Chapter - II

Review of Literature
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REVIEW OF LITERATURE

A number of micro and macro studies have been undertaken by the researcher and scholars on various aspects of sugar industry both at national and international level. Some of the selected studies are presented below as review of literature.

D. M. Attwood and B. S. Baviskar (1987), "Why Do Some Co-operatives Work but Not Others? A Comparative Analysis of Sugar Co-operatives in India". The co-operative sugar factories of western India (in Maharashtra state) are remarkably successful examples of local development initiative. This study presents a comparative sociological analysis of these co-operatives in order to pinpoint the organizational factors which are crucial for their success. Comparative analysis of privately-owned sugar factories in India reveals a basic weakness in the cane supply relationship between the private factories and the sugarcane growers-a weakness which the co-operative factories have overcome. As a result, the co-operatives can operate at higher technical and economic efficiency than the private factories. Moreover, although the co-operatives receive some helpful subsidies from the government, much larger subsidies are directed to the private factories at the expense of the more efficient co-operatives. The success of the co-operative sugar factories depends not only on a superior cane supply system (which resolves a problem specific to the sugar industry), but also on their ability to generate a stable alliance among the small, medium and large cane growers who are the shareholders. This alliance is made possible by two sets of factors: internal factors, which are specific to the technical
requirements of sugar production; and external factors, which are rooted in the agrarian system of the region where these co-operatives have flourished.

Comparisons with other types of co-operatives in other regions of India show that the presence or absence of similar factors determines whether a given type of co-operative will succeed or fail. Detailed comparisons with the successful dairy co-operatives of Gujarat show that co-operative alliances between small and large farmers may take different organizational forms under different regional conditions. Political organisation is also influenced by the nature and scale of the production process. The general conclusion is that the probable success or failure of co-operative organisations can be predicted through such comparative analyses which compare co-ops with other types of private and co-operative enterprises, taking into account (a) the technical and organisational requirements of the production process, (b) the distribution of interests and possibilities for a stable alliance among the members, and (c) the regional agrarian systems which determine the natural and social environments of the co-operatives.

Vijayakumar A. and Venkatachalam A (1996) “Responsiveness of Working Capital Management – A Case Study of Tamilnadu Sugar Corporation”. In the study it has been emphasized that the developing economies generally faced with the problem of inefficient utilization of resources available to them. Capital is the scarcest productive resource in such economies and proper utilization of these resources promotes the rate of growth, cuts down the cost of production and above all improves the efficiency of the productive system. Fixed capital and working capital are the dominant contributors to the total capital of the developing country. Fixed capital investment generates production capacity whereas working capital makes the utilization of that capacity possible. Thus, the
study of working capital behaviour occupies an important place in financial management.

Working capital has acquired a great significance and sound position for the twin objects of “profitability and liquidity”. The result of the study indicated moderate trend in the financial position and the utilization of working capital. The researchers suggested that the variations in working capital size should be avoided. Attempts should be made to use funds more effectively, by keeping an optimum level of working capital. Because, keeping more current assets causes a reduction in profitability. Hence, efforts should be made to ensure a positive trend in the estimation and maintenance of the working capital.

Lee E. Preston and Douglas P. O'Bannon, (1997), “The Corporate Social-Financial Performance Relationship” This research study analyzed the relationship between indicators of corporate social and financial performance within a comprehensive theoretical framework. The study emphasized that the strategic managers are consistently faced with the decision of how to allocate scarce corporate resources in an environment that is placing more and more pressures on them. Recent scholarship in strategic management suggested that many of these pressures come directly from sources associated with social issues in management, rather than traditional arenas of strategic management. Using a greatly improved source of data on corporate social performance, this study reported the results of a rigorous study of the empirical linkages between financial and social performance. The results of the study indicated that the corporate social performance (CSP) is found to be positively associated with prior financial performance, supporting the theory that slack resource availability and CSP are positively related. CSP is also found to be positively associated with future
financial performance, supporting the theory that good management and CSP are positively related.

Dan R. Dalton, et al. (1998). “Meta-Analytic Reviews of Board Composition, Leadership Structure, and Financial Performance”. The study examined the relationships between board composition, board leadership structure, and firm financial performance demonstrates little consistency in results. In general, neither board composition nor board leadership structure has been consistently linked to firm financial performance. In response to these findings, researchers have provided meta-analyses of 54 empirical studies of board composition (159 samples, n = 40,160) and 31 empirical studies of board leadership structure (69 samples, n = 12,915) and their relationships to firm financial performance. These - and moderator analyses relying on firm size, the nature of the financial performance indicator, and various operationalizations of board composition - provide little evidence of systematic governance structure/financial performance relationships.

