

# Chapter 2

## Research Methodology

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## **2.1 Introduction**

One of the vital keys to any research work is the research and analysis of its steps that are implemented. These steps must be appropriate to test hypotheses or questions of the research and also to facilitate the access ability of overall design of the research such as collection of data and analysis of data.

This chapter describes the approaches that are used in this study in order to test the hypotheses of the problem under the study and provides the reader with a basis for choices that were made and sufficient details that another researcher can replicate this study. In this chapter, some vital objects related to research methodology such as importance of the study, statement of the problem, scope of the study, objectives, hypotheses, limitation of the study and their methodologies developed for them, data instruments including collection of data, selection of sample, definition of research variables, analysis of data and finally at the end chapter scheme are stated.

## **2.2 Research Definition**

Research in common parlance refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. In fact, research is an art of scientific investigation. The Advanced Learner's Dictionary of Current English lays down the meaning of research as "a careful investigation or inquiry specially through search for new facts in any branch of knowledge."<sup>1</sup> Redman and Mory define research as a "systematized effort to gain new knowledge."<sup>2</sup> Some people consider research as a movement, a movement from the known to the unknown. It is actually a voyage of discovery. We all possess the vital instinct of inquisitiveness for, when the unknown confronts us, we wonder and our inquisitiveness makes us probe and attain full and fuller understanding of the unknown. This inquisitiveness is the mother of all knowledge and the method, which man employs for obtaining the knowledge of whatever the unknown, can be termed as research.

Research is an academic activity and as such the term should be used in a technical sense. According to Clifford Woody research comprises defining and redefining problems, formulating hypothesis or suggested solutions; collecting, organizing and evaluating data; making deductions and reaching conclusions; and at last carefully testing the conclusions to determine whether they fit the formulating hypothesis. D. Slazenger and M. Stephenson in the Encyclopedia of Social Sciences define research as “the manipulation of things, concepts or symbols for the purpose of generalizing to extend, correct or verify knowledge, whether that knowledge aids in construction of theory or in the practice of an art.<sup>3</sup>” Research is, thus, an original contribution to the existing stock of knowledge making for its advancement. It is the pursuit of truth with the help of study, observation, comparison and experiment. In short, the search for knowledge through objective and systematic method of finding solution to a problem is research. The systematic approach concerning generalization and the formulation of a theory is also research. As such the term ‘research’ refers to the systematic method consisting of enunciating the problem, formulating a hypothesis, collecting the facts or data, analyzing the facts and reaching certain conclusions either in the form of solutions (s) towards the concerned problem or in certain generalizations for some theoretical formulation.<sup>4</sup>

### **2.3 Statement of the problem**

In the context of the present intense competition in the Automobile industry, a constant watch over costs is inevitable to survive the factories. Unless systematic records of cost and accounting are available on a continuous basis, no management will be able to control costs and survive. Accounting record, prepared on the basis of uniform practices, will enable a business to compare results of one period with another period as well as obviate the necessity of remembering various transactions by businessman.

The main function of every financial manger is to optimize the corporation structure of assets, liabilities and equity in order to maximize the value of the firm. In doing so, financial managers make decisions related to financial analysis, financial planning , financing and related matters. One of the main elements which has a great

impact on maximization of the firm's value and therefore is of great importance, is the corporation's financing methods and financial structure. In other words, the financial manager makes decisions relating to debt and equity and thereby finances the company's needs and by making decisions relating to current and long lived assets and investments, allocates the financed resources.

This study helps to provide answers to many questions faced by the users of accounting information and it will help the industry to achieve the goal of building better accounting system for effective management in the operations.

Also, This research takes into consideration the various financing methods applied by the automobile manufacturing corporations in India.

In conducting this research, the various methods of financing used by automobile manufacturers have been identified and by appraising these methods, the advantages and disadvantages of each method has been examined.

Finally, This study involves a comparative analysis of the information content of Traditional Liquidity Ratios (accrual based) and financial ratios derived from cash flow statement (specially, Capital Expenditure Ratios). Because the major part of factors that affect the uncertainty about Going – Concern, emphasize on liquidity problems of the enterprise, by understanding the relation between ratios stated above, can reach the better evaluation on going-concern assumption.

Hence, the title of research is “Analytical study of accounting system and records followed by Automobile industry in India with reference to Pune City.”

#### **2.4 Importance of the study**

The automotive industry in India is now working in terms of the dynamics of an open market. Many joint ventures have been set up in India with foreign collaboration, both technical and financial with leading global manufacturers. Also a very large number of joint ventures have been set up in the auto-components sector and the pace is expected to pick up even further. The Government of India is keen to

provide a suitable economic and business environment conducive to the success of the established and prospective foreign partnership ventures.

In the context of the present intense competition in the Automobile industry, a constant watch over costs is inevitable to survive the factories. Unless systematic records of costs and accounting are available on a continuous basis, no management will be able to control costs and survive. Accounting record, prepared on the basis of uniform practices, will enable a business to compare results of one period with another period as well as obviate the necessity of remembering various transactions by businessman.

