CHAPTER - II

REVIEW OF LITERATURE

Aim of business is to earn profit. Profitability of a firm indicates the financial stability and determines its future growth. At the industry level, high profitability encourages the existing firms to expand and attracts new investment leading to economic gains. Hence, investors are interested in knowing the profitability over time and across firms and/or industries at a given moment of time. Working capital is one of the basic ingredients to determine the profitability of the firm. Moreover, economists and policy makers are examining trend and determinants of profitability in order to identify the crucial factors which explain profitability, impact of government controls and other measures and suggest actions for earning reasonable rate of return and enable future growth.

In the earlier days, studies conducted in relation to the use and consumption of fertiliser were mostly scientific in nature. Agricultural scientists do research on the impact of fertiliser on plants at various levels. Some economists have also analysed the pattern of use of fertilisers at different areas. Some studies relating to fertiliser are reviewed in this chapter for the purpose of understanding the concepts of pattern of use. In this chapter an in-depth study is made in relation to various studies in financial performance and fertiliser use by various researchers.
Review of Empirical Studies Financial aspects

N.K. Agaarwal$^2$ studied relationship between profitability measured as profit / net worth and profit / net assets and size expressed as total sales for seven Indian manufacturing industries, namely cotton spinning and weaving, cotton ginning, jute textiles, paper and pulp, sugar and aluminum for the period 1962-72. The relationship between size and profitability was observed in cotton spinning industry, jute textile industry, sugar and brewing industry and aluminum industry, while in case of cement and cotton spinning and ginning industry no such relationship was observed.

Agaarwal$^3$ analysed the behaviour and determinants of profit and in particular to examine the impact of price control on the profitability of firms in the automobile industry. The study was based on data for the period 1959-60 to 1978-79. He found that profits in the car sector depended on sales, capacity utilisation, product prices and factor prices. Market share and lagged investment appeared to be significant at the firm level but not at sector level. However, both market share and lagged investment were significant for non car sector. He has also concluded that price controls have adversely affected profit in the car sector.

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$^3$ ibid., p.29.
Alberts W.W. and S.H. Archer (1973)\(^4\) presented a research paper on “Some Evidence on the Effect of Company Size on the Cost of Equity Capital”. The objective of this paper is to carry out tests of the general hypothesis, that the cost-of-equity capital of small industrial corporations is greater than that of large industrial corporations.

Anup Agarwal and J. Nandu Nagarajan (1990)\(^5\) published a research paper on, “Corporate Capital Structure, Agency Costs, and Ownership Control: The Case of All-Equity Firms”. In this study, they attempted to evident that all equity firms (Firms which use no long-term debt over a continuous five-year period) exhibit greater levels of managerial stock holdings, more extensive family relationships among top management, and higher liquidity positions than a matched sample of levered firms. Further, it leads that the managerial control of voting rights and family relationships among senior managers are important factors in the decision to eliminate leverage. Their main findings are: i) Managers of all-equity firms have significantly larger stock holdings than managers of similar-sized levered firms in there industry, ii) there is significantly greater family involvement in the corporate operations of all-equity firms than in levered firms, iii) Managerial ownership in all equity firms

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is positively related to the extent of family involvement, and iv) all-equity firms are characterized by greater liquidity positions than levered firms.

Asha Jain⁶ examined the variation in price cost margin over time in ten two-digit Indian Industries. Price-cost margin was used as measure of profitability. Cost factors emerged as significant determinants of profitability while the structural variables like concentration ratio, capacity utilisation, growth and capital intensity showed mixed pattern results varied among industries.

Bain⁷ studied the relationship between concentration and profitability. Using eight firm concentration ratio for a sample of 42 U.S. 4 digit industries, he found that there exists a positive relationship between after-tax profits as a percentage of shareholders equity and concentration ratio.

Chudson (1945)⁸ presented a research paper on "The Pattern of Corporate Financial Structure" and it provides direct evidence on the companies with high properties of fixed assets to use more long term debt. The research also indicates that there is no simple linear relationship between corporate size and debt ratio.

