DESIGN OF THE STUDY

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CHAPTER 1
DESIGN OF THE STUDY

1.1 INTRODUCTION

Kerala with a high man land ratio, with 1.8 per cent of the entire land surface and 3.43 per cent of total population of India, considered industrialisation as an effort in which she places a major hope of finding solution to the problems of poverty, unemployment, insecurity, over population, and ending her newly realized problems in the modern economy. To quote United Nations Industrial development Organisation, UNIDO 1996\(^1\) - globalisation process has the potential to accelerate industrialization in developing countries. With the intention of re-positioning the state as an industrial friendly one, various measures were taken by the Government of Kerala. In the era of globalization and competitiveness an appropriate strategy for the industrialization of any state can be formulated only if there is a wide perception about the present status.

In Kerala planned economic development may be stated to have started during the period 1956-61, immediately after the formation of Kerala State. The main emphasis of the earlier plans of Kerala was on Agriculture and social services. As a result Kerala has achieved a high level of development in terms of social indicators but the state’s economic development is retarded due to the sluggishness in agriculture and industrial fronts. The studies made on the industrialization in Kerala reassured the state’s industrial backwardness. It has been observed that the development of state depends on the improvement and growth in different sectors of the economy. The sector wise contribution of net state domestic product of Kerala, showed that the tertiary sector has contributed more to, NSDP at the cost of primary and secondary sectors .i.e, the contribution

of the two production sectors decreases year after year while the contribution of service sector increases. The agriculture sector whose contribution was 36.03 per cent during 1992-93 fell to 16.74 per cent in 2003-04. The contribution of the secondary sector reduced from 26.13 during 1992-93 to that of 22 per cent during 2003-04. On the other hand the tertiary sector's contribution increased from 37.84 during 1992-93 to that of 54 per cent in 2003-04. Thus the structural transformation of the Kerala economy has been continuing in the same trend heavily biased in favour of the service sector for quite some time now. The growth of Kerala industries had not been uniform throughout the years. The maximum growth achieved was in the years, 1993-94 (with 22 per cent). The deceleration in growth is seen in the year, 1994-95 (-3.9), 1997-98 (-0.02) and 2001-02 (-16.08). When the maximum growth of 22 per cent was felt in Kerala in 1993-94, the growth in Indian industries was 6 per cent. While Kerala industries felt deceleration in 1994-95, 1997-98, and 2001-02, Indian industries felt acceleration. In the industrial map of India the position of Kerala is almost insignificant. To improve the situation serious efforts are needed.

Speedy industrialization can be achieved if the capital and consumer goods industries are suitably planned and started. The industrial structure of Kerala is characterized by very low representation of large, medium industrial units and significant concentration of small scale industries. To meet the increased demand for consumer goods, the development of small scale industry is very important (units with an investment less than rupees one crore are considered as small scale units). The total number of Small Scale Industrial units (SSI) registered in Kerala as on 31-03-04 was 2.75 lakh with an investment of Rs. 4031 crores providing employment opportunity to 12.37 lakh persons. The SSI sector in Kerala contributed more than 40 per cent of gross output of the manufacturing sector of the country as a whole. Thus the small scale sector has been a prime contributor

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to overall growth of industrial sector in Kerala. It can help to answer some of the most pressing problems such as unemployment, poverty, regional disparities in income and development, small markets, low level of skill, lack of capital and unequal distribution of income.

The industries which show a good potential for growth in the small scale sector are chemical industries. In Kerala the sector wise distribution of manufacturing firms shows that the chemical industry group occupies a prominent position within the manufacturing sector. It offers the highest percentage share of employment and production in the manufacturing sector. According to the Annual Survey of Industries (ASI) the highest amount of value added was contributed by the chemical industries. From the product point of view, soaps and detergents belong to the category of the product of chemical industries. Soap industry is an important consumer good industry providing both toilet and laundry soaps, used both for bathing and washing. In Kerala as a result of spreading consumerism the demand for soaps is increasing. It was reported by one of the leading manufactures in the country, (Godrej), that around 65 per cent of their expensive soaps are being sold in Kerala. Thus soap manufacturers of Kerala have to face stiff competition from multinationals and other large industrial units.

