CHAPTER IV

OBJECTIVES, HYPOTHESIS AND METHODOLOGY

1. INDUSTRIAL DEVELOPMENT IN PUNE

1.1 Just like Oxford, Pune is one of those few places in India, where the climate seems to have blended ideally with its people to produce an ethos which has built up, on the one hand, culture and education and on the other hand a vital part of the country's growing industry. In Pune, the modern industrial development has taken place without losing its importance as an educational centre. On the contrary, the industrial growth has also been supported by growth in management educating institutions.

1.2 Industrial growth of the city of Pune is a recent one, since the city had no local tradition of large scale trade or commerce. The first industrial establishment in Pune was Deccan Paper Mills in 1885. The second attempt was made to undertake large scale production of brass and copperware with the aid of machinery, which was later converted into Gujarat Metal Factory. The third venture was the establishment of Raja Bahadur Mills. In 1869 the Ammunition Factory was started at Khadki which expanded during
the First and Second World Wars. In 1940 the High Explosive Factory went into production at Khadki.\(^2\)

The establishment of Messrs Kirloskar Oil Engines at Khadki in 1946, gave impetus to the setting up of a number of small scale units.

1.3 After 1951, the city came forward to respond to the challenge of achieving rapid economic development. In 1954 Ruston & Hornsby (India) Limited was set up at Chinchwad. Greaves Poseco, another Factory in the same group, was also set up in the same premises at Chinchwad in 1957. In 1955 Hindustan Antibiotics Limited, a Public sector project, was set up at Pimpri near Pune. The setting up of these manufacturing units encouraged considerable industrial development near-about these factories on the Bombay-Poona rail road corridor in Pimpri-Chinchwad area. This growth was further accelerated mainly because of the proximity and easy accessibility of this area to Bombay and also owing to restrictions imposed by the State Government on the industrial expansion in Greater Bombay. Factors such as salubrious climate, availability of skilled personnel, necessary infra-structural facilities such as water, power, transportation attracted establishment of industries in the Hadapsar area along Pune Solapur
road, as well.

1.4 The establishment of National Defence Academy, the National Chemical Laboratory, Central Water and Power Research Station and a number of Defence establishments in and around the city, also helped the industrial growth.

1.5 In 1960 the Maharashtra Industrial Development Corporation (MIDC) undertook development of large industrial area at Bhosari in the Pimpri-Chinchwad Industrial complex. Bhosari Industrial Complex is one of the largest industrial complexes in our State. The peculiarity of industrialisation of Pune is that there is no concentration of any particular industry. There are industries in large scale sector, which manufacture textiles, pharmaceuticals, biscuits and chocolates, electrical appliances, electronic instruments, diesel engines, electric fans, machine tools, air-compressors, chemicals, dye-stuff, sugar machinery, scooters, trucks, tempo trailors, paper, paper boards, cables, rubber goods, glass, plastics, etc.

1.6 In the small scale sector, in addition to the traditional lines of manufacture such as brass and copper
ware, furniture, toys, mulls, dhoties, sarees, hosiery, leather articles, dyeing and printing, etc., a number of units have been started in such lines as chemicals, soap, pharmaceuticals, electrical equipments, sports goods, stationery goods, printing, engineering, scientific instruments, electronic equipment, etc. A number of small scale industrial units are also working as ancillaries to the new industrial units which are being started in the vicinities of Pune.

Starting from basic transistors and other semiconductor devices, components of all types are manufactured in the electronic industries in Pune. The small and medium scale equipment manufacturers are also specialised in different lines of instrumentations such as digital equipment, process control equipment, industrial equipment, consumer equipment, communication equipment, etc. The manufacturers of all these equipments and components need raw materials of various types and most of these raw materials and electronic hardware are manufactured in Pune. No city other than Pune has such a unique collection of electronic manufacturers.
A large variety of industries - small, medium and large - have now grown in and around Pune. A new industrial township has grown in Pimpri-Chinchwad, Bhosari areas near Pune. In the city itself a good number of small scale industries have been established. Thus, the city of Pune is a good combination of all sorts of industries.