Christine Bolling and Nydia R. Suarez (2000) “The Brazilian Sugar Industry: Recent Development”. Brazilian sugar and ethanol are taking on considerable importance as negotiations of the Free Trade Area of the Americas (FTAA) get underway. The U.S. sugar program and import tariffs on ethanol are important bargaining points to Brazil. As one of the world’s largest sugarcane producers, Brazil has considerable influence over the international sugar market. Brazil is also one of only a few countries that produce ethanol from sugarcane. The balance between ethanol and sugar production in Brazil immediately affects international sugar prices. Nearly 4 years ago, Brazil produced so much sugar that sugar prices in the international market fell to fewer than 5 cents per pound.
This study examined sugarcane production trends in Brazil and changes over time in sugar and ethanol production, consumption, and trade, with a view of prospects for trade and international prices in the near future.

The study concluded that the Brazil is among the world’s largest producer and exporter of sugar and has a significant effect on world sugar prices. Brazilian Government policies supporting economic liberalization are likely to stimulate greater sugar production and result in increased Brazil sugar export availability. Brazilian sugar can be expected to remain competitive in the world market because of increased internal efficiencies as Brazil deregulates its industry, modernizes its ports, and reduces its transportation costs from the mill to the port. However, the main determinant of growth in sugar output and exports is likely to be government policies affecting production and use of ethanol. These policies may be affected by trends in international prices of crude oil, as well as by Brazil’s approach to environment issues such as air quality.

Samar K. Datta and Kriti Bardhan Gupta (2001) “Global Competitiveness Analysis of Indian Sugar”. In the study Domestic Resource Cost (DRC) analysis was performed following a systems approach on a fairly large and representative sample of 131 sugar mills in India to estimate import competitiveness of Indian sugar under alternative assumptions. Besides discussing possible future strategies to attain competitiveness, it also identified and ranked the various types of policy parameters at enterprise level, national level and international level, which may have significant effect on Indian sugar’s competitive strength.
Three issues were found critical to this industry's long-term survival growth - first, international strategies to get rid of current distortions in the global market, second, short-term domestic strategies to further liberalize and defend the industry against falling import prices and third, long-term domestic policies to boost up investments in this sector to achieve quality competitiveness for exports.

Some of the important points that emerged out of the study have been highlighted below:

- In general, the Indian sugar industry is not export-competitive at present either in disjoint or in integrated form.

- If the levy quota is increased to 30% and import of sugar is put under open general license (OGL), the Indian sugar industry will become quite import noncompetitive.

- The price paid to the farmers for sugarcane is very high compared to statutory minimum price (SMP). Many times, due to political compulsions, the state governments and cooperative enterprises increase the level of sugarcane price to be paid to the farmers. This has very adverse impact on the competitiveness of the industry. If sugarcane price is paid as per SMP, the industry will be very competitive even with 30% levy quota and import of sugar under OGL.

- Reduction in the levy quota from 30% to 15% and imposition of excise duty will not help the industry to gain import competitiveness unless it is supported by some level of tariff on imported sugar.

- Under the present scenario, with levy quota as 15%, and imported sugar subjected to excise and 60% import tariff, the Indian sugar industry becomes quite competitive at the import front.
• The industry in general will remain fairly competitive even if the import tariff is reduced to 30%. However, even in that case many sugar mills running as disjoint units may become non-competitive.

• In general, the integrated sugar mills are more competitive as compared to the disjoint ones. Therefore, effort should be made to integrate the firm and farm sectors for increasing competitiveness of the sugar industry, as for example the South African Sugar Association (SASA) has been doing for a long time. A common platform for farmers and processors with scope for internal bargaining between the two groups under the same umbrella organisation and in the spirit of brotherhood, therefore, gives more competitive buffer to the sector in a global market.

• Increase in installed capacity and crushing duration have positive impact on the competitiveness of the industry up to a certain level. A very long crushing season, or too large an unit, however, may have adverse impact on competitiveness in Indian industries.

• The sugar mills that are situated in sub-tropical zone seem to show positive impact on the competitiveness as compared to the same in tropical zone. These findings highlighted the need for national policy changes to encourage more sugar mills in sub-tropical rather than in tropical zone, where irrigation potential is also lower.

• More recent sugar mills with newer machineries and generally better recovery rates also display greater competitive strength. This is not true of the mills which have generally failed to make investment in sugarcane processing given the highly regulated policy environment of the industry.
It is immaterial whether the sugar mills are running under private, government or cooperative system, as dummy variable representing any specific segment does not show on average any statistically competitive edge over others.