In Kerala soap is produced both in the public and private sectors. In the public sector we have Kerala soaps and oils (KSO) and Kerala Soaps and Detergent chemicals (KSDC) but are not functioning properly. In the private sector 80 per cent soap production belongs to the small scale sector, and are mainly localised. The traditional way of manufacturing toilet soaps by using non edible oils and herbal extracts which are having rich medicinal values are having the capacity to cure skin diseases. The toilet soaps of multinational companies have failed in arresting these diseases. It is found that Albenium oil, extract from turmeric and Tulasi along with non edible oils like Neem, Karanja,
Marothi, Jathropa produces a high quality toilet soap. Kerala enjoys an export market for her Herbal toilet soaps like Chandrika, Radhas and Thulasi.

With vast marketing prospects and production being very remunerative, the significance of the industry can not be neglected. At present our understanding about the performance of the soap production units are rather limited, therefore it is interesting to analyse the performance of these units to obtain a better knowledge of their position and performance. Are the production units in the state economically viable? and financially feasible? if not, why? and what measures shall be adopted to improve the situation.

To quote Asian Development Bank, ADB\(^3\) Globalization presents policy makers in developing countries new challenges, new vistas, needless to mention the urgency of reformulating strategies and polices aimed at industrialization. Successful industrialization must have an indigenous base. Kerala has talent assets, and the power of genius to compete with the best in the world to achieve industrialization. How we can make use of this opportunity effectively to be globally competent in industrial production? As soaps play an integral role in the human life all over the world, and Kerala soap enjoys some unique qualities, we can take advantages of globalisation in soap production also.

1.2 STATEMENT OF THE PROBLEM

The studies made on the industrialisation in Kerala reassured the state’s industrial backwardness. Different hypotheses have been put forward for this lag. The industrial structure hypothesis viewed that the slow industrial growth in the state is due to the lopsided structure rather than the differences in resource endowment. The hypotheses stated in the earlier studies suggested that, the inadequate development of capital goods and consumer goods industries has led to the industrial stagnation in Kerala. As capital goods industries are highly capital

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\(^3\) Asia Development Bank (1997); Asian Development Outlook, Oxford University Press.
intensive, there is reasonable scope for the development of consumer goods industries, which requires less investment, as there is paucity of funds in the states. Soap industry, which provides both toilet and laundry soaps, is one of the important consumer goods industries in the state. Soap has become an integral and indispensable part of Keralites, as they are very much particular about their cleanliness as well as their appearance. For the entire population of more than 3 crores, oil bath and clean clothing have become the part and parcel of their life. Due to the increase in the purchasing power of the people, rise in the level of education and standard of living, the demand for soaps is increasing in Kerala. Not only that, the demand for soap is likely to go up substantially in the coming years, due to some favourable factors like growth of media especially T.V, growth of super markets and retail outlets, and increasingly talented advertising and marketing agencies.

In the era of globalisation there is a strong move towards market driven economy and integration with the global economy, as a result, Kerala soap market is flooded with a new set of international branded soaps and is tested as one of the best market for soaps by the leading multinationals. In Kerala, 80 per cent of soap production units are in the small scale sector. Soap produced by these sectors are mainly local based and they have to face stiff competition from multinational companies. Even with much scope for soap production in Kerala, the existing units find it hard to grapple with many contributing factors that have affected its effective functioning. In short mismatch is observed in the demand and supply conditions. So the production and distribution of soap products require to be planned to ensure the adequate supply at reasonable prices.

The planners and government seem to have short sighted view of the prospects of soap production in Kerala. The current trends make a strong case for suitable policies to promote soap production in kerala. In order to revive the industry and to tackle its problems effectively, knowledge of its present structure
is indispensable. Hence the present study examine the economics of toilet soap production in Kerala and tries to identify the factors that have contributed to the present condition and thereby suggest measures through which the performance of the industry can be improved.

1.3 OBJECTIVES

(1) To examine the economics of toilet soap production in Kerala.

(2) To evaluate the financial performance of toilet soap production in the state.

