CHAPTER - I

PROBLEMS AND PROSPECTS OF COTTON TEXTILE INDUSTRY
OF UTTAR PRADESH
(WITH SPECIAL REFERENCE TO KANPUR)

Of all the industries the cotton textile industry is the largest and one of the oldest industries of India. It continues to occupy a prominent position in the overall economy of the country. India ranks third in the world in respect of its capacity to produce yarn and cloth in the mill sector and stands second on the basis of cotton consumption. By virtue of its age it has also inherited a number of problems. In the following pages an analytical study is made of its problems and prospects due to its large employment potential.

At present in India there are 637 cotton mills, out of which 347 are spinning and 290 are composite mills, working normally in two shifts a day and in certain cases three shifts per day. These mills
provide direct employment to 90,400 workers accounting for 20.6 per cent of the entire factory labour. The industry has total assets worth Rs. 900 crores and paid up capital of Rs. 270 crores. The total output of the mills is valued at Rs. 1,200 crores. The industry consumes cotton worth Rs. 418 crores and its wage bill is about Rs. 200 crores per year. The importance of the industry in export trade is of great significance. It occupies a unique position in the world's export market where India is second only to Japan in terms of exports of total quantity supplying 16 per cent of the world's supply of exports.

Although the industry is dispersed in almost all the States of the country, its chief centres are Maharashtra, Gujrat, Tamil Nadu, Andhra and Uttar Pradesh. The Uttar Pradesh is one of the important States of the Indian Union. The impact of Uttar Pradesh on the country's economy has been significance due to its size, strategic position and population. It would be out of place, however,

2. Ibid, p.32.
briefly to highlight some of the socio-economic features of the State of Uttar Pradesh.

SOCIO-ECONOMIC BACKGROUND OF UTTAR PRADESH:

Uttar Pradesh with a population of more than 98 million in 1981 is the State with the largest population amongst all the States of India and accounts for about one-sixth of the country's population. With an area of 113,654 sq.miles, Uttar Pradesh is the fourth largest State accounting for 9.65 per cent of India's total area. It lies between latitudes 23°52' N and 31°28' N and longitudes 77°4'E and 84°38' E. On the north it has international frontier with Tibet (China) and Nepal. In the south it has internal borders extending to Madhya Pradesh. In the north-west and the west are Himachal Pradesh, Punjab, Delhi, Haryana and Rajasthan. The eastern border is entirely attached with Bihar. This vastness of the State of Uttar Pradesh has given it a place of pride and has also given a socio-economic importance of an All-India character. Its trade, commerce and cultural relations are not only national but are of international importance. Apart from
above the physical features have added great value to this State.

**PHYSICAL FEATURES:**

Broadly speaking, Uttar Pradesh is divided into three distinct regions, viz., the Himalayan region in the north, the Ganga plains in the middle and the Hill Plateau lying to the south of the Ganga plain. The Himalayan region which is mountainous and traversed by several ranges from the bare region of perpetual snow to densely wooded hills which are sparsely populated. They supply wood and wood product for the entire country. The next region is the alluvial Ganga plain which covers the major portion of the State. This plain is agriculturally rich by the enormous supply of water by the Yamuna, the Ganga and its northern tributaries. This densely populated region is most vital to the economy of the State. The third Vindhayan Hills and Plateau region is a part of the Central Indian Plateau and forms a strip along the southern border of the State. This region is not densely populated.

**CLIMATE:**

Uttar Pradesh lies in the warm temperate zone but great variations in the climate occur on account
of altitude. In January the temperature ranges from 12.5°C to 17.5°C and in May from 27.5°C to 32.5°C with extremes of 45°C or more during April-June. In the north-western districts winter is very severe. The whole of the State gets major share of rain from the middle of June to the middle of September. Rainfall varies from 100 to 200 cms. in the Himalayan region to 50 to 120 cms. in the plains.

POPULATION AND WORKING FORCE:

The density of population in the State was as high as 300 persons per sq.km. as against the all-India average of 178 during 1981. The annual increase of population during 1971-1981 was 2.98 per cent (all-India: 2.48 per cent). The number of females per 1000 males was 879 in the State as compared to 930 in the whole of India. About 86 per cent of the population is rural as against the all-India average of 81. Most of the towns in the State are administrative, educational, pilgrim or tourist centres; they are not known for big commerce or industry. The rate of literacy is 217 per thousand; the comparative figure for all-India is 294.
According to the 1981 population census, the proportion of working population in Uttar Pradesh was 32 per cent which is less than the all-India average. The occupational distribution of the working population indicates that there is predominance of agriculture and the proportion of population engaged in 'manufacture other than household industry' and tertiary activities in Uttar Pradesh was lower than that for the country as a whole.

Agriculture

Agriculture is the mainstay of the economy of the State. The agricultural sector employs about three-fourths of the State's working population and contributes about 63 per cent to the State's net domestic product. The State leads in the production of foodgrains and potato and ranks second in the production of oil-seeds. It is also a major producer of sugar cane accounting for about half of the national output. The State's agriculture has also contributed significantly by providing raw material to several agro-industries such as sugar, oil crushing, grain milling, food processing, etc.
However, in spite of the dominant position of agriculture in the State, the productivity in the sector is quite low. The small size of the land holdings due to pressure of population, defective crop patterns and old method of cultivation have nullified the comparative advantages of fertile soil, reasonably good rainfall and irrigation facilities in the State with the result that the income originating from agricultural output is quite low. Though the State accounts for about 16.6 per cent of the national food production it is deficit in cereals. However, it is surplus in pulses.

MINERALS AND INDUSTRIES:

The State is not rich in minerals. Some gypsum is found at the foot of the Himalayan rocks. Small coal deposits have been discovered near Singrauli in the extreme south of Mirzapur. Limestone is quarried in Dehradun and in the Bundelkhand uplands and Vindhyan scraplands. Lack of minerals has all along been a great handicap in the industrial development of the State.

In fact, Uttar Pradesh is one of the industrially backward States in the country. Manufacturing other than household industry engaged only 2.8 per cent of the State's working population in 1971 as compared to
4.2 per cent for India. In 1973 the number of workers per 1000 persons employed in registered factories was 5.0 (all-India 9.9). During the same year the per capita value added by manufacture was Rs.9.2 as against Rs.29 for all-India. The industries in the State are dominated by labour intensive and low value adding cottage and village industries. The sugar factories and the textile mills dominate the large-scale manufacturing sector. Among the large scale industries textiles occupy an important place. The State of Uttar Pradesh has been a pioneer in this field and the cotton textile industry holds a prominent position in the economy of the State. In the following paragraphs an attempt is made to analyse the chief features of the industry in Uttar Pradesh.

COTTON TEXTILE INDUSTRY IN UTTAR PRADESH:

In Uttar Pradesh the Cotton Textiles Mills industry is the second largest industry in the organised sector, next only to sugar. In Jan.1978, the most recent period for which data are available there were 65,629 persons employed in the textile mills of Uttar Pradesh. The total number of mills in the State is 33 and they are

located in Kanpur, Rampur, Lucknow, Saharanpur, Dehradun, Agra, Aligarh, Noida, Moradabad, Ujjain, Allahabad, Ghaziabad, Hasitnapur, Maunath Bhanjan, Hathras, etc. Of these 33 mills, 16 are spinning units while the rest are spinning-cum-weaving or composite units. Ten of these composite mills are located at Kanpur. The State has two cooperative spinning mills—one at Etawah and the other at Bulandshahr. The installed capacity as in January 1978 in Uttar Pradesh was 3,61,430 spindles in the spinning mills and 7,95,680 in the composite mills making a total of 11,57,110 spindles. At the same time the number of looms installed was 13,272. These details are available in the table given on the next page.