2. **SICKNESS OF INDUSTRIES IN PUNE**

2.1 Maharashtra is no exception to the general phenomenon of widespread industrial sickness prevailing all over the country. Maharashtra being a highly industrialised State in the country, perhaps the number of sick industries is much larger in this State than in any other State. The Directorate of Industries, Maharashtra State has a special Sick Industries Cell and it has been collecting data as regards industrial sickness in the State. These data give information about those cases which are referred to the State Government for taking them under the Nursing Programme and hence, covers only a part of the entire sector of sick industries.

2.2 It is difficult to get correct and exact data regarding the number and the extent of sickness in
industries in the State and subsequently in any specific part of the State. In the first instance, the State Government, the Reserve Bank of India and the I.D.B.I., each has a different definition of sick industries. There is no single agency which collects all information regarding industrial sickness, leave aside uniformity of approach in data collection.

The Commercial banks and the State Financial Institutions like Maharashtra State Financial Corporation (MSFC) have some data relating to the industrial units financed by them. The regional development Corporations like Western Maharashtra Development Corporation and those for Konkan, Vidarbha and Marathwada also deal with such cases. The Directorate of Industries of the State Government has also a separate Cell. Some cases are referred to the newly organised body - Maharashtra Industrial and Technical Consultancy Organisation (MITCON). Then there are separate organisations like textile commissioner's office, Directorate of Sugar, which collect data in respect of the industrial units covered by them. This puts us in difficulty for obtaining the correct number and location of the sick industrial units. However, the number of sick units in Pune region,
which includes Pune, Nasik, Dhule, Jalgaon, Ahmednagar, Kolhapur, Solapur, Sangli and Satara, has been estimated at 268 of which 95 are in Pune.

3. FINANCIAL RATIOS

3.1 A ratio is one number expressed in terms of another number. Any attempt to find out the relationship between the two items or group of items of the financial statement establishes a ratio. Ratio analysis means the process of computing, determining and presenting the relationship of items and groups of items of financial statements. Ratios are worked out from a single year's balance sheet. Ratios are also worked out on several years' balance sheet for obtaining ratio trends in future. The analysis of financial ratios involves two types of comparisons:

1. present ratio with the past ratio for the same firm,
2. ratios of one firm with that of a similar one or with industry averages at the same point in time.

Ratios differ from industry to industry and also from time to time. Ratios can be worked out in any number depending upon the items in the financial
statements and possible comparison. Ratio analysis simplifies the comprehension of financial statements and notices the changes in financial condition of the business. Ratio analysis provides inter-firm comparison to measure efficiency and helps the Management to take corrective measures. Ratio trend helps in planning and forecasting. Ratio trend helps in the investment decision to make profitable investment. Ratio analysis may not be a precise technique for ascertaining liquidity, solvency, profitability, etc. of the firm because the financial statements are prepared on the basis of certain accounting conventions. No standard ratios can be established for the industry owing to the dissimilarities of the firms in the industry in several respects like business, policy, accounting procedures, local conditions, management policy and the knowledge of persons preparing such statements, etc. In India bankers use ratio analysis while analysing the financial statements of small-scale units, for the technique of ratio analysis is easy to follow and possible to apply to the information available from small units. The ratio analysis is an aid to management in taking credit decisions.
3.2 The position in respect of current liabilities may be such that financial commitments made by the sick units are more significant than in case of healthy units. The financial implication of current liabilities created is that current liability can be fulfilled provided long-term financial commitments are accepted and fulfilled. Creation of current liability may imply, in case of a healthy unit, that long-term financial investment is undertaken. In the absence of such a long-term productive investment, disproportionate increase in current liability may not only lead to but also aggravate sickness in the long run and make it chronic. Deplorable working capital position consistently over a long period would certainly imply sickness. Variability in Net Sales is a crucial factor to identify sickness since the main operational area which may initiate/induce temporary or chronic sickness is marketing. Financial constraints have little relevance in either leading a unit to sickness or curing it, because sickness does necessarily deprive an unit of bank credit. Non-sick units can prevent sickness by concentrating on their marketing activities and improving their net sales and thereby stabilising revenue both in the short and long periods. Stability in net sales and fall in sundry debtors
through adequate and continuous credit collection measures play a complementary role in improving the health of a unit. Stock on hand as a current asset is the major strength of a unit (sick or non-sick). Amount of stock as well as stock variations in the short period play a significant role in improving or deteriorating the health of a unit. Changes in sundry creditors may not necessarily imply increase in financial commitment (long-term or short-term). On the other hand, increase in sundry creditors may suggest a new asset formation. In the case of possible sickness, however, increase in sundry creditors may be such that additional financial liability is created without the prospect of meeting it in short-run or long-run by creative investment. Commitments created by purchases may or may not be speculative. Speculative purchases imply more variations in inventory without direct correlation with productive use. However, increased risk in speculative purchases imply more variations in inventory without direct correlation with productive use. Speculative purchases may over compensate the industrial unit in terms of appreciation in the value of current assets and may not necessarily lead to sickness as reflected in financial losses. This process may get accelerated when inflationary forces set in. Assuming favourable total capital availability position
initially, variations in working capital availability really are responsible for leading a unit towards temporary sickness, which may make sickness chronic in the long run. In the short-run, temporary sickness may not have serious repercussions on the fixed assets position of a sick unit. However, in the long run, deterioration in the fixed assets position would certainly mean that temporary measures to strengthen the weak units are of no avail. This also implies that the manipulation, if any, introduced for survival have very little or no favourable effect on the health of a unit. The absolute amount of expenses does not necessarily distinguish a sick unit from a non-sick unit, unless variations in expenses and the appropriateness of the ways in which they are met are taken into consideration. Changes in the net profit earning is of great relevance for the understanding of long-term sickness of a unit.

