenario as it has an established base in textiles. TN is home to more than 40 percent of the large and medium-sized spinning mills in India. It produces one-third of spun yarn in the country, the study noted. Besides, TN also enjoys leadership position in spinning, weaving, knitted fabric and apparel segments.

**Jayaswal, Rajeev, Mcclatchy - Tribune Business News (2006)**\(^{24}\), Good times have come for companies like S Kumars, which has shown remarkable jump in its net profit of `25.79 crore in 2005-06 compared to `5.82 crore loss in the same quarter last year. Winsome Textile Industries, which had posted a net loss of `0.33 crore in 2004-05 posted a `0.95-crore profits in the third quarter of the current fiscal. Industry is expecting the government to reduce customs duty by 10 percent and 8 percent in MMF during Budget 2006-07. MMF attracts 15 percent customs duty and 16 percent excise duty, whereas no excise duty is levied on cotton and it attracts 10 percent import duty.
According to Mr Xavier, Head, Farming Division of SSML (2006)\(^2\), his company in about three years would be able to bring in about 5000 hectares out of the 15000 hectares lands in the Kalrayan hill tracts under organic cotton. Going by the richness in the organic matter naturally existing in the lands and the natural barriers available against chemical contamination in the region, SSML hopes to get the certification from Skal International (Control Union World), the international certification agency for organic cotton for its direct cotton field activity by next year itself. Certification SSML currently holds certification from Skal International approving its standards (meant for sustainable textile production) followed in spinning, knitting, processing and garmenting for the organic cotton part. Once it successfully meets the internal control system standards for organic cotton farming, the company will go for Skal certification for direct organic farming.

Krishnan, Deepa, Mcclatchy - Tribune Business News (2005)\(^3\), According to the managing director of Bannari Amman Spinning and the chairman of Southern India Mills' Association, SV Arumugam, "A number of larger mills like KPR Mills and Gangotri Mills are raising capacities to over 1 lakh spindles, while mid-sized units like Bannari Amman are increasing the spindles to 75,000 compared to 30,000 spindles earlier."

Yadhupati Singhania (2005)\(^4\), The article says that the Group is planning to revive the ailing Kanpur- based JK Cotton Spinning & Weaving Mills Ltd, closed since 1989. "We are hoping to generate about `125-150 crore. These funds would be utilised to clear all the debts and make fresh investments in the company too", the official said. JK Cotton Spinning & Weaving Mills was the first venture of the undivided JK Group in the cotton sector. Sources said it started its operations way back in 1920s. Following the division within the group the company came into the Gaur Hari Singhania fold, which is now been overseen by his son, Mr.Yadhupati Singhania.
The Coimbatore-based company is part of the `1,200-crore Bannari Amman Group, which has interests in sugar, food processing, distillery and automobile distribution, to name a few. Bannari Amman Spinning is among the smaller companies in the cotton spinning industry with a turnover of `75 crore. Located near the Tirupur cluster of knitwear exporters, most spinning companies based in Coimbatore have a ready market for their yarn expansion plans to drive revenue growth: With its plant operating at near-full capacities over the past three years, a capacity expansion is overdue. Bannari Spinning has charted out an `290-crore expansion plan, which would be partly funded by the offer. Expansion of spinning and weaving capacities is already underway, funded by a `175-crore term loan. The expansion will almost triple spinning capacities from current levels. As this division operates at 97 percent utilisation levels, the expansion is likely to boost significantly the revenues, which have been growing at a modest rate in recent years. Strong demand from knitwear exporters of Tirupur and other areas is likely to ensure that the new capacities operate at optimum levels. The company’s focus on superior quality yarn is also likely to improve realisations.