The above table represents figures of a number of mills, installed capacity and labour employed in the cotton textile industry in various States of India. These figures show that as regards the number of mills U.P.'s position is fifth in the country while it stands fourth in respect of spindles as well as in respect of employment of labour. The total number of looms installed in Uttar Pradesh are 13,272 which gives to the State third position in the country. The comparisons

| TABLE - 1 |
| No. of units, installed capacity and labour employed in the cotton textile industry of India (As on 1st January, 1978) |

<table>
<thead>
<tr>
<th>State/Zone</th>
<th>Number of Mills</th>
<th>Installed Spindles (in thousands)</th>
<th>Installed Labour Looms Employed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spinning</td>
<td>Composite</td>
<td>Total</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>28</td>
<td>3</td>
<td>31</td>
</tr>
<tr>
<td>Assam</td>
<td>2</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Bihar</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Gujarat</td>
<td>19</td>
<td>91</td>
<td>110</td>
</tr>
<tr>
<td>(A) Ahmedabad City</td>
<td>4</td>
<td>62</td>
<td>66</td>
</tr>
<tr>
<td>(B) Rest of Gujarat</td>
<td>15</td>
<td>29</td>
<td>44</td>
</tr>
<tr>
<td>Haryana</td>
<td>9</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Jammu &amp; Kashmir</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Kerala</td>
<td>21</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td>Madhya Pradesh</td>
<td>6</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>154</td>
<td>25</td>
<td>179</td>
</tr>
<tr>
<td>(a) Coimbatore</td>
<td>71</td>
<td>17</td>
<td>88</td>
</tr>
<tr>
<td>(b) Rest of Tamil Nadu</td>
<td>83</td>
<td>9</td>
<td>91</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>26</td>
<td>77</td>
<td>103</td>
</tr>
<tr>
<td>(a) Bombay city</td>
<td>1</td>
<td>53</td>
<td>54</td>
</tr>
<tr>
<td>(b) Rest of Maharashtra</td>
<td>25</td>
<td>24</td>
<td>49</td>
</tr>
</tbody>
</table>

contd......
<table>
<thead>
<tr>
<th>State</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karnataka</td>
<td>20</td>
<td>11</td>
<td>31</td>
<td>409.21</td>
<td>380.07</td>
<td>789.28</td>
<td>6,087</td>
<td>32,754</td>
</tr>
<tr>
<td>Orissa</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>71.66</td>
<td>50.53</td>
<td>122.19</td>
<td>1,014</td>
<td>6,089</td>
</tr>
<tr>
<td>Punjab</td>
<td>7</td>
<td>2</td>
<td>9</td>
<td>146.45</td>
<td>52.76</td>
<td>199.21</td>
<td>1,468</td>
<td>10,842</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>5</td>
<td>11</td>
<td>16</td>
<td>117.07</td>
<td>297.05</td>
<td>414.12</td>
<td>2,789</td>
<td>13,540</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>16</td>
<td>17</td>
<td>33</td>
<td>361.43</td>
<td>795.68</td>
<td>1157.11</td>
<td>13,272</td>
<td>6,562</td>
</tr>
<tr>
<td>(c) Konnur</td>
<td>-</td>
<td>10</td>
<td>10</td>
<td>-</td>
<td>506.24</td>
<td>506.24</td>
<td>11,140</td>
<td>44,754</td>
</tr>
<tr>
<td>(b) Rest of U.P.</td>
<td>16</td>
<td>7</td>
<td>23</td>
<td>361.43</td>
<td>289.44</td>
<td>650.87</td>
<td>2,132</td>
<td>20,875</td>
</tr>
<tr>
<td>West Bengal</td>
<td>22</td>
<td>18</td>
<td>40</td>
<td>435.74</td>
<td>591.06</td>
<td>1026.80</td>
<td>9,143</td>
<td>40,490</td>
</tr>
<tr>
<td>Delhi</td>
<td>-</td>
<td>4</td>
<td>4</td>
<td>-</td>
<td>167.42</td>
<td>167.42</td>
<td>3,454</td>
<td>20,407</td>
</tr>
<tr>
<td>Pondicherry</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>53.04</td>
<td>104.14</td>
<td>157.18</td>
<td>2,679</td>
<td>9,700</td>
</tr>
<tr>
<td>Goa</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>25.04</td>
<td>-</td>
<td>25.04</td>
<td>-</td>
<td>449</td>
</tr>
</tbody>
</table>

**Source:** Handbook of Statistics on Textile Industry, ICMF, Bombay.
reveal some interesting features. Tamil Nadu has the highest number of mills in the country and the second highest number of spindles but in respect of looms it has very low position which is a pointer to the fact that the industry there is very much spin-based. On the other hand in Uttar Pradesh the total number of mills is only 33 while it has third all-India position in loom installations which shows greater stress on weaving and cloth making. In this respect, Uttar Pradesh is closer to Maharashtra and compares better with Gujarat though it mainly produces coarse quality cloth.

**OUTPUT TRENDS:**

Unfortunately, over the years, the performance of this industry has not been satisfactory. In the organised sector productivity has fallen in a large number of units. The incidence of sickness has been growing and the progress of modernisation has been tardy. The cost of textiles has been rising steadily while the per capita consumption of cloth has been falling. This is the All-India position and the industry of Uttar Pradesh is not an exception.

The trends in output in the textile mills of
Uttar Pradesh have been much disconcerting. This statement can be substantiated with the help of linear regression equations based on time series. Table-2 shows production of yarn and cloth in Maharashtra and Uttar Pradesh as well as for the country as a whole for a period of 10 years from 1968 to 1977.

On the basis of data, given in Table-2, the following linear regression equations have been obtained (NCAER) for Uttar Pradesh and two other leading states, viz. Maharashtra and Gujarat as well as for the country as a whole. In support of our observations the equations are reproduced as under. The units for spinning (yarn) and weaving (cloth) are tonnes and thousand meters respectively.

**SPINNING:**

U.P. \[ Y_1 = 73830 - 430 t(R^2 = 0.66) \]

Maharashtra \[ Y_2 = 275210 - 5540 t(R^2 = 0.83) \]

Gujarat \[ Y_3 = 149110 - 900 t(R^2 = 0.20) \]

All-India \[ Y_4 = 879900 - 6100 t(R^2 = 0.22) \]

**WEAVING:**

U.P. \[ Y_1^2 = 374040 - 8810 t(R^2 = 0.82) \]

Maharashtra \[ Y_2^2 = 1713100 - 32500 t(R^2 = 0.74) \]
### Table 2

**Production of Yarn and Cloth in Gujarat, Maharashtra, U.P. & All India**

<table>
<thead>
<tr>
<th>Year</th>
<th>Gujarat Yarn</th>
<th>Gujarat Cloth</th>
<th>Maharashtra Yarn</th>
<th>Maharashtra Cloth</th>
<th>Uttar Pradesh Yarn</th>
<th>Uttar Pradesh Cloth</th>
<th>All India Yarn</th>
<th>All India Cloth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1968</td>
<td>146585</td>
<td>1364</td>
<td>266560</td>
<td>1723</td>
<td>67527</td>
<td>338</td>
<td>862295</td>
<td>4702</td>
</tr>
<tr>
<td>1969</td>
<td>142580</td>
<td>1320</td>
<td>258705</td>
<td>1660</td>
<td>72731</td>
<td>332</td>
<td>859460</td>
<td>4561</td>
</tr>
<tr>
<td>1970</td>
<td>147586</td>
<td>1295</td>
<td>261261</td>
<td>1610</td>
<td>76150</td>
<td>296</td>
<td>902572</td>
<td>4422</td>
</tr>
<tr>
<td>1971</td>
<td>162564</td>
<td>1380</td>
<td>267012</td>
<td>1640</td>
<td>84185</td>
<td>329</td>
<td>964925</td>
<td>4654</td>
</tr>
<tr>
<td>1972</td>
<td>159220</td>
<td>1380</td>
<td>250360</td>
<td>1559</td>
<td>71302</td>
<td>330</td>
<td>939240</td>
<td>4583</td>
</tr>
<tr>
<td>1973</td>
<td>161218</td>
<td>1310</td>
<td>234533</td>
<td>1416</td>
<td>67075</td>
<td>287</td>
<td>910983</td>
<td>4240</td>
</tr>
<tr>
<td>1974</td>
<td>156625</td>
<td>1325</td>
<td>221002</td>
<td>1352</td>
<td>64457</td>
<td>277</td>
<td>897582</td>
<td>4096</td>
</tr>
<tr>
<td>1975</td>
<td>160990</td>
<td>1266</td>
<td>237038</td>
<td>1472</td>
<td>67072</td>
<td>276</td>
<td>950900</td>
<td>4364</td>
</tr>
<tr>
<td>1976</td>
<td>153603</td>
<td>1311</td>
<td>231213</td>
<td>1445</td>
<td>71502</td>
<td>265</td>
<td>965076</td>
<td>4170</td>
</tr>
<tr>
<td>1977</td>
<td>150293</td>
<td>1240</td>
<td>222380</td>
<td>1429</td>
<td>73032</td>
<td>252</td>
<td>960229</td>
<td>3930</td>
</tr>
</tbody>
</table>