3.3 Profits if so adequate as to enable a unit to maintain safety ratio of current assets to current liabilities will not harm the health of a unit. Only when the current ratio goes below the ideal, i.e. 1:1, a long-term sickness can be suspected. In case there are wide fluctuations downwards and
negative trends in the ratio of net working capital to net sales over a long period, chronic sickness is suggested. This is reflected in the negative ratio of net working capital to Bank Credit, which implies not only temporary insolvency but also bankruptcy of the firm. A highly variable ratio of net working capital to Bank Credit is a sure sign of weakness. Falling of sales per day to debtors is an important measure of catastrophic change in the operation of a unit, since piling stocks of unsold commodities certainly indicate lack of driving force in the area of marketing. Unless timely measures are taken for promoting sales, a unit which is temporarily sick may lead towards a catastrophic fall in the near future. Variations in the ratio of sundry creditors to purchases play a significant role in determining the day-to-day health of a unit. Emergence of creditors along with purchases and temporary fluctuations in the ratio of creditors to purchases do not have serious consequences on the health of a unit, provided working capital position is maintained in tact, given the availability of credit facility. The golden rule for maintaining good health in short-run as well as long-run is to maintain a highly satisfactory or buoyant average ratio of net sales to total capital and total fixed
assets. If the ratio of fixed assets to net sales is favourable over a long period, it is certainly a sign of sound health of a unit in the long run. In the short run a satisfactory ratio of current assets to net sales ensures good health in the day-to-day operation of business. A unit will derive additional strength if a satisfactory ratio of current expenses to net sales is maintained by strict vigilance over purchase and credit policy. Temporary variation in the ratio of net profit or loss to net sales does not adversely affect the health of a unit.

3.4 For identifying the health of small units, banks obtain the information in the form of financial statements, stock statements, list of debtors and creditors, list of order in hand, etc. The financial statements consisting of balance sheets and Profit & Loss Accounts provide valuable information to the bankers. The balance sheet indicates the sources of the business funds and investment of business funds in the form of various assets. The Profit & Loss Account indicates operations of the firm. Bankers study the balance sheet and Profit and Loss Account with the help of accounting ratios. Bankers employ ratio analysis to identify the health of small units which may help them make
their lendings profitable and sound. Bankers would like to know the success of the business on one hand and have a cautious view of defaults on the other. The success of a business ensures the return of the banker's money out of the funds generated.  

3.5 Working capital ratios measure the adequacy of working capital, where working capital is the surplus of current assets over liabilities. Shortage of working capital may lead to closure of business. Banks provide working capital finance and, therefore, are interested in working capital ratios. A relationship between Current Assets and Current Liabilities indicates the working capital position. Small scale industries rely exclusively on bank credit for working capital and hence, it is appropriate in case of small units to relate working capital to bank credit. The following three ratios ascertain the position of working capital: 

a) Current Ratio, i.e. Current Assets/Current Liabilities  
b) Net Working Capital / Net Sales  
c) Net Working Capital / Bank Credit.  