Mohan. S. (2001), “Working Capital Management of the Sugar Mills”. In this study, the researcher pointed out that the working capital forms a major chunk of the total capital employed in the sugar industry. The two crucial determinants of corporate health (liquidity and profitability) are in part influenced by the way working capital is managed. Industry sources said that today cane arrears are set to mount. There were Rs. 5 crores of cane arrears in the Indian government mill under study during December 2001 and Rs. 7.5 crores of arrears in the case of a selected cooperative mill. Though the law requires the mill owners to pay within 15 days of cane purchased, barring a few mills, none are able to do so because of serious cash flow problem. Industry experts also pointed out that the performance of the existing government and cooperative sugar mills has been unsatisfactory and they continue to be defaulters by huge amounts to financial institutions. These are largely because of an illiquidity of funds. This study examined the working capital management of the sugar mills in Thanjavur district, Tamil Nadu. The study is based on the data collected from the annual reports of three mills (one each from cooperative, government and private sectors) for ten years from 1991-92 to 2000-01.

Abhijit Banerjee, et al. (2001), “Inequality, Control Rights, and Rent Seeking: Sugar Cooperatives in Maharashtra” This study presented a theory of rent seeking within farmer cooperatives in which inequality of asset ownership affects relative control rights of different groups of members. The two key
assumptions are constraints on lump-sum transfers from poorer members and disproportionate control rights wielded by wealthier members. Transfers of rents to the latter are achieved by depressing prices paid for inputs supplied by members and diverting resulting retained earnings. The theory predicts that increased heterogeneity of landholdings in the local area causes increased inefficiency by inducing a lower input price and a lower level of installed crushing capacity. Predictions concerning the effect of the distribution of local landownership on sugarcane price, capacity levels, and participation rates of different classes of farmers are confirmed by data from nearly 100 sugar cooperatives in the Indian state of Maharashtra over the period 1971–93.

Manoj Anand and Chandra Prakash Gupta (2002), “Working Capital performance of Corporate India: An Empirical Survey for the Year 2000-2001” This study was in continuation of the researchers earlier attempt of developing quantitative benchmarks at the firm as well as at the industry level to evaluate Working Capital Management performance of Corporate India from time to time. The previous attempt was based on the methodology designed by CFO Europe Magazine and REL Consultancy Group in their first Working Capital Survey of 1997. In this study researchers experimented with a number of new parameters and different weights in the overall score to have a better picture of working capital management performance of Corporate India.

Finally, researchers selected three financial parameters for this purpose - CCE, DOC and DWC. The study examined their estimates by using data of 427 companies over the period 1998-99 to 2000-01 for each company and for each industry. It is believed that the presence of these three in the overall working
capital performance criterion not only helps in performance evaluation but also will capture the dynamics of risk-return trade off.

Ferrantino Michael J., et al. (2002), “Organizational Form and Efficiency: Evidence from Indian Sugar Manufacturing” In the study Frontier cost and production functions were used to examine the effects of ownership on intra firm differences in technical, cost, and allocate efficiency in the Indian sugar processing industry. The result of the study indicated that the cooperatives were found to be as or more efficient than their counterparts. The results suggested that technical and coordination economies of vertical integration provide important advantages for the cooperative form of organization. The researcher also found that the seasonal labor is over utilized and permanent labor is underutilized relative to their cost-minimizing proportions. This is possibly a second-best solution in light of employment regulations.

Donald F. Larson and Brent Borrell (2001)”Sugar Policy and Reform”. The study pointed out that the interventions in sugar markets come about for many reasons. Often the consequences of these policies persist even when the circumstances that motivated them change or the underlying problems that motivated past interventions remain even when it’s clear that current approaches have failed. Reform of sugar markets needs to go beyond eliminating failed policies - and find lasting solutions.

Reviewing cross-country experience with sugar policies and policy reform, the researchers concluded that long-standing government interventions - rooted in historical trade arrangements, fear of shortages, and conflicting interests between growers and sugar mills - often displace both the markets and the institutions required to produce efficient outcomes. Arrangements rooted in colonial eras still
shape policies and trade in the United States, the European Union, and many developing countries. Once policies and institutions are put in place, households and the value of investments grow dependent on them, even as their usefulness fades. Firms and households make decisions that are costly to reverse. Moreover, the result is a legacy of path-dependent policies in which approaches and instruments are greatly influenced by past agreements and previous interventions. The cumulative effects of these interventions are embodied in livelihoods, political institutions, capital stocks, and factor markets—which not only dictate the starting point for reform but also determine which reform paths are feasible. Experiments with public ownership, common in many countries, have not succeeded. So most countries have initiated some measure of market reform. And events relating to NAFTA, Lome, and expansion of the EU may bring about significant changes in the EU and US sugar regimes, with cascading effects on other countries. Common problems in the sector include determining cane quality, finding methods for fairly sharing revenues from joint production, finding ways to take advantage of preferential trade arrangements with minimal negative consequences, finding ways to finance and encourage research and other activities with common benefits, identifying practices that facilitate equitable, sustainable privatization, and determining the relationship between sugar market reform and markets in land, water, credit, and other inputs.

