CHAPTER-2
DESIGN OF THE STUDY AND PROFILE OF COMPANIES
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2.1 Design of the study

2.1.1 Statement of the problem: Something which stops growing starts dying is a well known adage quite relevant to business firms. There is a limit to which a company can grow by expanding its present business. A point is reached in time when there is no alternative but to diversify, either in related area or in an unrelated field. Corporate diversification is a very significant top management decision. It requires major allocations of financial and organisational resources to implement the strategy of diversification. Diversification strategy changes the product-market profile involving significantly different skills, processes and knowledge from those which existed prior to diversifying.

Diversification can be affected through "green field projects", mergers, takeovers and joint ventures. Associated with it is the element of risk. Will the strategy result in increased profits, enlarge and strengthen the asset and market base, reduce and spread risk, bring in synergistic gains, help in gaining strategic and competitive advantage, and boost employee morale and motivation? It is not that diversification has always been a success story. Even large conglomerates and their subsidiaries have had to accept defeat while venturing into areas requiring skills vastly
different from the core skills of their basic business. Thus, tempting and promising though, diversification is not every company managements' cup of tea. Even so, firms have hardly an alternative. While on the one hand, growing through diversification though challenging is virtually the only way, it is not an unmixed blessing free from the risks of failure on the other.

2.1.2 Reasons for the study: The study was undertaken for the following reasons:

i) To contribute to the existing theory of diversification especially in the context of Indian industry.

ii) As the research work done in this area in the corporate sector in India is very limited.

iii) To assess the functioning of both Indian and multinational companies pursuing diversification strategy in our business environment.

iv) To evolve prescriptions for Indian industry.

v) To examine the success or otherwise of diversification strategy adopted by companies under study and make generalisations there from.

vi) As a step towards improving personal knowledge and venturing into greater depths at the post doctoral level in this area of business policy research.

2.1.3 Objectives of the study: The study was undertaken with the following objectives in view:
1. To study the financial health of the diversified companies with the help of financial and statistical analysis.

2. To examine the sales performance of the product portfolios of the companies in order to assess the extent of success in diversification.

3. To determine how far diversification has contributed to improved performance in exports, import substitution and research and development.

4. To assess and extrapolate the performance of the diversified companies to gauge their future potential through trend analysis.

It was expected that these would throw light on the success or otherwise of diversification strategy vis-a-vis the Indian business scenario.

2.1.4 Hypothesis: An attempt was made in the present study to test the following hypotheses:

H₁: Diversification has lead to sound financial performance and health.

H₂: Success of diversified companies is because of uniform growth in sales of their product portfolios and its contribution to the total sales of the company.

H₃: Diversification results in growth in export earning, import substitution and enhanced research and development.
H₄: Enhanced future potential and performance of diversified companies is a consequence of their pursuing diversification strategy.

2.1.5 Methodology: There are several possible approaches for a study of this nature such as:
- a) case problem approach,
- b) single industry approach,
- c) multi-industry and multi-company approach. In this study, the multi-industry and multi-company approach was adopted to obtain a fairly large sample size in order to improve the generalizability of the findings.

Sample: The sample companies of this study basically belong to the following industries:
- pharmaceutical,
- consumer goods,
- tobacco,
- jute,
- cement,
- paper,
- and engineering goods. However, the diversification made subsequently are in some cases related while in others are unrelated. In order to restrict the study to large companies for minimizing the impact of size on performance, only those companies with a minimum of Rs. 25 crores of sales and Rs. 25 crore of assets in 1984-85 were chosen. The population of this study was public limited manufacturing companies in the private sector. Though ten companies were originally chosen, only seven responded by providing the requisite data and hence considered for study. These seven are, Glaxo India Ltd., Hindustan Lever Ltd., Indian Tobacco Company Ltd., Birla Jute and Industries Ltd., Pfizer Ltd., Larsen and Toubro Ltd. and Ballarpur Industries Ltd. A brief profile of these Companies is given in this chapter later on.
Sources of Data: The financial data for the study were primarily drawn from published corporate reports of the companies. Other information was derived from other publications, handouts, chairman's speeches, etc. Obtaining related data and review of literature was possible by consulting various libraries like the libraries of IIM (Bangalore), IISc. (Bangalore), British Library (Bangalore) and Manipur University. A structured questionnaire was mailed to the companies and replies solicited. But as only one company responded, this tool was abandoned.

Period of study: This study was for a period of six years, from 1984-85 to 1989-90.