3.6 Turnover ratios relate to the level of investment in various current assets to the level of the
company's operation. The turnover of current assets indicates how fast the funds have been utilised in the business. The turnover ratios measure the short-term solvency which depends upon the liquid assets of the Company. The degree of liquidity of the firm is determined by its ability to meet its maturing debts. It is essential to measure the credit position of the firm. The following ratios ascertain the credit position of the firm:

a) Stock / Net Sales
b) Sundry Creditors / Purchases.

3.6 Current Assets and Fixed assets are employed for the purpose of generating sales. Assets are effectively and efficiently utilised if more sales are generated with the given assets. These ratios employed are known as Assets usage ratios and are:

a) Net Sales / Total Capital employed
b) Fixed Assets / Net Sales
c) Current Assets / Net Sales.

3.7 Owners are interested to know the return on that investment. Poor operational performance may indicate poor sales and hence, poor profits. A low profitability may arise due to lack of control over
the expenses. The profitability ratios measure the efficacy of the firm in generating income on investment. Bankers look at the profitability ratios as an indicator of whether or not the firm earns substantially more than it pays interest for the use of borrowed funds and whether the ultimate repayment of their credit appears reasonably certain. Earning capacity of the firm may be measured by relating the net profit to net sales, net worth and total capital employed. A ratio of expenses to net sales measures the extent of expenses that occurred in relation to sales and indicates the operational efficiency of the firm. The profitability ratios are:

a) Expenses / Net Sales
b) Net Profit (Loss) / Net Sales.

3.8 Most of the sales are made on credit terms. In that case, the realisation of debts is a major inflow of cash to finance the working capital. The banker is very much concerned with the degree of collectivity of debtors as he provides finance for working capital. A ratio of debtors to net sales is a tool to measure the amounts receivable in comparison with sales. This helps to measure the efficiency of the credit department of the firm by adjusting the speed of recovery of debts. If the turnover
of the debtors is too low, it may indicate that the credit policies of the firm are unduly strict and need to be realised. The ratio sales per day/Debtors points out the number of days credit allowed and money blocked in sundry debtors. The ratio of sales per day/Debtors helps in understanding the effectiveness in collection of debts due, time taken in conversion of sales proceeds into cash and formulating future credit policies. The ratio, sales per day/Debtors also determines the probability of bad debts that may arise in the business. The average collection period is obtained as sales per day/Debtors.

4. OBJECTIVES

4.1 Taking into consideration the growing sickness in small scale industries and importance of financial ratios as indicators of the health of the unit, the research work has been conducted with an objective to compare the sick and non-sick units in respect of the following items and also the financial ratios obtained with the help of these financial items so as to critically study the phenomenon of sickness among small scale industrial units:

a) Financial Items

1. Current Assets
Current Liabilities
Networking Capital
Net Sales
Bank Credit
Net Sales per day
Sundry Debtors
Stock on hand
Sundry Creditors
Purchases
Total Capital
Fixed Assets
Expenses
Net Profit or Loss

b) Financial Ratios

I Working Capital Ratios
1. Current Assets / Current Liabilities
2. Net Working Capital / Net Sales

II Turnover Ratios
1. Stock / Net Sales
2. Sundry Creditors / Purchases

III Assets Usage Ratios
1. Net Sales / Total Capital
2. Fixed Assets / Net Sales
IV Profitability Ratios
1. Expenses / Net Sales
2. Net Profit (Loss) / Net Sales

V Average Collection Period
1. Sales per day / Debtors

4.2 HYPOTHESIS

The three phases in the existence and successful continuation of business operations of any industrial unit — whether small, medium or large — are:

1. Promotion as an outcome of preparation of a bankable project report and its meticulous and objective evaluation;

2. Survival of a unit as a result of consistency in maintenance of financial discipline as a co-ordinated effort from other areas of decision-making, viz. production, purchases, materials and manpower management;

3. Expansion resulting from continuous and consistent effort on the part of the owner-manager of an industrial unit. This implies an intelligent choice by the owner-manager against the available facilities and constraints at the micro and macro levels of operation.
4.3 There are two broad categories of decisions which are taken at the micro level to ensure stability of an industrial unit in the short-run and its growth in the long-run:

a) Short-term investment decisions to maintain viability and survival.

b) Long-term investment decisions to consolidate the position of the unit in the long-run by creating productive fixed assets, maximising rate of return on investment and arranging for amortization of the long-term capital liabilities, thereby making the unit self-reliant in the long-run.