(3) To identify the major problems and constraints confronted by the toilet soap production units.

1.4 HYPOTHESES

For achieving the above objectives the following two main hypotheses are formulated

1) Toilet soap production in Kerala is productive.

2) Toilet soap production in Kerala is profitable.

1.5 DATA SOURCE AND METHODOLOGY

1.5.1 Sample selection:-

In Kerala 80 per cent of the soap producing units are in the small scale sector. Therefore this study is confined to the soap production units in the small scale sector alone. The database of the study represents a sample of small scale industries registered with the state Directorate of Industries and come under the purview of Small Industries Development Organization (SIDO). The total number of soap production units registered in the industries Department of the state comes to 272. Detailed enquiry by the research scholar revealed that there are only 184 units with proper functioning. Further among these units only 92 units are producing toilet soaps. The survey was started with a view of taking a sample size of 10 per cent. We classify all the units in our sample into four groups on the basis of investment in land and building, plant and machinery. They are very small units with investment below Rupees one lakh, small units with an
investment ranging between one lakh and three lakhs, medium units with investment above rupees three to five lakhs and large units having investments above rupees five lakhs. Very small group consists of 31 units, 27 units comprises small group, medium group covers 25 units and large group has 9 units. The sample in the present study was limited to 10 units selected at random from each group, 3 from very small, 3 from small, 3 from medium and one from large. Units were drawn from across the state. The sample frame is shown in Flow Chart 1.

1.5.2 Data sources:

The study makes use of both primary and secondary data. Data were collected for a ten-year period from 1995-2004. Primary data were collected with the help of pre-tested structured schedules. The various accounts and reports maintained by the units especially, profit and loss account, balance sheets and information gained in the discussion with management and eminent persons, are used to examine the economics of the toilet soap production.

The secondary data collected from the Economic Reviews, information from Industries Department, Planning Board, Centre for Monitoring Indian Economy (CMIE), Annual Survey of Industries (ASI), Indian Toiletries and Soap Makers Association (ITSMMA), Reports of Small Industries Development Bank of India (SIDBI) are also used.
Flow Chart. 1

Flow chart for sample selection

Total Registered (272)

Currently working (184)

Toilet soap only (92)

very Small Less than 1 lakh (31)
Sample selected (3)

Small Between 1-3 lakhs (27)
Sample selected (3)

Medium Between 3-5 lakhs (25)
Sample selected (3)

Large Above 5 lakhs (9)
Sample selected (1)

Total (10 units)
1.5.3 Methodology

The methodology adopted is both descriptive and analytical. In order to satisfy the objectives both Economic and financial analysis is carried out. The discussion on economic analysis is centered around micro economic theory, but strict theoretical approach is not possible due to non availability of qualitative data. So the economics of toilet soap production was studied by the detailed examination of capital structure, inputs used including labour, value of output, profit, and value added with the help of growth rate, averages and percentages and bi-variate tables. For the analysis both the exponential and annual average growth rate is used. The compound growth rate is calculated by using the exponential function

\[ Y = ab^t \]

ie, \( \ln Y = \ln a + t \ln b \)

\[ \text{CGR} = (\text{Antilog (b) -1})\times100 \]

1.5.4 Structural Ratios

Structural changes over the reference period were discussed with the help of selected structural ratios namely,

1) Fixed capital to invested capital ratio = Fixed capital/ Invested capital

2) Fixed capital to productive capital ratio = Fixed capital/ Productive capital

3) Input output ratio = Value of input/ Value of output

4) Value added to output ratio = Value added/ Value of output

5) Fixed capital to output ratio = Fixed Capital/ Value of output

6) Invested capital to output ratio = Invested capital/ Value of output

7) Value added to invested capital ratio = Value added/ Invested capital
(8) Value added to input ratio = Value added/ Value of inputs

(9) Output input ratio = Value of output/Value of input

(10) Output invested capital ratio = Value of output/ Invested capital

(11) Input invested capital ratio = Value of input/ Invested capital

1.5.5 Productivity Analysis

Empirical investigation of the study is conducted using total factor productivity analysis. Since both labour and capital contributes to output it is necessary to derive TFP index that will include both labour and capital as inputs. TFP can be measured by the use of Direct method and Kendrick method.