A. Ganesh-Kumar, et al. (2001), “Outward Orientation, Investment and Finance Constraints: A Study of Indian Firms”. In the above study, the researchers have investigated the presence of finance constraints on firms’ investment behaviour using Indian manufacturing as a case study. This question becomes particularly interesting in the post-1991 period when substantial market
oriented reforms were undertaken. They argued that in the Indian institutional context (especially, the underdeveloped state of bankruptcy laws and restrictive exit procedures) outward orientation rather than size is the relevant criteria for distinguishing firms that may be 'finance-constrained' from those that are not. Using panel data for 718 Indian manufacturing firms for the period 1993-98, they found that exporting firms are less constrained in financial markets than firms which sell primarily to domestic markets.

Pratapsinh Chhauhan (2003), “Role of Transaction Cost on Financial Performance of Sugar Industry of India”. In the study, it is pointed out that the Agriculture is still the backbone of Indian economy as it contributes a considerable 30% share to the total national income and provides employment to 2/3rd population of the country. Sugar industry has a very important place in the agriculture sector. There are as many as 426 sugar mills in the country. The Indian sugar industry also deals with 45 million farmer families as the second largest Agro-processing industry. These sugar mills are not properly managed as far as their performance is concerned. The heavy losses, sickness and poorer performance lead to analyze the financial performance of the sugar mills in India.

The study has the following precise objective to examine the role of transformation vis-à-vis transaction cost in economic and financial performance of the Indian private sugar industry and Second, to bring out the policy implications of transaction cost analysis for future development of this industry. General hypothesis was that the transaction cost role was closely related to financial performance in terms of profitability. Operational factors were also affecting to transaction cost and financial performance of the sugar industry.
The analysis concluded that the financial variable related to transformation cost and it also includes the operation variable for i.e. return on net sales based on cane quantity crushed and sugar produced in quintals influencing financial performance of sugar industry. Transaction cost (TC cane-2) on cane crushed, percentage of transaction cost in advertising, marketing and bad debts (PTC Cane-2) and transaction cost (TC Sug-2) based on sugar produced were highly statistically significant. Whereas operational variable capacity was also statistically significant (Ecapa). Remaining variables are not statistically significant on return on net worth between two groups. The overall conclusion of the regression model was the transaction cost influencing the financial performance at greater extent where as transformation cost leads to increase profitability up to optimum level of production but after that it negatively influence the financial performance. The recovery positively influences the financial performance. Where as the working day losses is highly statistically significant in all models. It means that working day losses lead to decrease overall efficiency of sugar industry.

Narendra Reddy (2004) “Survival Strategies for the Fiji Sugar Industry”. This study examined the problems facing the Fiji sugar industry and the options and prospects for restructuring the industry. In recent years the sugar industry has been confronted with a number of problems, both internal and external, such as declining productivity both in the field and the factory, declining sugar quality, poor industrial relations, rising production costs, shortage of skilled manpower, ineffective management, fluctuations in world free market prices and phasing out of the long term market in the European Union. The sugar industry is too crucial to Fiji’s economy to be ignored. The industry structure and stakeholder
relationship is somewhat outdated and needs to be revisited. The study explored some of the options for restructuring the industry to facilitate its survival.

The study concluded that the sugar industry has for some time been faced with fundamental problems. The government as well as the sugar industry stakeholders recognized the need for addressing the problems. This study has looked at six options which have been proposed to address the sugar industry problems. These are privatization of the Fiji Sugar Corporation, continuing with the status quo, implementing the Sugar Industry Strategic Plan, implementing the ‘Way Forward Proposal’, entering into a management contract with an experienced international sugar milling organisation, and entering into a joint venture or strategic alliance with an international sugar milling organisation. The study proposed that the best solution out of the six is to implement the sugar industry strategic plan developed in 1997. This plan calls for grower and miller partnership in addressing the problems. The study also proposed that the government ought to clearly distinguish its role as a shareholder of the FSC and its role as an independent arbiter in the disputes.

The study stressed the need for consensus on the sugar industry reforms. For any reform to succeed in the sugar industry, it is vital that stakeholders be involved in the reform process, and that the process and the ingredients of the reform get stakeholder endorsement.