2.1.6 Framework of Analysis: The data collected were analysed chapterwise. Information which did not lend itself for statistical analysis were dealt with separately. Various financial and statistical tools were used for the purpose of analysis. The tools employed in their sequence of deployment, along with brief explanation, is delineated below:

Ratio analysis was the basis of the chapter on financial analysis. The ratios used to measure performance can be grouped into four sub-categories:

a) Liquidity ratios: This includes the Current ratio and Acid test ratio.
b) Profitability ratios: Five ratios were used, namely, Gross Profit ratio, Net Profit ratio, Return on Assets, Return capital employed and Return on shareholders equity.

c) Capital structure ratio: The Debt equity ratio was employed.

d) Activity ratio: The Asset turnover ratio was used.

To rank the companies on the basis of the above calculated ratios, the Kruskal Wallis Test was used. The test statistic for it is as follows:

\[ H = \frac{12}{n(n+1)} \sum_{i=1}^{k} \frac{r_i^2}{n_i} - 3(n+1) \]

Where \( n \) = total number of elements in \( k \) samples.

Kruskal Wallis Test uses \( x^2 \) test (chi square) to test the null hypothesis. It is calculated as below:

\[ x^2 = \sum \left( \frac{(O-E)^2}{E} \right) \]

with degrees of freedom \( (N-K) \)

Where \( N \) = total number of classes.
\( K \) = independent restrictions.

In the fourth chapter while performing the product portfolio analysis, "percentage" and "compound growth rate" were made use of. The formula for compound growth rates calculated was:
\[ P_i = P_0 (1+r)^n \]

Where, 
- \( P_i \) = Final year value 
- \( P_0 \) = First/Initial year value 
- \( r \) = Rate of interest 
- \( n \) = Number of years.

Subsequently, in the same chapter, the "Diversification Index" (DI) using Gini-Simpson's formula was used for arriving at the extent of diversification achieved by each company. The Index was calculated as below:

\[
D = 1 - \sum_{i=1}^{N} \frac{P_i}{2}
\]

Where,
- \( D \) = extent of diversification.
- \( P_i \) = proportion of product \( i \) to total sales.
- \( N \) = total products in the firms' portfolio.

Further, while studying the relationship between the DI and profit, Karl Pearson's correlation formula was used which is as follows:

\[
r = \frac{N \sum xy - \sum x \sum y}{\sqrt{N \sum x^2 - (\sum x)^2} \sqrt{N \sum y^2 - (\sum y)^2}}
\]

Where, \( dx = \text{deviation of } x \text{ series from assumed mean} \) 
- \( dy = \text{deviation of } y \text{ series from assumed mean} \)
The standard error formula for small samples (here companies being only seven) used is:

\[ SE_r = \frac{r\sqrt{N - 2}}{\sqrt{1 - r^2}} \]

In the 'Trend Analysis' chapter, basically the 'Regression Analysis' was used to project the performance of the companies on different parameters. Five models of regression were used depending on the need. These were:

1. \( Y = a + bx \) (Linear)
2. \( \text{Ln}y = a + b\text{Ln}x \) (Log linear)
3. \( \text{Ln}y = a + b \) (Semi log) (model 3)
4. \( Y = a + b \text{Ln}x \) (Semi log) (model 4)
5. \( Y = a + bx + Cx^2 \) (Quadratic trend)

Then in order to check the goodness of fit of the regression coefficient, the Analysis of Variance (ANOVA) was undertaken.

The one-way ANOVA model used was:

\[ Y = \beta_0 + \beta_1x_1 + E \]

Where, \( Y \) = the dependent variable
\( x_1 \) = the independent variable
\( E \) = a random error term.

\( \beta_0 \) and \( \beta_1 \) are the regression coefficient to be estimated.
Further, both 'F statistic' and 'T statistic' were used to determine the linear relationship between the independent and dependent variables.

Ultimately, the 'Durbin-Watson Test' was employed to test whether any auto-correlation existed in the data. Its existence would vitiate the other findings.

The use of computer was made for analysis, typing and drawing graphs. Different graphs have been depicted where feasible and found necessary.

2.1.7 Chapter scheme: The entire study has been divided into seven chapters which are given below:

The first chapter introduces the concept of strategy, approaches to strategy and highlights the diversification strategy. The reasons why diversification is pursued and measures of firm diversification then follow. The chapter ends with review of relevant literature.