**Source:** Compiled from the various editions of the Indian Textile Bulletin and Monthly Statistics of Production of Selected Industries of India (1969 to 1978).
The time-trend equation for U.P. in respect of yarn is devoid of significance, for the $R^2$ value is very low and the standard error of the regression coefficient is very high. This implies that the yarn output in U.P. has had no discernible trend over time. Of course, for the two other States and the country as a whole, the regression coefficient were not significant at one per cent level indicating that their output of yarn remained virtually stationary in the course of the period under review.

In regard to production of cloth, the trend in U.P. significantly was downward, the regression coefficient being significant at one per cent level. For the two other States and all-India, too, the trend was declining. (The coefficient for Gujarat was significant only at 5 per cent level.) In short, the secular pattern of production of cotton yarn and cloth in U.P. has been in conformity with the overall trends in the

\[
\begin{align*}
\text{Gujarat} & \quad \hat{y}^1_3 = 1375700 - 11400 \cdot t \quad (R^2 = 0.52) \\
\text{All-India} & \quad \hat{y}^1_4 = 4774200 - 73200 \cdot t \quad (R^2 = 0.80)
\end{align*}
\]

**NOTE:** Figures in parentheses indicate standard errors of regression coefficients.
- Regression coefficient significant at 1 per cent level
- Regression coefficient significant at 5 per cent level
However, the installed capacity in respect of
spindles in the State has increased slowly though
steadily in recent years. This has also been keeping
with the trend in the country as a whole. Thus, the
spindlage in the State increased by 11.1 per cent
between 1968 and 1977. (For Maharashtra, Gujarat,
Tamil Nadu and all-India, the proportionate increase
was similar over the same period—11.8, 11.6, 11.5
and 11.4 per cent respectively). 5 U.P.'s share in
the total spindlage of the country was 5.5 per cent
in 1968 and 5.7 per cent in 1977. Regarding loomage,
the State's share was 6.5 per cent in both 1968 and
1977 and the number of looms in the State has virtually
remained unchanged as in the other States and the
country. 6

COMPOSITION OF OUTPUT:

As regards the composition of the textiles output,
in U.P. the proportion of coarse and medium varieties
of cloth over the years 1969 to 1975 was as high as
97.7 per cent of the total compared with 93.4 per cent

in Tamil Nadu, 81.2 per cent in Gujarat and 78 per cent in Maharashtra. That is to say, the mills in U.P. concentrated much more on the production of inferior varieties compared with three other leading cotton textile manufacturing States.

As regards the production of different varieties of processed cloth in various States, there are statistics to show that U.P.'s production of chemically processed cloth, e.g., piece dyed sanforized, mercerised and bleached is generally less compared to the three other States and the country as a whole.  

**COTTON TEXTILE INDUSTRY OF KANPUR**

It has already been pointed out that though the industry is spread over all the parts of the State, Kanpur is the chief centre of its concentration. It is evident from Table-1 that Kanpur accounts for 45.2 per cent of the total spindlage and 83.9 per cent of the loomage in the State. The role of Kanpur in the organised cotton textile industry of Uttar Pradesh is, therefore, almost similar to that of Ahmadabad in Gujarat and Bombay in Maharashtra. Hence, there is every justification of analysing in detail the relevant aspects of the industry in Kanpur. In the following

lines an attempt is made to trace the evolution, present position, future prospects and problems of cotton textile industry of Kanpur.

K A N P U R:

The present Kanpur, originally named Kanhayapur or Keopur, was a small village up to the time of its first connection with the British. During the sixteenth century it occupied an unimportant place in the industrial map. In 1778 it was selected as the cantonment for the Oudh local forces maintained under the treaty of 1773. Consequently, the British forces at Bilgram were moved to Kanpur which was considered strategically a better site. This advent of British rule into Kanpur led to a considerable demand not only for food but also for clothing and other requirements for these forces. In order to cater to the military needs there were established in and around the Kanpur cantonment, innumerable cottage and small industries for the manufacture of clothing and equipment of military personnel. With such an ordinary beginning Kanpur has made, slowly but steadily, a tremendous progress in this field. Thus, Kanpur, which was once a small village grew up as the

biggest cotton textile centre in Uttar Pradesh. The following information about the development of the industry in Kanpur is of great economic and social significance.

**Origin of the Industry:**

The cotton textile industry of Kanpur owes its origin to the establishment of military cantonment. Originally the industry was started for catering to the military needs of clothes. For the same purpose other industries like leather work and shoemaking were also set up. This developed an industrial atmosphere and enterprise. For the location of this industry Kanpur offered other favourable factors also like availability of cotton within the State of Uttar Pradesh. Another encouraging factor was the supply of abundant labour at cheap rates. Availability of cheap power and the evolution of a fair consumer market were also helpful in the establishment of this industry at Kanpur.

Moreover, the industry gathered momentum by the security and amenities afforded by the cantonment set up in Kanpur. They attracted many traders and merchants and more so the working classes. In this move quite a good number of merchants from Mirzapur and other centres shifted their business to Kanpur while
many others established their branches here.

**EVOLUTIONARY PROCESS:**

The evolutionary process was due to the enterprise of the East India Company which established a factory at Kanpur which progressively gave rise to increasing activity in the manufacture of indigo and the plantation of cotton for clothing. During the period of seven years as between 1812 and 1819 the indigo and cotton business flourished with a tremendous speed. In the middle of 1819 there came a great crash due to reckless trafficking and gambling in the various stages of the plantation of the cotton. Huge advances were given to zamindars who spent the money without any return. Under these conditions East India Company closed down its cotton gins, indigo planters utterly failed and so huge sums and landed property in the district was divided up. In these gloomy conditions two champions emerged, Maxwells and Greenways, who are inseparably connected with the foundation and the latter development of Kanpur industry. More specially the latter acquired lustre in the industrial development which followed after the first war of independence in 1857. The indigo planters exploited the growers and made huge profits. This speeded up the process of
mutiny against the East India Company.

AFTER THE MUTINY:

The real period of progress of Kanpur industry begins after the Mutiny or war of independence of 1857. Though the Mutiny adversely affected British interest and many British merchants gave up their pursuits, there followed after mutiny a period of greater industrial activity. The site of the British entrenchments commanding the bridge across the Ganges was converted into a Government leather and clothing factory. The opening of the East India Railway brought much new enterprise and greater incentive to the industrial development.

