CHAPTER FOUR

RESEARCH DESIGN AND SAMPLE

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RESEARCH DESIGN AND SAMPLE

The present chapter covers the methodological design and sample techniques used in this study. The various aspects of the research design follow the objectives, hypotheses, scope, methodology and limitations of the study. These steps are described in the following paragraphs.

4.1 The Objectives

The present study has been undertaken to achieve some general as well as specific objectives. The general objective of the study is to ascertain the factors liable for sickness of the industrial enterprises in Bangladesh. The specific objectives of the study are as follows:

(a) To analyse the growth & development of public sector textile mills in Bangladesh.
(b) To analyse the overall position of sick industries in Bangladesh with a view to ascertain whether sickness in public textile industry is real or fake.
(c) To review the policies & measures taken by the government of Bangladesh to tackle the problems of sick industrial units.
(d) To evaluate the financial performance and operational efficiency of textile mills under Bangladesh Textile Mills Corporation (BTMC).
(e) To identify the factors causing sickness of public textile industrial enterprises under BTMC and suggest some possible measures to overcome the situation.

4.2 Hypotheses

The study broadly aims at examining the following hypotheses with the help of available data & information:

1. In Bangladesh, most of the public textile mills operating under BTMC are sick.
2. The sickness of the BTMC mills results from some important factors like shortage of working capital, under-utilization of capacity, adverse
debt-equity ratio, entry of yarn & cloth through smuggling & some unauthorized way etc.

3. The mills under Group-B (which mills are probable profitable & nearest to the break-even) have better operational efficiency and financial performance than that of the mills under Group-A. (losing mills).

4. The difference between the state of financial health of the mills under Group-A & B is significant which can be analysed with the help of the selected ratios.

4.3 Scope of the Study

The scope of the study is limited in terms of industry and period coverage. The details are as under:

4.3.1 Industry Coverage

Among the different sectors/sub-sectors of industrial enterprises in Bangladesh, textile sector has been chosen for the purpose of the study. Within the textile sector, only public sector cotton textile mills have been included within the scope of the study. The selection of the public textile mills operating under BTMC is guided by several factors. First of all, it is one of the earliest established & organized industries in Bangladesh. Secondly, public textile mills are spread over the country more widely than several other traditional industries. Thirdly, most of the textile mills under BTMC are incurring heavy losses and a large number of mills have been closed & denationalized since the last decade. Last but not the least, BTMC is the second largest public sector corporation on the basis of investment, capital machineries, the number of the mills and employment. The largest public sector corporation, on the basis of the above mentioned criteria, Jute mills under BJMC have not been included in this study, because a lot of works have already been done in this sector. In view of the large diversity of the public sector as well as private sector, it is neither feasible nor desirable to attempt a pathology of sickness among all public or private industries and suggest a panacea.
4.3.2 Period Coverage

The study basically covered a period of five years beginning from 1992-93 to the year 1996-97. In case of the historical background of BTMC, the time profile of denationalization of BTMC mills and the contribution of the corporation to national exchequer, the period has been included twenty five years from March, 1972 to June, 1997. This is the period beginning from nationalization of the mills till the last financial year.

4.4 Methodology

The present study is based on certain objectives as mentioned earlier. In the light of these objectives, an attempt has been made to analyse the main functional areas like production, sales, marketing, capacity utilization, plant & machinery, profitability and overall financial position of selected industrial units for the study. The basic statistical techniques have been used in the course of study. The details are as follows:

4.4.1 Selection of Sample

In 1995, the BTMC authority had classified the mills into three groups on the basis of past financial trends & operational achievements. These three groups were:

- A. Heavily losing mills
- B. Losing mills
- C. Probable profitable & nearest to the break-even mills.

Under the Group-A there were eleven mills. During the financial year 1996-97, these eleven mills were laid-off due to heavy operating losses. Some mills were disinvested and others are in the pipe line of disinvestment. Under the Group-B there were ten mills (eight spinning & two composite) and under the Group-C there were nine mills (eight spinning & one specialised) in June 1997.

The present study is limited to ten mills (nine spinning & one composite), out of a total number of nineteen mills presently running under BTMC, thereby covering roughly 53 per cent of the total running mills. Five mills from Group-
B and five mills from Group-C have been selected purposively. The selected mills are scatteredly located throughout the country.