4.4 As against the possible survival, consolidation and development of a unit in the competitive world a tragic situation of insolvency and bankruptcy indicating major and minor phases of sickness may arise as a result of wrong managerial policies. The consequences of wrong managerial policies or of the insurmountable difficulties may be reflected in many ways. These reflections enable us to distinguish between a healthy and a sick industrial unit heading towards either expansion or termination of business, respectively. These reflections manifest themselves in two ways:
i) manipulations introduced by the owner of the unit, with a view to 'managing' various transactions in the transitional stages; and

ii) reflections manifested in the short-term (current) asset and liability position which, in turn, determine the long-term asset and liability position of the unit.

4.5 This implies an overall imbalance in the asset and capital structure of the unit. However, the short-term imbalances and the long-term imbalances (indicating over capitalization and under-capitalization) are not independent of each other. The overall index of the failure, insolvency and bankruptcy of a unit is the outcome of the following anomalies indicated by the falling values of the ratios mentioned below:

i) Working capital : Total assets < 1

ii) Retained Earnings : Total assets < 1

iii) EBIT : Total Assets < 1
    (Earnings Before Interest & Taxes)

iv) Sales : Total Assets < 1


4.6 The aggregate value of these ratios serve as a measure of bankruptcy of the unit. The aggregate value
ranges between 1.81 and 2.99. Supposing the aggregate value is less than 1.81, it is indicative of the possible sickness leading ultimately to bankruptcy.

4.7 The implications of the aggregate value of the above ratios are:

i) inadequacy of working capital in relation to total assets tempting the owner to transfer or conceal a current or a fixed asset or manipulate the same in order to improve the working capital position – which is a fraudulent act from the point of view of creditors.

ii) Inadequacy of earnings not allowing the owner to be self-reliant by making arrangements for amortization of current and long-term capital liabilities.

iii) Heavy tax liability and interest liability leaving very little for the small industrialist to continue operations on self-reliant basis and creating a vicious circle of "creating one liability for meeting another" – THE LIABILITY TRAP.

* Prof. Edward Altman quoted by Prof. Brigham, Eugene F: Readings in Managerial Finance, Page 10.
iv) Deterioration in the sales or a long waiting period prolonging conversion of product into cash endangering the liquidity position - "THE LIQUIDITY TRAP".

v) Deterioration in the real value of assets creating a disability for the small industrialist to clear the long-term debt.

4.8 These implications enable us to clearly distinguish between a healthy and a sick unit, on the basis of the following criteria:

i) a sick unit cannot maintain the safety current ratio (CA : CL = 1 : 1).

ii) Net working capital position of a sick unit is continuously deplorable - adequacy of net working capital is the major factor determining health or sickness.

iii) Inadequacy of working capital reflected in the unit's inability to meet current financial commitments leads to a fall in the unit's credit standing from the point of view of creditors and bankers.

iv) Apart from the deteriorating sales position which results from the fall in the orders to be got from the bigger firms, unavailability of
cash because of the postponement of payments puts the small units in considerable financial hazards. Whereas the big companies placing orders with the small units enjoy credit facility for longer periods, a small industrialist has inevitably to pay cash - may be in advance - for procurement of materials.

v) The rising price position creates tremendous financial strain on the small units, while making purchases.

vi) In absence of orders consistently flowing in, the problem of under-utilisation of capital and equipment entails a financial loss to the Small Units.

vii) Even if the overall financial position of the industrial unit is sound and healthy and the value of total assets is greater than the value of its total liabilities, the crucial factor influencing financing of small units by the commercial banks is the amount of cash brought in by promoters as capital. The bankers ignore the fixed assets of a small industrial unit although their market value is constantly appreciating. Moreover, for small industrial units,
depreciation is one of the major sources of cash accruals. However, bankers have disregarded depreciation as an important factor determining cash accruals.

4.9 The debt equity ratio in case of a small unit is far from ideal. Approximately 70 to 80 per cent borrowings imply that the ratio of debt to equity is 4:1. The promotional expenses are beyond proportion and working capital available has to be diverted for the creation of fixed assets which facilitate further borrowing. However, this process creates a 'debt-trap' as a beginning of sickness of a small unit. Even if a unit is healthy, implying that its fixed assets are adequate for effecting recoveries of loans, bankers are too critical and their lending policies are based on imaginary fears. This situation is very crucial to even a healthy unit, and paves the way to liquidity trap in the short-run and debt-trap in the long-run.

