2.1 INTRODUCTION

2.11 In the previous chapter we saw the poor performance of the textile industry. According to Thorelli (1977) Strategy + Structure = Performance. In this study we shall only examine and understand the relationship between the product-market strategy and the performance. Thus it shall not cover the structural aspects and other strategic decisions.

2.12 The purpose of this chapter is to build a theoretical base for the research study. Performance is measured against the set objectives. Therefore to start with, it will examine how Product Policy Management will help to achieve the objectives of the firm. This will be followed in the second stage by a review of literature which will emphasise the state of the findings. The third stage shall convey the Indian scene and attempt to identify the gap that exists in the literature and how the proposed study will fill the gap.

2.2 RELATION OF PPM WITH OBJECTIVES

2.21 First let us identify the various goals/objectives of a firm. The objectives of a firm can be classified into long term and short term objectives. Long term objectives are set for more than three years whereas short term will be immediate, within a year or two. Keshava\(^2\) in the book states that the objectives of the firm may be defined in terms of:

a) earning of surpluses.

b) distribution of the output.

c) generation of non-vendible benefits.

He further identifies the differences in the focus of objectives in the Private enterprises vs. Public sector enterprises. It is stated that generally in private enterprises the focus of objective (immediate or ultimate) is profit maximization. Thus objectives are financial whereas in public sector the objectives are multiple as well as diversified. They may be non-financial objectives specified by the government.

2.22 Luck defines objectives as those which provide an end towards which management should steer. According to him, the set objectives of a firm are as follows:

1. Profit levels and growth.
2. Cash flow.
3. R.O.I.
4. Sales growth and levels.
5. Market share and penetration.
6. Turnover of assets.

He further states, that the objectives may be laid down in absolute terms or in ratio or percentage terms. These objectives are followed by policies which provide guidelines to the firm as to how to proceed towards the set objectives. Now let us understand, how product policy management will help to achieve the objectives.

2.23 Cardozo mentions that the "objectives of product policy is to establish an optimum portfolio for an organization." He further states that, "a set or collection of product lines together with the markets they serve constitutes an organisation's product-market portfolio, which is the largest unit of analysis in product policy." Thus to meet the set objectives, optimum product portfolio is selected. In other words, composition of output which is Product Policy Management (PPM) is chosen in a way to meet the set objectives.

2.24 The objective of surplus earnings (Keshava) which

in other words is called profits is nothing but the result of two factors. Total Revenue (TR) and Total Costs (TC). It can be expressed in an equation form as follows:

\[ R - C = P \]

Where

- \( R \) = Total Revenue
- \( C \) = Total Cost
- \( P \) = Total Profits.

If the objective is to increase \( P \) i.e., profits, it can be achieved by three alternatives:

1. Keep Revenue constant and decrease costs (cost reduction). With continuous increases in costs, this alternative is difficult to achieve.
2. Keep Costs constant and increase Revenue.
3. Vary both Revenue and Costs but in such proportion that Revenue increase is higher than Cost increase.
Now let us examine the aspect of Revenue. Keshava notes that Revenue is a function of three factors:

a) Size of the output.
b) Proportion of output.
c) Price per unit of output.

In other words it can be expressed as follows:

\[ R = P_1 Q_1 + P_2 Q_2 \ldots \ldots P_k Q_k \]

Where

\[ P_i = \text{Price of item } i \]
\[ Q_i = \text{Quantity of item } i \]
\[ K = \text{No. of items} \]

Product quality and quantity are product decisions. It is nothing but determination and distribution of output.

2.25 Thus we can see how PPM affects the revenue and sales growth. Costs may be divided as fixed costs and variable costs. One has to consider capital investment in terms of land and machinery which is fixed as well as working capital funds which is required to run the organisation. In case of textile industry, the same machinery could be used for producing different products but the working capital required would be different. Hence from the cost angle fixed costs can be treated as constants as they are not expected to change with change in
product policy, while raw material and working capital will change with the product mix.

Just as we have seen how PPM affects the objectives of:

a) Profit  
b) Growth  
c) Distribution of output

in the same manner it also affects ROI. As investments are in terms of costs.

2.26 As far as cash flows are concerned Day* has clearly shown in the exhibit given below the relationship between different product-markets and the cash flows.