**4.4.2 Use of Code Name**

Ten selected mills are classified into two groups i.e. Group-A & Group-B. Group-A contains five losing mills and Group-B contains five probable profitable & nearest to the break-even mills. In order to avoid frequent mentioning of the names of the selected mills, code names have been used. The name of the mills & their code name, used in the study, are given below:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the Mills</th>
<th>Code Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GROUP-A</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Ahmed Bawany Textiles</td>
<td>A&lt;sub&gt;1&lt;/sub&gt;</td>
</tr>
<tr>
<td>2.</td>
<td>Quaderia Textile Mills</td>
<td>A&lt;sub&gt;2&lt;/sub&gt;</td>
</tr>
<tr>
<td>3.</td>
<td>Kurigram Textile Mills</td>
<td>A&lt;sub&gt;3&lt;/sub&gt;</td>
</tr>
<tr>
<td>4.</td>
<td>Magura Textile Mills</td>
<td>A&lt;sub&gt;4&lt;/sub&gt;</td>
</tr>
<tr>
<td>5.</td>
<td>Sylhet Textile Mills</td>
<td>A&lt;sub&gt;5&lt;/sub&gt;</td>
</tr>
<tr>
<td><strong>GROUP - B</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Sundarban Textile Mills</td>
<td>B&lt;sub&gt;1&lt;/sub&gt;</td>
</tr>
<tr>
<td>7.</td>
<td>Dinajpur Textile Mills</td>
<td>B&lt;sub&gt;2&lt;/sub&gt;</td>
</tr>
<tr>
<td>8.</td>
<td>Rangamati Textile Mills</td>
<td>B&lt;sub&gt;3&lt;/sub&gt;</td>
</tr>
<tr>
<td>9.</td>
<td>Rajshahi Textile Mills</td>
<td>B&lt;sub&gt;4&lt;/sub&gt;</td>
</tr>
<tr>
<td>10.</td>
<td>Bengal Textiles</td>
<td>B&lt;sub&gt;5&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

**4.4.3 Sources of Data**

With a view to achieving the objectives of the study and testing the hypotheses, both primary and secondary data have been used. The main secondary sources of data were:

- Bangladesh Textile Mills Corporation (BTMC)
- Ministry of Industry and Commerce, Government of Bangladesh
- Ministry of Finance (MOF), Government of Bangladesh

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Different types of reports of BTMC have mostly been used as the secondary source for the purpose of the study. Besides these secondary sources, primary data have also been used in the study. One executive (GM/DGM/AGM/Manager/Accounts Head) from each of ten selected mills i.e. ten respondents filled up the questionnaire. Informal discussions have also been made, with the Chief Accountant, Additional Chief Accountant (MIS) and some other Senior Executives of BTMC alongwith the Leaders of labour unions of four mills under BTMC, to know their feelings & opinions regarding sickness/continuous losses incurring by the BTMC mills.

4.4.4 Methods of Data Collection

Various methods for data collection have been used for completing this study. Published and unpublished secondary materials viz. annual reports (audited & provisional), performance reports & annual MIS reports of BTMC, research reports, economic reviews, industrial policies of the govt., survey reports, etc. have been collected by the researcher personally from the BTMC head office, different ministries, offices, & institutes. Existing literature like books, journals, newspapers, magazines, published & unpublished research works etc. (available in different libraries in Bangladesh as well as in India) have been consulted. The statistical year books, economic reviews and government policies on different aspects have also been consulted to supplement the available information.

In order to get the necessary primary data, a questionnaire was prepared, which was partly structured & partly open-ended (vide in appendix-1), in the light of the objectives of the study. Before the finalization of the questionnaire, some discussions were made with some experts on all its aspects and also tested it in Magura Textile Mills (A_4). After piloting the questionnaire, some changes were made and prepared the final questionnaire for collection of required data. Four mills (three spinning i.e. A_4, B_1, & B_5
and one composite i.e. $A_1$) were visited personally by the researcher which
were selected purposively. Informal discussions were also held, with the
officials & the leaders of the employees unions of the visited mills, to gather
knowledge on different functional areas & obtain valuable information, and
proved helpful and some opinions were very appreciative which have been
duly incorporated at appropriate places.

4.4.5 Data Analysis Techniques

The collected data from the primary & secondary sources have been
processed, analysed and presented in order to make them suitable for the
purpose of the conclusions. For data analysis purpose, various statistical
measures & techniques such as percentage, ratio analysis, mean, standard
deviation, t-test etc. have been used. Three multi-variate models have also
been applied in the study to measure the degree of sickness.

The collected primary data have been presented in different tables. The
common-size percentages of profit & loss statements have been calculated
to analyse the individual cost items to sales of the selected mills during the
study period.

For the purpose of evaluation of past trend of financial health as well
as the prediction of future of the selected mills, twenty seven different
financial ratios, mean values and standard deviations have been calculated under
univariate approach for each year under study from 1992-93 to 1996-97. The
"t-test" has also been applied to measure the statistical significance of the
difference between the mean values of selected financial ratios with the
ultimate object to test the difference between the state of financial health of
two groups of mills. Under multivariate approach, three important multiple
discriminant analysis (MDA) models based on financial ratios (Altman's $Z$-
score, Satyanarayana's $Z^*$ value & Yadav's $Y$-score) have been applied to
ascertain the financial health & measure the degree of sickness of the selected
mills.
4.5 Limitations of the Study

The study has some limitations. The main limitations are:

(a) Though there are a large number of state-owned manufacturing enterprises under six industrial sector corporations but the study covered only one public sector industry due to time & resource constraints.

(b) At present, there are nineteen textile mills operating under BTMC but ten mills have been selected for the study and the remaining nine public textile mills have not been included in the present study.

(c) The commercial audit of annual accounts of BTMC enterprises was found complete only the year of 1992-93. In case of incomplete audit work of the annual accounts some inconsistency, on the figures between annual MIS reports and provisional accounts of BTMC enterprises, were observed. Thus, the limitations of the secondary data have remained a constraint of this study.