The present study helps to provide answers to many questions faced by the users of accounting information and it will help the industry to achieve the goal of building better accounting systems for effective management in the operations.

Also, this research takes into consideration the various financing methods applied by the automobile manufacturing corporations in India.

The main reason for selecting the automobile industry is due to the fact that besides being involved in the major portion of financing activities in the country, the financing methods applied in this industry vary significantly.

In conducting this research the various methods of financing used by automobile manufacturers have been identified and by apprising these method, the advantages and disadvantages of each method has been examined.

Finally the study involves a comparative analysis of the information content of Traditional Liquidity Ratios (accrual based) and financial ratios derived from cash flow statement (specially, Capital Expenditure Ratios). Because the major part of factors that affect the uncertainty about Going – Concern, emphasize on liquidity problems of the enterprise, by understanding the relation between ratios stated above, can reach the better evaluation on going –concern assumption.

## **2.5 Scope of the study**

**The Scope of the study in two section time and place is as follow:**

### **1. Time period:**

The period under the study is to be determined for 10 years started from 2000-01 ended till 2009-10.

### **2. Geographical area**

The study includes Indian automobile Industries in Pune city.

## **2.6 Objectives of the Study**

1. To study the system and history of Automobile industry.
2. To analyze and examine the financial position of Automobile industry in India.
3. To understand the account recording system of the Automobile industry in India.
4. To study the accounting methods used for recording transaction.
5. To analyze the demand and supply for automotives (light and heavy) in Indian market.
6. To find complete figures of automotive imports in the country by brand, quantity and type.
7. To understand challenges to the automotive industry of India.
8. To study the proper accounting standard used for account writing.

## **2.7 Hypotheses of the study**

The set of hypotheses laid down to study the research problem is as under:

### **Hypothesis No. 1**

All Indian automobile industries have used the same financial strategy and accounting system for recording transactions.

The Sub – Hypotheses are as under:

- 1.1 All Indian automobile industries have used the same financial strategy.
- 1.2 All Indian automobile industries have used the same accounting system for recording transactions.

### **Hypothesis No. 2**

The Annual Accounts of the Companies have been prepared on a going concern basis.

The basic question of this hypothesis is whether company accounting reports prepared based on going concern assumption or not?

For answering to this question researcher has to comparative analysis of the information content of traditional liquidity ratios (Accrual based) and Financial ratio's derived from cash flow statement (specially , capital expenditure ratios). So whether both type of ratios indicate complete informational contain or not? And also whether these ratios can substitute one another or not? Because the major part of factors that affect the uncertainty about going concern, emphasize on liquidity problems of the companies by understanding the relation between ratios stated above so the sub-hypotheses are as under:

- 2.1 There is not a significant relationship between capital acquisition ratio and current ratio.
- 2.2 There is not a significant relationship between capital acquisition ratio and quick ratio.
- 2.3 There is not a significant relationship between investment to financial ratio and current ratio.
- 2.4 There is not a significant relationship between investment to financial ratio and quick ratio.

### **Hypotheses No. 3**

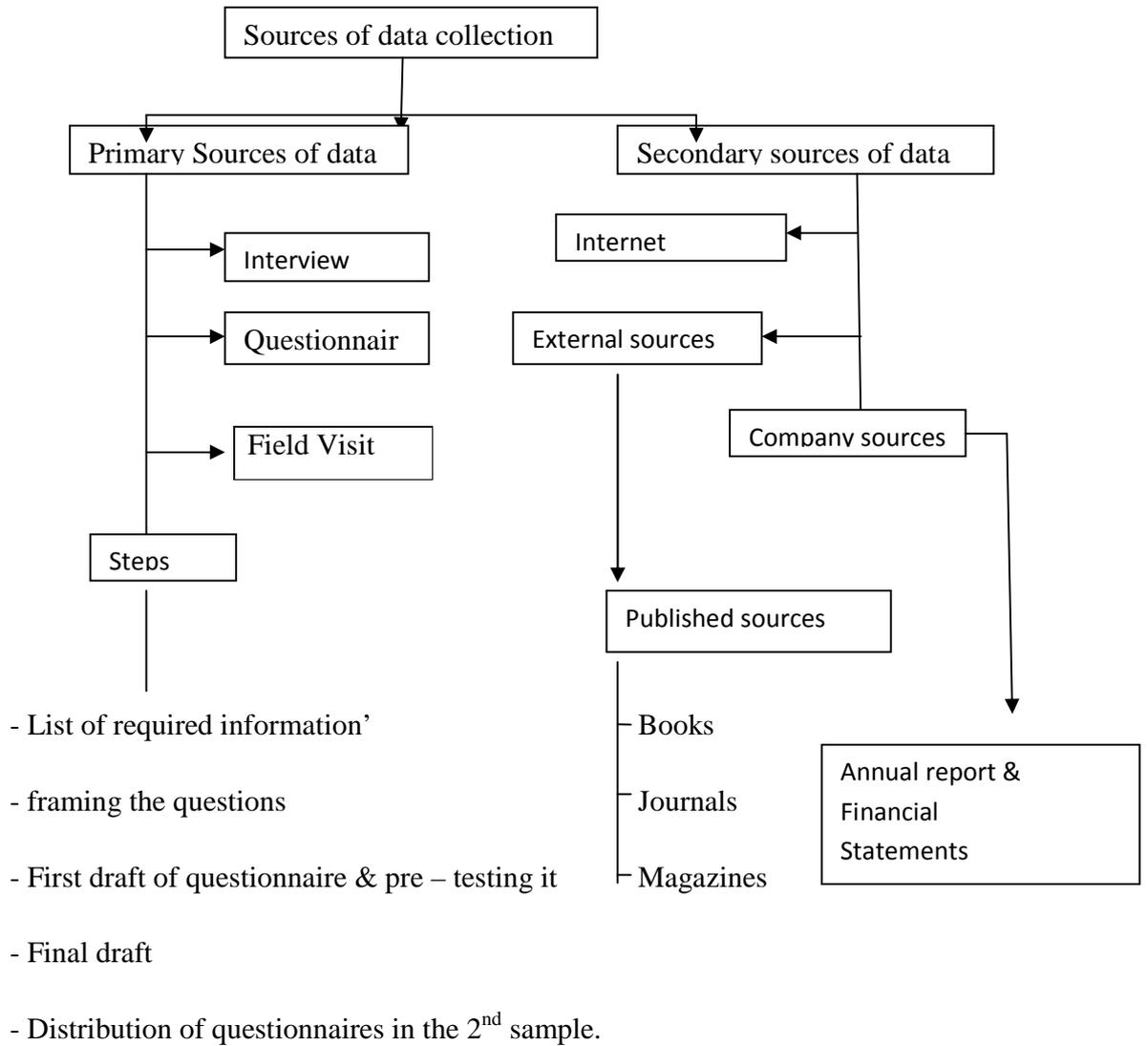
Indian Accounting standards are used for accounts in Indian Automobile industry.

