CHAPTER II
FINANCIAL STRUCTURE OF SUGAR MILLS -
A CONCEPTUAL FRAMEWORK.
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Background:

Uttar Pradesh is the most important sugar producing State in the country. Sugar industry in this State gained momentum after 1932 when protection was accorded to this industry on all-India level. Since then, sugar industry has been contributing significantly to the socioeconomic development of Uttar Pradesh. Sugar mills are located mostly in rural areas and serve as a focal point for the economic upliftment of rural masses. Besides generating sizeable employment avenues and opportunities, the State's sugar industry contributes approximately Rs.200 crores annually to the State and Central exchequer by way of taxes and duties.

Owing to considerable support from the Government, the sugar industry in Uttar Pradesh has made substantial progress turning round an all time high record output of 29.76 lakhs tonnes in the year 1990-91 by crushing 327 lakh tonnes of cane.\(^1\) Incidentally, however, increased production of this agro-based industry did

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1. The Hindustan Times New Delhi, Tuesday, November 5, 1991, p.4.
not commensurate with the targetted goals and objectives. For the past few years, the industry has been facing various problems which are directly and/or indirectly responsible for its retarded growth. Briefly, these problems include instability in production, shortage of raw materials, obsolete technology (plant and machinery) shortened crushing period, unrealistic location of the majority of mills, shortage of finance for modernization, expansion and rehabilitation of the mills, rising cost of sugar production and, consequently, of sugar industry. However, now, all aspects of the industry are controlled, determined or regulated by the Government viz. installation of new sugar mills, expansion, modernization and rehabilitation of old units, wages of the employees, quality and quantity of sugar to be sold to consumers in the open market and all other related matters. This immense control of the industry has prompted the present study to assess the situation of State-controlled and managed sugar mills under the Uttar Pradesh State Sugar Corporation.

Objective of study:

The objective of this study is to evaluate the financial structure of sugar industry as controlled and managed by the Uttar Pradesh State Sugar Corporation.
As a corollary to this, the study will highlight the problems of finance, mode of financing and the adequacy of finance available to the sugar mills. Automatically, the problem relating to cost and prices of sugar in Uttar Pradesh will also be scrutinized.

The study will review the various steps taken by the Central Government as well as by Uttar Pradesh State Sugar Corporation for the amelioration of the financial problems of the sugar industry. It will also identify the area where improvement is needed and offer suggestions for its accomplishment.

Apart from the main objective mentioned above there are certain secondary objectives which are as follows:

(i) To highlight the development of sugar industry in India and to make an assessment of the policies pursued by the Government.

(ii) To study the pattern of growth of sugar industry in Uttar Pradesh and its structural set-up; and also, to make a comparative evaluation of the industry in the major sugar producing States of the country.

Hypothesis:

As mentioned in the preceding paras, the present
study seeks to examine and evaluate the performance of sugar industry from the point of view of financial structure of sugar mills under the Uttar Pradesh State Sugar Corporation. Keeping in view the objectives of the study following assumption have been made:

(1) The takeover of the management of the sick sugar mills by the State Government has not changed the scenario of sugar industry as the performance of such mills still lags much behind the envisaged goals.

(2) The present sugar policy of the Government did not have any positive influence on this important sector of economy; rather, it has adversely affected its growth under the Corporation because of excessive bureaucratic actions.

(3) Heavy debt burden in the form of interest on borrowings has reduced the profitability of the industry. Obviously, the financing pattern and policy of the Corporation requires thorough overhauling.

Importance and significance

According to the latest figures, the total investment amounted to over Rs.3372 million employing nearly 2.5 lakh skilled and unskilled workers. Millions others gain their livelihood through indirect
association such as cane growers, brokers and transporters. Besides, it acts as a catalyst for the transformation of rural society as majority of the sugar mills are situated in rural areas.

The present study gains an added importance because, today, the sugar industry is undergoing a phase of rapid expansion and modernisation. Presently, the sugar industry in Uttar Pradesh consists of both the modern and out dated technologies. Taking these variations into consideration a study on the pattern of financing vis-a-vis its financial structure has a significant role to play. The main objective of this study are directed at improvements in efficiency and cost reduction. Although there have been researches concerning various problems and prospects of the sugar industry mostly dealing with its growth patterns, the financial aspects have, so far, not been adequately studied. The present study, therefore, differs with the earlier ones as its scope is mainly the financing and financial structure of sugar mills under the Uttar Pradesh State Sugar Corporation. The problems facing the sugar mills under the Corporation are too important to be ignored. Although the major share of capital comes from the Government, the Commercial Banks and other Financial Institutions play an equally important
role. The relevance of this study lies in the fact that a critical evaluation of the financial statements of the Corporation has been made and conclusions drawn keeping in view the practicality of their implementation. This can lead to a remarkable change in the performance and output of the Corporation. Admittedly, the losses incurred by the Corporation are mounting; high rate of interest on the loans availed by the Corporation is the main contributing factor for this failure. In order to explore and investigate, at length, the causes of failure, the following queries need to be properly answered:

1) Are the problems faced by the Sugar Corporation due to unhealthy and wrong policy pursued by the Government?

2) Are the problems due to wrong financing policy adopted by the State Government?

In fact both the above mentioned reasons are equally responsible for the deplorable state of affairs of the Corporation as would be projected in the course of further analysis in the present study.