The organisation of the industry began by Government for the provision of clothing for its troops was taken up by private individuals and in 1860 an association styled as Cawnpore Cotton Committee was formed largely on the initiative of Mr. Buist, the Station Master of newly opened East India Railway. Several Indian and British merchants and military officers, notable among whom was Mr. Hugh Maxwell, partner in the firm of Bogg Sutherland & Co., were associated with him. His family had owned large estate in the Kanpur district since the beginning of the century. This enterprising man brought into being the Elgin
Cotton Spinning and Weaving Company Ltd., which was incorporated in 1861 and it commenced working in 1864. The company was started with initial capital of Rs. 3 lakhs. The Elgin Mills Co. was, however, forced to go into liquidation in 1871. Its property and goodwill were sold by auction and the partners of this firm, together with Mr. A.S.B. Chapman put the mills upon their feet again in 1872. Mr. Gravin John, a relative of Mr. Hugh Maxwell, who had survived the mutiny after thrilling adventures and escaped, had been engaged as Manager and Secretary of the original Elgin Mills company, prior to its liquidation; but owing to management differences, he resigned his posts. However, he rejoined the newly constituted company in the same position. He left Elgin Mills later in order to start the Muir Mills Co. which was registered in 1874 with a capital of five lakhs of rupees. Mr. Gravin John was its first Managing Director.

Mr. John Harwood left the service of Elgin Mills and established the Cawnpore Cotton Mills (now Elgin Mills No.2). This mill under the management of British India Corporation was registered in 1883 with a capital of Rs. 5 lakhs. Mr. Atherton West, a Weaving Master brought by Elgin Mills from Lancashire also left the
service and set up the Victoria Cotton Mills Co. (now New Victoria Cotton Mills Co. Ltd.) in 1886 with an initial capital of Rs. 5 lakhs. In this undertaking an old Indian firm, Messrs Ramanath Bajnath were closely interested.

Another branch of the family tree of Kanpur Cotton Textile industry was the Swadash Cotton Mills Company which was set up by Mr. A.F. Herasem who was the Manager of the Cawnpore Cotton Mills for many years. This concern was registered as a private limited company in 1921. The Ramanath Bajnath association with the Kanpur Cotton Mills is responsible for yet another branch of the tree namely Juggilal Kamlapat Mills which was built up by private interests descended from that old established firm of Ramanath Bajnath. Atherton Mill is by no means less important branch of the tree of more recent growth as it was set up by Messrs. Atherton West, who founded the Victoria Mills Company.

From the brief history of the growth of the cotton textile industry of Kanpur in its early stages one can safely conclude that it was established as a family concern. It was the British enterprise that led to the formation of the first cotton mill, namely the Elgin Mills Co. Ltd. Later on, this mill was
expanded into several off-shoots and gradually Kanpur which was once a small village grew up as the biggest cotton textile centre in Uttar Pradesh. This can be observed from the table given on the next page.

At present there are 10 textile mills in Kanpur. They employ nearly Rs. 6 crores as paid up capital. All the 10 cotton textile mills situated at Kanpur are equipped with 5,06,240 spindles and 11,140 looms. Except Muir Mills Co.Ltd., which employs 1,080 mule spindles in addition to 57,312 ring spindles, the other nine mills do not employ mule spindles. The average number of spindles and looms at work at Kanpur are 3,79,431 and 9,353 respectively. The approximate quantity of cotton consumed by these mills during 1978 comes to 2,45,312 bales of 180 kgs. while the average number of workers employed during the same period is 44,756.

While comparing these figures with Uttar Pradesh, Kanpur stands out to be the biggest centre in the whole State so far as the installed capacity, average number of workers and the consumption of cotton are concerned. The paid up capital of Kanpur cotton mills stands to be nearly 47 per cent of the total paid up capital of mills in Uttar Pradesh. The Kanpur cotton mills alone employ about 45.2 per cent of the total spindles and
Table- 3
SHOWING PAID UP CAPITAL, INSTALLED CAPACITY, COTTON CONSUMPTION, WORKERS EMPLOYED
(as on 1st Jan.1978, and No. of days worked during the year 1977, in Kanpur)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Mill</th>
<th>Paid-up Capital (Rs.)</th>
<th>No. of Spindles</th>
<th>No. of Looms installed</th>
<th>Quantity of Cotton consumed (bales)</th>
<th>Average no. of workers employed daily</th>
<th>Total no. of Days worked for the year 1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Atherton West</td>
<td>40,00,000</td>
<td>40,696</td>
<td>901</td>
<td>13,192</td>
<td>2636</td>
<td>277</td>
</tr>
<tr>
<td>2.</td>
<td>Lokeshri Ratan Mills</td>
<td>35,00,000</td>
<td>56464</td>
<td>977</td>
<td>12,998</td>
<td>2512</td>
<td>279</td>
</tr>
<tr>
<td>3.</td>
<td>New Victoria Mills</td>
<td>61,17,000</td>
<td>51,184</td>
<td>1281</td>
<td>15,661</td>
<td>2905</td>
<td>302</td>
</tr>
<tr>
<td>4.</td>
<td>Mir Mills</td>
<td>60,00,000</td>
<td>58,392</td>
<td>1714</td>
<td>30,564</td>
<td>5725</td>
<td>1305</td>
</tr>
<tr>
<td>5.</td>
<td>Swadeshi Cotton Mills</td>
<td>2,10,000</td>
<td>77,144</td>
<td>2097</td>
<td>41,356</td>
<td>8130</td>
<td>304</td>
</tr>
<tr>
<td>6.</td>
<td>Elgin Mills No.1</td>
<td></td>
<td>48,908</td>
<td>1196</td>
<td>36,114</td>
<td>5920</td>
<td>292</td>
</tr>
<tr>
<td>7.</td>
<td>Elgin Mills No.2</td>
<td>109,70,000</td>
<td>67,242</td>
<td>1185</td>
<td>33,455</td>
<td>5473</td>
<td>280</td>
</tr>
<tr>
<td>8.</td>
<td>J.K. Cotton Mills</td>
<td>16,76,600</td>
<td>45,236</td>
<td>988</td>
<td>18,060</td>
<td>4641</td>
<td>305</td>
</tr>
<tr>
<td>9.</td>
<td>Kanpur Textiles</td>
<td>60,00,000</td>
<td>37,224</td>
<td>611</td>
<td>20,510</td>
<td>3317</td>
<td>290</td>
</tr>
<tr>
<td>10.</td>
<td>B.I.C. Ltd.</td>
<td>24,32,000</td>
<td>23,780</td>
<td>150</td>
<td>23,352</td>
<td>3295</td>
<td>302</td>
</tr>
<tr>
<td></td>
<td><strong>Total (Kanpur)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total (U.P.)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Percentage of Kanpur to U.P.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOURCES: (1) Kanpur cotton mills Annual Statements for the year.
          (2) Northern India Mill Owners Association Report for 1978
about 83 per cent of the total looms in Uttar Pradesh. As far as the consumption of cotton is concerned Kanpur alone consumes about 59 per cent of the consumption in Uttar Pradesh. Similarly, the percentage of the average number of workers employed in Kanpur mills comes around 67 per cent of the total labour force engaged in the cotton textile industry of Uttar Pradesh. It is clear from this comparison that Kanpur is the biggest cotton textile centre in Uttar Pradesh.

The industry in Kanpur is over hundred years old. Twelve cotton textile mills were established during the period of 1864-1935. However, two mills later were permanently closed down leaving ten cotton textile mills into existence. All the existing mills were originally set up by private enterprise and initiative and worked under private management. But now some of these mills have been taken over by the State and for their control in autonomous body, i.e. National Textiles Corporation (N.T.C.) has been set up. Atherton West, Lakshmi Ratan Mills, New Victoria Mills and Muir Mills are under the charge of National Textile Corporation while Elgin Mills No.1 and No.2, J.K. Cotton Mills, Kanpur Textiles and B.C.I. Ltd. are still in the private sector.
PROSPECTS OF THE INDUSTRY:

From every standpoint the cotton textile industry has a great scope of development in Uttar Pradesh. No doubt the State is poor in raw materials resources but there is a very large potential for development of agriculture and livestock sectors. These resource fields would contribute a great deal to expansion of such industries as cotton textiles, leather manufacturing and sugar etc. by providing necessary raw materials. It may also be noted that though the existence of raw materials is a favourable factor for industrial growth, it is not a necessary condition for it, specially for such industries. For example, there are countries (such as Japan, U.K., etc.) which have been able to build vast industrial complexes entirely on the basis of imported raw materials. This becomes possible through other favourable factors such as demand, availability of capital and manpower. So far as the local demand is concerned, Uttar Pradesh has a great advantage of its very large population. In spite of marked changes in consumption pattern of cloth, cotton is still the most preferred fibre in U.P. According to a consumer preference survey of U.P.,
to cotton was 93.8 in the case of shirts, 59.8 in the case of pants, 92.5 in the case of scarves and 92.2 in the case of blouses".  