## **2.8 Research Methodology**

### **2.8.1 Data Collection**

The methods of data collection depend upon the source of data collection including primary source of data and secondary source of data. For this study to collect primary data, field visit, interview and questionnaire and to collect secondary data websites, external and internal sources including annual reports and financial statements were utilized. In this study both sets of methods of data collection have been utilized with the same emphasis and they have created valuable information to this research. Exhibit represents in details the methods of the sources of data collection.

**Exhibit 2.1: Sources of data collection**



## **2.8.2 Hypotheses research methodology**

According to population, and sample size, research variables and data analysis of each hypothesis is deferent. So, researcher used following methodologies for each hypothesis:

### **2.8.2.1 Hypotheses No. 1**

- 1.1 All Indian automobile industries have used the same financial strategy and accounting system for recording transactions.

The sub – hypotheses are as under:

- 1.2 All Indian automobile industries have used the same financial strategy.
- 1.3 All Indian automobile industries have used the same accounting system for recording transactions.

#### **The Sub – Hypotheses No. 1.1:**

##### **2.8.2.1.1 Population:**

The population is total of automobile industry in Pune City. There are 13 automobile manufactures in Pune city.

##### **2.8.2.1.2 Sample size**

The sample size is equal to the population namely; there are 13 automobile manufactures in Pune City. So, all of them selected for the study. The names of the companies are as under:

**TABLE 2.1: The name of companies**

<b>Row</b>	<b>Name of the Company</b>
1	TATA Motors Ltd
2	Automotive stampings and Assemblies Limited.
3	Bajaj Auto Limited
4	Lumax Auto technologies Limited
5	Kinetic Engineering Limited
6	AutoLine Industries Limited
7	Maharashtra Scooters Ltd.
8	Kalyani Forge Limited
9	Bharat Forge Limited
10	Simmonds – Marshall Limited
11	Gabriel India Limited
12	ZF Steering Gear (India) Ltd.
13	Force Motors Limited

**2.8.2.1.3. Accounting Variables:**

The accounting factors for sub – hypothesis 1.1 is as under:

The financial leverage relates to the financing activities of a firm. The sources from which funds can be raised by a firm, from the point of view of the cost/charges, can be categorized into (i) those which carry a fixed financial charge, and (ii) those which do not involve any fixed charge. The sources of funds in the first category consist of various types of long-term debt, including bonds, debentures, and preference shares. Long-term debts carry a fixed rate of interest which is a contractual obligation for the firm. Although the dividend on preference shares is not a contractual obligation, it is a fixed charge and must be paid before anything is paid to the ordinary shareholders. The equity shareholders are entitled to the remainder of the operating profits of the firm after all the prior obligations are met. We assume in

the subsequent discussions that all preference dividends are paid in order to ascertain the operating profits available for distribution to ordinary shareholders.