The poor financial performance of the Uttar Pradesh State Sugar Corporation can be judged by the data presented in Table III-1. It is evident that the
**TABLE II-1**

**A GLANCE OF FINANCIAL POSITION OF THE UTTAR PRADESH SUGAR CORPORATION (RS. IN LAKH)**

(1975-76 to 1987-89).

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</thead>
<tbody>
<tr>
<td>Share Capital</td>
<td>1550</td>
<td>1690</td>
<td>1835</td>
<td>1910</td>
<td>1998</td>
<td>2420</td>
<td>5329.44</td>
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<tr>
<td>Reserve and Surplus</td>
<td>26.88</td>
<td>63.84</td>
<td>72.82</td>
<td>85.35</td>
<td>105.49</td>
<td>144.99</td>
<td>121.37</td>
</tr>
<tr>
<td>Borrowing</td>
<td>792.92</td>
<td>1336.62</td>
<td>1707.01</td>
<td>2226.02</td>
<td>2461.13</td>
<td>3258.11</td>
<td>3804.85</td>
</tr>
<tr>
<td>Sales</td>
<td>1041.77</td>
<td>914.52</td>
<td>1117.65</td>
<td>1366.89</td>
<td>2862.16</td>
<td>4095.09</td>
<td>4479.39</td>
</tr>
<tr>
<td>Capital Employed</td>
<td>800.02</td>
<td>932.45</td>
<td>691.29</td>
<td>657.2</td>
<td>775.86</td>
<td>1129.56</td>
<td>2693.62</td>
</tr>
<tr>
<td>Net Fixed Assets</td>
<td>251.50</td>
<td>356.06</td>
<td>334.94</td>
<td>614.62</td>
<td>601.37</td>
<td>666.66</td>
<td>764.40</td>
</tr>
<tr>
<td>Investments</td>
<td>638.41</td>
<td>881.07</td>
<td>1124.08</td>
<td>1124.10</td>
<td>1124.10</td>
<td>1174.10</td>
<td>1588.79</td>
</tr>
<tr>
<td>Capital work in</td>
<td>108.35</td>
<td>84.08</td>
<td>39.86</td>
<td>59.86</td>
<td>47.23</td>
<td>273.19</td>
<td>886.18</td>
</tr>
<tr>
<td>Progress</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Assets</td>
<td>856.81</td>
<td>1004.10</td>
<td>1131.91</td>
<td>1128.62</td>
<td>1733.35</td>
<td>2293.99</td>
<td>4032.69</td>
</tr>
<tr>
<td>(Loans and Advances)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current liabilities</td>
<td>308.29</td>
<td>427.73</td>
<td>775.75</td>
<td>1786.02</td>
<td>1578.86</td>
<td>1831.09</td>
<td>2103.77</td>
</tr>
<tr>
<td>(Including provision)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Worth</td>
<td>753.86</td>
<td>560.98</td>
<td>148.22</td>
<td>-384.84</td>
<td>-534.54</td>
<td>-681.33</td>
<td>1363.44</td>
</tr>
<tr>
<td>Loss</td>
<td>832.82</td>
<td>1192.70</td>
<td>1759.48</td>
<td>2380.11</td>
<td>2637.99</td>
<td>3246.21</td>
<td>4987.37</td>
</tr>
</tbody>
</table>

Cont'd..
## Table II-1

A Glance of Financial Position of the Uttar Pradesh Sugar Corporation (Rs. in Lakh)

(1975-76 to 1987-89).

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Share Capital</td>
<td>5767.44</td>
<td>6152.84</td>
<td>6731.84</td>
<td>8866.84</td>
<td>10613.38</td>
<td>24331.12</td>
</tr>
<tr>
<td>Reserve and Surplus</td>
<td>114.00</td>
<td>111.46</td>
<td>111.18</td>
<td>119.20</td>
<td>123.55</td>
<td>131.10</td>
</tr>
<tr>
<td>Borrowing</td>
<td>6564.47</td>
<td>7362.91</td>
<td>10472.14</td>
<td>15027.15</td>
<td>19826.14</td>
<td>18270.41</td>
</tr>
<tr>
<td>Sales</td>
<td>4743.29</td>
<td>5647.69</td>
<td>10133.20</td>
<td>10684.79</td>
<td>15711.30</td>
<td>28882.98</td>
</tr>
<tr>
<td>Capital Employed</td>
<td>3455.44</td>
<td>3847.17</td>
<td>4769.64</td>
<td>6452.51</td>
<td>10117.55</td>
<td>16401.94</td>
</tr>
<tr>
<td>Net Fixed Assets</td>
<td>668.75</td>
<td>1691.10</td>
<td>1684.63</td>
<td>1584.82</td>
<td>2251.03</td>
<td>2479.23</td>
</tr>
<tr>
<td>Investments</td>
<td>1691.80</td>
<td>1778.82</td>
<td>1803.87</td>
<td>3461.76</td>
<td>3498.66</td>
<td>5099.78</td>
</tr>
<tr>
<td>Capital Work in Progress</td>
<td>1525.69</td>
<td>140.52</td>
<td>148.18</td>
<td>1656.07</td>
<td>1271.82</td>
<td>1687.49</td>
</tr>
<tr>
<td>Current Assets (Loans &amp; Advances)</td>
<td>5489.69</td>
<td>4682.69</td>
<td>6011.75</td>
<td>8085.90</td>
<td>11599.75</td>
<td>19641.86</td>
</tr>
<tr>
<td>Current Liabilities (Including provision)</td>
<td>2703.50</td>
<td>2526.68</td>
<td>2926.72</td>
<td>3218.21</td>
<td>3733.21</td>
<td>5719.15</td>
</tr>
<tr>
<td>Net Worth</td>
<td>474.68</td>
<td>-1596.40</td>
<td>-3250.45</td>
<td>-3456.80</td>
<td>-4958.34</td>
<td>4918.84</td>
</tr>
<tr>
<td>Loss</td>
<td>5406.76</td>
<td>7860.30</td>
<td>10093.47</td>
<td>12442.85</td>
<td>15695.73</td>
<td>19543.38</td>
</tr>
</tbody>
</table>

* Figures are for 18 Months i.e. from 1.10.87 to 31.3.89.