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David Flath and R. Charks Knoeber (1980)\(^9\) presented a research paper on “Taxes, Failure Costs, and Optimal Industry Capital Structure: An Empirical Test”. In this article, they attempted to test that, although taxes and costs of failure do not affect the average cost of capital, they do affect the expected income and so imply an optimal capital structure. This is against the concept of Franco Modigliani and Merton Miller (M-M). M-M stated their proposition in two equivalent forms: that the “value of firm is independent of its capital structure” and that “the average cost of capital to any firm is completely independent of its capital structure”. Several theorists have suggested that the validity of the invariance proposition of corporate finance first posed by Modigliani and Miller depends upon the absence of taxes and failure costs. That is, taxes and failure costs imply the existence of an optimal capital structure.

Douglas Vickers (1970)\(^10\) in his article “The Cost of Capital and the Structure of the Firm” has concentrated on the narrow but important set of issues namely, the nature and relevance to a firm at different optimization points of the cost of capital.


Gale\textsuperscript{11} examined the effect of market share on the rate of return of selected firms operating in different market environment using data of 106 firms. He found that high market share is associated with high rates of return and that the effect of share on profitability depends on other firm and industry characteristics such degree of concentration and rate of growth in the industries in which the firm competes and on the absolute size of the firm. He also found the relation between rate of return on equity and the equity to capital ratio (a measure of risk in a inter-industry sample of firms) to be positive and significant.

B. Gay Hatfield, T.W. Louis, Cheng and Wallace N. Davidson III (1994)\textsuperscript{12}, presented a research paper entitled “The Determination of Optimal Capital Structure: The Effect of Firm and Industry Debt Ratios on Market Value”. In this paper they argued against the concept of De Angelo and Masulis (1980) who demonstrated that the presence of corporate tax shield substitutes for debt implies that each firm has a “Unique interior optimum leverage decision” Masulis (1983) argued further when the firms that issue debt are moving toward the industry average from below, the market will react more positively than when the firm is moving away from the industry average.


V.K. Goyal (1989)\textsuperscript{13} in his doctoral dissertation submitted to the University of Delhi, Delhi, entitled “Measurement of the Cost of Capital in Selected Indian Industries”, focused on the two dimensions of the problem of cost of capital: 1) Behaviour of the cost of capital in relation to capital structure changes, and 2) The measurement of the cost of capital. For the first problem, he attempted two views. The one is held by Modigliani and Miller. It means that under certain assumptions, the cost of capital remains invariant to the capital structure changes. Contrary to this, the other view, held by traditionalists, is that the cost of capital is affected by changes in the capital structure, i.e., the cost of capital can be reduced by judicious mixture of debt and equity capital. The problem of measuring the cost of capital has not been adequately attempted particularly under the Indian Context. Therefore, the endeavor in this study has been to measure the cost of capital in selected Indian Industries using the existing theoretical models. For which, the cost of debt is measured with the interest rate suitably adjusted for tax effect, while the cost of preferred capital is measured by the rate of dividend indicated. The other problem related to the measurement of cost of capital has been the assignment of appropriate weights to each component of capital.

Greg Filbeck, Raymond F. Gorman and Dianna C. Preece (1996) submitted a research paper titled, "Behavioural Aspects of the Intra-industry Capital Structure Decision". In this article, they examined that the firms may actually make financing decisions of some industry leader. In other words, they ascertain certain firm within an industry as a "leader" and the other firms in the industry, termed "followers" and the latter will try to emulate the leader’s capital structure decisions. Applying the concepts of prospect theory and self deception to financial manager's decision making may provide important insights into the way firms make choices. However, this field is in its infancy and much work remains to be done.

Haim, Ben Shahar in his article, "The Capital Structure and the Cost of Capital – A Suggested Exposition", he examined the firm’s capital structure, and the efficient opportunity curve of yield versus risk was presented and the range of efficient capital structure of the firm was derived. The capital structure theorem was formulated, stating that the firm’s cost of capital is constant along with the range of efficient structure and rises at the inefficient range.

