CHAPTER III
CONCEPTUALISATION OF THE PRESENT RESEARCH

3.1 INTRODUCTION

3.11 Before coming to the study, proper let us first understand the concept of product policy and operations of a mill in terms of the production process. Also understand the product decisions in a textile mill. Subsequently in this chapter, the objectives, scope and methodology of this research study shall be presented.

3.2 WHAT IS PRODUCT POLICY AND MANAGEMENT?

3.21 Philip Kotler\(^1\) defines the concept of products as follows: "A product is anything that can be offered to a market for attention, acquisition, use or consumption; it includes physical objects, services, personalities, organizations and ideas".

3.22 According to Joel Dean\(^2\) "Product coverage is only one phase of product policy i.e. decisions on what end products the company will make and sell. Product improvement is other phase of product policy". Whereas Cunningham and Clarke\(^3\) are of the opinion that the concept of PPM was evolved in response to the increasing complexity of markets. As the companies have grown in turnover, and

2. Joel, Dean. Manageral Economics.
assets, an expansion of the product range has been the norm. Product management has helped the companies to

a) Optimize allocation of scarce resources between various products.

b) Co-ordinate and integrate various operational activities for products being offered in dissimilar market.

c) Obtain profitability and control for each product in the range.

3.23 Thus we can conclude that PPM is management of products. From a practical point of view, for the manufacturer the term products means an end product offered for sale by the firm. It may or may not be manufactured by the firm. It is not necessary that all products sold by a firm are necessarily manufactured by the same firm. Also it is not necessary that all products manufactured by a firm are sold by it. Thus Dean says that "Product policy has another dimension as not all products sold by a company are made by it and not all carry that company’s "brand name".

3.24 From the customer point of view, at the most fundamental level, product is viewed as a bundle of benefits or problem solving devices. The customer exchanges costs to get the satisfaction of having obtained the benefits. Thus benefits and costs are the two sides of the same coin. At the
specific/objective level, for a consumer, a product is one which can be differentiated from the other. The consumer differentiates between the product on the basis of quality, cost, brand name and package.

3.25 In reality products cannot be isolated from markets. According to Corey Product planning and market selection are integrally related. In fact product decisions proceed from the market decisions. Manufacturers produce products needed by the customers, in the sense he decides which markets to serve. Thus a careful selection of market segment is made. Also products are meant for consumption in the market. So it is always product-market integration and markets cannot be ignored.

3.26 The management of products, calls for decisions about products. Kotler has classified product decisions in two main categories (1) product-mix and (2) product line. According to him "product mix is the set of all products and items that a particular seller makes available to the buyer and product line as a group of products within a product class that are closely related, either because they function in a similar manner, are sold to the same customer groups, are marketed through the same type of outlets, or fall within given price ranges". Whereas for the manufacturer,

1. Corey Raymond E. 1975
3.27 Thus the product mix of a company consists of different product lines. The width of the product mix refers to the number of different product lines while the depth of the product mix refers to the number of variety, brands, models etc. within a product line. The consistency of the product mix refers to how closely related are the various product lines in terms of end use, production requirements, distribution channels or in some other way. Product decisions are taken in terms of either adding or deleting a product line, and within product line, additions and deletions of different variety, models or brands.
The following Flow Chart diagram given below describes the Production Process of a Composite Mill.

STAGE I - SPINNING:

Cotton is spun and converted into Yarn and processed.

1. Bale of Pressed Raw Cotton from stores sent to

2. Blow room to disintegrate and clean it up by removing major impurities

3. Converted into lap and rolled on beam for ease of handling

4. Carded and converted into sliver on carding machine for ease of handling.

5. Combed on combing machines for superior Yarn

6. Taken on draw frame for drawing

7. On fly frame converted into thin thread called yarn

8. On ring frame for further processing of yarn

9. Parallel winding for the doubling of the yarn on winding machines (only if required)

10. After warping is done it is taken on to warpers beam

11. After sizing it is rolled on weavers beam
STATE II - WEAVING:

Yarn is converted into cloth.