**Source:**
1. Annual Reports and Account of the U.P. State Sugar Corporation, Lucknow from 1971-72 to 1983-84
Corporation started with a meagre Capital and, thus, has been facing the financial problems right from its inception. As a result, most of the mills have been in crisis suffering losses, frequent labour problems and closures. Year after year, additional funds have been pumped in by the Government and by other Financial Institution but of no avail. The losses have been continuing inspite of investment for modernisation and rehabilitation i.e. Rs.5406.76, 7860.30, 10093.47, 12442.85, 15695.73 and 19643.38 lakhs in 1982-83, 1984-85, 1986-87 and 1988-89 respectively. The net worth has almost totally eroded and dependence on borrowed funds increased tremendously.

An indepth analysis of the financial statements of the Corporation leads to the conclusion that the main reason of the huge losses is the heavy burden of interest on the loans availed. Obviously, such a situation has adversely affected the functioning of the Corporation. Undoubtedly, a good equity-base is invariably helpful in reducing the interest burden. Keeping in view the narrow equity base of the Corporation, the State Government has approved the conversion of their dues for loan and interest accrued thereon, upto September 1980, aggregating Rs.1994.72 lakhs in Equity Share Capital.
From time to time, the State Government and other Financial Institutions have been providing increasing quantum of finance to the Corporation. Seemingly, however, the efforts made so far have not changed the deplorable situation and the Corporation continues to be crisis-ridden. It is, therefore, necessary to critically examine and evaluate the mode of financing available to the Corporation and to identify the problem areas so that corrective measures can be suggested.

Methodology

The present study has been divided into two phases. In the first phase, the published literatures available on sugar industry were scanned to get fully acquainted with the subject matter and, then, in the second phase, the relevant data and literatures were collected through secondary sources as Annual Reports, Statements, Journals and Periodicals etc. Also, the primary data were gathered by surveying the opinions of various Committees and Boards appointed by the Governments. Further, the ideas and views of the Managing Directors and Executives were ascertained through personal interviews/discussions.

Procedure of data analysis and interpretation:

The main objective of analysis and
interpretation of the financial statements of the Sugar Corporation was to formulate an opinion with regard to the financial health, profitability and efficiency of the Uttar Pradesh State Sugar Corporation and to derive conclusions and lay-down policies for future guidance. The procedure of analysis of financial statements involved compilation, comparison and interpretation of relevant data. The quantitative assessment was made on the basis of arithmetic mean and its absolute and selective range of standard deviation.

Conceptual framework

The financial structure of any industry is of strategic importance for its adequate growth and survival. In fact, the proper financial structure is the backbone of any industry. It is the foundation stone and only a well-planned financial structure can provide a solid base to an industry for its future growth and prosperity. It is, therefore, imperative that the Management of an industry must plan its financial structure keeping in mind the best interest of the industry as well as the owner. Only such a structure should be chosen as would yield optimum results, in that, the Management must exercise prudence and follow the cardinal principles of financing,
considering the prevalent environment factors and should make it flexible enough so as to take care of any change in the circumstances envisaged initially.\textsuperscript{1}

Formulation of financial structure is certainly of paramount importance and crucial significance. Any negligence in formulating financial structure may cost heavily not only on industry's profitability and efficiency but, in the long run, may prove fatal to its very existence. The first step in the formulation of financial structure is assessment of the project-cost. Unless the cost of a project, is known, the sound financial structure can not be designed. While designing the structure, the operational and financial attributes such as the nature of asset requirements, the prevailing market conditions, the degree of risk involved, future prospects of earnings, terms and conditions of the Central and State Governments must be taken into account.

The concept of financial structure has been viewed differently by different authors. To some, it constitutes all the resources tapped to finance the total assets employed covering the total liability of

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the industry represented by short-term and long-term
finances, considering the Capital structure as a part
of financial structure represented by long-term debt,
preferred stock and Common Equity. Thus, the capital
structure includes items of permanent capital long-term
obligations and equity. To others, the financial
structure of an enterprise is nothing but its Capital
structure and the term 'Capital' is viewed as a
determinant to its cost which includes all types of
funds procured or to be procured to meet the cost of
project covering equity, preference, capital, reserve
and surplus, term loans, deposits, borrowing and
retained earnings.