4.10 Another unreasonable stand taken by the bankers even in case of a healthy unit is that a small unit should be in a position to plough back major part of its earnings to improve its capital base. In view of heavy tax incidence to the extent of 66% of earnings and other emergency financial commitments created by
scarcity and inflationary conditions, very little of the earnings is left with a small industrialist so as to enable him to satisfy the bankers' criterion for determining credit standing of the borrower.

4.11 The above analysis leads to an important hypothesis based on a circular type of reasoning making a cohesive argument. In determining the viability position or soundness of the health of a small unit, in the short-run, current assets vis-a-vis the current liabilities play a vital role. In the case of a sick unit, as distinguished from a healthy unit, the current ratio is adverse and not as a temporary phase. Assuming that a small unit is promoted on a sound basis, approved as a bankable project (meaning that a technically sound viability report is most objectively prepared and approved by a bank), the unforeseen circumstances/difficulties at the micro and macro levels lead to unwarranted manipulations and misuse of funds leading to inadequacy of working capital as a temporary phase. If the deplorable working capital position remains uncared for and stands unremedied on time, sickness as a temporary phase becomes a chronic malady. The further implications of the chronic malady are constant
deterioration in liquidity and creditability; and this in turn damages permanently the firm's ability to meet all the financial commitments resulting from future business operations in the areas of production, quality control, purchases and other recurring liabilities. The deteriorating net sales and credit collection position also further leads to a fall in liquidity and credit-availability ultimately forcing a small firm to a close-down. Thus, a sick unit, caught in the trap of low-liquidity and deplorable working capital position cannot survive. The revival of a small unit from the unhealthy situation is a problem to be taken care of by a small unit and in absence of preventive or palliative measures taken on time, chronic sickness appears to be beyond the control of the owner of a small unit and also beyond the control of the banker financing the unit. Conditions of adversity at the micro level make room for the macro factors to aggravate the crisis of sickness.
5. METHODOLOGY

5.1 Statistical Methods necessitate that a research work is made representative by selecting a random sample. The sampling methods, however, need that a sampling frame, i.e. a complete list of units must be made available. In the absence of such a list, a purposive incidental sample is selected. To make use of small sample tests such as T-test for testing the equality of two means through small samples, the criteria for a small sample is enough to have the number of units less than 30.

5.2 Initially a detailed questionnaire was planned with a view to collect information from sick as well as non-sick units. In the absence of any proper list of sick units, it was not possible to select the units at random as envisaged by statistical theory. Due to this, the selection was made by purposive incidental sample without giving any preference to any of the sick or non-sick units. All efforts were made to collect detailed information, firstly from a few sick units, which were declared as sick
by the financial agencies. Some units refused to
give the information stating that they do not
consider themselves as sick and some units did not
give the details as required even after assuring
that their names will not be disclosed and the
entire information will be held as confidential.

Efforts were also made to gather views of entrepre­
eurs, bankers, Chartered Accountants and Government
officials who are actually connected with sick S.S.I.
units, either as entrepreneurs or in nursing of sick
units and/or in rehabilitation of sick units. How­
ever, since the number of such persons coming forward
to do the frank-speaking required and also to show
analytical acumen was limited, these interviews
could not be used for statistical analysis. An
effort, therefore, is made to peep into these as
an additional work to find out how far our objective
conclusions get reflected in these 'views'.

5.3 As an alternative effort, a few Chartered Accountants
were contacted and the balance sheets of 20 sick
and 20 non-sick units were selected, for the study.
The Chartered Accountants also insisted on complete
confidentiality and the information including their
names, the names of the units and also insisted not
to present the balance sheets in their original form.
Due to this difficulty, the units have been marked as 1 to 20 in both sick as well as non-sick units and other relevant figures are reproduced by separating them from the balance sheets. Interviews of few experts have also been taken regarding causes and cure of sickness of small scale industries.

5.5 Standard statistical constants such as mean, standard deviation and coefficient of variation are used for presentation and all comparisons are made by using t-test as recommended by Standard Statistical Texts.
REFERENCES


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