**Financial leverage** results from the presence of fixed financial charges in the firm's income stream. These fixed charges do not vary with the earnings before interest and taxes (EBIT) or operating profits. They are to be paid regardless of the amount of EBIT available to pay them. After paying them, the operating profits (EBIT) belong to the ordinary shareholders. Financial leverage is concerned with the effects of changes in EBIT on the earnings available to equity holders. It is defined as the **ability of a firm to use fixed financial charges to magnify the effects of changes in EBIT on the earnings per share**. In other words, financial leverage involves the use of funds obtained at a fixed cost in the hop of increasing the return to the shareholders.

Favorable or positive leverage occurs when the firm earns more on the assets purchased with the funds, than the fixed cost of their use. Unfavorable or negative leverage occurs when the firm does not earn as much as the funds cost. Thus, financial leverage is based on the assumption that the firm is to earn more on the asses that are acquired by the use of funds on which a fixed rate of interest/dividend is to be paid. The difference between the earning from the assets and the fixed cost on the use of the funds goes to the equity holders. In a way, therefore, use of fixed interest sources of funds provides increased return on equity investment without additional requirement of funds from the shareholders. Financial leverage is also, therefore, called as 'trading on equity'. However, in periods of persisting adversity when earnings are not adequate, the presence of fixed charges will imply that the shareholders will have to bear the burden. Thus, the leverage/trading on equity will operate in the opposite direction such that the earnings per share, instead of increasing, will actually fall as a result of the use of funds carrying fixed cost.

The procedure outlined above is merely indicative of the presence or absence of financial leverage. Financial leverage can be more precisely expressed in terms of the degree of financial leverage (DFL). The DFL can be calculated as under:<sup>5</sup>

$$\text{Degree of Financial leverage (DFL)} = \frac{\text{percentage change in EPS}}{\text{percentage change in EBIT}} > 1$$

$$\text{Alternatively, DFL} = \frac{\Delta \text{EPS} \div \text{EPS}}{\Delta \text{EBIT} \div \text{EBIT}}$$

$$\begin{aligned} \text{EPS} &= \frac{[(\text{EBIT}-I)(1-t)-Dp]}{N} \\ &= \frac{[Q(S-V)-F-1](1-t)-Dp}{N} \end{aligned}$$

Since, F, I and Dp are constants,

$$\begin{aligned} \Delta \text{EPS} &= [\Delta Q(S-V)] (1-t)/N \\ &= \frac{\Delta \text{EPS}}{\text{EPS}} = \frac{[\Delta Q(S-V)](1-t)}{[Q(S-V)-F-1](1-t)-Dp} \end{aligned}$$

Dividing numerator and denominator by (1-t)

$$\begin{aligned} &= \frac{\Delta Q(S-V)}{[Q(S-V)-F-1]-Dp/(1-t)} \\ \text{DFL} &= \frac{\Delta Q(S-V)}{[Q(S-V)-F-1]-Dp/(1-t)} \times \frac{Q(S-V)-F}{\Delta Q(S-V)} \\ &= \frac{\Delta Q(S-V)-F}{[Q(S-V)-F-1]-Dp/(1-t)} = \frac{\text{EBIT}}{\text{EBIT}-I-Dp/(1-t)} \end{aligned}$$

### Where

EPS = Earning per share

EBIT = Earning before interest and tax

T = Tax rate

DP = Dividend Preference Share

Q = Sales quantity in units

S = Selling price per unit

V = Variable cost per unit

F = Fixed cost

N = Number of share

#### 2.8.2.1.4 Data Analysis

The data analysis of Sub – hypotheses 1.1 is as under:

1. The degree of Financial leverage (DFL) is calculated for 13 companies from 2000-01 to 2009-10
2. The mean of degree of financial leverage (MDFL) is calculated for each company from 2000-01 to 2009-10.
3. In the context of statistical analysis, we often talk about null hypothesis and alternative hypothesis. If we are to compare method A with method B about its superiority and if we proceed on the assumption that both methods are equally good, then this assumption is termed as the null hypothesis. As against this, we may think that the method A is superior or the method B is inferior, we are then state what is termed as alternative hypothesis. The null hypothesis is generally symbolized as  $H_0$  and the alternative hypothesis as  $H_1$ .<sup>6</sup>

So, the null and alternative of this hypothesis is as under:

$H_0$  : All Indian automobile industries have used the same financial strategy.

$H_1$ : All Indian automobile industries have not used the same financial strategy.

In this hypothesis, the degree of financial leverage is as evaluation index of financial strategy. The similar financial strategy in companies means that to being homogenize of variable of investigation case for companies.

So, null and alternative ( $H_0$ ) ( $H_1$ ) hypotheses are as under:

$H_0$ : The companies had been homogenized ( $Homo\ 1^{st} = Homo\ 2^{nd} = Homo\ 13^{th}$  )

$H_1$ : The companies had not been homogenized ( $Homo\ 1^{st} \neq Homo\ 2^{nd} \neq \dots \neq Homo\ 13^{th}$ )

4. Hypothesis tester Function calculated through homogeneity test

This approach consists of four steps: (1) state the hypotheses, (2) formulate and an analysis plan, (3) analyze sample data and (4) interpret results.