Factors influencing the pattern of financing

Following factors must be taken into
consideration in order to work out the proper financial
structure:

a) Debt-Equity Ratio
b) Cost of Fund/Capital
c) Availability of finance

a) Debt-Equity Ratio: The funds required to finance a
new project are managed from two sources namely- owned
and borrowed funds. The owned funds consist of equity,
preference share capital and retained earnings. The borrowed capital consists of term loans from Financial Institutions, Commercial Banks, debentures and deposits from the public. An optimum combination of these two funds, debt and equity, is of paramount importance for the sound financial health of an industry. There are certain institutional norms to be followed while arriving at optimum debt-equity gearing. It usually varies from 1:1 to 4:1 depending upon the nature of industry. Under the terms and conditions, the lending institutions generally prefer a debt-equity ratio of 1.5:1 for medium and large units and 2:1 for the small-scale units. The industries promoted by the Government may have a higher debt-equity ratio of 3:1 or 4:1. At a higher ratio, the firm may avoid to borrow funds. However, if the debt-equity ratio becomes too high, an industry may not be able to borrow funds at lower rate of interest because the creditors may lose confidence in that industry. It is, therefore, essential to make a comparative study of different types of resources of financing and to


ascertain the cost of each source of funds.

b) Cost of fund/capital: Generally, a new enterprise is financed by both the owned and borrowed funds, for it is not possible to meet the financial requirements singly. The ratio between these two depends inter alia on the cost of the two funds; if the borrowed funds are cheaper than the ratio of earnings, it is preferable to increase the proportion of borrowings and vice versa. It is, therefore, imperative that an exercise has to be conducted to ascertain the cost of different sources of funds. For the owned funds, the industry has to pay the supplier a dividend which is variable but for the borrowings it has to pay interest at a fixed rate. Therefore, a judicious determination of debt-equity ratio is of paramount importance so that the rate of return to equity share holders is maximised. Briefly, for securing the funds, the industry has to pay dividend or interest, depending upon the nature of funds, i.e. owned funds or borrowings.¹ Hence, the cost of funds is the charge paid periodically to the supplier in the form of dividend or interest for hiring the funds.

¹ Israni D., op. cit. p.7.
c) **Availability of finance:** Finance is of vital importance for the rapid growth and speedy development of any industry and the sugar industry is no exception to it. Funds are made available to an industry by term-lending institutions and commercial Banks as well as Cooperatives. The long-term funds are provided by IFCI, ICICI, IDBI which has acquired considerable expertise in the financing of medium and long-term needs of an industry. Short-term funds are provided by the Commercial Banks and Cooperatives. National Bank for Agriculture and Rural Development has been instituted to take care of agriculture and allied sector; in that, it refinances the Commercial Banks and Cooperatives for their lending to the important sectors of economy.

In the present study, an attempt has been made to critically analyse the financial structure and the mode of financing of sugar mills from the view point of the following factors:

(i) Pattern of liabilities  
(ii) Pattern of investment in assets  
(iii) Cost structure  
(iv) Debt-Equity leverage  
(v) Current ratio  
(vi) Acid test ratio  
(vii) Uses and application of available financial sources
With regards to the present study, the financial structure of the Sugar Corporation comprises of owned funds and borrowings, the former, usually called equity, consists of share capital, reserve and surplus and long term loans obtained from the financial institutions, Commercial Banks and Cooperatives. Here, the term financial structure refers to all the items on the right hand side of balance sheet, that is both the long term and short term funds.

REVIEW OF LITERATURE:

Thorough scanning of available literatures revealed that, with regard to the sugar industry in India, very limited work has been carried out as is evident by fewer studies and research papers occasionally appearing in the press. The reports of various Commissions and Enquiry Committees are either too old or contain too little information to provide an insight into the overall development of sugar industry in India. The first assessment of the cost structure and fair prices payable to sugar cane growers was done in 1958-59 by the Tariff Commission¹ which submitted its report to the Government in September 1959. The Tariff Commission recommended segregation of the country into four regions for the fixation of prices on

on the basis of crushing duration and recovery of sugar.

The Government of India appointed a committee under the Chairmanship of Dr. S.R. Sen\(^2\) to examine the problems of old and uneconomic sugar factories and to look into the cost-structure of the sugar industry. The Sen Commission suggested that the minimum price of sugar cane should be so fixed as might cover the bulk line opportunity cost of cane cultivation. It also recommended that minimum price of sugar cane should be adjusted yearly on the basis of index of prices of other competitive crops so that price of sugar cane has an edge over the prices of alternative crops within the country.

Again, in 1947, a Sugar Enquiry Commission was appointed under the Chairmanship of Mr. R. Bhargava\(^3\). This Commission submitted its report within an ultrashort period. It suggested for long-term planning of the cane cultivation, development of areas of sugar mills and reservation of areas for a period of at least 5 years. The sugar industry is of the opinion that the

consideration of issue of reservation has been highly encouraging. Among others the commission was in favour of making suitable changes in the Act, concerning sugar industry at State Central level, covering the following aspects:

1. Factories should enter into an agreement with the sugar cane growers of its area for regular supply of cane upto its full requirement for a normal crushing period.

2. Where the sugar cane growers supply cane through society, the society, the cultivator and the factory should enter into an agreement.

3. The agreement must specify the quantity and quality of sugar cane to be supplied by the growers to sugar mills.

4. The sugar mills should be under obligation to advance loan to the cane growers for the cultivation of cane.

5. The sugar mills should be entitled to recover the loan along with the interest thereon through deduction from cane prices payable to the grower concerned.

1. Ibid., p.1045
The Bhargava Commission also underlined the need for reasonable spatial distance between new units and existing units to ensure their proper working. The recommended distance was 50 km. In order to stabilise the cane supplies to the mills, the Commission has suggested the following measures: 2

(1) The extra realisation on the sale of sugar should be distributed between the cultivators of cane and the mills in the ratio of 50:50.