Wendt, Ian Christopher, (2005) Textile production and commerce engendered complex networks of relationships in early modern South Indian society. This dissertation examines the processes of producing cloth in four stages: first, commercial agriculture in cotton and indigo; second, cotton cleaning, cotton trade and spinning; third, warping and weaving; and fourth, washing, dyeing and painting cloth. These chapters analyze the social organization, geography, and economy of each process. This work describes the labour, organization and incomes of a wide range of agrarian labourers, women, weavers, washers and merchants. It also examines the social geography of diverse specialized settlements, including agrarian villages, weaving villages, washing and dyeing centers, and market centers.
Higgins, David, Toms, Steve (2003)\textsuperscript{30}, The analysis presented is based on a case study of Lancashire cotton textile firms. It traces their financial history through the sharp boom of 1919-20 and the sudden crisis that followed. Using a sample of representative companies, it is shown that firms unwittingly adopted inappropriate financial structures that acted as the decisive constraint on the adoption of recovery strategies in the subsequent slump. The paper explains how the relationship between indebtedness and asset values prevented subsequent internal financial retrenchment, restructuring and re-equipment, and dictated the competitive processes within the industry. It is demonstrated that financial constraints were the decisive factor determining the feasibility of competitive strategies available to the industry’s leaders.

\textbf{Asia Intelligence Wire From FT Information Published (2003)\textsuperscript{31}}, Considering the huge gap in the supply and demand of waste cotton, the Open End Spinning Mills (OESM) industry has sought Government intervention for plugging export and allowing free import of waste cotton, reduction in the excise duty rates and power tariff, abolition of textile committee cess and turnover tax on yarn among others. On seeking a ban on export of waste cotton and allowing its free import without import duty, the OESM Association President, Mr K.G. Vijayakumar, explained that there was an acute shortage in waste cotton availability in the domestic market, leading to spiralling of rates up to 40 percent in the last three months. Import was also not viable since the duty levy was as high as 15 percent, making the domestically available raw material much cheaper.

\textbf{United Kingdom (Asia Intelligence Wire from FT Information) (2001)\textsuperscript{32}}, the increase in raw cotton prices was perhaps the biggest problem facing the cotton yarn industry today. Take for instance the J-34 variety. There was a 21.70 percent increase in the price of this cotton to `49.28 per kg in November 2000 from a year earlier. As price is a function of supply, the reasons for high prices was that our supplies were mediocre. Therefore, a fall in prices and an increase in supply will be
welcomed by the textile industry especially the cotton yarn industry and spinning mills could see a bright year ahead.

Raj, C Soundara (2001)\textsuperscript{33}, Even while painting a good domestic crop, SICA members were informed about the prospects of high cotton imports this year due to further softening of global cotton prices that had crashed to as low as 34 cents. The higher production cost along with the factors such as higher contamination, increased transportation costs and incidences of too many taxes had rendered Indian cotton costlier to the consuming mills which increasingly preferred imports that gave better price realisation on their yarns. Even while the global cotton exporters could look at Indian spinning sector as an opportunity area, SICA wanted them to appreciate the difficulties Indian importers faced in areas as market information, absence of hedging facilities, rigidity in banking services and accessing the cotton arbitration procedure under the LCA rules.

G.Gurumurthy (2000)\textsuperscript{34}, The SITRA director, presenting the findings at the 28\textsuperscript{th} Technological conference of SITRA held here, said that the textile research body had derived a mathematical expression to separate and quantify the savings made or losses incurred by a textile unit due to product mix, commercial efficiency, labour and machine productivity, wage rates and power tariff as compared to the standard mill. This would help the units to initiate remedial measures to improve their profits.

Asian Textile Weekly [Osaka] (2000)\textsuperscript{35}, According to a State Textile Industry Bureau report on the nation's textile production capacity at the end of 1999, the cotton spinning capacity, of which nearly 10 million superannuated spindles were scrapped, amounted to 33,825,600 spindles. Open-end rotors totaled 593,600. Cotton looms numbered approximately 700,000, of which shuttleless looms accounted for 58,700 or 8 percent. The wool spinning capacity, of which a scale reduction is a task this year, numbered 3,826,200 spindles with wool looms at 25,000. The man-made fiber spinning capacity reached 6,574,100 ton/year. Based on the 1999 production volume, the operation rate came to 91
percent. The cellulosic fiber spinning capacity was 554,900 ton/year, and that of synthetic fibers stood at 6,008,900 ton/year, of which polyester was at 3,945,200. Three MMF producers had a capacity of over 200,000 ton/year: China Yizheng Chemical Fibre Group (541,700), the Shanghai Petrochemical Co., Ltd. (242,200) and Xianglu Polyester Co., Ltd. (280,000).