## 1. State the Hypotheses

Every hypothesis test requires the analyst to state a null hypothesis and an alternative hypothesis. The hypotheses are stated in such a way that they are mutually exclusive. That is, if one is true, the other must be false; and vice versa.

Suppose that data were sample from  $r$  populations, and assume that the categorical variable had  $c$  levels. At any specified level of the categorical variable, the null hypothesis states that each population has the same proportion of observation. Thus,

$$H_0: P_{\text{level 1 of population 1}} = P_{\text{level 1 of population 2}} = \dots = P_{\text{level 1 of population } r}$$

$$H_0: P_{\text{level 2 of population 1}} = P_{\text{level 2 of population 2}} = \dots = P_{\text{level 2 of population } r}$$

$$H_0: P_{\text{level } c \text{ of population 1}} = P_{\text{level } c \text{ of population 2}} = \dots = P_{\text{level } c \text{ of population } r}$$

The alternative hypothesis ( $H_a$ ) is that at least one of the null hypothesis statements is false.

## 2. Formulate an Analysis Plan

The analysis plan describes how to use sample data to accept or reject the null hypothesis. The plan should specify the following elements.

- Significance level. Often, researchers choose significance levels equal to 0.01, 0.05, or 0.10; but any value between 0 and 1 can be used. In this case, it tested with significance levels equal 0.05.
- Test method. Use the chi-square test for homogeneity to determine whether observed sample frequencies differ significantly from expected frequencies specified in the null hypothesis. The chi-square test for homogeneity is described in the next section.

### 3. Analyze Sample Data

Using sample data from the contingency tables, find the degrees of freedom, expected frequency counts, test statistic, and the P-value associated with the test statistic.

- Degrees of freedom. The degrees of freedom (DF) is equal to:

$$DF = (r-1) * (c-1)$$

Where  $r$  is the number of populations and  $c$ , is the number of levels for the categorical variable.

- Expected frequency counts. The expected frequency counts are computed separately for each population at each level of the categorical variable, according to the following formula.

$$E_{r,c} = (n_r * n_c) / n$$

Where  $E_{r,c}$  is the expected frequency count for population  $r$  at level  $c$  of the categorical variable,  $n_r$  is the total number of observations from population  $r$ ,  $n_c$  is the total number of observation at treatment level  $c$ , and  $n$  is the total sample size.

- Test statistic. The test statistic is a chi-square random variable ( $X^2$ ) defined by the following equation.

$$X^2 = \sum [(O_{r,c} - E_{r,c})^2 / E_{r,c}]$$

Where  $O_{r,c}$  is the observed frequency count in population  $r$  for level  $c$  of the categorical variable, and  $E_{r,c}$  is the expected frequency count in population  $r$  for level  $c$  of the categorical variable.

After calculation P – value, if P-value is equal or more that 5% then  $H_0$  means acceptance and  $H_1$  means reject and if P- value is less than 5% then  $H_0$  means reject and  $H_1$  means acceptance. So, This hypothesis test with 5 percent level of significance. In 5 percent level of significance means that in a population including 100 cases, specific event will happen in 95 cases and that event may not happen in 5 cases due to change. It means that the level of confidence is 95 per case and level of significance is 5 per case  $(100-95)^7$ . Researcher is used Minitab 14 software for statistical tests.

### **The Sub hypothesis No 1.2:**

#### **2.8.2.1.5. Population**

This hypothesis tests through questionnaire. The populations include executive management teams, advisors, Experts, auditors/inspectors.

#### **2.8.2.1.6. Sample Size**

According to limitation and to be extensive of population, sample size is calculated as under:

$$\begin{aligned}\text{Sample Size } ^8 N &= [Z_{1-\alpha/2}]^2 PQ/E^2 \\ &= [1.96]^2 \times 0.25/(0.1)^2 \\ &= 96.04 = 97\end{aligned}$$

Where,

$$PQ = 0.25$$

$$\alpha = 0.05$$

$$\varepsilon = \text{error} = 0.1$$

In above formula, the random quantity of X is quality and population variance is not known so, variance is between 0 and 0.25

Finally the totals of 110 copies of the questionnaire were distributed to population.

#### **2.8.2.1.7. Measurement of scale:**

As mentioned earlier, each question in prepared questionnaire assigned by two choice (answers) scaled by “Yes” and “No”

#### **2.8.2.1.8. Data Analysis:**

The basic question of this hypothesis is:

Have all Indian automobile industries used the same accounting system for recording transactions?

Here in this study, 10 questions (Q. No. 3-12) in questionnaire with special reference to accounting system for recording transactions in automobile industry. The questions are as follow:

Q.3 Dose the accounting systems maintain, at a minimum, a general journal and a general ledger?

Q.4 Dose the accounting system has a chart of accounts?

Q. 5 Is the annual budget incorporated in to the accounting system?

Q. 6 Are transactions posted to the general journal on a daily basis?

Q. 7 Do the accounting system staffs produce monthly financial reports?

Q. 8 Are the financial reports comprehensive in reporting in revenue, expenditure, fund balances, assets and liabilities?

Q.9 Is the basis of accounting identified by the accounting system?