*Day, George S., 1977
From the above Exhibit it can be seen that, on the basis of market share and market growth, product-market has been classified into 4 distinct categories. These are: Cash Cow, Star, Problem Child, and Dog. Products which fall in the Cash Cow category, are those which have low market growth and high market share. They are profitable products which generate cash surpluses for the organization. The cash generated by them is more than the use hence, the result is cash surplus. High market growth and high market share has been classified as Star category. These products generate cash and are market leaders, but need a lot of cash to finance the rate
of growth. Problem Child is the combination of rapid growth and poor market share, which create an enormous demand for cash. The cash out flow is much more than the cash in flow. The low market growth and the low market share is classified as Dog category. The cash generated is equal to the cash use.

Thus it can be seen how products in different markets affect the cash flows and market share.

2.3 LITERATURE REVIEW

2.31 An extensive review of literature about the subject showed many conceptual as well as empirical studies which could be thematically classified into three main categories:

1. Those which deal only with performance and performance measurements.
2. Those which deal with product-market aspects and its measurement.
3. Those which deal with the product-market decisions and its relationship with the performance.

This review shall focus only on the last category of literature.

2.32 An attempt is made to cover the literature published during 14 Years period ranging from the year 1974 to the year 1987. At first the review is presented authorwise and chronologically. This is
followed by a summary and a brief thematic review. As stated earlier, the state of the findings rather than the state of the art will be emphasised in this literature review.

2.33 Earlier Bain (1956) studied the relationship between the industry structure and performance. He contrasted profit rates in industries with two different structure. One, where the eight largest firms sold >70% of the goods in the industry and the other, where the eight largest firms accounted for a smaller % of sales. Significant differences were found in favour of industries with high concentration.

2.34 Rhoades (1973) used the industry structure-performance framework, to examine the influence of diversification on industry price-cost margin. The performance was measured, in terms of prices maintained above average variable costs. The data was analysed with the use of multivariate regression analysis. Performance as indicated above was taken as a dependant variable and the independent variables selected were diversification, concentration, growth in demand, geographic market index, capital output ratio and producer vs. consumer goods as dummy. The values of regression co-efficients and $r^2$ though low were found to be statistically significant at 1% level.
Thus, on the basis of results it was concluded that there is a relationship between diversification and performance.

2.35 However the pioneering work on impact of strategic planning on profit performance was done by Schoeffler and others (1974). They used 37 distinct factors and measured the relationship of each factor with performance and also the combined impact of all the factors on the performance measure of profitability. The study selected Return On Investment (ROI) as the only indicator of performance and profitability. The sample consisted of 57 corporations with 620 diverse businesses. Amongst the various factors, product-market factors selected were market share, product quality and corporate diversity. The findings suggested that market share has a major influence on profitability. ROI went up steadily as market share increased. Subsequently, market share and product quality were combined which gave the same results. However it was found that on an average ROI was practically identical for businesses belonging to highly diversified corporations as well as non-diversified companies. Thus no relationship was established between corporate diversity and performance.
2.36 Bass (1978) with the help of regression analysis, examined whether the influence of industry concentration and advertising intensity on profitability was the same across various industries. He measured profitability as the ratio of net income after taxes to shareholders equity averaged over a 5 year period. The independent variables selected were (a) weighted average of industry advertising to sales ratio, (b) weighted average of the firms concentration ratios, (c) weighted average of changes in the industry demand, (d) weighted average of the firm's market share, (e) size of the firm and diversification of the firm. The study analysed a total of 181 observations of 10 industries consisting of food, tobacco and cosmetic companies. At first the model assumed that the industries across were heterogeneous in nature. This was followed by one more model with the assumption of homogeneity. The results were found to be almost same under both the conditions. The F test was 3.5 highly significant while low $r^2$ (.241). Thus it was not possible to arrive at any conclusion on influence of advertising and concentration ratio on profitability. However the co-efficients for the advertising and profitability were significant at .01 level whereas market share at .05 level.
Jacquemin and Berry (1979) developed a measure of diversification called Entropy, which considers total diversification as a weighted average of firms' diversification plus the firms' diversification across those sectors. The data on 460 large U.S. firms were analysed with the use of regression analysis. The results between the Herfindahl and Entropy measures were compared. The \( r^2 \) with the former measure was .10 while with the latter it was .17. Further the regression coefficients were statistically significant for both broad and narrow diversification. However the coefficients for broad diversification were found to be lower than for narrow diversification. The observed pattern of results led Jacquemin and Berry to conclude that diversification into both closely related industries and related industries favours asset growth.

Montgomery (1979) examined the performance differences in diversified firms using market structure variables. He found that diversified firms with higher level of performance tended to have well positioned businesses in industries with favourable market structure. Thus, the structure of the industries in which the firm competes, and the competitive position of the firm's businesses within these industries, are the key determinants of performance.
2.39 Rumelt (1934 & 1982) examined the relationship between a firm's diversification strategy and its economic performance. He classified businesses into four categories on the basis of percentage of the firm's total sales in a discrete business:

1. Single business 95-100%
2. Dominant business 70-94%
3. > 70% but the diversification is in unrelated and new activities.
4. < 70% but the diversification is related to firm's original skill or strength.