12. From weavers beam, yarn is taken on looms

13. Warp yarn is drawn through holes as per the reed specifications on looms. (reed is the number of threads in warp per inch)

14. For the weft, the yarn is wound on pirns which are small round cones.

15. Weft yarn passes through warp threads. Separate yarn can be taken on warp and weft.

16. These are closely woven on looms as per the reed pick specifications.

17. Cloth is taken up on rolls for processing.

STAGE III - PROCESSING:

Cloth to finished product.

18. Cloth passes through bleaching/dying/printing machine depending on final product.

19. Processed for final finishing.

20. Inspected for any damages and quality

21. Grading is done

22. Stamping

23. Packed into piece lengths

24. Packed into bales and wooden boxes and delivered.
3.31 As we can see it is broadly divided into three distinct processes:

- Spinning
- Weaving and
- Processing

3.32 In a Composite Mill all the 3 functions are performed under one roof as compared to specialized mills performing specialized functions. Spinning mills produce only yarn, processing houses do only processing of cloth, powerloom and handloom do weaving. Thus a composite unit is vertically integrated, as far as production is concerned.

3.4 CONCEPTUALISATION

Now let us relate the PPM to a textile mill. In a textile mill product-mix constitutes different variety of fabrics produced by the mill. The critical product-mix decisions are determining the quantity of cotton, polyester, and blends to be produced. Thus out of the total production of fabrics, how much of it to be cotton, polyester, and blends, each of these can be regarded as a product line.

It can be represented conceptually as follows:
<table>
<thead>
<tr>
<th>Product-Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>Cotton</td>
</tr>
<tr>
<td>Non-Cotton</td>
</tr>
</tbody>
</table>

The product decisions are to be taken at various stages.
The following is the decision tree diagram:

**DECISION TREE FOR PRODUCT MIX DECISIONS**

Product Mix Decision

<table>
<thead>
<tr>
<th>Cotton</th>
<th>Non-Cotton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count Products, saree, dhoti etc.</td>
<td>Blend Products, saree P/c/P/P/V</td>
</tr>
<tr>
<td>Count Products, saree, dhoti etc.</td>
<td>Count Products, saree P/c/P/P/V</td>
</tr>
<tr>
<td>Warp Weft Count Warp Weft</td>
<td>Warp Weft Count Warp Weft</td>
</tr>
<tr>
<td>Reed Pick Reed Pick</td>
<td>Reed Pick Reed Pick</td>
</tr>
<tr>
<td>Width Width</td>
<td>Width Width</td>
</tr>
<tr>
<td>Grey Printed Dyed Grey Printed Dyed</td>
<td>Grey Printed Dyed Grey Printed Dyed</td>
</tr>
<tr>
<td>Finish</td>
<td>Finish</td>
</tr>
</tbody>
</table>
3.51 The product specifications are given in terms of counts, reed pick, width and finish. For e.g. for cotton, it is said 30's X 30's, 36 X 60, 74" width, grey/printed/Dyed. If it is grey then whether it is sanforised, mercerised etc. if it is printed then prints are either developed or given by the buyer. For non-cotton additional specification in counts are given whether it is polyester/Viscose. Texturised Polyester/cotton/Viscose and its proportion say 60:40 which mean 60 cotton and 40 polyester it can be any proportion.

3.52 Thus we can see that at each and every stage there are various alternatives to choose from.

3.6 NEED AND IMPORTANCE OF THIS STUDY

3.61 After understanding how product decisions are taken the first question that comes to my mind is whether there is a need for a product policy under the present circumstances and whether it will be of any use?

3.62 Why I say this is due to the following reasons:

In other industries, manufacturers first produce the goods and distributors take charge of distribution. The risk of producing the product rests with the producer. Whereas in textiles, the so called product risk lies with the wholesalers. Mills produce only those goods which
the wholesaler specifies/book an order. Probably this is the reason for low profitability in the textile industry as compared to other industries. The wholesalers take the product decisions. He is the major influencer for product management function. Under such a situation, having any product policy will be of use or not or to what extent it could be of use. Later on in this chapter we will see how it could be useful.