Q. 10 Does the accounting system comply with Generally Accepted Accounting Principles for government units?

Q. 11 Do the accounting system officials uphold their responsibilities in ensuring and adequate accounting system is maintained?

Q. 12 Are subsidiary ledger maintain for accounts?

The testing methodology of this hypothesis is as follow:

1. The null and alternative hypothesis are as under:

H<sub>0</sub>: All Indian automobile industry have not used the same accounting system for recording transactions. ( $P_1 \neq P_2$ )

H<sub>1</sub>: All Indian automobile industry have used the same accounting system for recording transactions. ( $P_1 = P_2$ )

2. Hypothesis tester function calculated through population proportion test for defense between proportions.
3. This approach consists of four steps: (!) state the hypotheses, (2) formulate an analysis plan, (3) analyze sample data, and (4) interpret results.

### **State the Hypotheses**

When the null hypothesis states that there is no difference between the two population proportions (i.e.,  $d = 0$ ), the null and alternative hypothesis for a two-tailed test are often stated in the following form.

$$H_0: P_1 \neq P_2$$

$$H_a: P_1 = P_2$$

### **2. Formulate an Analysis Plan**

The analysis plan describes how to use sample data to accept or reject the null hypothesis. It should specify the following elements.

- Significance level. Often, researchers choose significance level equal to 0.01, 0.05 or 0.10; but any value between 0 and 1 can be used. In this study, It used with significance level equal 0.05.
- Test method. Use the two-proportion Z-test to determine whether the hypothesized difference between population proportions differs significantly from the observed sample difference.

### **3. Analyze Sample Data –**

Using sample data, complete the following computations to find the test statistic and its associated P-value.

- Pooled sample proportion. Since the null hypothesis states that  $P_1 = P_2$ , we use a pooled sample proportion ( $p$ ) to compute the standard error of the sampling distribution.

$$P = (p_1 * n_1 + p_2 * n_2) / (n_1 + n_2)$$

Where  $P_1$  is the sample proportion from population 1,  $P_2$  is the sample proportion from population 2,  $n_1$  is the size of sample 1, and  $n_2$  is the size of sample 2.

- Standard error. Compute the standard error (SE) of the sampling distribution difference between two proportions.

$$SE = \sqrt{p*(1-p)*[(1/n_1) + (1/n_2)]}$$

Where  $p$  is the pooled sample proportion,  $n_1$  is the size of sample 1, and  $n_2$  is the size of sample 2.

- Test statistic. The test statistic is a  $z$  – score ( $z$ ) defined by the following equation.
- $Z = (P_1 - P_2) / SE$

Where  $p_1$  is the proportion from sample 1,  $p_2$  is the proportion from sample 2, and SE is the standard error of the sampling distribution.

According to alternative hypothesis ( $H_1$ ), the critical region with 5 percent level of significance is as under:

$$W(Z \leq Z_{\alpha/2}, Z \geq Z_{1-\alpha/2}) \Rightarrow W(Z \leq Z_{0.05/2}, Z \geq Z_{1-0.05/2}) \Rightarrow$$

$$W(Z \leq Z_{0.025} = -1.96, Z \geq Z_{0.975} = 1.96)$$

**Where**

$$\alpha = \text{Error} = 0.05$$

### **A. Interpret results**

If  $Z$  is less than or equal  $-1.96$  also If  $Z$  is more than or equal  $1.96$ , then  $H_0$  mean rejection and  $H_1$  means acceptance.<sup>9</sup>

### **2.8.2.2 Hypothesis No. 2**

The Annual Account of the Companies have been prepared on a going concern basis.

The basic question of this hypothesis is, whether accounting reports of the companies prepared based on going concern assumption or not?

For answering to this question researcher has to comparative analysis of the information content of traditional liquidity ratios (Accrual based) and financial ratios derived from cash flow statement (specially , capital expenditure ratios) so whether both type of ratios indicate complete informational contain or not? And also whether these ratios can substitute one another or not?

Because the major part of factors that affect the uncertainty about going concern, emphasize on liquidity problems of the companies by understanding the relation between ratio's stated above. So the sub-hypotheses are as under:

- 2.1 There is not a significant relationship between capital Acquisition ratio (CAR) and Current ratio (CR).
- 2.2 There is not a significant relationship between capital acquisition ratio (CAR) and Quick ratio (QR).
- 2.3 There is not a significant relationship between Investment to Financial ratio (I/FR) and Current ratio (CR).
- 2.4 There is not a significant relationship between Investment to Financial ratio (I/FR) and Quick ratio (QR).

#### **2.8.2.2.1. Population**

The population is total of automobile industry in Pune city. There are 13 of automobile manufactures in Pune city.

#### **2.8.2.2.2. Sample Size**

The Sample Size is equal to the population namely; there are 13 of automobile manufactures in pune city.

So, all of them selected for study. The names of the companies presented in table 2.1.