The design of the study forms the first part of the second chapter. It encompasses, hypothesis, methodology, framework of analysis, chapterisation, limitations of the study and scope for future work. In the second half a brief profile of the seven companies studied is portrayed.

Financial analysis is the quintessence of the third chapter. Ten different ratios were used to study the financial health of the seven companies for six years. The Kruskal-Wallis Test has also been made use of for ranking of companies.
The next chapter deals with "Product Portfolio Analysis and Diversification Index. Indepth study of the sales of individual product categories and the total sales of the companies were analysed. The diversification index was employed to measure the extent of diversification.

Certain performance measures like export performance, import substitution and research and development expenditure were studied in the fifth chapter. This exercise was undertaken with an eye towards measuring the impact of diversification on these important areas so vital to our country's economy.

'Trend Analysis' was the theme of the sixth and the penultimate chapter. Basically, the regression models were used to forecast the performance potential of the companies on four parameters: Sales, Net Profit, Gross profit and Dividend. This would reflect the future potential of the diversified companies. Other statistical tools were also employed to ensure accuracy in the predicted values.

The seventh and last chapter, contains a brief summary of the important findings of the study along with the conclusions of the study.

2.1.8 Limitations of the study: The chief limitation of the study was that the number of companies studied were too few. In most works on diversification it was found that the number of firms covered were very large and therefore generalisations were more
acceptable. Another shortcoming was the inability to make the work internationally standardised. This is an outcome of the first lacuna. The sample size being small the categorical measures (now universally accepted by business policy researchers) developed by Richard Rumelt of Harvard University, could not be utilised for classifying the companies and hence the results cannot be globally comparable. A third weakness was that comparison of a decisive nature could not be undertaken. This would have been possible if diversified and non diversified companies were studied. Alternatively, the data before and after diversification should have been used for comparison. But data procurement being the single largest obstacle these could not be performed.

2.1.9 Scope for future work: In India indepth research has yet to take root in the area of diversification. In order to replicate the findings and to develop a theory in this area, consistency in research methodology is essential. Even in the international scene consistency is not being maintained, and as a consequence the research will lead nowhere. Since in India only three or four studies of acceptable quality have been done, future researchers should follow Richard Rumelt's methodology.

2. Rumelt Richard op. cit.
2.2 Profile of Companies:

2.2.1 Glaxo India Ltd.: It is one of the largest pharmaceutical companies in India. The company was incorporated in India under the name of H.J. Foster and Co. in 1924. It became a wholly owned subsidiary of Joseph Nathan & Co. in 1926. The Indian company changed its name to Glaxo Laboratories (India) Ltd. in 1950 and to Glaxo India Ltd. in 1989. It is number 8 in the Glaxo Group's world wide sale ranking, following closely behind Glaxo Companies in some of the World's biggest pharmaceutical markets such as the U.S.A., the UK, Italy, Japan, Germany, France and Canada. In India, it ranks as the largest pharmaceutical company in terms of market share.

Glaxo has ventured into related activities like drugs, medicines, chemicals which are mostly technically related. In other words, it provides an example of concentric diversification. It has a large pharmaceutical range with 70 brands and 116 product packs. Its anti-peptic ulcerants, corticosteriods, multi-vitamines, mineral preparations, calcium oral, and vitamin C preparations are leaders in the market. It also leads the rankings in the veterinary products and fine chemical markets.

In its range of family products, Glaxo is the market leader in Glucose powders and prickly heat powders. Its health care food 'complan' has a unique position. Recently, it has entered the manufacture of starch and soya derivative products.
A large distribution network of over 4000 stockists and 1,30,000 retailers ensures supply of products to consumers. The company's R&D efforts have resulted in import substitution of certain high value raw materials and several processes received from abroad have been successfully modified and commissioned in India.

Glaxo was pioneer in the export of Indian drugs and pharmaceuticals about 20 years ago. The strategic importance placed on exports by the company, is a recognition of a long standing aim to contribute towards improving the country's balance of payments. Today, Glaxo exports a wide range of both bulk and finished pharmaceuticals to several countries including the UK, France, West Germany, Russia, Austria, New Zealand, Japan, Bangladesh, Thailand, Kenya, Nigeria, Srilanka and Afghanistan.

2.2.2 Hindustan Lever Ltd. (HLL) HLL is one of the Unilever's seven companies in India (comprising HLL, Lipton, Brooke Bond, Pond's, Quest, Doom Dooma and Tea Estates). The original three companies — Lever Brothers India Ltd., Hindustan Vanaspati Manufacturing Company Ltd., and United Traders Ltd. have merged and formed HLL in 1956.