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Hall and Weiss\textsuperscript{16} study found firm size as the major determinant of profitability. They hypothesised that large enterprises should earn high profit rates even in the long run and even in the absence of the barriers to entry other than those directly associated with availability of capital. Using data of 341 firms for the years 1956 to 1962, they concluded that size tend to result in high profit rates.

Mitton Harris and Arthur (1991)\textsuperscript{17} issued a paper on "The Theory of Capital Structure" which surveys capital structure theories based on agency costs, asymmetric information, product / input market interactions, and corporate control considerations, (but excluding tax based theories), for each type of model, a brief overview of the papers surveyed and their relation to each other is provided.

Rahul Kochhar (1997)\textsuperscript{18} presented a research paper on "Strategic Assets, Capital Structure, and Firm Performance", in which he directed towards providing a theoretical integration between strategic management and modern financial theory. This paper related conceptual arguments regarding financial policy decision-capital structure to the resource based perspective of competitive advantage to examine some implications for firm performance. Further, this paper explored the role of financial management in generating

superior performance for a firm. The basic thesis is that the possession of a source sustained competitive advantage is not sufficient to obtain improved value. Rather, the financial policies of a firm should be in harmony with its source of economic rents. A competitive advantage without such a capability to obtain the economic rents present in their strategic assets.

M. Sanwar Misra\textsuperscript{19} has stated that Globalisation has become a buzzword. All developing economies cannot remain unglobalised, unliberalised unless they want to become isolated from the world business development forum. Now the turn for the developing countries is to go through the exercise of the GLAP. Forces of globalisation may threaten some ethical, social, cultural changes unacceptable to the country, when foreign funds are channelised through some of the unscrupulous non-government organisations. Because the funding agencies tie up conditions are favourable to them. Similarly, FDIS may not help in creating employment opportunities in rural areas, where the need is the greater, but in projects, which are more remunerative to them. Since our country has already gone far into the liberalization process, reversing is not possible. But a cautious and prudent move with adequate weightage to employment GDP growth, technology update, productivity and export in our plan projects is implied in view of the economic breakdown of the south east Asian countries. Even in Russia and east European countries so far globalisation has not proved successful.

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Sharma and Hanumantha Rao (1968)\textsuperscript{20} in “Leverage and the Value of Firms”, were to employ the Modigliani and Miller’s model under Indian conditions to a non-regulated industry and to test the influence of the debt on the value of the firm.

Suryanarayana (1972)\textsuperscript{21} in his article, “Finishing State Transport Undertaking”, commented that, profit in the commercial sense is difficult to assess in the public sector transport undertakings because of several social costs such as higher wages, over staffing and provision of more amenities to workers incurred by them compared to privately managed undertaking.

**REVIEW ON FERTILISER INDUSTRY**

Anderson\textsuperscript{22} in his work “The Role of Fertilisers” analyzed the factors expected to restrict the contribution of fertilisers to food production to an accelerated rate of increase in food production and to remove the factors with emphasis on the role of public policy measures. He found out that unavailability of fertilisers, lack of knowledge, risk and uncertainty, lack of credit, land tenure and lack of complimentary inputs are the impediments to overcome.

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C.H. Anumanthra Rao\(^2\) in his special article “WTO and Viability of Indian Agriculture” felt the need for reforms at the gross root level and to hold the key to improving the viability of Indian agriculture in the wake of trade liberalisation. He was also of the opinion when private investment was stepped up in the post-reform period of the 1990s in response to the liberalisation of the economy and favourable terms of trade, real public investment continued to decline on account of fiscal compression and failure to reduce input subsidies.

H.R. Arakeri\(^3\) in his book “Indian Agriculture”, stressed the need for increased attention paid to the aspect of fertiliser use efficiency. He also says that farming in dry land is as old as agriculture itself. He recommended that the required organizational structure has to be built up to ensure timely and adequate supply of fertilisers and also the equipments needed to apply the same by the recommended methods.