the report viewed that a capital investment it was most significant in Japan, whether the government financed an industry or not. The article deals with Tanigawa Tatsumi, the founder president (presidency 1885-1911) of Okayama Cotton Spinning Co. (an enterprise for employing ex-warriors). Whereas cotton spinning companies for employing ex-warriors played an important role in the initial stages of the development of the cotton spinning industry, these became bankrupt long before. Under such circumstances, Tanigawa's Spinning Co. weathered many years. An examination of a brief history of Okayama Spinning Co. with special reference to Tanigawa's life history will reveal the significance of the entrepreneur's learning and virtue, organizing ability, and leadership. Furthermore, it will make clear what otherwise might have been overlooked about the initial nature of industrialization in Japan.

**South India Textile Research Association (SITRA) (1999)**

According to a study done by the South India Textile Research Association (SITRA), the productivity survey results from the textile spinning industry during 1998 has revealed that after four years of declining productivity rates, the industry could have improved productivity in the order of five percent in the last two years.

**Business Line (1998)**

The report says that the Government's decision to increase the export quota of waste cotton, the Open-End Spinning Mill (OESM) sector now faces the threat of closure. OESMs, which use waste cotton as the principal raw material, is of recent origin in India. Until about 15 years ago, the cotton waste produced from the ring spinning mills did not have much use and was sold at a low price.
Rana (1998)\textsuperscript{39}, regarding the fiscal relief sought by the spinning sector to tackle the current crisis, informed the spinning sector that the Ministry has sent its recommendations to the Finance Ministry for rationalisation of duties. With regard to the demand from the SIMA for the removal of textiles from the purview of the Essential Commodities Act and the compulsory hank yarn scheme, the Union Finance Minister said that all these issues have to wait till the new textile policy is announced as the policy document would cover all such issues.

Wofford. J.C. (1994)\textsuperscript{40} Says a young manager of a spinning mill's experiences are used to examine a new approach to the understanding of leadership. Two approaches that examine the way leaders behave on a moment-to-moment basis are the behavioral approach and the cognitive processes approach. Cognitive processes look inside the heads of leaders to see how they think and how this determines their behavior in response to information and other feedback. Cognitive processes’ concepts have important implications for understanding the behavior of leaders and their subordinates in any culture. While the environment and cultural conditions faced by the young manager are unique, the cognitive processes involved are the same for managers everywhere.

Vibert, F. Oxford Economic Papers (1986)\textsuperscript{41}, The paper sets out in broad terms some of the main problems which the industry have faced since 1950. Four particular problems are highlighted: the decline in consumption and production of home-produced yarn and cloth; the cyclical fluctuations superimposed on the long-run trend of demand; the structural adjustment of the industry; and capital utilization.

L.C.Gupta (1979)\textsuperscript{42}, in his study entitled, “Financial ratio as Forewarning indicators of sickness,” analysed 41 Indian textile companies. The companies were classified into 20 sick and 20 non-sick companies. The financial ratios of the companies, 63 in total, were taken to test the predictive power of sickness. Out of 63 financial ratios, two ratios were declared as significant. They were earning before depreciation, interest and tax to sales and operating cash flow to sales.
OBJECTIVES OF THE STUDY

The study has been carried out with the following objectives

- To analyse the origin and growth of spinning mills in India
- To know the profile of selected spinning mills in Coimbatore
- To study the role of spinning mills and economic development.
- To study the financial health of spinning mills.
- To analyse the profitability of spinning mills.
- To offer recommendations for the improvement of spinning mills

METHODOLOGY

Data Sources

The study is mainly based on secondary data. Secondary data are collected from prowess which is the most reliable and empowered corporate database of CMIE.

The data required for the study were collected from the annual reports of the mills. The annual reports of the sample mills are downloaded from the database called prowess.

Period of Study

The present study covers a period of 10 years from 2001-02 to 2010-11 in order to evaluate the profitability of spinning mills in Coimbatore region.

Formulation of Sample Selection

The study concentrates on spinning mills, in Coimbatore district of Tamil Nadu. It is decided to select spinning mills based on the working from 2001-02 to 2010-11. There are 29 spinning mills in Tamil Nadu. Out of 29 mills 16 mills are situated in Coimbatore region. Owing to several constraints such as non availability of financial statements or non availability of working results of mills in a particular year etc., the researcher is compelled to restrict the number of mills to eight. To draw a
logical and meaningful conclusion eight mills have been selected based on its earnings.