The above findings are 10 years old and since then considerable changes have taken place. The consumption of man-made fabrics has been increasing more than cotton fabrics. While forming an impression about cotton textiles this vital factor should also be taken into account. In this context we find that the per capita annual consumption of cotton cloth in the country has been around 13.5 metres in recent years. The consumption of man-made fabrics, on the other, has been increasing more than cotton fabrics. In fact, with increasing popularity of man-mades, the income elasticity of demand for cotton textiles has become less than unity. On the basis of time-series data for 1959-67 an elasticity coefficient of 0.71 was obtained. A more recent exercise by the sub-committee of the Development Council for Non-made Textiles yielded an Engel elasticity coefficient of 0.86 for cloth. Besides the competition of man-mades, which have a higher income-elasticity of demand, another factor

has contributed to the slackening response of cloth consumption to income changes, viz., changes in garment habits of the people which have led to a reduction in demand in terms of yardage of cloth for the same clothing comfort.

Hence, with an income-inelastic demand, the increase in consumption of cotton fabrics will be more in response to the growth of population than in response to marginal increase in per capita income. If, therefore, we assume a 4 per cent growth in national income and a 1.5 per cent growth in per capita income it is likely that the per capita consumption of cloth will be only 15 metres and assuming a 2.5 per cent compound rate of growth of population (which puts the estimated population figure in 1979 around 670 million), the total requirement of cotton fabric within the country would be roughly 10,000 million metres in 1979. On the other hand, the production of cloth in the organised sector during the last few years has been around 4,000 million metres per year. In the decentralised sector, output has been about 3,500 million metres annually. Unless there is a major rise in production in the decentralised sector (and so far as handlooms are concerned, this can
be ruled out), production in the mill sector will have to expand by 40 to 50 per cent implying a compound growth rate of about 4 to 4.5 per cent just to satisfy domestic demand without a price rise. And then, one has to allow for exports of cotton fabric which form one of our leading, traditional exchange earners. An export target of 1,000 million metres towards the end of the decade, as set forth by the Development Council would imply that production in the organised sector will have to go up at an even faster rate. However, as we have seen, no positive rate of growth in output has been registered by the industry in the recent past, this simple exercise gives a rough impression of the extremely challenging task that confronts the organised sector of the cotton textiles industry in the country, including that in U.P., in the seventies if the country is to aim at eliminating or even substantially reducing the imports of cotton cloth.

Within the State of U.P., itself with a per capita annual requirement of 15 metres, the total requirement will be over 1,600 million metres, assuming a compound growth rate of 2.5 per cent in population over the 1971 figure of 88.4 million which puts the estimated
population of the State by 1979 at 110 million.
The annual production of mill cloth in U.P. is about 260 million metres, while the output of the decentralised sector may be placed around 400 million metres. Even allowing for some increase in production by powerlooms and handlooms, the mill output of cotton textiles in U.P. will have to expand in a very major way, if the State is to make a significant stride towards self-sufficiency. At present, the large deficit in the State's requirements of cloth are met mainly by supplies from Bombay, Ahmedabad and Indore.

PROBLEMS

From the above analysis it becomes clear that the cotton textile industry of U.P. is not self-sufficient. The annual production of mill-made cloth in the State is about 30 crore metres. Thus, U.P. accounts for roughly 7 per cent of the cloth produced in the country although it accounts for 17 per cent of the population. Hence, it imports cotton piece goods from other States and the textile industry in the State is languishing. Kanpur has the largest number of textile mills. As these mills are not as favourably located as Bombay mills, they produce coarse varieties
Cotton has to be imported for manufacturing textiles. The cost of production in U.P. mills is higher as compared to their counterparts in other centres of the country. Moreover, machinery is outdated and power rates are also higher. It appears that the extremely low level of consumption on account of general poverty is also responsible for stagnation of cotton textile industry. The monthly per capita average expenditure on clothing is less than Rs. 2 in U.P. Thus, the industry, though matured and organised it is beset with multiplicity of problems. Let us discuss some outstanding ones in the following lines.

**CHANGE IN CONSUMER PREFERENCES:**

In many cases the needs for which the mills were set up, are no longer there. The mills at Kanpur are producing coarse cloth to meet the requirements of the people of the surrounding regions. But the taste and the purchasing power of the people have changed and they no longer wish to purchase coarse varieties of cloth. This may be one of the very important reasons responsible for the ill of the Kanpur mill industry.

The government of U.P. has set up a Textile Corporation with an authorised capital of Rs. 3 crores mainly to

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help in the running of the sick mills and to take steps to ensure smooth functioning of the industry in the State. From our point of view the task of such a Corporation should be to see that the industry is enabled to produce what the consuming public wants to be effective.

The State of U.P. has not made any headway in regard to the production of blended yarn and fabrics. Production of both is negligible in the State while substantial progress has been recorded in respect of blended yarn production in Maharashtra, Gujarat and Tamil Nadu and in respect of blended fabrics in the first two States. In view of the rising demand for blended fabrics we need hardly to over-stress that the U.P. mills should step up the production of blended textiles. In particular, in the units to come up in the future at least 10 per cent of the capacity should be used for the production of blended textiles. Moreover, one or two cotton textile processing units should also be set up in the State. This would certainly help the States' cotton textile industry to step up the production of chemically processed fabrics. More important is that the textile units, particularly those coming up in the future should try to develop their own processing facilities.
In considering the development of the cotton textile industry of U.P., another important problem that should be dealt with is its great heterogeneity. Whether it is from the point of view of technology or the quality of products, or the efficiency of the production, there is considerable divergence within the industry. On the one hand there is talk about open-end spinning and set looms. On the other, there is increasing stress on handlooms and Ambro Charkha. There are various factors which give rise to heterogeneity. The first factor is the existence of handlooms, powerlooms and the mill sectors. Secondly the textile industries using different fibres have tended to remain in separate watertight compartments. The third factor of heterogeneity is due to the considerable variation in the levels of technological competence and efficiency even within the mill sector. With the existence of these sectors, generally competing with each other and asking for special privileges and reservations it is difficult for the industry as a whole to progress. One of the effects of this heterogeneity is the difficulty of policy formulation because of the conflict of interest between various sectors. If this state of affairs continues it would be harmful for all the sectors. It is essential that all
the sectors should progress in an atmosphere of harmony. In place of sectoral competition they should work as complementary and supplementary to each other. In order to integrate the production programmes of the decentralised and the organised sectors the Government took a number of steps. It is essential that these measures should be strictly followed and each sector must have security and surety of progress to its maximum level.

**UNDER-UTILISATION OF CAPACITY:**

The cotton textile mills in Uttar Pradesh as in the country as a whole, have not been able to utilise their installed capacity fully. In the case of nearly all the mills of Kanpur and similarly in other composite and spinning units of Uttar Pradesh the licensed capacity was not actually installed and the latter in turn was not actually utilised. In the case of composite units the ratios between (i) licensed spindlage and installed spindlage (ii) installed spindlage and running spindlage and (iii) licensed spindlage and running spindlage were 0.86, 0.86 and 0.74 per cent respectively. Similarly, the ratios between (i) licensed loomage and installed loomage, (ii) installed loomage and running loomage and (iii) licensed loomage and running loomage were 0.94, 0.88 and 0.82 per cent respectively. Of course, the
above ratios do not provide a satisfactory measure of the extent of under-utilisation of capacity in the weaving and spinning sectors of the textile industry in U.P. and Kanpur too. When this aspect is studied in comparative terms, some more idea can be had of the extent of under-utilisation. Calculations made by NCAER for 1972 and for 1971 are available for this purpose. According to their findings about 66 per cent of the spinning capacity (measured on the staff basis) was actually utilised in the State in July 1972. For July 1971, the relevant percentage was 60. The extent of utilisation in Maharashtra and Gujarat in these two years were 80 and 79, and 76 and 71 per cent respectively. For the country as a whole, the respective percentages were 74 and 71 respectively. This shows comparative weakness of the industry in Uttar Pradesh.