R.C. Arora\(^4\) in his book “Development of Agriculture and Allied Sectors”-An Integrated Area Approach said that there are two aspects of fertiliser consumption. One is the question of year-to-year equilibrium between demand and supply; and the other the progressively higher levels of the annual equilibria. According to him if Indian agriculture is to progress, it is necessary to raise the level of fertiliser consumption higher and higher. He designed the

study to explore farmers' attitudes to the use of fertilisers, besides other important factors that affect the demand. The following aspects of the problem were studied: a) distributive arrangements b) credit arrangements and c) attitudes of farmers towards fertiliser and towards the facilities for fertiliser use. He also stressed the need for using fertiliser for common Indian crops, like wheat, rice, barley and sugar cane and the availability of fertiliser for the farmers.

P.C. Bansil\textsuperscript{26} in his book "Agricultural Problems of India" points out that organic manures cannot possibly meet that full requirements for replenishing the soils at higher levels of production envisaged by the new technology. He says that chemical fertilisers play a vital role in any scheme for boosting agricultural output. He found out that the present level of nutrient components is not fully balanced. He concluded that on account of the various plan programmes undertaken by both central and state governments, the farming community is increasingly becoming aware of the value of applying fertilisers.

P.C. Bansil\textsuperscript{27} in his work on Manurial Policy stressed the use of cow-dung and bone for manurial purpose. He also suggested quick growing fuel trees which rural population will have to rely instead of cow-dung for fuel. In


\textsuperscript{27} P.C. Bansil, "Manurial Policy" Agricultural Problems of Indian, 1993, pp.117 – 121.
addition he recommended the use of green legumes which contain largest nitrogen. He suggested a crash plan for fertiliser to produce more food grains.  

K.C. Bhatnager, G.L. Khurana and S.R. Bapat in their article “Economics of Fertiliser Consumption- Application to Mustard”, attempted to examine the scope and extent of fertiliser application to mustard crop in three states of Northern Region and found out that the return to investment on Fertilisers and said that fertiliser use is dependent upon additional yield of the produce. They also found out the factors affecting fertiliser-use-efficiency like, variety, season and time, sowing, water management and plant protection measures.  

P. Bhattacharyya and U.C. Mishra in their article “Status of Bio-fertiliser use in Andhra Pradesh-Scope and Limitation” studied the scope of applying Bio-fertiliser and said that Bio-fertiliser plays a significant role as one of the components of Integrated Plant Nutrient Supply Systems. They studied the potential demand in Andhra Pradesh and stressed the need for the combined efforts of Centre and State Government to meet the demand.

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G. Bheemaiah, M.V.R. Subrahmanyam, Syed Ismail, S. Sridevi and K. Radhika\textsuperscript{30} in their article “Effect of Integrated Application of Green Leaf Manures and Fertilisers on Growth and Yield of Summer Groundnut under Different Cropping Systems” found out that inter-cropping of summer groundnut in 6 year old teak and sissoo plantations did not prove beneficial, while popinac green leaf manuring was found effective in increasing the yield of groundnut.

B.C. Biswas\textsuperscript{31} Naresh Prasad and Sonmithra Das in their article on “Fertiliser use in some selected Agro-Ecological Zones of India” attempted to examine their fertiliser use pattern of some selected agro-ecological zones and also indicated the fertiliser use pattern for the future taking into account their compound growth of fertiliser consumption. They found out that fertiliser consumption varies widely in different agro-ecological zones in India.

Deepak Kher and G.M. Bhat\textsuperscript{32} in their article “Economics of Fertilization in Maize and Wheat: A Study of Himachal Pradesh” have analysed the use of fertiliser and the relationship between fertiliser inputs and


yield outputs with regard to maize and wheat in Himachal Pradesh. They have found out that the coefficient determination $R^2$ is significantly high for both the crops.