Arindam Bandyopadhyay and Sandwip Kumar Das (2004). “The Linkage between the Firm’s Financing Decisions and Real Market Performance: A Panel Study of Indian Corporate Sector” In the study, researchers examined the relationship between quality and reputation signals and firm’s product market performance at empirical level. Using data of 533 Indian
listed firms over the period 1989–2000, researchers compared the behavior of top 50 business group firms with the small group and private standalone firms. The empirical result suggested that real market signals like advertisement, marketing, distribution, research and development, ISO third party quality certifications significantly affect firms’ performance. Financial decisions by firms in the capital market like issue of commercial paper and debentures may also act as additional signals of firm specific qualities in the product market. For instance, the total sales go up by 2.4% for top 50 business group firms and by 2.5% for non-top 50 firms with a one standard deviation increase in commercial paper as a fraction of assets. Similarly, an increase in debentures relative to assets leads to 9.5% increase in sales for non-top 50 firms in comparison to a 4.7% increase for top 50 firms. The researchers also found that financial institutions lending helps firms increase expenditure on advertising for product promotion, build distribution networks, increase marketing efforts and research and development, and thereby, boost sales growth significantly in the long run.

From regression results and various univariate tests, researchers found strong empirical evidence that firms’ financial decisions drive product market outcomes.

Sanghamitra Das and Dilip Mookherjee (2005), “Ownership Form and Contractual Inefficiency in the Indian Sugar Industry”. This study examined the evidence for contracting distortions in procurement of sugarcane by Indian sugar factories with differing ownership or management. The researchers pointed out the role of ‘institutional’ factors in the growth process are manifested by the contrasting responses of factories and growers to changing patterns of landownership. Owing to differences in their respective cane pricing patterns, these
changes induced distinct output responses in the farmer-managed cooperatives and private as well as state-managed factories. The rise in land fragmentation induced opposite effects on the extent of cane pricing distortion in the Maharashtra cooperatives and in the other two types of factories in UP, causing their growth performances to diverge. Had the private sugar factories in UP been organized and managed the same way as the Maharashtra cooperatives, rising land fragmentation would have caused cumulative output growth over the period 1981-91 to be higher by 14 percentage points. The key incentive problem is that residual claimants to factory profits can exploit their ex post monopsony power and under price cane supplied by farmers. This result in undersupply of cane to factories, the extent of which depends on who controls the factory, and the distribution of land between small and big growers. Predictions of the model are empirically verified for factories and cane growers in the two largest sugar producing Indian states – Uttar Pradesh and Maharashtra.

The results of the study indicated that there is no evidence of significant differences in the pricing distortion between private and state-managed factories in UP, as measured by its contribution to growth implications of rising $\beta$. This is particularly true in East UP, where land fragmentation was high enough for the cane distortion to not change much with rising $\beta$. In West UP, however, rising fragmentation was associated with a significantly lower growth of cane supply in private factories compared with state-managed factories. In general, however, cane participation rates change with respect to changes in $\beta$ in a fairly similar fashion across the two sectors, while levels of participation are uniformly higher in the private factory areas. This suggested that farmers are better off in the private factory areas compared with the state managed areas. However, the extent to which
this difference is caused by the difference in ownership as against other region-specific factors is something we cannot identify. Nevertheless the interesting fact that does emerge is that state managed factories seem prone to the same kind of cane under pricing as private factories, despite their stated aim to reduce the severity of the incentive problem inherent in a private monopoly. The researchers also found that the respective cane price distortions overwhelm the effect of changes in cane quality, technological change, and sugar prices in accounting for differences in growth of the industry between different ownership forms and regions. Privately owned factories exhibit the strongest distortions, followed by government owned or managed factories in UP. The distortions are lowest in farmer-managed cooperatives of Maharashtra.

M Poggio (2006), *Measuring Business Performance in the Sugar Industry in Australia*” the study emphasized that the measuring and comparing the performance of a business is a critical part of successful business management. Information on the past and present performance of a business can provide a basis for improved manager decisions and greater profitability. Measuring and comparing business performance is not a standard practice in the sugar industry and many farm businesses are still uncertain about the value of such an analysis and the process involved. Measuring business performance accurately requires the use of sound business records, an understanding of the terminology used and what information is required to calculate the relevant performance measurements. Sound business records also provide the farm manager with a means to review past practices and develop strategies to enhance business performance. Developing uniform terminology and analyzing practices is essential to enable accurate and meaningful comparisons between or within a farming business. The aim of this
study was to outline some of the performance indicators that may be used to measure and compare business performance in the sugar industry and to provide a case study of a benchmarking exercise undertaken by a group of growers in the Burdekin region. This study also outlined the meaning of the performance indicators used during the case study and highlighted the necessary farm management records required to accurately measure business performance.