Under these circumstances it is imperative that along with setting up of additional capacity in new units there must be expansion and full utilisation of the installed capacity in the existing units—both spinning and weaving. This will be largely conditioned by the availability of raw materials and power. In this matter the U.P. Textile Corporation can play a useful role effectively.

Working of more shifts in the textile mills is also essential. At present 54 per cent of the looms are working on a 3-shift basis. When compared with other States and the country as a whole this is not a bad performance, but there is scope for working more looms on a three-shift basis. Efforts should be made to bring this percentage up to a level of at least 75 per cent. As regards spindles, the extent of three-shift utilisation in U.P. is relatively less compared with Gujarat, Maharashtra and the country as a whole. Therefore, there is more powerful case for bringing more spindles under a three-shift basis of working. A 75 per cent utilisation on a three-shift basis as in Maharashtra, should be the target of the weaving mills in Uttar Pradesh and Kanpur.

In this connection, it is also to be stressed that the weak and marginal mills have no right to exist unless their capacity is expanded to a viable level and their management becomes efficient. An indiscriminate take-over of sick mills either by the National Textile Corporation or the State Textile Corporation are not justified. Only potentially sound units must be considered for take-over and for a viable expansion of uneconomic units financial assist-
assistance should be provided from some special fund to be created for rehabilitating the cotton textile industry in U.P.

**RAW MATERIAL:**

One very important factor responsible for the under-utilisation of installed capacity is the shortage of raw cotton in required quantity and of desired quality.

India has the largest area under cotton in the world but ranks fourth as the producer. This is because the yield of cotton per acre is very low in India compared to those in U.S., U.S.S.R., Egypt, etc. The main reasons for this low yield are that more than 80 per cent of the crop in India is raised under rainfall conditions and that 60 per cent of the crop falls under Asiatic types of cotton. Adverse weather conditions have been the major reason for the sharp decline in production. In 1976-77 the country imported 8.18 lakh bales of foreign cotton costing Rs. 228 crores. It would be possible to reduce substantially the import of foreign cotton resulting in a considerable saving of foreign exchange if steps are taken to improve the yield per acre.

The problem of raw material is more serious for the cotton textile industry of U.P. The mills in Kanpur mostly manufacture coarse and medium quality of cloth which comes to nearly 15 per cent and 85 per cent respectively of its total production. Compared to all-India figure of about 90 per cent, the Kanpur mills manufacture only about 58 per cent of processed cloth. The mills in Western India have the advantage of proximity to sources of raw material as compared to U.P. which has now ceased to be a cotton growing State of importance. At one time, U.P. was one of the chief cotton producing States of the country but now depends for it on other States. In 1976-77, it produced only 16000 bales which is less than 1 per cent of the country's total production. The yield rates are also lower in U.P. than in States like Gujarat, Haryana, Punjab, Rajasthan and Tamil Nadu.

The mills in Kanpur were originally designed to manufacture coarse varieties of cloth as they were assured of plentiful supply of short staple cotton grown in the State. With the gradual decline of cotton production in U.P. as also due to change in consumers' preference to medium and fine varieties of cloth, the mills in Kanpur also changed their pattern
of production and started manufacturing medium varieties of cloth. Some mills also equipped themselves to some extent for the production of fine varieties of cloth. For the manufacture of medium varieties of cloth, they relied on and obtained cotton from Punjab which produced suitable cotton for such varieties. On partition of the country, an important part of the cotton growing area in Punjab went to Pakistan and the availability of cotton to Kanpur mills from Punjab became restricted. As the traditional sources of cotton dried in U.P., the Kanpur mills had no option but to obtain a substantial part of their cotton requirements from Madhya Pradesh, Gujarat and Maharashtra. This resulted in their cost going higher due to additional freight charges, interest, insurance, storage and other charges for storing cotton in larger quantities.

The Government has also put restrictions on the cotton stock limit of mills, but such restrictions are circumvented by the prosperous and well-to-do mills within the knowledge of the government. The assurances of the government to requisition of cotton held in excess by mills or the trade have not been fulfilled. The Kanpur mills which lacked finances
and could not afford to purchase cotton at such high prices are, therefore, greatest sufferers in regard to their need for quality cotton.

As there are no ready markets for cotton in Kanpur, the facility of obtaining quality cotton throughout the year is not available to mills. To meet their full requirements of cotton it becomes imperative for the mills to buy large quantities during the first few months of the cotton season to ensure the supply of quality cotton and maintain their standard of production.

The restrictions imposed by the banks on limits for advances against cotton have, therefore, badly hit the mills in Kanpur. There being ready cotton markets in Bombay and Ahmedabad, large stocks are readily available from which the mills there can purchase cotton as and when required. Uniform Government restrictions on the purchase and stocking of cotton, therefore, adversely affect the Kanpur mills.

Imported varieties of cotton are allotted normally to mills termed as traditional users because they consumed such cotton in the past. A small quantity is also allotted to mills under the cooperative sector and under government management. Foreign cotton is
denied to the mills in Kanpur on the ground that they are not traditional users. The majority of mills which get cotton are situated in Bombay and Ahmedabad. The profitability of mills using foreign cotton is exceptionally high and it has made them prosperous. Cloth manufacture from such cotton is fine and superfine and commands a substantially greater margin of profit than medium and coarse cloth manufactured from Indian cotton. Thus, the traditional users of foreign cotton are benefitted at the cost of such exporting mills. Since it is their foreign exchange earnings through such exports which made possible the large import of foreign cotton. Foreign cotton should be allotted to all mills and not to traditional users alone.

There are two main reasons for the increased cost of raw material. Firstly, the price of raw cotton is increasing because of increased demand for it in the organised as well as unorganised sectors of the industry. Since the per acre yield of cotton is low in the country, price of raw cotton naturally tends to go high on account of the increased demand for it in the wake of comparatively high rate of population growth. High levy of cess on the consumption of
cotton, a large percentage of raw material, waste due to mishandling and disproportionate mixing of cotton further add to the increased cost of raw material. These reasons apply not only to Kanpur but also to Bombay, Ahmedabad and other regions. The second reason which applies especially to Kanpur is the additional cost incurred in maintaining sufficient stocks of raw cotton by the Kanpur mills much in advance. In Bombay, too, there are mills which maintain stocks of raw material for two to nine months depending upon the market conditions. In case of rising market, mills purchase cotton much in advance while in case of falling market they do not. Since in Bombay cotton is always available though prices may vary, stocking of raw cotton is usually avoided. But mills in Kanpur always carry stocks of raw cotton sufficient to cover several months requirements. It has been estimated that this item alone costs Kanpur mills on average of about Rs. 4 per candy per month and even an extra six months stocks, which amounts to Rs. 24 per candy on cotton consumption. This is inevitable because of the fact that the Kanpur mills do not have the advantage of availability of cotton as the Bombay mills have. Therefore, they are compelled to maintain larger stock of cotton and have
to make investments in cotton which raise interest charges. The interest charges are reflected in high cost of production and consequently in low productivity.

It is to be noted that all the Kanpur mills purchase cotton in bulk and in the cotton season lasting for several months. Most of the cotton buyers are parties in which the middlemen are financially interested. This is held to be utterly undesirable. In order to ensure that cotton is supplied to specified quality and would reach the mills exactly in accordance with the required quantities at fair market price, it is desirable that the U.P. Government should also take a financial and supervisory or regulatory interest in it. There can be no guarantee whatsoever of good cotton mixing unless supply of better quality cotton is placed in the hands of an agency independent of the middlemen.