R.G. Desai\textsuperscript{33} in “Role of Agriculture in Economic Development” traced the importance of agriculture to Indian Economic Development. He wanted that to achieve a rapid increase in incomes a greater proportion of investment should be made in agriculture.

H. Dholakia Ravindra and Majumdar Jagdip\textsuperscript{34} in their article, “Estimation of Price Elasticity of Fertiliser Demand at Macro Level in India”, made an attempt to overcome some of the short comings in estimating fertiliser demand function in India. It is a time series study using the annual data from 1966 – 67 to 1991 – 92. Both static and dynamic models are used in estimating demand function and price elasticity in the short run and long run. They found out that fertiliser price in India is ‘price in elastic’ in the short run and in the long run.

Gisfatson\textsuperscript{35} in his “Handbook of Fertilisers” has expressed the view that for a well-balanced normal growth and proper development plants need water, air, light, favourable temperature, sufficient root space and physical support.


and plant nutrients. Among the elements needed for plant growth fertiliser is very important. He also dealt with the effects of fertilisers on crops and soils. He was of the view that the residues of fertilisers and its impact on soils. He discussed about the fertilization of potato crop. He had also suggested the method of applying fertilisers and gave importance to side-dressing and top-dressing of fertilisers to plants.

S. Gowen[^6] in his book “Bananas and Plantains” said that in order to achieve high yields, in banana cultivation the amount of nitrogen, phosphorus, potassium or other nutrients applied differed from one location to another. This variation is significant according to the climate, yield, resources of the grower and his soil and management practices. He stressed the need for frequent application of nitrogen. He found that plant density is one of the major factors affecting the mineral nutrition in many respects.

Gulati Ashok[^7] in his article, “Fertiliser Subsidy Net Subsidised”, indicated that economic subsidy on fertilisers to Indian cultivators constitutes not more than 50 per cent of what Government delineates in its budget. (average of 1981 – 82 to 1989 – 90). He came to the conclusion that the issue of fertiliser price in relation to the prices of major crops, such as rice, wheat and cotton, Indian cultivators do not appear to have been ‘net subsidised’ on account of fertilisers.

O. Heady Earl, T. Pesek John, G. Brown William and P. Doll John in their work\(^{38}\) (Chapter 14) "Crop Response Surfaces and Economic Optima in Fertiliser Use", conducted a research experiment in Iowa in 1952. They found out a) the nature of estimated fertiliser response surfaces, b) the nature of isoclines and other relationships derived from various soils and moisture conditions by different algebraic functions and c) the optimum quantities and use of fertilisers as specified by particular analysis of response. They had used Cobb-Douglass production function with and without fertiliser nutrients and found out Economic Optima for these two aspects. They had studied empirically the crops like Red Clover, Alfalfa for two years yields in 1952 to 1953. They had also drawn corn yield isoquants and isoclines for two year total square root function. They had also said that optimum inputs are determined by equating marginal physical product with their corresponding factor-product price ratios. They found out that uncertainty in agriculture and other factors do not allow the farmer to be precise in their decision making.

D.M. Hegde, B.S. Dwivedi and S.N. Sudhakara Babu\(^{39}\) in their article "Bio-Fertilisers for Cereal Production in India" - reviewed critically the performance of bio-fertilisers in cereal crops under different ecologies. They

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studied the effect of Azospirillum with millets and wheat sorghum, and found out that the yield has increased. The impact of bio-fertiliser like Azola, Blue-Green Algae and Mycorrhizae were also studied. These had greater influence on the yield of cereal crops and they supplement chemical fertilisers.

W. Hopper David\textsuperscript{40} in his article, “The Economics of Fertiliser Use—a Case Study in Production Economics”, presented a mathematical equation to the experimental data for wheat by the technique of least squares. The equation is of the quadratic form. The return to various inputs are found out. The return for fertiliser use is also calculated. He found out the maximum profit from fertiliser use. According to him the optimum presented are economic optimums, which will maximize the net return to the farmer.