Such selected mills are:
1. VTX Industries Ltd
2. Bannari Amman Spinning Mills Ltd
3. Precot Meridian Ltd
4. Ambika Cotton Mills Ltd
5. Super Spinning Mills Ltd
6. Lambodhara Textiles Ltd
7. Super Sales India Ltd
8. Salona Cotspin Ltd

STATISTICAL TOOLS USED

Statistical analysis is one of the most commonly used research methods.

The following tools are used for in analyzing the data

FULMER MODEL – H SCORE:

Though there are so many models to predict the bankruptcy position of a concern, Fuller Model (U.S.1984) has been used to predict the insolvency status as the given data very correctly fits into the model.

Fuller has used the stepwise Multiple Discriminant. In stepwise discriminant analysis, a model of discrimination is built step-by-step. Specifically, at each step all variables are reviewed and evaluated to determine which one will contribute most to the discrimination between groups. That variable will then be included in the model, and the process starts again. The stepwise procedure is "guided" by the respective $F$ to enter and $F$ to remove values. The $F$ value for a variable indicates its statistical significance in the discrimination between groups, that is, it is a measure of the extent to which a variable makes a unique contribution to
the prediction of group membership. General Model of Discriminant Analysis takes the following form:

\[ D = v_1X_1 + v_2X_2 + v_3X_3 = \ldots \ldots v_iX_i + A \]

Where \( D \) = Discriminate function

\( v \) = the discriminant coefficient or weight for that variable

\( X \) = respondent’s score for that variable

\( a \) = a constant

\( i \) = the number of predictor variables

Fulmer (U.S.1984) has used step-wise Multiple Discriminate Analysis to Evaluate 40 financial ratios to a sample of 60 companies-30 failed and 30 successful. He has reported a 98 percent accuracy rate in classifying the test companies one year prior to failure and an 81 percent accuracy rate more than one year prior to bankruptcy. This model is applied to find the financial healthiness of the companies under study. The Model takes the following form:

\[ H = 5.528V_1 + 0.212V_2 + 0.073V_3 + 1.270V_4 + 0.120V_5 + 2.335V_6 + 0.575V_7 + 1.083V_8 + 0.894V_9 - 6.075 \]

\( H < 0 \), then the firm is classified as ‘Failed’ otherwise ‘Successfull’

Where,

\( V_1 \) = Retained Earnings/Total Assets

\( V_2 \) = Sales/Total Assets

\( V_3 \) = EBIT/Equity

\( V_4 \) = Cash Flows/Total Debt

\( V_5 \) = Debt/Total Assets

\( V_6 \) = Current Liabilities/Total Assets

\( V_7 \) = Log Tangible Total Assets

\( V_8 \) = Working Capital/Total Assets
V_9 = \log \frac{EBIT}{Interest}.

The H-Score like umbrella covers the areas of profitability, Efficiency, Liquidity and Solvency status of a firm.

**COMPOUND ANNUAL GROWTH RATE**

The compounded Annual Growth Rate is the rate at which a variable grows over a period of years, taking into account the effect of compounding. It is used to find the smoothed annualized return or gain of an investment over a given period of time. It describes the growth over a period of time of some element of business

It is expressed as:

\[
\text{CAGR(to,tn)} = \left[ \frac{V(t_n)}{V(t_0)} \right]^{\frac{t(t_n - t_0)}{t}} - 1
\]

Where \(V(t_n)\) = End value
\(V(t_0)\) = Initial Value
\((t_n - t_0)\) = Gap Period

**MULTIPLE REGRESSION ANALYSIS**

Linear Regression estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable. The General model of the Multiple Regression model can be written as:

\[
y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \ldots + \beta_kx_k + u,
\]

Where \(\beta_0\) is the intercept, \(\beta_1\) is the parameter associated with \(x_1\), \(\beta_2\) is the parameter associated with \(x_2\) and so on. Since there are \(k\) independent variables and an intercept, the equation contains \(k+1\) (Unknown) population parameters. The variable \(u\) is the error term or disturbance.