The study concluded that the modified FEAT (Farm Economic Analysis Tool) program proved to be an effective tool to measure business performance with a group of growers in the Burdekin region. The benchmarking exercise highlighted the need for uniform terminology and analysing practices in order to improve the accuracy of the performance indicator results.

Benchmarking and comparative analysis is a useful tool for managers, however the results should be interpreted with caution and consultation with a qualified person is recommended before implementing a strategy. A variation in the performance indicator results between businesses may be caused by several factors and may not necessarily mean that one business is more superior in farm management practices. The Burdekin benchmarking exercise provided a basis for group discussion and highlighted the need for further investigation into the grower’s management practices to determine the reason for a variation in results. The benchmarking initiative also highlighted the main drivers behind farm profitability and provided growers with a basis to measure business performance in the future.

management is expected to contribute positively to the creation of a firm’s value.

The purpose of this was to examine the trends in working capital management and its impact on firms' performance. The trend in working capital needs and profitability of firms were examined to identify the causes for any significant differences between the industries. The dependent variable, return on total assets, was used as a measure of profitability and the relation between working capital management and corporate profitability was investigated for a sample of 58 small manufacturing firms, using panel data analysis for the period 1998 – 2003. The regression results showed that high investment in inventories and receivables is associated with lower profitability.

The key variables used in the analysis are inventories days, accounts receivables days, accounts payable days and cash conversion cycle. A strong significant relationship between working capital management and profitability has been found in previous empirical work. An analysis of the liquidity, profitability, and operational efficiency of the five industries shows significant changes and how best practices in the paper industry have contributed to performance. The findings also revealed an increasing trend in the short-term component of working capital financing.

Kewal Raj (2006), “Sugar Industry in India: Growth and Capacity”. According to the available indications in the Vedic literature, sugar industry, with its glorious past and bright future, has its origin in India. The study found out that the growth of the industry has been quite slow till 1929-30. In 1931, the industry was granted protection, which resulted in its rapid growth. The result of the study indicated that the performance of industry has been satisfactory in the plan period. The policy measures of liberalization, privatization and globalization (LPG) have
not produced the desired results instead the industry has suffered a setback in the sense that the rates of output growth capacity expansion and capacity utilization have witnessed a decline in the post-liberalization era. However, the cause for the decline is not the failure of LPG but the neglect of agriculture in which lie the roots of this industry.

Rahul Kumar (2007), "Sugar Industry is in the Doldrums", based on analysis of the study the researcher pointed out that the industry has been facing an unpleasant period. Not only the sugar industry but also most agro-industries are facing a difficult time. Whether it is food grains, like Paddy and Wheat, or Oil seeds like Groundnut and Coconuts or money crops like Turmeric, Banana or Sugarcane, they have all been relegated to a situation of getting an unreasonable price or perhaps a lower price. Just how much Mexican sugar can enter the American market this year is in dispute. Sugar is nightmare in terms of trade negotiations. Most of the sugar mills, not only in Tamilnadu, but throughout our country are facing huge loss due to the poor performance of the marketing conditions.

Javalagi, C.M. and Bhushi, U.M (2007), “An Overview of Application of System Dynamics Modeling for Analysis of Indian Sugar Industry”. The study pointed out that the sugar cane and sugar sectors are quite important segments of the Indian agriculture sector with great potential for impacting rural development. Sugar industry has proved itself to be a nucleus of rural development, particularly in its surrounding areas and has carved for itself a very significant role in the national economy. The performance of Indian sugar industry depends on national and international factors which include sugar price, consumption pattern, government policies or support programme to name a few.
The study discussed the present national and international scenario of sugar industry and their impact on the performance. SD is an approach, which takes a causal view of reality, and uses quantitative means to investigate the dynamic behavior of socio-technical systems and their response to policy.

This study presented a conceptual framework for application of system dynamics modeling for analysis of Indian sugar industry. It also described how system dynamics (SD) can aid as an effective management tool to resolve the complex dynamic issues of sugar industry management.

Shanlin Yang and Nanping Feng (2007) “A Case Study of Industrial Symbiosis: Nanning Sugar Co., Ltd. In China”. In the study, it is observed that the industrial symbiosis activities are being implemented in the philosophy of “circular economy” in China. Integrating industrial symbiosis into the corporate development plans to optimize materials and energy flows is a feasible strategy for many corporations in their transition between non-sustainable and sustainable development. By constructing industrial ecosystems, Nanning Sugar Co., Ltd. in China, has achieved the successful transition from a traditional corporation to a sustainable corporation, or rather, a circular corporation. This study expounded on its whole transition course to a circular complex in the past decade, in which four factors are essential to making this symbiosis achievable: rational production structures; raw materials advantages; technical supports and correct diversification. The corporation is in charge of almost all the aspects of its affiliated companies and the management mode, in particular, differing from that of industrial symbiosis systems in Kalundborg, is considered another potential factor contributing to the
corporate success. The transition mode in question is hoped to point to a feasible
development path for similar corporations.