Indo-British Fertiliser Education Project\textsuperscript{41} through Hindustan Fertiliser Corporation emphasized on “Block Demonstration” about modern technology for about 100-150 families in two villages in a year with 50 percent subsidy in west Bengal. From the second year follow-up work was continued without any subsidy, on any input. Small and marginal farmers were covered under Block Demonstration. They had tested the effect of the Block Demonstration area over the outside Block Demonstration and found out the increase in the yield of

\textsuperscript{40} W. Hopper David, “The Economics of Fertiliser Use—A Case Study in Production Economics”, Indian Journal of Agricultural Economics, Indian Society of Agricultural Economics, Bombay, 1940 – 64, pp.185 – 197.

\textsuperscript{41} Indian Journal of Agricultural Sciences, Central Research Institute for Dry land Agriculture, Hyderabad, Andhra Pradesh, Vol. - 68, No.8, August 1999, pp.560-561.
Aman Paddy. They had also studied the infrastructure facilities like irrigation, storage, marketing of products, supply of inputs and retail points seeds.

Kumar Das Tapan and Bhattacharyya Kanti\(^42\) in Chapter V on “Rural Development Experience of Fertiliser” felt the need for increasing food production to meet the demand for increasing population of India. They said that block Demonstration as a method of increasing the fertiliser use was initiated by the cluster-village concept. This method was advocated by Indo-German Fertiliser Education Project of Hindustan Fertiliser Corporation Ltd., launched in 1974.

Kuo, Leslie\(^43\) in his work “Agriculture in the People’s Republic of China - Structural Changes and Technical Transformation” stressed the importance of organic fertilisers and chemical fertilisers in Chinese agriculture in stepping up production. He analysed the fertiliser production, distribution and the use of chemical fertilisers in China. He felt that to make up deficiencies, the People Republic of China had to import chemical fertilisers.

K. Mengal and E.A. Kirkby\(^44\) in Chapter VI of his book “Principles of Plant Nutrition” said that during the growing period roots act as link collecting available nutrients utilized in the synthesis of organic plant constituents. After


the termination of growth and the start of decay, the process is reversed and
nutrients are released into the soil from breakdown of the plant debris. The
extent to which nutrients of transported down the soil varies considerably
between soils. According to them the removal of plant nutrients by crop up
take, leaching and de-nitrification is well in excess of nutrient release by
weathering and mineralisation. In the intensive cropping system, in order to
maintain soil fertility the higher yield nutrients applied to soil. The fertilisers
contain nutrients like N, P and K that are rapidly taken up and required in
higher quantities. They also discussed the technique of the application of
fertilisers and their usage as to when fertilisers are to be applied.

H.S. Mishra, T.R. Rathore, R.C. Pant and R.P. Tripathi\textsuperscript{45} in their article,
"Soil, Water and Fertiliser Management for Wheat Cultivation in Rice-Wheat
Rotation", studied the crop rotation among wheat and rice. According to the
study wheat yield in rice-wheat rotation is considerably low. After rice is
harvested, the soil condition then is quite favourable for the growth and yield of
the subsequent crop like wheat. They also accepted that balanced application of
nutrients is important for getting higher yield in addition to irrigation and plant
production.

\textsuperscript{45} H.S. Mishra, T.R. Rathore, R.C. Pant and R.P. Tripathi, "Soil, Water and Fertiliser
Management for Wheat Cultivation in Rice-Wheat Rotation", Indian Farmers’ Digest,
B. Mishra in his article on “Computer’s use of Fertiliser Advice and Crop Production” says that there are many possibilities of using computers in crop production for saving time and increasing crop yields. He also stressed that a good fertiliser recommendation should be site-specific as well as situation-specific.

T.C. Mohanam in his article on “Growth Rates of Fertiliser Consumption – A District-wise Analysis in Tamil Nadu” analysed the growth rate and found out that the growth rate of fertiliser consumption in India was nearly 18 per cent during the pre-Green Revolution period (1952-1966) which has decreased to 10 per cent during the Post-Green Revolution Period (1966-1985) According to him the growth rate of fertiliser consumption in Tamil Nadu, during the same periods, were 14 per cent and about 7.5 per cent, respectively. There were inter-district variations and almost clustered around the state level growth rate.