3.63 The product ideas are given by the wholesaler. Sometimes he brings a sample and shows it to the mills and books order for that particular variety. Ease of entry is extremely high. In the sense, one mill can produce what is produced by other mills very fast. If one variety has been accepted in the market, immediately wholesalers approach their respective mills with orders. Thus one does not have upper hand for introducing new products in the market for a long time. If at all there is any advantage, it will be for a very short duration.

3.64 Product management function is extremely complex in textiles. This is because of highly flexible nature of textile producing machinery to produce a very large number of varieties, designs, prints and colour combinations. This is applicable to all the three processes which have been identified earlier.
in this chapter i.e. Spinning, Weaving and processing. Each stage, there are plenty of alternatives available from which one has to take the product decisions. Similarly each consumer has different need, preferences, choices depending on the culture, religion, geographic areas, etc. The end uses of the product are innumerable. Same product is put to different uses, by not only the different customers, but by the same consumer at different point of time. In the light of above discussions one can argue it out that there is not much of a need for product policy.

3.65 Now let us examine as to how a formal product policy can help the textile manufacturer. A product policy is a long term strategic decision about what markets to serve with what products. Once these decisions are taken, it helps the management in deciding upon the product proposals. It serves as a guideline for day-to-day product decisions about quality and quantity. As stated earlier there are a very large number of products and product lines in the textile industry. At every stage product decisions have to be taken. Too many frequent changes in the product-mix gives variety but at the cost of productivity. On the other hand having a product policy i.e. specialization of product market permits high degree of standardization in
terms of limited number of yarn counts spun and few standard fabric construction woven at high production rate on machines tailor made for a specific purpose. The result will be top-notch fabric quality at favourable low production costs to ensure high profitability. Compare this picture with a mill churning out 10-15 yarn counts and 35-40 varieties. Thus variety in production beyond a point is counter productive. At the same time a narrow product line has its own disadvantage. Thus a right balance needs to be maintained between standardization and optimization. It is here that having a product policy helps.

3.7 OBJECTIVES AND SCOPE OF THE STUDY

3.71 The objectives of this study are:

(a) To examine and understand the relationship between product market decisions and performance.

(b) To make an attempt to develop a set of criteria which would help management to take proper product decisions.

(c) To analyse the factors influencing the product mix decisions.

Thus the framework will develop an approach for:

i) Identifying opportunities for expanding product range.

ii) Developing criteria for deciding upon additions and deletion/dropping of the products to the product line.
3.72 Firstly as stated in chapter I, this study is restricted to composite mill sector only. Secondly, packing and branding are also product policy decisions but this study will concentrate only on product planning aspects.

3.8 APPROACH

3.81 At first the study identifies, analyses, and discusses the structure of the textile industry in general.

3.82 To understand the industry structure, market share analysis is done. Since the production figures were not available, next best data, looms is taken as an indicator of market share. Accordingly, the database is the number of looms installed in each of the 261 mills published by mill Owners Association. Market share is arrived at by dividing number of looms in each mill by total looms in the industry. So looms are used as an indicator of market share.

3.83 It broadly looks at the 25 product lines manufactured by the industry. Production figures of composite mill sector, for all the 25 product lines, for 13 years i.e. from 1969-1981, published by Indian Cotton Mill Federation in Handbook of statistics on cotton Textile Industry are studied for this purpose. The data are coded and analysed
3.84 This macro level analysis is followed by micro analysis i.e. case study of selected three composite textile mills. One a big successful mill (A) and another two (B&C) are small mills which became sick and were taken over/merged with successful mills and turned around. The objective of micro-level analysis exercise is to understand and build up the relationship between the product-market decisions and performance. The analysis is done to identify the product-market strategies of successful mills.

3.85 The performance of mill A is compared with the overall performance of the textile industry. This is done by comparing and analysing the profitability ratios of Mill A vis-a-vis industry. Analysis of variance (anova) technique is used to know how significantly the profitability ratios differ. Along with this market share analysis is done to measure the performance of the Mill A vis-a-vis other mills.