(2) A sugar sale committee consisting of five members, should be set up at each and every mill with the representative of the mill growers and the workers. The committee should be given the authority of inspection of the account of the mills.

(3) Sugar cane price should be so fixed as to have an edge over the competitive crops. So that cultivators are motivated to extend the cultivation of sugar cane.

(4) The planning commission 4 has setup an enquiry committee on sugar industry to formulate targets and to look into the various aspects of sugar industry. This committee has recommended the following 1:

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2. Ibid., pp.709-65.
1, Ibid.
(i) Keeping in view the growing demands of sugar, sugar factories should be more responsible for the overall development of the sugar cane areas and the technical guidance should be provided by the Central State agencies.

(ii) Each factory should have to own farm which can provide basic input to the farmers.

(iii) Sugar cane pricing policy should be framed in such a fashion so that a minimum cane price which is equivalent to cost of production of sugar cane be ensured to the farmers. It also recommended that a sizeable buffer stock and a long term pragmatic policy taking into account the interest of cane growers, the sugar factories and the consumers should be evolved.

Gandhi M.P. in his book entitled "Problem of sugar industry in India. Scope and Prospects of Reorganisation" deals with the historical aspects of the sugar industry, especially after the grant of protection in 1932. A close review of the study reveals that first class white sugar was produced from Gur throughout Northern India, specially in Burdwan and

and Murshidabad division of Bengal upto Gorakhpur in Oudh before the advent of the British. In the opinion of the author Sugar Protection Act 1932 met with unique success. Within a short span of time, there has been a phenomenal development of the industry. The country which was mainly dependent on import has became a major sugar producing country in the world. The author has aptly summed up his points in the following words. Protection of sugar industry is an unqualified success in the sense, that the country has been recompensated for the aid given to the industry, particularly in the war-period and there is wide scope for further progress of the industry which can be secured, only through coordinated development in both the industry and the agriculture.1

A publication entitled "Cane Development in Uttar Pradesh by S.K. Tripathi,6 focusses on the various factors affecting the production of sugar in Uttar Pradesh. He emphasised that the phenomenon of steep rise and fall in sugar production as a consequence of corresponding fluctuation in cane

1. Ibid.

production is not new. The cyclical fluctuation in cane production resulting in surplus in some years and scarcity in others, causes great distress to the cane growers as well as to the industry. The most important factor responsible for these fluctuations appears to be the sensitivity of the crops to cane price realisation. Cane growers are extremely responsive to price movement resulting in acreage shifts.¹

He suggests a multi pronged strategy that should be evolved to avoid fluctuation. These are as follows:

i. A remunerative price to growers.

ii. Increasing the capacity utilisation of sugar mills.

iii. Timely payment of cane price to the cane growers.

iv. Use of good quality of seeds and technology

v. Adoption of improved techniques of cultivation.

The author is of the view that "unless concerted and coordinated efforts are made in this direction by all the concerned agencies, it will not be possible to improve the efficiency and productivity in the State of

¹Ibid.
Gupta B.K. & Gupta K.K.\textsuperscript{7} in an article entitled "Sugar Cane Production Behaviour In India" published in July 1981 have looked into the factors responsible for the speedy development of sugar cane production during the pre and post independance era in the country with the specific objectives to evaluate the trend in area and production of sugar cane in the country. A State wise analysis has been made by the authors. The study indicates that during the pre-independance era, area and the production of sugar cane remained almost unchanged while the area and the production of cane have appreciably increased during the post independence era.\textsuperscript{1} In arriving at the findings and conclusions of study, they have made the use of the secondary data. The data for the most of the states are available only for few years, due to which a detailed and critical analysis has not been done. The study, therefore, cannot be used by the policy makers. The findings of the authors are as follows:

1) During the pre-independence era, the area and the

\textsuperscript{7} Gupta, B.K. & Gupta, K.K. Sugar Cane Production Behaviour In India. Indian Sugar, New Delhi, 1981, July, p.267.

\textsuperscript{1} Ibid.
production of sugar cane remained constant, while after independence both have shown an appreciable increase.

(ii) After independence marginal and average productivities of sugar cane farms have witnessed an increase of 61.68% and 23.5% at aggregate level over the pre-independence period. The authors conclude that there is wide scope of increasing the production of cane if an ameliorative credit policy is followed.

In a Book by C.L. Marketing in an Under Developed Economy- The North Indian Sugar Industry The author analyses marketing in an under developed economy as exemplified by sugar factories in Uttar Pradesh and Bihar. It deals with the structure of North Indian sugar marketing and effectiveness of Indian distribution system. The author highlights the various factors which affect the way the marketing is conducted. The whole work is divided into four major chapters and an index has also been added at the end. In chapter I he discusses the history and setting of Indian Sugar industry. It also deals with the locational pattern, production of sugar cane and the

sugar. It also covers the consumption of sweetening products. Chapter II deals with the cane procurement by sugar mills and discusses the relationship among the growers, the cooperatives and the sugar factories. In Chapter III there is a detailed discussion on the structure of North Indian sugar marketing. The fourth chapter covers household consumption of sweetening products in relation to income, expenditure and prices of sugar. The author critically evaluates the performance of sugar factories. He also suggests a possible line of action that the Government might take in order to bring about a speedy development of sugar factories in north India. In an article entitled "Sugar production prospects and problems" appearing in the Financial Express of July 16, 1990, Varkey V.O. is of the view that the sugar industry is the most politically motivated industry in India. Sugar factories and their output up to large extent are controlled by the politicians and the Governments. Keeping in view the wide fluctuation, the Government has no option but to interfere in its operation by resorting to controlled release of sugar in the market.