A similar agency may be formed to purchase stores and spare parts, foreign as well as local. Here also the U.P. Government should have a share both financial and regulatory to ensure the necessary supply of machines and stores on standard prices.

Formation of central cotton and stores purchasing pools will remove doubts from the minds of the workers regarding purchases of these items at inflated prices.
to divert profits of the mills into the hands of middlemen. Besides, this will reduce substantially the production costs because stores account for seven to ten per cent of manufacturing charges which are 25 to 30 per cent of aggregate production cost of cloth. Cotton accounts for about 60 per cent of the aggregate production cost, the formation of the pool can check under or over purchase of cotton as well as stocks and consequently the blocking of capital.

PLANT LAYOUT AND PLANNING:

Layout of plant and buildings is an essential condition for increased productivity. Unfortunately this aspect has been given least attention in Kanpur. The reason for this lies in the fact that at times when the cotton mill industry was established in Kanpur, little consideration was given to layout and planning. In Kanpur where the cotton textile industry is long established, the original layout in almost all the mills represents unsatisfactory features. Almost all the mills are of old type with old ideas of layout, planning and spacing. Various departments of the mills do not follow each other according to
processing stages but they are scattered and spread over in irregular manner breaking the continuity.

Mills in Kanpur have narrow alleys, dark sheds, irregular layout, insufficient ventilation and lighting arrangements, overhead shaft driven etc. In most of the mills, processes are working exactly in the manner in which they used to work a quarter of a century ago. There is, however, a tendency that the mills are now changing over from old machines to modern high speed ones. High speed machines are inevitably driven individually. Very few mills have equipped the departments with overhead transport lines, while most of the mills work on old principle of manual labour. Material is carried from department through lifts and thereafter dragged or carried on trucks. Since the layout and planning being not in conformity with modern ideas and present day tendencies, irregularities and hazardous working conditions are the glaring features in Kanpur Cotton Mills.

Sizing departments of all the mills are also in need of fresh planning. Zizing machines are all two cylinder alisher sizer driven from overhead shaft. Spacing of machines and layout of the departments have no difference whatsoever when compared with Bombay
and Ahmedabad. Departments are somewhere on the first or second floor while weaving shed is on the ground floor or in some other buildings, and the number of workers engaged is too many because of irregular layout. Departments are dark, dirty and lights and ventilation are not adequately provided. Insufficient lighting, presence of steam in the departments, inadequate space for easy movement of men and material and machines of very old type with no modern control methods have led to poor working conditions resulting in less production and bad quality.

In some cases the drawing-in department lies within the sizing departments without any consideration for light, ventilation and adequate space for free movement of material, while some mills have their departments in separate sheds with better light effect. Drawing in departments of the same mills are working with fluorescent tubes while others are working with incandescent lamps. In Kanpur mills, drawing-in departments are not followed by the weaving departments. This results in unnecessary transport work in carrying the beams in and out.

Since mills in Kanpur have been established
when very little thought was given to layout and planning, hence in weaving sheds, too, there is nothing like layout and planning. Almost all the sheds are on the ground floor of storeyed buildings and, therefore, they are dark. Looms are driven from overhead shafts in most of the cases and illumination is of ordinary inconceivable type. Alleys are narrow and presence of dobbyes and jacquards has made the sheds congested and dirty due to machines being laid out very near to each other. Sufficient space at the back of the looms is wanting and has made it hazardous for the cleaning staff to clean the looms and flooring properly. The loom sheds are humidified and ventilation do not seem to be effective. Weavers beams are carried from distant drawing-in departments on shoulders by beam carriers. Such working conditions have resulted in low productivity and poor quality.

In some mills folding departments are situated on the ground floors of two storeyed buildings while in other cases the folding departments are attached to the dyeing and bleaching departments. This requires about 5 minutes way from the weaving shed. As in other departments, Kanpur mills have given no
consideration with regard to layout and planning of the folding departments. Both material and artificial light effects are poor and departments look cramped with machines, men and materials.

For increased productivity proper layout and planning is most essential and should form an integral part of rationalisation. In Kanpur poor layout of machines as well as of looms has been due to the fact that the number of machines has been increased within the available space and this is a matter which can be borne in mind and rectified in the future expansion of the industry. It is now high time for mill management to give due consideration to layout and planning at least for the preparatory departments which will definitely improve the results of the subsequent processes.

**WORN-OUT MACHINES:**

Apart from the question of defective layout and planning a serious problem facing the U.P. industry is the existence of obsolete machinery. The capital equipment of the industry is worsening dangerously due to greater wear and tear and run down of the machines. This factor does not exert
a favourable influence on productivity which is already very low when compared to textile mills in Maharashtra and Gujarat. If we fail to modernise out plants and equipment it would be rather difficult to maintain even the existing levels of efficiency and productivity.

As pointed out earlier, higher costs and lower level of productivity are the disappointing features of Kanpur textile mills. One of the reasons is that machinery is outdated and worn-out. In almost all the departments of Kanpur cotton mills machines are old and want immediate replacement. Outmoded machines not only slow down production but also deteriorate the quality of the products and increase damage percentage which, according to the findings of the Technical Sub-committee of Working Party for the Cotton Textile Industry, was as high as 30 in the weaving department of the mills. 15 Frequent machines stoppages and breakdowns are found in all the Kanpur mills which disrupt chain work as well as reduce output per man-hour. In cases machines remain idle for reasons mentioned above, cost per unit of output

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rises up. Moreover, unless high degree supervision is exercised and checking tightened up, great quantity of faulty cloth would come in the market which affects adversely not only the sales turnover but also the goodwill of the mills in the competitive market.

The published accounts of the various cotton textile mills in Kanpur reveal that the cost of repairs forms heavily a recurring expenditure every year. This is indicative of the poor conditions of machines wanting regular repairs.

The annual average cost of repairs comes to about Rs. 18-20 lakhs. The cotton textile mills in Kanpur are, therefore, incurring heavy expenses on the repairs of the machines. Although cost of repairs is essential for the proper upkeep and maintenance of the machines, it is, however, justified up to a point where the cost incurred on repairs does not exceed, or at least equals the gains accrued out of it. Beyond that point it is neither gainful nor, indeed, desirable. If the cost of repairs does not ensure any gains of higher productivity, it is always prudent on the part of management to replace the existing machines by new ones rather than going on incurring heavy expenses on repairs and maintenance of the same machines.
It has been estimated that machinery prior to 1910 is obsolete in design and completely worn out and should be replaced by modern ones as early as possible. Machines in the second age group can give satisfactory service for a few years more if properly maintained. However, it is not economical to work some of them. All cards and combers should be replaced as they could not be reliably set close enough. Slubbing frames must be scrapped and the existing intermediates converted to zone-drafting; winding and warping should be replaced by modern high-speed machines. The latter change should be introduced for the machinery in the second age group also. For the machines in the third group like Blow Room process should be made continuous by making additions and alterations. In doing so, the replacement cost would amount to Rs. 30 millions. According to an estimate the financial requirements for rehabilitation and modernisation of Kanpur mills amount to Rs. 26 crores.  

Such a huge investment is beyond the capacity of Kanpur mills. Due to continuous losses or insufficient profits during the past several years their finances have dried up. Further, internal finances

are also not available on account of a very high increase in tax rates. The sur-tax has practically robbed the Kanpur industry of whatever it could save after paying a reasonable return on capital. Since Kanpur mills are producing coarse and medium cloth, they do not make huge profits on account of increased cost of production. Whatever is left with the mills by way of depreciation and retained profits is further taken away by the inflation which is advancing every year. Hence, the financial resources of the mill companies do not permit to undertake any plan of modernisation and replacement.