Direct method

In a general form we can define Total Factor Productivity as

\[
\text{TFP} = \frac{\text{Output Index}}{\text{Factor Input Index}}
\]

Total Factor Productivity Index (TFPI) can be directly obtained through geometric average of the partial productivity indices. Partial productivity has been obtained by dividing gross value added by respective factor of production. If we define partial factor productivity index of capital by TFPI (K) and of labour by PFPI(L) and Total factor productivity index by TFPI, then,

\[
\text{TFPI} = \sqrt[\text{PFPI(K)}] * \text{PFPI(L)}
\]

PFPI (K) = \( \frac{V(t)}{K(t)} \) and

PFPI(L) = \( \frac{V(t)}{L(t)} \)

Where \( V(t) \) = index of value added for the year \( t \)

\( K(t) \) = index of capital employed for the year \( t \)

\( L(t) \) = index of labour employed for the year \( t \)
1.5.6 Kendrick Method

TFP of Kendrick has been computed by using the following form

Kendrick’s TFPI = $V(t)/\{aL + (1-a)K(t)\}$

$V(t) = aL(t) + (1-a)k(t)$

Where $V(t) =$ index of value added

$a =$ share of labour in value added in the base year

$l-a =$ share of capital in value added in the base year

$K(t) =$ index of capital employed for the time $t$

$L(t) =$ index of labour employed for the time $t$

Since the kendrick's TFPI is based on the indices of value added, capital employed and labour employed, the denominator has been calculated through geometric average of the weighted indices of capital and labour. Kendrick’s index of TFP is based on the assumption of competitive equilibrium, constant returns to scale and Hicks-neutral technical change.

1.5.7 Production Function

The study also made use of Cobb Douglas and Translog production functions in order to examine the factor use efficiency and factor contribution.

Cobb-Douglas production function

$Q = AK^{\beta_1}L^{\beta_2}M^{\beta_3}e^u$

Where $A > 0$, $0 < B_1 < 1$, $0 < B_2 < 1$, $0 < B_3 < 1$. where $Q =$ gross value of output. $A$ is the efficiency parameter, $K$, $L$, and $M$ are working capital, wages and salaries and raw material cost. $\beta_1$, $\beta_2$, and $\beta_3$ are constant and to be determined empirically which gives a measure of factor intensities. In Cobb Douglas production function sum of the factor elasticities gives an indication of returns to scale.
Translog Production Function

Translog production function takes the following form.

\[ \ln Q = \beta + \beta_1 \ln (K) + \beta_2 \ln (L) + \beta_3 \ln (M) + 0.5\beta_4 \]

\[ \ln (K^2) + 0.5 \beta_5 \ln (L^2) 0.5 \beta_6 (\ln (M^2) + \\
0.5 \beta_7 \ln (K) \ln (L) + 0.5 \beta_8 \ln (K) \ln (M) + 0.5 \beta_9 \ln (M) \ln (L) + e \]

Where Q- Gross value of output, K- working capital, L- wages and salaries, M- cost of raw material, and \( \ln \)- natural log.

1.5.8 Financial Analysis

Financial performance was examined with the help of financial ratios. Efficiency of the different toilet soap production units in liquidity management, inventory management, cash management, operational performance and assets utilization were assessed by using

(1) **Current ratio** = Current assets/ Current liabilities

(2) **Quick assets ratio** = Quick assets/ Current liabilities

(3) **Turnover of current assets ratio** = Sales/ Current assets

(4) **Inventory to current assets ratio** = Inventory/ Current assets

(5) **Cash to current assets ratio** = Cash/Current assets

(6) **Gross profit ratio** = Gross profit/Sales

(7) **Operating ratio** = Cost/Sales

(8) **Bifurcated operating ratio** = Raw material and fuel costs/ Sales, Salary and wages/ Sales, Establishment cost/sales

(9) **Assets turnover ratio** = Net sales /Net assets

(10) **Net fixed capital turnover ratio and** = Sales/Fixed capital

(11) **Working capital turnover ratio** = Sales/ Working capital
1.5.9 Working Definitions