T.C. Mohanam in an article “Determinants of fertiliser use in Tamil Nadu” attempted to study the factors determining the fertiliser use in Tamil Nadu by choosing three groups of factors, viz. Technological, Economic and Institutional and analyzed their relative importance on fertiliser use with the

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help of a simple regression model and found out that the proportion of area under heavy yielding varieties are more dominantly influencing the fertiliser use.

V.R. Mutalik Desai\(^4\) in his book "The Strategy of Food and Agriculture in India" felt that agriculture makes a positive contribution to the regeneration of the entire economy of India. He stresses that due to continuous cropping over the years the fertility of the soil may decline. Hence according to him application of fertilisers is essential. For this he advocated a massive production programme for fertilisers.

M. Nageswara Reddy, M. Sitaramayya, S. Narayanaswamy, A. Sairam and G. Krishna Kanth\(^5\) in their article, "Productivity and Soil Fertility changes under continuous fertilization of rice Cropping System", conducted experiment with rice, rice-cropping system for 10 consecutive years from 1987-1996 in a semi-arid climatic zone of Andhra Pradesh. They found out that comprehensive continuous nutrition to rice is a need for better result.


V. Nelson Paul\textsuperscript{51} in his work on "Fertilisation – Green House Operation and Management" said that a plant is composed of about 90 per cent water and 10 per cent of dry weight. This 10 per cent consists of 14 essential elements. He also discussed about their Fertilisation programmes. Among the 14 essential elements there are Macro nutrients and Micronutrients.

The Economic Survey of India (1999-2000)\textsuperscript{52} tells that the fertiliser consumption has increased from 0.29 million tonnes to 5.5 million tonnes in 1960-61 and in 1998-1999 the figure reached 16.8 million tonnes. In 1999-2000 it may touch 19.1 million tonnes. The ideal consumption of NPK for rice and wheat for the country as a whole is 4:2:1 of NPK.

Uniqueness of the Present Study

Though various studies on fertiliser have been conducted, no specific study is conducted in relation to financial performance of the selected companies recently.

Performance analysis of various companies has so far been made by various research scholars. They have selected different types of companies such as transport, banking, iron and steel and agricultural units. This study is different from the earlier studies for, a comparative study is done with reference to the selected units in relation to financial performance.


In this study the fertiliser companies operating in Tamil Nadu are selected. They operate all over India. Their performance in terms of quantity and quality are analysed in this study. Profit and Loss Accounts, Balance sheets, Fund Flow Statements, Cash Flow statements and other important accounts of the companies are analysed in detail.

Comparisons are made in relation to production, operational efficiency and various financial matters. Comparing the performance of three companies in the field of fertiliser industry is not done so far by the researchers.

All types of ratios, trends and projections, simple and complex statistical tools are utilized for the purpose of analysis. Advanced statistical tools are also used for getting valid information.

The present study highlights most of the problems of the selected fertiliser companies and the probable reasons for the problems are also identified. Hence this study may be considered as a different study from the earlier ones. The suggestions given in this study may help the companies to solve their problems and improve their prospects.

The review of earlier studies is made to facilitate better understanding of the various structural and non-structural variables that determine profitability. It gives an idea on extensive and diversion works on determinants of profitability. Researchers have verified and extended the results over the years. Further works on reaffirmation of these relationships based on improve research methodology are being done. Moreover, depending on the nature and
position of industries and for policy prescription and evaluation further works are being undertaken.

In this chapter the review of previous studies and related studies are done in detail. Review relating to financial performance studies, production performance studies and other studies are made with reference to various industries. Further the significance of the present study over the previous studies is also explained in this chapter. The next chapter is designed to analyse the performance of fertiliser companies at international and national levels.