Here \(b0\) is the intercept and \(b1, b2, b3, \ldots, bk\) are analogous to the slope in linear regression equation and are also called regression coefficients. They can be interpreted the same way as slope. Thus if
bi = 2.5, it would indicate that Y will increase by 2.5 units if Xi increased by 1 unit.

The appropriateness of the multiple regression model as a whole can be tested by the F-test in the ANOVA table. A significant F indicates a linear relationship between Y and at least one of the X's. Once a multiple regression equation has been constructed; one can check how good it is (in terms of predictive ability) by examining the coefficient of determination (R2). R2 always lies between 0 and 1.

**R₂ - coefficient of determination**

The closer R₂ is to 1, the better is the model and its prediction.

Statistically the null hypothesis is tested by using t-test. If the t-test of a regression coefficient is significant, it indicates that the variable in question influences Y significantly while controlling for other independent explanatory variables.

**PRINCIPAL COMPONENT ANALYSIS:**

Principal Components Analysis is a method that reduces data dimensionality by performing a covariance analysis between factors. It is recommended as an exploratory tool to uncover unknown trends in the data. PCA is a way of identifying patterns in data, and expressing the data in such a way as to highlight their similarities and differences. The procedures carried out and its results are given below:

1. Principal components analysis (PCA) is a procedure for finding hypothetical Variables (components) which account for as much of the variance in the multidimensional data as possible. These new variables are linear combinations of the original variables.

2. The Newly Created variables satisfy the following two conditions:
   a) PC’s are orthogonal Linear functions of the original variable.
   b) First (PC1) Principal Component has large variance when compared with other variables. Then PC2 is then chosen from the
remaining variations among the variables. The same procedure is followed to arrive the variations.

3. The PCA routine finds the Eigen values and eigenvectors of the variance-covariance matrix or the correlation matrix. The Eigen values, giving a measure of the variance accounted for by the corresponding eigenvectors (components) are given for all components.

4. The percentages of variance accounted for by these components and also its cumulative variations are also given.

5. Most of the variances are accounted for by the first one or two components if the spread is deep. However if the variance is spread more or less evenly among the components, the PCA has in a sense not been very successful.

6. The Jolliffe cut-off value gives an informal indication of how many principal Components should be considered significant. Components with eigenvalues smaller than the Jolliffe cut-off may be considered insignificant, but too much weight should not be put on this criterion.

TIME SERIES - TREND ANALYSIS:

A time series is a chronological sequence of observations on a particular variable. It assumes that the underlying time series is stationary. If a time series is stationary, its mean, variance, and auto covariance (at various lags) remain the same no matter at what point we measure them; that is, they are time invariant.

An observed time series can be decomposed into three components: the trend (long term direction), the seasonal (systematic, calendar related movements) and the irregular (unsystematic, short term fluctuations).

A time series analysis consists of two steps: (1) building a model that represents a time series, and (2) using the model to predict (forecast) future values. An attempt has been made to fit the time series data to find its trend. Trend analysis has been used to forecast the data for the fourth
coming periods. Suitable trend method is used to find trend and predict the data.

**LIMITATIONS OF THE STUDY**

The study has the following limitations

- The firm’s overall efficiency cannot be evaluated merely by profitability analysis alone.
- The efficiency level of the management cannot be assessed fully from the profitability measurement. Technical measures and other areas are to be considered.
- This study is based on secondary data taken from CMIE Prowess as such its findings depend entirely on the accuracy of such data.

**CHAPTER SCHEME**

The entire study has been organized into six chapters. They are as follows:

- The **first chapter** deals with the Introduction and design of the study, Operational Definitions, Importance of the Study, Statement of the Problem, Scope of the Study, Review of Literature, Objectives of the Study, Research Methodology, Limitations of the Study, and Chapter Scheme.
- The **second chapter** deals with the growth of spinning mills in India.
- The **third chapter** presents the role of spinning mills and economic development.
- The **fourth chapter** highlights the spinning mills in Tamil Nadu and profile of the study area.
- The **fifth chapter** focuses the profitability analysis of selected spinning mills in Coimbatore district.
- The **sixth chapter** summarizes the major findings, suggestions and conclusion.