For soap industry exclusive definitions for various concepts are not available and hence the definition adopted by ASI have been used for the study and marginal modifications were also made wherever necessary.

a) Fixed Capital

Fixed capital represents the value of fixed assets owned by the factory as on the closing day of the accounting year. Fixed assets include land, buildings, and plant and machinery. Strictly speaking, while calculating fixed capital, historical cost calculation and depreciation are also not to be accounted for.

b) Physical Working Capital

Physical working capital is defined to include all physical inventories owned, held or controlled by the factory as on closing day of the accounting year such as stock of materials, stock of semi finished goods and stock of finished goods.

c) Working Capital

Working capital is the sum total of the physical working capital and the cash deposits in the hand and bank and the net balance of amounts receivable over amounts payable at the end of the accounting year.

d) Productive Capital

Productive capital is the total of fixed capital and working capital as defined above.

e) Invested Capital

Invested capital is the total of fixed capital and physical working capital as defined above.
f) Workers

Workers are defined to include all persons employed in the factory including administrative staff also.

g) Emoluments

Emoluments are defined to include wages/ salaries and also the other benefits enjoyed by the workers.

h) Inputs

Inputs comprise gross value of materials, power and fuel consumed during the accounting year.

i) Cost of Production

The total cost of production is the sum total of inputs costs, wages/ salaries and other establishment costs.

j) Value of Output

Value of output is defined to include the value of products manufactured during the accounting year.

k) Gross Profit

The study used the gross profit as given in the accounts of the sample Units.

l) Value added

Value added is calculated by deducting the value of total inputs from the value of total output.

1.6 LIMITATIONS

The study suffered some serious limitations, which narrowed down the scope of a very detailed analysis on certain occasions.
1) Since the study makes use of both primary and secondary data, it poses a variety of data problems. Most of the units did not have concrete information and they rarely followed the practice of keeping records. Hence sufficient difficulty was experienced in getting required data for a ten-year period.

2) We feel some inconsistencies in the analysis due to the reporting errors.

3) The secondary information is limited for the soap industry (toilet soap) and there is a scarcity of authentic studies.

4) Standard definition of various concepts were not developed for the soap industry specifically. So certain working definitions were used for the analysis.

5) Details of quantity of inputs used and the quality produced are important to examine the economics of an industry but because of the non-availability of quantity wise information, the major part of the analysis was done only in value terms.

1.7 SCHEME OF THE STUDY

The text of the thesis is discussed in eight chapters, which are outlined as follows.

The thesis opens with an introduction in which the problem to be investigated is briefly stated. It also covers objectives, scope, limitations and scheme of the study. Methodologies used for the study are also given in this chapter.

In order to identify the research gap review of literature of the studies was made in the second chapter.

The third chapter discusses the industrial development in Kerala. Here we are throwing light on Kerala’s position on the industrial map of India.
Chapter four gives a brief account of soap industry in global, Indian and Kerala scenario. Here we go to enquire the historical roots of soap industry. The nature and growth performance of the soap industry have also been discussed. It brings out the current status of soap production in Kerala.

An economic analysis of the toilet soap production in Kerala is attempted in the fifth chapter with reference to capital structure, input cost, including labour, value of output, profit, and value added with help of growth rate, bivariate tables and percentages. Structural changes were examined with the help of selected structural ratios. We are examining the performance of soap manufacturing units in Kerala as reflected in the productivity measures. As an index of over all efficiency we are constructing a measure of total factor productivity. Total factor productivity by Direct and Kendrick method has been measured. The production functions, Cobb Douglas and Translog were also attempted to trace the factor contributions in the toilet soap production.

Chapter six presents financial performance of the toilet soap production units in Kerala. Financial analysis is attempted using the various ratios in liquidity management, inventory management, cash management and operational performance.

The third objective of the study is identification of the major problems and constraints confronted by the toilet soap production units in Kerala, which is covered in the seventh chapter.

The conclusions emerged from the study, a few recommendations and area for future research are listed in the final chapter.