Industrial Base for Rural India”. In the study an attempt was made to review
progress of sugar industry in India, understand its problems and challenges in
context of ongoing liberalization process. Indian sugar industry can be a global
leader provided it comes out of the vicious cycle of shortage and surplus of
sugarcane, lower sugarcane yield, lower sugar recovery, ever increasing production
costs and mounting losses. It needs quality management at all levels of activity to
enhance productivity and production. Attention is required on cost minimization
and undertaking by product processing activities. It is concluded that the sugar
industry is the second largest agro-based industry in India. Sugar factories,
particularly cooperative sugar factories in Maharashtra and other states have been
instrumental in building confidence among rural people and strengthening
industrial base in rural India. In the era of globalization, sugar industry needs more
competitive edge, which can be given by way of modernization, enhancing
productivity, and manufacturing excellent quality sugar at competitive prices. It is
suggested in the study that the sugar industry needs quality management at every
level of activity to enhance its performance. The need of the hour is to liberalize
industry from clutches of unprofessional people. Most of the sugar units do not
have byproduct utilization plants. Projects based on bagasses and molasses should
be initiated. Ethanol, alcohol, and paper projects have tremendous scope for
development in India. In future, 10-15% ethanol may be allowed to be blended
with petrol. Bagasses based power generation projects installed adjacent to each
sugar factory would fulfill need of power. NABARD should provide adequate and
timely refinance to these projects at concessional interest rates. New sugar units should be set up taking into consideration sugarcane availability.

Research programme should be undertaken in area of sugarcane cultivation, enhancing sugarcane productivity, and sugar recovery. Sugarcane prices should be fixed on basis of sugar recovery. Attention is to be given on manufacturing quality sugar as per international standards at competitive prices.

_Benni Basavaraj S (2007) “Inter State Sugar Factory Efficiency: A Comparative Analysis”_. This study was carried out to compare the average efficiency ranks of the various sugar producing states on the basis of their respective average technical efficiency scores with a view to identifying the inefficient sugar producing states. Using the Data Envelopment Analysis Model, the study identified the inefficient sugar producing states and revealed that Bihar can increase 12.28 per cent (3936 Tonnes) of sugar output with given inputs, Tamil Nadu 10.22 per cent (3709 Tonnes), Punjab 8.52 per cent (1467 Tonnes), Karnataka 6.12 per cent (1832 Tonnes) Uttaranchal 5.89 per cent (2386 Tonnes), Haryana 5.54 per cent (1803 Tonnes), Chhattisgarh 3.15 per cent (364 Tonnes) Madhya Pradesh 3.27 per cent (348 Tonnes), Orissa 1.95 per cent (146 Tonnes) and Goa 1.27 per cent (103 tonnes)

_Sushma Vishnani and Bhupesh Kr. Shah (2007), “Impact of Working Capital Management Policies on Corporate Performance—An Empirical Study”_. The study observed that conventionally, it has been seen that if a company desires to take a greater risk for bigger profits and losses, it reduces the size of its working capital in relation to its sales. If it is interested in improving its liquidity, it increases the level of its working capital. However, this policy is likely
to result in a reduction of the sales volume therefore of profitability. Hence, a company should strike a balance between liquidity and profitability.

In this study an effort has been made to make an empirical study of Indian Consumer Electronics Industry for assessing the impact of working capital policies & practices on profitability during the period 1994-95 to 2004-05. The impact of working capital policies on profitability has been examined by computing coefficient of correlation and regression analysis between profitability ratio and some key working capital policy indicator ratios.

N. Chiadamrong And R. Kawiümmachai (2007) “A Methodology To Support Decision-Making On Sugar Distribution For Export Channel: A Case Study Of Thai Sugar Industry”. The study pointed out that the supply chain research can lead to an increase in efficiency, business integration, responsiveness and ultimately market competitiveness. In the sugar industry, such research has expanded rapidly over the past two decades, and has been motivated by low world sugar prices and rising costs of production. However, in the present competitive business environment, a more customer-driven and holistic approach to supply chain management is required. This study focused on warehouse and distribution management for the export channel of Thai sugar industry. The aim was to suggest the best inventory position and transportation route in the distribution system based on Genetic Algorithm (GA). It provides a systematic and flexible framework to solve the problem of cost minimization of sugar transport from the mills to seaports. The results demonstrate that the tool is not only useful for minimizing the cost, but also for managing sugar warehousing, distribution route and seaport exporting. While the focus of this paper is on sugar supply chain, much of the
information is relevant to distribution management of other agricultural commodities as well.