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1. Ibid.

He himself has admitted that quantity of cane used for sugar production has increased mainly by attracting the additional production of sugar cane. The article has elaborately dealt with the production of sugar cane and the number of sugar factories in operation since 1970-71 to 1987-88. The author concludes that the shortage of efficient sugar factories, may be the major cause of higher Gur production in the country as well as in Uttar Pradesh. Therefore, setting up of new mills in those areas where mills are insufficient in number is essential in order to increase the production. The paper entitled "Sugar Policy" published in 1982, critically examines the sugar policy.

Kunaria B.K. has looked into various factors responsible for determining the prices of cane and sugar in the country. He argues that manufacturing of Gur and Khandsari is a Colossal loss. He presumed that if 200 lakh tonnes of sugar cane is diverted to manufacture of sugar from Khandsari, the total sweetner will be around 20 lakh tonnes against 16 lakh tonnes.

1. Ibid.

of consumable Gur and Khandsari. In order to increase the supply of cane to factories, he suggested the following points.\(^1\)

1. The sugar cane prices should be fixed at a level which ensures parity in the return from cane with those of important competitive crops.

2. The buying agencies should have a system of registered cane growers. Who would enter into a contract for a period of more than one year. The agreement must be made before the sowing season.

3. It is necessary to create a buffer stock of sugar so that Government can have effective control on the market during the years of fluctuations in the output of sugar and its price.

Sanjay B.\(^{11}\) in his book "The Political Economy of Indian Sugar; State Intervention and Structural Changes" has raised some issues of importance. The whole book is divided into three parts. Part I deals with the advent of State intervention beginning with the grant of protection in 1932. It deals with the

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1. Ibid.

location, nature and set up of cooperative mills. In the opinion of the author, cooperative sector is already dominant on the sugar map of the country, and it will further strengthen its position. The future is bleak for the private mills. The IIInd part deals with the structural changes that occurred in the sugar scenario since independence. He highlights the points that at the time of independence Uttar Pradesh and Bihar produced over 70% of the sugar in the country but by 1985-86 their share had been reduced to less than 30% while the share of southern states has increased from 23% to 60%. Part III deals with the sugar policy viz. cane pricing policy, licensing policy etc. The author discusses in great detail the frequent up and down in Government policy aimed at stabilizing the production of sugar and even out fluctuation in prices and production of sugar in the country. He also seeks to identify the factors which affect the development of sugar factories in the country. Methods are suggested for improving the current conditions prevailing in the country.

Perumal K.12 in his book entitled "Sugarcane Nutrition Norms of Sugar" has based his work on a

12. Perumal, K., Sugar Cane Nutrition Norms for More Sugar, M/s Kothari Sugar publication.
number of field experiments conducted in Tiruchi District of Tamil Nadu. The experiments were mainly conducted between 1973 to 1977 on the case the poor recovery of sugarcane. The author discusses various issues confronting the sugar cane crops. The emphasis has been laid on the maximisation of cane yield and to improve the quality of cane varieties. Various improved cane varieties have been suggested by the authors to raise the productivity of cane in Tiruchi Distt. of Tamil Nadu. He discusses in great detail the various aspects of the plantation. Application of correct technological norms have been critically evaluated in order to achieve the said objectives. He concludes that since the high yielding varieties of sugar cane are generally costlier and require increased input the grower does not like to adopt it. The findings of the work should be helpful to boost the yield through the maintainence of correct nutrition level.

Mohalingum, N's 13 Book "Some Thoughts on Sugar Industry" is a collection of papers & articles published at different intervals and important extracts from the speeches delivered. The work reveals as to

how the industry has progressed against the serious odds and how difficult problems have been tackled during the crucial period. In the opinion of the author there is no other industry which is capable of catering, so effectively to the needs of the common man providing employment to the skilled and unskilled workers in rural and urban areas and generating high revenue in the form of direct and indirect taxes to the central and state Governments. The whole work of this volume comprises of four well ordered parts.

1. The ideal size and structure for the factories in the context of raw material availability. Optimisation of the sugar economy through improved technology of the industry in the country.

2. Various sugar policies and recommendation relevent to production of sugar and its consumption, dealing with such elements in it as control, de-control and partial control etc.

3. Proposals for more systematic and intensive exploitation of the by-products of industry viz. Molasses, alcohol, and bagasse.

1. Ibid., p.3.
2. Ibid.
3. Ibid., p.iv.
From the analysis and interpretation, Mahalingum draws the following conclusions: Location of new sugar mills should be decided on the basis of cane availability and not on the basis of political pressures. He also points out that production of Gur and Khandari should be discouraged through taxes and excise levy.

5. An all India sugar cane price should be adopted. Prices should not be only on the tonnage of cane but also on a minimum sucrose content of at least eight percent. This volume is a good manual for the policy makers as well as the Government dealing with the sugar sector of our economy. In the Book "Government of Cooperative Sugar Factories. A study of Maharashtra Cooperative Sugar Factories" by Inamdar N.R., the author evaluates the role of the Government in the promotion and development of the Cooperative sugar factories in Maharashtra. The work of Inamdar is of general interest and raises some vital issues. The Book critically evaluates the early spade work made by the voluntary efforts of farmers of Ahmadnagar District. The book has been written with a view to acquainting the general reader with the story of

development and growth of cooperative sugar factories in Maharashtra. The main focus is on Government regulation and assistance in the setting up and conduct of cooperative sugar factories. The author has also covered the financial aspect including the participation of financial institutions in the management. The conclusion drawn by the author seems general. In his opinion, the State as well as Central Governments played equally important role in placing the sugar cooperatives on the map of sugar industry of the country. It has supported a liberal attitude towards the sugar cooperatives in the matter of granting licences. Import licences for procurement of plant and equipment and spare parts.