HLL is a trusted name for quality products and has established a record of impressive growth through planned investment and diversification, supported by a strong base in marketing and technology.
It is one of the premier companies, manufacturing and marketing a range of consumer products, chemicals and agriproducts. In other words, it has a wide range of diversified products—e.g., in soaps and detergents—Lux, Lifebuoy, Breeze, Rexona, Liril and Peers. Lifebuoy made in India continues to be the world's largest selling toilet soap. The company's detergent brands—Surf, Rin, Sunlight, Wheel powder and Rin and Wheel bars are household names, as Vim, India's best known domestic scourer.

In the field of chemical products, it has been the leading manufacturer of sodium tripolyphosphate (STPP) glycerine, nickel catalyst and speciality chemicals. Mixtalol—the plant growth nutrient, which increases cereal and vegetables yields by as much as 30 per cent at a very economical rate is marketed as Paras photosynth.

The company's personal care products feature popular brands such as Sunsilk, Clinic shampoo, Close up and Fair and Lovely cream.

HLL's activities regarding export promotion, import substitution and research and development have shown a remarkable improvement. The country's traditional products as well as foods, chemicals, garments, marine products, hand knotted carpets, footwear and leather goods are the main export items of the company. The research and development activities of the company have led to significant import substitution. For instance, the upgrading of
unconventional and forest-seed oils to replace imported fats in soap making and technology for producing a range of sophisticated organic chemicals and catalysts. In addition to these activities, the company has also been playing a vital role in developing industrially backward rural areas by making new investments in backward regions.

2.2.3 Indian Tobacco Company Ltd. (ITC): ITC was established in 1910. It is the largest cigarette company in the country. Its major products are a wide range of cigarettes (in different price category), hotels, packaging and printing and paper.

It has a commanding market share in the cigarette industry with its marketing network spread throughout the length and breadth of the country, and is considered to be one of the best.

The major events in the company's recent history relate to its management's strategic move to extend ITC's activities from traditional cigarette production and sales to core industries such as paper, hotel and exports. Many observers of Indian industrial scene, consider that ITC's entry in the core sector has led to similar moves by other multinationals, manufacturing and marketing traditional items onto products and services which are important to the country's economy and industrial development. ITC was also pioneer in reducing its external equity holdings to a level which was subsequently stipulated by the Government of India. The interesting point to note is that it did so even
prior to the norm for large multinational corporation's business practices in the country.

Its capabilities in several areas — particularly tobacco procurement and development (and marketing), and distribution of cigarettes — are considered to be of outstanding quality. Over the years, its paper and hotel operations are beginning to be rated as very well managed businesses. To give the necessary thrust to ITC's international business, ITC Global Holdings Pvt. Ltd. was incorporated in April 1992 as a 100 per cent subsidiary of the company. ITC is also India's highest foreign exchange earner.

2.2.4 Birla Jute and Industries Ltd. (BJ&I): Birla Jute and Industries Ltd. once solely a jute manufacturing company, became one of India's leading diversified, multi-product corporations. The main units of the company are Jute Division, Cement Division, Carbide and Gases, and Synthetic Division.

All the units have shown a remarkable performance. Regarding exports of cement even though various constructive proposals have been suggested by the industry, the government has not taken any steps to encourage exports. The enormous growth in the demand for cement in South-East Asia has created an opportunity for India not only to earn substantial foreign exchange, but in the process ensure better capacity utilisation in the Cement industry and to a large extent reduce the current imbalance between

local demand and supply. Exports for jute goods have increased substantially. The company has been awarded a Certificate of Excellence by the Textile Ministry for the export of jute goods.

The overall performance of Synthetic division in terms of productivity, range and quality of products and profitability have all shown a marked improvement over the years. The continuous process of modernisation and upgrading of technology has not only improved the quality of products but also resulted in a widening of product range and greater flexibility in the operations.

Birla Jute and Industries Ltd. being a diversified company helps the country in its continued development and progress.

2.2.5 Pfizer Ltd: Pfizer is a worldwide, diversified research-based health care corporation with business operations in more than 140 locations. Pfizer in India is also one of the leading pharmaceutical companies having a wide range of diversified products in five business segments:

i) Health care, which includes a broad range of pharmaceuticals, medical devices and surgical equipments.

ii) Agriculture, which is primarily animal health products.

iii) Speciality chemicals, which includes intermediates for pharmaceuticals, agricultural products and ingredients for food and beverage industries.
iv) Material science, which manufactures mineral based products, magnetic oxide and pigments for a range of industrial uses; and

v) Consumer, which includes a variety of leading over the counter health care products, cosmetics and fragrances.