He found that related business companies out performed the averages on five accounting-based performance measures over the period between 1949-1969. Thus by classification he was able to demonstrate a linkage between diversification and performance.

2.40 Porter (1980) established that the structure of the industry in which a firm operates, constrains its strategies and affects its performance.

2.41 Bealtie (1980) examines whether the development of conglomerate structures allowed firms to increase their returns and risks. Risk and return performance are evaluated through comparisons of pre- and post-conglomerate structures, as well as comparisons among successive stages of firm diversification. It was found that the conglomerate firms had increased returns.
2.42 Macmillan and others (1982) in their study examined whether the association between the 27 selected strategic attributes and profitability of 1011 businesses differ in the four cells of Boston Consulting Group’s Product-Portfolio Matrix. At first the variables were reduced from 27 to 23 selecting the statistically stronger variable where r value was greater than .60. The Profitability measures used were Return On Investment (ROI) and Cash Flow On Investment (CFOI). The strategic variables were classified into 4 main groups as follows:

I. **Arithmetically related**
1. Investment / Revenue
2. Value added / Revenue
3. Manufacturing / Revenue
4. Product R.D. / Revenue
5. Process R.D. / Revenue
6. Sales force / Revenue
7. Advertising and promotion / Revenue
8. Receivables / Revenue
9. Inventory / Revenue

II. **Resource Usage**
10. Plant and Equipment newness
11. Capacity utilization
12. Capacity / Market Size
13. Sales / Employee
III. Domain Scope

14. Relative product breadth
15. Relative customer breadth
16. Relative no. of customers
17. Vertical integration backward
18. Vertical integration forward

IV. Competitive Devices

19. Relative quality
20. Relative price
21. Percentage of new product
22. Relative percentage of new products
23. Relative sales force expenses

As per the BCG's 4 cells, Cash Cow, Star, Problem Child and Dog (Ref Exhibit 2.261 in Chapter II), the study analysed 4 years average data of 173 organisations in problem child category, 103 in star, 309 in cow and 420 in dog categories. The $R^2$ obtained between the 4 groups were compared and also the Beta co-efficients of all variables were examined to test the level of significance. The Beta co-efficients showed that arithmetically related variables were highly significant as compared to the other variables. The domain and the competitive devices which are Product-Market related did not show any significance. Except Product breadth in dog and vertical integration in cat. Thus, overall on the basis of the analysis it was concluded that domain attributes seem to have little effect on the profitability.

Nathanson and James (1982) developed a two dimensional typology (market diversity and product
emerged. Finally a framework of seven attributes was developed as the criteria of success. It was concluded that excellent firms were internally well fitted and externally well adapted which meant the diversifications were closely knit together and related.

2.45 Palepu (1985) compared the profit growth rate of a sample of 12 predominantly related diversified and predominantly unrelated diversified firms in the food industry. He found the growth rate of return on sales for the period 1973-79 to be significantly higher for the former group.

2.46 Beltis and Mahajan (1985) examined the risk/return performance of related and unrelated diversified firms for a sample of 80 firms, and reported that, on the average, related diversified firms outperformed unrelated diversified firms.

2.47 Vardarajan (1986) in his study examines the relationship between product diversity and firm's performance, or more accurately, performance differences between firms pursuing different product diversification strategies. The study uses ROE & ROC measures to examine the relationship between diversification and profitability, and sales growth rate (SGR) and earnings per share growth rate (EPSGR) to examine the relationship
between diversification and growth. Thus both growth and profitability were used to measure performance. The firms were classified into two main diversification categories - Mean Narrow Spectrum diversity and Broad Spectrum diversity - and within each category again into Low, Medium and High range. Two way ANOVA was done and F value was used as the test of significance. The results point to significant differences in the performance of firms characterized by varying levels of depth and breadth in diversity.

2.48 The review of the relevant literature shows that product-market factors affecting the performance in terms of growth and profitability are:

- market/industry structure
- advertising
- diversification and
- market share.