Binayak R. & Rais M., in their paper entitled "Problems and Prospects of Sugar Industry in Uttar Pradesh" published in December 1970 highlight the various issues relevant to the development of sugar industry. They observed that over the years the sugar industry of Uttar Pradesh has grown steadily. The number of sugar factories has increased from 63 in 1951-52 to 104 in 1987-88. In their view a number of

sugar factories are facing problems like inadequate supply of raw materials, obsolete plant and machinery and unfavourable pricing policy of the Government. Owing to these problems most of the mills incur huge losses.\(^1\) They had emphasised the need for rehabilitation, modernisation and expansion of sugar factories of Uttar Pradesh. They suggest that while planning the supply of sugar cane to sugar mills, the Gur and Khandsari units should also be taken into account. The intensity of cane supply should also be regulated by strict enactment of licences for Gur and Khandsari units.\(^2\) They are of the opinion that a contractual agreement of sugar cane supply between mills and growers may solve the problems. They feel that a realistic and long term sugar policy dealing with modernisation, pricing of sugar cane and levy on sugar could bring about significant improvements in the health of sugar industry.

Sinha R.V.\(^{16}\) in his Book "Sugar Industry in India" attempts to review systematically, the efforts made so far towards the growth and development of sugar in the country. The primary objective is to analyse

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1. Ibid.
2. Ibid.
the problems of the industry and to assist in the formulation of sugar policy. The whole work is divided into as many as 10 chapters. The first chapter deals with the history of sugar industry in India. He views that the sugar industry got momentum specially when protection was accorded to it during 1932. Since then its growth has been phenomenal. In chapter II he expresses the view that all aspects of sugar industry are regulated by the government, viz. installation of new units, expansion of old ones, the quantity of sugar to be sold in the open market and the prices of cane to be paid to the growers. He also discusses in detail the management of soil and control of sugar cane pests and diseases in order to increase the production of sugar cane. In the III chapter Sinha vividly describes problems of marketing and transport. He highlights that cane is a perishable raw material as it rapidly deteriorates with the passage of time converting sucrose into invert sugar which is non crystallisable. Organisation of cane marketing and effective transportation system is of considerable importance.¹ In the 4th and 5th chapter Sinha analyses the cost structure and the utilisation of by-products. Labour

1. Ibid., p.100.
relation is dealt with in chapter six. The author discusses the various pros and cons of the Government policy aimed at stabilizing the production of sugar in the country and even out fluctuation in prices. The 7th and 8th chapters are mainly concerned with the finance and the development of the sugar industry in the country. Forecasts about the industry have been made in the last chapter with long term prospectives and strategy, this part being rather technical and of special importance of the subject. Towards the end he suggests that success of any policy should be judged on the following criteria: ²

i) The sugar policy must allow sugar to be available to the consumers at reasonably low prices fulfilling their hopes and aspirations.

ii) The policy must protect the interest of Gur and Khandsari producers.

iii) It must offer a reasonable rate of return to the sugar producers and the growers.

Behari. C.¹⁷ in an article entitled "An Insight into Sugar Cane Production in India" expresses the view

². Ibid., p.283.

that the crux of increasing the productivity of cane rests on need based programmes of sugar factories, Gur and Khandsari manufacturers and cane growers, regulation of cane supplies to sweetening agents, proper price structure and tackling the problems of flood, water logging and drought in specific areas. He focuses that since independence efforts on sugar cane development in the country are being directed towards providing basic inputs of the cane growers in the form of right sugar cane variety, adequate application of fertilizers and irrigation etc. However, the standard of farming in general still remains far below the expected break-through; the reasons obviously being:

1. Lack of the required thrust by the extension agencies on imported technology at field level.

2. Non adoption of available technology by the farmers either due to scarce and or uneconomical availability of various inputs.

He suggests that all three factors shall have to be properly analysed and proper strategy has to be worked out to make a break-through in the production of sugar cane.

1. Ibid., p.273.
2. Ibid.
Channa S.S. & Gupta M.P.,\textsuperscript{18} in the article entitled "Strategy to raise sugarcane production" published in 1988 critically examine the various aspects relevant to the production of sugar cane in the country. They highlight the pattern of sugar production and consumption. In their opinion the vicious cycle of fluctuation in the production of sugar cane from year to year is perhaps the single factor causing great disruption in the sugar production in the country. These wide swings not only make the entrepreneur hesitant in modernising sugar factory, but also affect the adoption of new sugar cane production technology by the farmers.\textsuperscript{1} The benefit of modern technology can be derived only, when it is efficiently utilized by individual cane growers. They emphasize on high yielding varieties of sugar cane with a fair degree of resistance to disease and better crop management to raise the production of cane in the country. They think that the crux of the increasing productivity of sugar cane rests on need based development programmes with effective participation of mills, the cane growers and the maintenance of rationing price structure for cane supplies for Gur, Sugar and Khandasari manufacturers.\textsuperscript{12}

\textsuperscript{18} Khanna, S.S., Gupta, M.P., "Strategy to Raise sugar Cane Production, Yojna, December, 1988, pp.21-22.
1. Ibid.
2. Ibid.
Vekaria R.S., Pandya D.N. & Soni M.C.\(^1\) carried out a study entitled "Role Planed by Cooperative Sugar Factories in Sugar cane development" which was published in 1989. The specific objectives of the study are:

(1) To know the attitude of sugar cane growers towards cooperative sugar mills and its relationship with extent of adoption of sugar cane technology.