3.86 Performance of the mill over the years in terms of growth in sales, profits and price realised per metre of cloth is also done. Product mix analysis of the end product, by using percentage and growth
analysis is done and compared with the industry trends. Share of cotton and non-cotton as a proportion of total production over the years are analysed. Product range in terms of number of yarn counts in cotton, number of different blends and widths are identified. The product mix analysis is followed by product line analysis where the product lines are analysed as follows:

a) The share of each line in the total production of mill A. This is done to understand the role and importance of each line.

b) What percentage of the production of each line is cotton and non-cotton respectively.

c) Share of cotton production of each line vis-a-vis total cotton cloth production. Similar analysis for non-cottons.

d) Market share analysis to understand the company's share in each line, i.e. as a proportion of the total industry production in the given product-market. This is done both for cotton as well as non-cotton separately.

3. 87 Apart from these Butta, Carbonized, exports, prints have been analysed to identify the strengths and weaknesses. Advertising expenses over a decade has been analysed. Its proportion to sales and impact on sales and profits done by using partial approach of regression and correlation.
To examine the changes over the years in the product mix and product lines, products added and deleted are analysed. Product-mix and product line-wise. Further to identify the stable products, product stability analysis is done. This is done by identifying products which have survived for the period of analysis, only for a year and so on. Raw material consumption analysis is also done to understand and identify the product policy.

The data base for the analysis of Mill A, is the production figures from the company record and sales, profit, raw material consumption, and advertising expenses figures from balance sheet over the years 1977-1984. The data are coded and analysed on the computer using D-Base and Omni cal program.

Competitive analysis of the mills competing with mill A is done in terms of product range, market share, distribution strengths. Profitability ratios and modernisations. Also product line wise competitive analysis was done. The purpose of this analysis was to identify the product market strategies and understand its relationship with performance.
3.91 Mill B was running into losses till 1977 and was closed for 2 years before being taken over by Mill A in 1979. Data on cloth production prior to merger was not available. Hence instead of end product, the yarn production in terms of count of yarn, number of counts is taken as an indicator of product policy. The changes in the product-mix before and after take over is studied. Additions and deletions in yarn are analysed. From 1979, data about product lines was available, therefore, percentage and growth analysis is done to identify the changes in the product line. Due to non-availability of data extensive analysis like in the case of Mill A could not be carried out. However, broad level analysis was done to understand the impact of product mix changes on performance.

3.92 Like Mill B, mill C was taken over by another successful mill and turned around. Briefly the product policy changes are highlighted, and its impact on performance seen.

3.93 Keeping in view the second objective of the study, a set of criteria, are evolved which would help the management to identify opportunities and decide upon the additions/dropping of the products. These are developed, by analysing Mill A data and application of the various approaches available in the literature to the Mill A data. Further, the
present and future product-market strategies of Mill A are evaluated and recommendations made.

3.94 Towards the end, descriptive case studies is followed by a specific empirical study, to understand the relationship between product mix and performance. In the empirical study, the variables selected are as follows:

<table>
<thead>
<tr>
<th>Performance variables</th>
<th>Product market variables</th>
<th>Investment variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. R.O.I. (%)</td>
<td>1. Product mix (%)</td>
<td>1. Working capital</td>
</tr>
<tr>
<td>2. Contribution as a % of production value (%)</td>
<td>2. Exports (%)</td>
<td>investment per 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>loom shift (Rs)</td>
</tr>
<tr>
<td>3. G.P.M. on Sales (%)</td>
<td>3. Yarn Sales (%)</td>
<td></td>
</tr>
<tr>
<td>4. Sales revenue per metre of cloth sold (Rs)</td>
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<td></td>
</tr>
<tr>
<td>5. Equity Dividend (Rs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Sales per loom shift (Rs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Contribution per 100 loom shift (Rs)</td>
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</tr>
</tbody>
</table>

3.95 The data on these variables for the year 1983-84 were taken for 95 mills from the ATIRA. Thus it is a cross section study. Like Rumelt (1974), in this study also the mills were divided into different group categories according to the non-cotton sales as a percentage of total sales and ANOVA carried
out. A simple and multiple regression program on computer is run to know the relationship between the product-mix decisions and performance. Thus on the basis of various analyses, an attempt is made to build up the relationship between product policy and performance.

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