The terms and conditions on which financial agencies grant assistance are so stringent that the mills can not fulfill these conditions particularly regarding the nature and quantum of security demanded. In the absence of capital market, the only recourse left with the Kanpur mills is to depend inevitably on banks for loan. But mills which are incurring heavy losses for the last few years are put to still greater difficulty in matters of financial assistance from the banks because apart from stocks, their immovable property and other fixed assets are already mortgaged with the banks against current advances.
In the interest of industry, it is suggested that the conditions for the grant of assistance by the financial institutions should be liberalised. The State government should create a special fund for granting assistance in deserving cases. Moreover, to introduce modernisation in the cotton textile industry of Kanpur, a phased programme should be chalked out keeping in view the social factors affecting the efficiency of labour which is the most ticklish problem of industrial economy.

LABOUR PROBLEMS

Labour is one of the most important variables affecting the industrial production and efficiency. In various countries, including India, productivity is measured as a ratio between output and labour. Another indicator emphasising the importance of personnel problem is the fact that labour is a major component of the overall cost structure of cotton textile industry. Next to the cost of cotton, wages are the most important item accounting for about 28 per cent of the total cost of producing cloth and 20 per cent of yarn. Hence, the disappointing position of cotton textile industry is closely associated with the behaviour of labour. The widespread labour
unrest which has badly affected most of the textile mills of Kanpur. There were strikes, lockouts, bundhs, demonstrations, personal threat, refusal to work and slowdowns. The Swadeshi Cotton Mills of Kanpur was continuously plagued with labour trouble for long time during the period 1974-76. The average annual loss in value of production during 1970-71 to 1974-75 in Kanpur mills was of the order of Rs. 15 crores.

There is a general notion that Indian labour is inefficient and lethargic but this is not a full truth.

It is believed that labour in Europe and other western countries is capable of turning out much more work than Indian labour in a given hour of work. It was pointed out by the Tariff Board as early as 1927 that the number of spindles looked after by each operative in India was only 189 while in Japan it was 240, in England 540 to 600 and in the U.S.A. 1,120. The number of looms attended by one weaver in Japan averaged two and a half, in the U.K. 4 to 6, in the U.S.A. 9, while in India it was usually 2.\(^\text{17}\) The Kanpur Labour Enquiry Committee of 1929 also pointed out that there were for every 1000 spindles, 6.1 operatives in Japan.

as against 15 in India. A girl weaver in Japan looks after 6 looms while an Indian weaver minds about two. 18 In his evidence before the Industrial Commission, Mr. Alexander Mac Robert stated that the English worker was 3.5 or even four times as efficient as an Indian worker. Further, according to Sir Colcement Simpson's calculations 1.67 hands in an Indian cotton spinning and weaving mill are equal to one hand in a Lancashire mill. 19

It is to be emphasized that while comparing the performance of Indian labour with his counterpart in other countries some retarding factors of Indian economy should also be taken into account. It is a fact that typical climatic conditions in India are to some extent responsible for comparatively low efficiency. Particularly the entire northern region is a belt of extreme climates. During summer it is extremely hot and dry while in the wet season it has excessive rains and sometimes floods. These features adversely affect the industrial efficiency. Similarly, the migratory character and mass illiteracy of Indian labour are also retarding factors to efficiency. Widespread

18. Quoted by S. Irshad Ali, "Rationalization of Management in the Cotton Textile Industry of India", p. 80
illiteracy is a typical problem of India which is rather unknown in industrially advanced countries. With this serious disability Indian workers have to work as humble servants of the machine. It is to be pointed out that modern industrial development depends in a large degree on the expansion of education among workers. It is imperative on the part of management to take educative measures in order to inculcate a sense of understanding in the minds of workers and to make them realise that they are equal partners in the field of higher productivity.

Thus, it is important to note that the Indian workers have to work under socio-economic and physical odds otherwise they are equally efficiency. In India more workers are employed per unit of machinery and its simple reason is that labour is relatively cheaper and machinery dearer. In Japan, England and the U.S.A wages are much higher and it is, therefore, necessary to economise labour there. Hence, low output per worker in India cannot be exclusively attributed to the inefficiency of the workers. The findings of some reports bear testimony to this fact. The Labour Investigation Committee pointed out that from such published evidence as could be made available to it
during the course of its investigation, the alleged inefficiency of the Indian worker is largely a myth. Granting more or less identical conditions of work, wages, efficiency of management and of mechanical equipment of the factory, the efficiency of Indian labour generally is no less than that of the workers in most other countries. 20

Hence, to improve the situation Indian workmen are to be trained and through organisation and proper supervision modern productive methods are to be applied. What we lack most in India is skilled and experienced supervision. In fact, textile workers in India try to put in as much work as possible in existing working conditions. But factors such as worn out machinery, inefficiency of management, lack of supervision and proper facilities to the workers go a long way to retard the efficiency of Indian worker. Besides this, hours of work in India are longer, wages low, and the rate of absenteeism and labour turnover high. Also human relations which is the pre-requisite for increased labour efficiency are not fairly developed. In fact these are the causes of low efficiency rather than the innate inferiority of the workers.

It is now sufficiently clear from the above discussion that the inefficiency of labour in industry is not of inherent character. There are number of factors which are responsible for labour inefficiency. Factors like the absence of a scientific method of recruitment and selection and the lack of training facilities make the labour force weak from the base. Low wage level relative to the higher cost of living, lack of incentives and other benefits, long working hours, poor working conditions, higher rate of absenteeism, and above all, lack of human relations within the industry, all are responsible for labour inefficiency. In other words, personnel problems are the root cause of poor performance of cotton textile industry of Kanpur. It is hoped that if these problems are sincerely attended to and earnestly solved, performance of the industry is bound to improve. This calls for a better understanding of the science and art of personnel management.

CONCLUSION:

Utter Pradesh has been one of the pioneer States of India in the organisation of cotton textile industry. On the basis of number of mills it stands fifth while
on the basis of spindlage it stands fourth in the
country. Though the industry is spread over all the
ports of the State, Kanpur is the chief centre of its
concentration. The role of Kanpur in the organised
cotton industry of U.P. is almost similar to that of
Ahmedabad in Gujrat and Bombay in Maharashtra.

Kanpur, once a small village, is now the biggest
textile centre of Uttar Pradesh. At present there are
ten mills in Kanpur and they all are composite units.
These mills employ about 45 per cent of the total
spindles and about 83 per cent of the total looms in
U.P. The average of workers employed by Kanpur mills
is about 67 per cent of the total labour force engaged
in the cotton textile industry of the State. Despite
changes in consumption pattern of cloth, cotton is
still the most preferred fibre in U.P. Besides this,
the State has vast local market and plenty of manpower.
In view of these factors the industry has a great
scope of development. But the industry is not self-
sufficient. The State produces only 7 per cent of
the cloth produced in the country although it accounts
for 17 per cent of the population. Hence, U.P. imports
cotton piece goods from other State.

For many years the cotton textile industry of
Kanpur has been working under heavy odds under which its performance is disappointing. There are numerous factors responsible for this situation. Increasing cost of production, underutilisation of installed capacity, outdated machines, changes in consumption pattern, and sectoral rivalry are some of the problems which the industry is facing. Other retarding factors are low yield and inadequate supply of raw material, defective plant layout, workout and outdated equipment, and inefficiency and uncooperative attitude of workers.

The widespread labour unrest has badly affected most of the textile mills of Kanpur. Some of the important factors which are retarding labour efficiency are due to unscientific method of recruitment, selection and promotion of workers. Low wages in the wake of rising cost of living further aggravate the problem. Lack of proper training facilities make the labour force weak from the base. Moreover, lack of incentives and other benefits, long working hours, absence of cleanliness, uncontrolled heating, low intensity of illumination, industrial injuries due to lack of the safety measures, all are responsible for labour unrest. These personnel problems require immediate attention and wider outlook.
Labour is vital to industrial development and should not be treated as mere hired slaves. Personnel problems are sensitive and demand wider outlook and human approach. The interest of labour must be fully safeguarded. This calls for a clear and exhaustive understanding of the science and art of personnel management which forms the subject matter of the next chapter.