### **2.8.2.2.3. Accounting Variables:**

#### **1. Going concern assumption:**

In accounting, “going concern refers to a company’s ability to continue functioning as a business entity (concern being an early – 20<sup>th</sup> century term for “business” or “enterprise”). It is the responsibility of the directors to assess whether the going concern assumption is appropriate when preparing the financial statements. A company is required to disclose in the notes to the financial statements whether there are many factors that may put the company’s status as a going concern in doubt.

Financial statements are prepared on the assumption that the entity is a going concern, meaning it will continue in operation for the foreseeable future and will be able to realize assets and discharge liabilities in the normal course of operations. Different bases of measurement may be appropriate when the entity is not expected to continue in operation for the foreseeable future. Where a company is not a going concern, the break-up basis is used where all assets and liabilities are stated at Net Realizable Value.

The company’s auditor must consider whether the use of the going concern assumption is appropriated, and whether there are material uncertainties about the entity’s ability to continue to operate as a going concern that need to be disclosed in the financial statements <sup>10</sup>. An auditor considers such items as negative trends in operating results, loan defaults, and denial of trade credit from suppliers in deciding if there is a substantial going concern issue. <sup>11</sup>. An auditor who concludes that substantial doubt exists with regards to the appropriateness of the going concern assumption is required to issue an opinion reflecting this; a modified opinion if the company has appropriately disclosed the doubt and risks; and a qualified opinion if the company has not made appropriate disclosures. These are called “going concern” opinions. <sup>12</sup>

## 2. Current Ratio (CR) :

It is the measure of degree to which current assets over current liabilities. A high ratio represents a good possibility that the enterprise can retire current debts. For majority of the enterprises a ratio of 2.0 is a comfortable financial position.

It is computed in the Following way:

$$\text{Current ration (CR)} = \frac{\text{current Assets}}{\text{current Liabilities}}$$

It is able to measure how adequately current liabilities are covered. The greater the ratio, the greater the assurance can be given for meeting the current liabilities.

Also, this ratio indicates the degree of buffer against losses. The larger the ratio, the larger is the buffer, and the lower is the risk. It helps in signifying the degree of safety for covering shrinkage in values of non-cash current assets.

Finally, It shows the volume of liquid assets available as margin of safety against uncertain shocks to firm's cash flows arising from unexpected circumstances.

## 3. Quick ratio (QR)

The ratio between quick assets and quick liabilities is called **liquid ratio** or **quick ratio**.

$$\text{Liquid (or Quick) Ratio} = \frac{\text{Quick assets}}{\text{Quick liabilities}}$$

Quick assets refer to the assets which can be converted into cash very quickly. They are also called **liquid assets**. Here liquidity means the ability of the assets to be quickly converted into cash. Therefore, it is assumed that if stock – in – trade is excluded from current assets, we may have a measure of quick or liquid assets. Similarly, measure of quick or liquid liabilities will be available if short-terms liabilities like bank overdraft (whose repayment may be delayed) are deducted from the gross measure of current liabilities. Stock-in-trade is excluded, for cash cannot be quickly realized from this source; bank overdraft is excluded, because it need not be repaid immediately.

This ratio indicates immediate loan repaying ability. True and fair solvency position cannot be inferred from current ratio, for inventories may be overvalued or they may be full of obsolete items. With a view to eliminating these shortcomings these item should be excluded. Acid is used to eliminate base metal from the mixture to have a true measure of gold content. Similarly, inventories and bank overdrafts are excluded from current assets and current liabilities to have an idea as to how much cash, in reality, can be realized immediately. That is why the ratio is called **acid test ratio.**<sup>13</sup>

#### **4. Capital expenditure ratio**

The numerator for this ratio is made up of operations cash flow while capital expenditure makes up for the denominator.

A company that is string financially is one that manages to finance its growth. The capital expenditure ratio is an index of available capital for reinvesting internally, along with offsetting of existing debts. Should this ratio be greater than one, what this means is that a company has sufficient funds to fulfill various capital investments, in addition to fulfillment of debt requirements as a result of surplus cash. A high value indicates that the amount of spare cash that a company is in control of, is also high (Revise, 2005). As such, a company is in a better stead not only to service its existing debts, but also repays them as well.

Furthermore, appropriate value for this ratio, similar to the majority of the other ratios; differ from one industry to another. For example, autos and housing industry, often referred to as cyclical industries, indicate a wide difference of their ratios, as opposed to such non-cyclical industries such as the beverages and pharmaceuticals.

The capital expenditure ratio includes:

4.1: Capital acquisition ratio (CAR)

4.2: Investment to Finance ratio (I/FR)

#### **4.1. Capital acquisition ratio (CAR)**

The capital acquisition ratio reflex the company's ability finance capital expenditures from internal sources.

A ratio of less than 1:1 (100%) indicates that capital acquisition is drawing more cash form the business than it is generating. It calculates as follow:

$$\text{Capital acquisition ratio (CAR)} = \frac{(\text{Cash Flow From Operation} - \text{Dividends})}{\text{Cash paid for acquisitions (Capital assets)}}$$

#### **4.2 Investment to Finance ratio (I/FR)**

The internal relation between net operating activities and investing activities and financing activities, can be indicator procedure of investments finance.