In 1990, Pfizer Inc. spent over 1300 crores of rupees on global research. The period 1990 has been termed by Pfizer Inc. as an "exciting decade with an excellent flow of new research products" in various stages of development and launch. This is said to be "the most promising pharmaceuticals cycle in Pfizer's history." The benefits of Pfizer's global research have always been available to Pfizer in India, helps the company to continually receive benefits of development in technology update, good manufacturing practices, quality assurance, manpower development and scientic promotion of ethical products. Pfizer in India carried out R&D in chemicals, pharmaceuticals, analytical and engineering development areas. The benefits as a result of the R&D are product improvements, process development, import substitution and standardisation of quality control of bulk drugs and formulations.

Pfizer continues to be a leader in the pharmaceutical industry with leading market shares in many key product categories e.g., Teramycin, Becosules, Protinex provide a good example in this regard.

The company’s export promotion activities enhance the country’s foreign exchange earnings. At present, it is exporting formulations in consumer packs and in bulk packs as well as bulk drugs and drug intermediates to various countries in Asia, Africa, Europe and America. It has been continuously exploring the possibilities of exporting more of its products to different markets. Thus, Pfizer is an example of a global corporation bringing science to life and for the world’s well being.

2.2.6 Larsen and Toubro Ltd. (L&T) : L&T was established in 1938. It is a classic example of a giant engineering conglomerate. The major products of L&T relate to engineering based equipments and products such as equipment for dairy, chemical, cement, steel and paper industries as well as nuclear power and space exploration. Other products in the L&T range are hydraulic excavators, switchgear, electronic control, valves, welding alloys, computer peripheral, telecommunication equipment, medical electronic instruments etc. It also manufactures capsules and bottle closures.

L&T operates a large 2.2 million tonnes per annum capacity cement plant. It has substantive interest in shipping (with a fleet of bulk carriers) and a construction group with three major activities, i.e., civil, mechanical and electrical.

In many of its product line, L&T has a very substantial market share. Many of its products command a premium in the market because of its image of
supplier of quality engineering as well as because of its reputation of meeting committed delivery dates.

L&T collaborates with several very well-known industrial leaders in the other parts of the world, particularly in fabricating technology based equipment. The construction group has a strong overseas presence and specialises in civil works for industries as well as erection and commissioning of heavy machinery.

Some of the newer projects and products of L&T relate to cement at Awarpur, petrochemical equipment manufactured at the Hazira facilities, electronic components and peripherals in Mysore complex. The company has consistently inducted new technologies which relate to such complex products as nuclear power reactors, space vehicles, cement plant, fertilizers and petrochemical equipment as well as sophisticated computer peripherals.

Many observers believe that L&T represent a very fine example of professionally managed company which emphasises growth and development through management of technology based operations and customer services as well as new product instruction.

2.2.7 Ballarpur Industries Ltd. (BILT) : Paper units expanded their product range by manufacturing a variety of paper and related products as well as unrelated products. BILT is not an exception to this move. It has moved into chemicals, vanaspati, tin containers and shipping business.
The company is well known for its traditional product, paper. Paper manufactured by the company continues to enjoy a marked consumer preference. Besides, it is the largest manufacture of paper in the private sector. Further, it has 95 percent market share for technical grade phospheric acid in India. It is the second largest manufacturer of glass and fourth largest producer of caustic soda in the country. It is the flagship company of the Thapar Group which is the third largest industrial house in the country in terms of turnover. The performance of chemical and vanaspati divisions have shown encouraging results. Cornola, Do Ghora and Shapola are well established brands.

The company's operations are well known not only in the country but also abroad. Phoenix Pulp and Paper Co. Ltd., Thailand, a joint venture company continued to operate at a high level of production. Ballarpur Glass (Nigeria) Ltd. Nigeria, P.T. Saraswati Bhakti Coated Papers, Indonesia, Ballarpur Palm oil Malaysia, Ballarpur Middle East Pvt. Ltd., Dubai are examples of joint venture companies abroad.

The company has been trying to make consistency with national objectives like export promotion and import subsititution, the drive to increase export continue and the company hopes to make bigger strides in these fields in the days ahead.