In the beginning the emphasis was on impact of market structure and advertising on performance. Later on, many of the studies deal with diversification strategy. Also, in the beginning, it can be seen that product-market factors were one of the factors along with other factors and later on it was the only factor. Whereas for performance measures it was the reverse. In the beginning it started with only one variable while later on multiple measures of performance were used.
2.49 The Indian literature available in this area is not much. The Reserve Bank of India (RBI) uses some profitability ratios for comparison of performance. These ratios are:

1. Operating profit + interest to total net assets (%)
2. Operating profit + interest to net sales (%)
3. Operating profit + interest to total net assets less current liabilities.
4. Profit before tax to total net assets.

It also uses profitability ratio of gross profit margin on sales and net worth for all industries and textile industry, to compare the performance of textile industry against all other industries.

2.50 Rao and Sharma (1971) applied Multiple Discriminant Analysis (MDA) to 80 textile firms comprising 30 failed and 30 successful firms. Out of 30 failed firms, 18 companies were taken over by the Government and 12 were those which had negative networth for the period 1968-1971. The discriminant functions found to be efficient included 5 financial ratios which were (1) Net worth to total assets, (2) Debtors to turnover, (3) Working capital to total assets, (4) Retained earnings to total assets and (5) Earnings before interest and taxes (EBIT) to total assets.

2.51 Gupta (1974) found that, as a measure of
profitability. EBIT was inferior to Earnings Before Depreciation Interest and Tax (EBDIT). Net worth assets proved to be the worst measure. The study applied a simple non-parametric test for measuring the differentiating power of 56 financial ratios. The best ratio was found to be EBDIT/Sales and Operating cashflows/Sales. Other important ratios were found to be EBDIT/Total assets + Accumulated depreciation, Operating cashflow to Total assets + Accumulated depreciation and EBDIT to Interest + 25% of Debt. Using these ratios, on the basis of the ratio analysis, the author predicted the failure of the textile companies.

2.52 George (1984) paired diversified companies with the non-diversified companies, and since the sample was small used Non-parametric paired test, Wilcoxon test, Maunwhitney U test and Kruskalwallis one way analysis of variance test to study, the relationship between diversification and performance. The gross measures i.e., gross profit to capital employed and net profit to net worth were used for the analysis. Also the return measure of ROE was used with risk measures. It was found that the diversification was related to performance.
2.53 Rao (1978) argues that Net profit/Net sales can be treated as the short run measure of profitability whereas Net profit/Total assets represents long run profitability.

2.54 Ahmedabad Textile Industry Research Association (ATIRA) every year does inter-firm comparison of firms in the textile industry. It works out different profitability and contribution ratios which are used to compare the performance of various textile mills. Apart from these, relationship between product decisions and profitability is also measured. The findings revealed that with the average count of the mills going finer, all the profitability ratios mentioned below were found increasing. Thus a positive relationship between product decisions and profitability was shown. The ratios used by the study were: 1) Return on capital employed, 2) Return on total assets, 3) Contribution as a percentage of production value, 4) Operating profit before depreciation and interest as a percentage of production value, 5) Net profit before taxes as a percentage of production value.

2.55 Similarly relationship between product mix and profitability was analysed. The product mix was taken (a) in terms of proportion of yarn sales to
total sales and (b) average sales realisation per metre of cloth. The findings revealed a positive relationship between the profitability and average sales realisation per metre of cloth. However contribution as a percentage of production value was found decreasing both with the increase in price realisation and with the increase in the proportion of yarn sales. Thus no consistent trend could be established between product mix and profitability. In fact the average sales realisation per metre of cloth is the result of the product mix decisions.

2.56 Garde and others (1987) in an unpublished study, examined the impact of product mix on the profitability in the textile industry. The Product mix has been taken as the sales value realised per metre of cloth while the contribution rate (%) and the fixed costs per loom shift as the determinants of profitability. Four years data for 25 selected mills were analysed using regressions. It was found that with increase in the sales value realised per metre of cloth, the contribution rate decreased while the fixed costs increased.
2.4 PRESENT RESEARCH

2.41 The Review of foreign literature shows that quite a few studies have been carried out on diversification and performance. However, except Palepu (1985), all the studies have been done on firms across various industries. He has used a single measure of performance. Some of the studies have looked at the difference in the performance between related and non-related diversification.

2.42 I propose to fill up the gap, by my research study, wherein related diversification within an industry will be taken up for analysis with multiple performance measurement of profitability and growth in the short and long run.

2.43 It is certainly advantageous to restrict the study to one industry, because most of the market related factors which have influence over the performance of industry will be common to all the firms and hence will be constant. So its influence is controlled, and only the product diversity and its impact on the performance will be clearly brought out.
Also, as product-mix, instead of sales realisation per metre of cloth used by ATIRA, the proposed study will be using proportion of blends to total sales.

### SUMMARY OF THE LITERATURE REVIEW

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