The article “Factories Crippled by Cane Crisis” published in the Times of India on 12th May 2008 pointed out that the decline of the sugar industry in Bihar was mainly due to non-availability of sufficient quantity of sugarcane and lack of infrastructure. Poor linkages, lack of irrigation facilities, irregular power and poor varieties of sugarcane have left the industry crippled. Moreover, yield per hectare in Bihar is lower than the sugarcane producing regions in north India. The main reason for this is that out of the total cultivable area, a sizeable portion is fallow land and not suitable for cultivation of sugarcane in the absence of drainage facilities. Hence, yield is only 41.4 tonne per hectare in Bihar against the national average of 59.4 tonne per hectare. The sugarcane-growing season is also of a lesser duration than other sugarcane growing states. It means that sugar mills would remain operational only during some months of the year. It also reduces the viability of standalone sugar mills and emphasizes the importance of both increasing the duration of the crushing season and establishing integrated mills that can remain profitable during the time of the year when crushing is not possible.

Mills in other sugar producing states are also facing problems. Sugar factories in Uttar Pradesh have been thrust into a 'cane war' situation after new units were allowed near existing sugar mills. In Tamil Nadu, high transport costs are an issue with sugar factories having to source sugarcane from 50-100 km away. In Maharashtra, the reason for sickness is the crowding of sugar factories. With so many units in close proximity, raw material shortage is a problem.
Political control of firms is prevalent across the world. The study investigated the consequences of this control in the context of sugar mills in Maharashtra, India, in particular how elections affect mill production. This study found out the evidence of electoral cycles in outcomes of sugar mills in Maharashtra. In particular, the recovery rate or yield of sugar falls by approximately 0.13 percentage points in election years and by a further 0.07 percentage points in politically controlled mills during state elections. The fall translates to an economically significant drop in revenues, of Rs 8 to 12 million (US$ 250,000–350,000). There is some evidence to indicate that the output decline is not due to effects on mill operations, indicating that sugar may “disappear” off the books to cover up stolen funds. Farmer welfare is affected directly as prices are lower by Rs 54 per ton in years with national elections, and by Rs 19 in politically controlled mills during national elections. From the perspective of farmers, this fall in output and prices could represent either pure theft by mill chairmen, or a form of involuntary campaign contribution by farmers. Given that it is unlikely that farmer-shareholders are completely ignorant of stealing and electoral cycles, and that internal mill elections are competitive, the latter perspective seems plausible. Testing for whether farmers receive anything in return for their involuntary donation, it is found that chairmen who win national elections pay higher cane prices in the year after elections, and are also much more likely to keep mills open. Moreover, when the party affiliated with the mill’s chairman is in power at the state level, the mill also pays higher cane prices.

The overall effect on farmer welfare is difficult to determine, since the counterfactual is difficult to construct in this case if assumed that all mills are
politically connected to some degree. In an ongoing project, the researcher examined whether farmers perform better under private sugar mills versus cooperative or government-owned sugar mills, which might shed light on this issue. Even more difficult to measure are the overall costs or benefits to society since the higher cane prices come at the cost of diversion of state funds by the politically powerful to their favored sugar mills. Nonetheless, these results can perhaps shed light on the debate over whether voters are short-sighted. In this case, the story suggested that voters can plan ahead, offering their votes in return for the promise of future state funds.

Andrew A. King and Michael J. Lenox (2008) *Does It Really Pay to Be Green? An Empirical Study of Firm Environmental and Financial Performance:* It is pointed out in the study that the previous empirical work suggested that firms with high environmental performance tend to be profitable, but questions persist about the nature of the relationship. Does stronger environmental performance really lead to better financial performance, or is the observed relationship the outcome of some other underlying firm attribute? Does it pay to have clean running facilities or to have facilities in relatively clean industries? To explore these questions, the researchers analyzed 652 U.S. manufacturing firms over the period 1987–1996. Although they found that the evidence of an association between lower pollution and higher financial valuation, they also found that a firm's fixed characteristics and strategic position might cause this association.

A survey of the various studies on sugar industry in India reveals that research study on the performance evaluation of sugar industry in Tamil Nadu with special reference to Thanjavur District is not yet attempted. The present study “A
Study on the Performance Evaluation of Sugar Industry in Tamilnadu - With Special Reference to Thanjavur District attempts to fill the research gap. The study focuses mainly on the performance of the sugar industry in general and financial performance in particular and investigates the various problems of sugar industry. The findings of this study not only throw light on technical weakness in the managerial activities of the sugar industry, but may also help scholars and researchers to develop new ideas, techniques and methods in respect of the functioning of sugar industry especially in the global competitive scenario.