Investment to finance ratio is total financial sources of investment requirement with Finance Sources compared and calculated as under:

$$\text{Investment/Finance ratio (I/FR)} = \frac{\text{Net cash from investing Activities}}{\text{Net cash from financing Activities}}$$

#### **7.8.2.2.4. Data Analysis**

The data analysis of sub-hypotheses 2.1, 2.2, 2.3 and 2.4 are as under:

1. The null and alternative sub hypotheses are as follow:

##### **Sub – hypothesis No 2.1**

$H_0$  : There is not a significant relationship between CAR and CR [ $H_0 : R (CAR \& CR) = 0$ ]

$H_1$ : There is a significant relationship between CAR and CR [ $H_1 : R (CAR \& CR) \neq 0$ ]

##### **Sub – hypothesis No 2.2**

$H_0$  : There is not a significant relationship between CAR and QR [ $H_0 : R (CAR \& QR) = 0$ ]

$H_1$ : There is a significant relationship between CAR and QR [ $H_1 : R(\text{CAR} \ \& \ \text{QR}) \neq 0$ ]

### **Sub – hypothesis No 2.3**

$H_0$  : There is not a significant relationship between I/FR and CR [ $H_0 : R(\text{I/FR} \ \& \ \text{CR}) = 0$ ]

$H_1$ : There is a significant relationship between I/FR and CR [ $H_1 : R(\text{I/FR} \ \& \ \text{CR}) \neq 0$ ]

### **Sub – hypothesis No 2.4**

$H_0$  : There is not a significant relationship between I/FR and QR [ $H_0 : R(\text{I/FR} \ \& \ \text{QR}) = 0$ ]

$H_1$ : There is a significant relationship between I/FR and QR [ $H_1 : R(\text{I/FR} \ \& \ \text{QR}) \neq 0$ ]

2. This information content in sub-hypotheses 2.1, 2.2, 2.3 and 2.4 examine by using the usual statistical tools like linear regression and simple coefficient correlation, coefficient of determination and T – test.

Coefficient of correlation is used to describe how well one variable is explained by the other variable. It reveals the magnitude and direction of relationship. The magnitude is the degree to which variables move in the same or opposite direction. The coefficient sign signifies the direction of the relationship.

Coefficient of determination measures the extent, or strength of the association that exists between the two variables.

T-test is used for testing the significant of a dependent variable over the independent variable. researcher is used Minitab 14 software for statistical tests.

### **2.8.2.3. Hypothesis No. 3**

Indian Accounting Standards are used for accounts in Indian Automobile industry.

The population, sample size, measurement of scale is same sub-hypothesis No. 1.2. But, the data analysis is as follow:

The basic question of this hypothesis is:

Is Indian automobile industry used for accounts as per Indian accounting standards?

Here in this study, 15 questions (Q. No. 13-27) in questionnaire with special reference to application of Indian accounting standards for accounts in Indian automobile industry. The questions are as follow:

Q. 13 Is going concern concept follow by this industry?

Q. 14 Is consistency in accounting policies followed by this industry?

Q.15 Is physical verification of inventory taken at year end?

Q. 16 Is the inventory appropriate classified in financial statements?

Q. 17 are contingent assets / liabilities disclosed in accounts by way of notes as to its amount, Nature and uncertainties which may effect the future outcome?

Q. 18 depending upon the principle activity of the enterprise, is the classification of items in the cash flow appropriate made into operating, financing and investment activities?

Q. 19 Have the fixed assets revaluated?

Q. 20 Is revenue recognized on accrual basis?

Q. 21 In the case of capitalization of fixed assets whether purchase price including import duty and other non-refundable taxes or levies is included in cost?

Q. 22 Are current investments carried at a lower of cost and fair value on individual basis or category of investment?

Q. 23 Is the company required to prepared and present interim financial report?

Q. 24 At the reporting date, balance sheet date, are all monetary assets/liabilities recorded at closing rate?

Q. 25 At the reporting date, balance sheet date, are all non-monetary assets/liabilities recorded at rates prevailing on transaction date?

Q. 26 Has the company during the year or after year end but before approval of account by the Board of directors issued bonus shares?

Q. 27 Has the company during the year or after year end but before approval of account by the Board of direction made share split?

The testing methodology of this hypothesis is as follow:

1.The null and alternative hypotheses are as under:

$H_0$  = Indian accounting standards are not used for accounts in Indian automobile industry. ( $P_1 \neq P_2$ )

$H_1$  = Indian accounting standards are used for accounts in Indian automobile industry. ( $P_1 = P_2$ )

3. Hypothesis tester function calculated same the sub-hypothesis N.1.2.

## **2.9 Limitations of the Study**

1. In accounting, there are some methods and ways to prepare the financial statements that their impact on financial statement is not the same. It may be caused improper to generalize the result of research to the statistical population.
2. The period of this study is only ten years for 1<sup>st</sup> hypothesis and five years for 2<sup>nd</sup> hypothesis generalized statement and findings are based on the ability of respond, if respondents don't give proper information, the study will not be proper.

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