(2) To look into the type of services provided by the cooperative sugar mills to the member as opined by the cane growers. The study was undertaken in Gujrat and eight factories were covered. An interview schedule was designed by the authors which was followed by personal interviews. The main findings of the study are as follows:\(^1\)

(i) Out of 209 sugar cane growers majority i.e. 57-90 percent were found to have the favourable attitude towards cooperative sugar factories.

(ii) The relationship between attitude of sugar cane growers and extent of adoption of technology was found significant.

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1. Ibid., p.173.
(iii) The cooperative sugar mills have arranged the improved varieties and aerial spraying programmes.  

The findings clearly indicate that cooperative sugar factories play a pivotal role in increasing the sugar cane production and bringing technological transformation in the sugar cane growing community of Gujrat.

Gehlawat, J.K. \(^2\) in his article entitled "Sugar Industry at Cross Roaos" published in 1989 views that the area and production of sugar cane in the country has stagnated over the past decade, as it increased from 3.15 millions hectares in 1977-78 to 3.45 hectares only in 1989. Similarly, the production of sugar cane has increased at the rate of less than 2% from 176 million tonnes in 1977-78 to 184 million tonnes in 1988-89. \(^1\)

In his opinion production of sugar cane is to be enhanced mainly through the development of high yielding varieties, and an improvement in the farm practices.


1. Ibid.
Dhanuka O.P. in his paper entitled "Problems and Prospects of Sugar Industry" published in 1990 has critically examined the present sugar industry. The author views that due to unrealistic sugar policy there has been a phenomenal increase in the cost of production. It has been so on account of Government's directives to increase the sugar cane prices upto 33 percent, labour wages by 3 percent, transportation cost by 25 percent, spaces and packing materials by 40 percent, which are the main data manuals of the cost of production.  

In this study emphasis had been laid on the state advised cane pricing policy. The state advised cane pricing policy are not only causing deterioration in the sugar economy, but the entire agricultural economy. The study is mainly qualitative in nature adopting a critical approach. The main objective of the study is to evaluate the effectiveness of the different policies viz a viz sugar cane pricing policy, licensing policy pursued by the Government of India. The author critically evaluates the new guidelines issued by the Industry Ministry for licensing of new mills. The findings of the study indicate that there are some problems confronted by sugar industry for which remedial measures need to be undertaken.


1. Ibid., p.373.
Gehlowat S.K. in his article entitled "Sugar industry-misguided policies inviting sickness" published in July 1990 has critically examined the pricing and licensing policies relating to sugar industry. He looked into factors responsible for the escalation in the production cost of sugar. He discusses that some are inherent due to its seasonal character and being predominantly dependent on favourable weather and many are man made which include Government regulation and control of various kinds. He argues that present policy based on the availability of potential for the development of cane is politically motivated and now the Government has become a party to the process of inviting sickness in sugar industry. Sickness is seen to affect all the sugar producing states. A large number of sugar factories of old age have gone sick in Uttar Pradesh and Bihar due to the unrealistic policy of adding new sugar mills in the close proximity of the existing ones. He suggests that the price control mechanism of the Government has to be made more efficient if economic principle is to be applied regarding the licensing of new mills.

1. Ibid.
2. Ibid.
Some of the aforesaid studies deal with the problems of sugar industry of Uttar Pradesh but, no attempt has yet, been made to critically evaluate performance of state Sugar corporation and no study has been conducted concerning the numerous aspects of financial structure of the sugar industry of the State. Therefore, an attempt is made to make a comprehensive study of the financial structure of the Corporation in this work.
PLAN OF STUDY

Keeping in view, the objective of the study, the present work has been divided into the five chapters. Given below are the basic contents of the various chapters in a nutshell.

Chapter I has dealt with the pattern of Growth of Sugar Industry and the problems confronting it. It also reviews the various measures taken by the central Government as well as State Government in order to bring about a speedy development of the industry in the country.

Chapter II deals with the conceptual framework of the study. It has highlighted the importance and significance of the work. The objectives underlying the study have also been defined and a tentative hypothesis has been framed. A though and critical scanning of the work previously available on the subject has also been made.

Chapter III discusses in detail the role played by the industry in U.P. with special reference to the organisation and working of the U.P. State Sugar Corporation. It sheds light on the reasons due to which the Government took over the functioning of the
mills, in order to improve their functioning and economy. It also makes a comparative evaluation of the industry in the major sugar producing states of the country.

Chapter IV attempts to analyse the financial structure and mode of financing of the mills keeping in mind the conventional parameters such as pattern of liabilities, Pattern of investment in assets, cost structure, Debt equity leverage, current ratio and Acid test ratio, and the uses and amplifications of available financial resources.

Chapter V being the last chapter consists mainly of the conclusions derived during the course of study. It also lists the findings of the work and various suggestions in order to bring about a marked change in the present sugar Scenario of the country.