CHAPTER –III
RESEARCH METHODOLOGY
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3.1 INTRODUCTION

It is universally accepted that research must be a problem oriented. Investment behavior, in the broadest sense, implies exercise went for the utilization of regular assets for human welfare. The subject of investor behavior in equity markets, incorporates various choices made by investors regarding equity investment such as selection of equity or scrip, amount invested, frequency of investment monitoring, type of script, financial and political literacy too name a few. The efficient market is a precondition for equity market development. It has been affected by unwanted intermediaries and middlemen as they have controlled it. As a result, the investors receive lower returns for their investments.

Components like little size of the investment possessions, high info use which has huge effect on the expense of development and obligation, deficiency of both physical framework and institutional game plans keep on undermining the general agribusiness environment. Little and minor investors in rustic India keep on being helpless before dealers and other business sector go-betweens and are defenseless against out of line exchange hones.

3.2 SELECTION OF THE TOPIC

In this study, an attempt is made to understand and evaluate investor behavior in equity markets undertaken, to study linkages. The present study is important because in spite of the various efforts by competent authorities investors have been lured by many ponzy schemes and penny stocks. The investors who are small and marginal have been swindled by investors and PCs to understand clearly the problems & key challenges they are facing, to evaluate investment plans undertaken, to study linkages and networks developed, to suggest business development services required, etc so that these investments are sustainable and profitable in long run.
3.3 RELEVANCE OF THE STUDY

In case of the small and marginal investors with limited investment amount profit surplus is often too meager, thereby making the economics unviable. Most of them find it difficult to decide upon the appropriate timing of their investment resulting often in poor price realization. Thus there is a need for interventions to enable the small and marginal investors to understand the dynamics of the equity market. This would enable the investors to thrive in the otherwise competitive environment.

3.4 PROBLEM STATEMENT AND RESEARCH QUESTION

Statement of Research Problem

As the present study deals with finding out the factors that govern the investor behavior in equity selection which shall ultimately depend upon investor perception of risk and socio demographic attributes.

“What are the various factors governing the investor behavior in equity and relative importance of these factors in investment decision?”

3.5 OBJECTIVE OF THE RESEARCH

- To understand the investment behavior of retail investors in terms of amount of investment, types of stocks invested and monitoring frequency and information sources influencing investments
- To identify the factors inducing trading or investment in a particular stock.
- To understand the relative influence of factors influencing retail investor decision regarding selection of particular stock for trade or investment.
- To rank the factors influencing decision making of the individual investors.
- To understand and segment individual investors on basis of differences observed on relative importance of factors governing individual investor decisions in equity markets.
Justification:

- The present study came out with listing of present investment plan of individual investors and difficulties in execution of plan. This shall help to understand the existing behavior in terms of investment in stock, percentage of income invested, years of investment, types of stock invested and monitoring frequency of investment.
- Further as investment or trading in a stock may be influenced by extraneous factors such as news, tips, insider information to name a few and hence an attempt is made to understand the role of such factors in investment decisions.
- A variety of factors such as personal characteristics, stock related characteristics, macro economic factors, personal needs, subjective risk perception may have a bearing on selection regarding particular stock and hence an attempt to understand and categorize these factors is important.
- Further the relative importance of such factors may differ among different individuals based upon their socio demographic attributes. Hence an attempt is made to understand the relative importance of these factors.
- Depending upon the socio economic attributes such as age, occupation, income it is possible that these factors may differ according to their score on relative importance. Hence understanding the factors based upon the relative score and segmenting the investors on basis of such score shall help the competent authorities to design appropriate training literature to protect investor interest in long run.

3.6 VARIABLES IN STUDY

Based on the extensive literature review (Nagy and Obenberger, 1994, Anna A. Merikas, Greece Andreas G.Merikas, George S. Vozikis, Dev Prasad) a pilot study was conducted on 30 investors to study the variables that govern the investment behavior of the investors in equity market. The initial questionnaire contained five broad factors. The accounting factors, subjective factors, neutral factors, advocate recommendation and personal financial needs.
Investment behavior = f (accounting factors, Subjective factors, Neutral factors, Advocate recommendation, Personal financial needs)

The investor does not take decision in isolation. The factors that he considers are

**Accounting Factors**
1. Financial performance of Company
2. Expected Corporate Earnings
3. Affordability of Share Price
4. Expected Corporate Dividend (Cash dividend, Bonus Share, Buyback of Shares)
5. Recent Price Movements of Firm's Stock

**Subjective/ Personal**
1. Feelings for Firm's Products and Services
2. Gut Feeling on Economy
3. Past Performance of Investor's Stock Portfolio

**Neutral Information**
1. Coverage in Electronic (Internet) Media
2. Coverage in Print Media-Press
3. Current Economic Indicators
4. FII Movement in Stock Market

**Recommendation**
1. Brokerage House Recommendation
2. Family Member Opinions
3. Friend or Co-worker Recommendation
4. Stock Broker Recommendation

**Personal Financial Needs**
1. Diversification Needs
2. Liquidity of Fund
3. Tax Consequences
4. Minimizing Risk
3.7 **HYPOTHESIS**
On the basis of the objective in the study and pilot study results following hypothesis of the study are formulated and listed below

\[H_1: \text{There is significant difference in the influence of Accounting Factor on behavior of respondents based on socio demographic attributes like Age, Income, Occupation, Gender and Years of Investment.}\]

\[H_2: \text{There is significant difference in the influence of Personal Factor on behavior of respondents based on socio demographic attributes like Age, Income, Occupation, Gender and Years of Investment.}\]

\[H_3: \text{There is significant difference in the influence of General Factor on behavior of respondents based on socio demographic attributes like Age, Income, Occupation, Gender and Years of Investment.}\]

\[H_4: \text{There is significant difference in the influence of Recommendation Factor on behavior of respondents based on socio demographic attributes like Age, Income, Occupation, Gender and Years of Investment.}\]

**Justification**

- For testing hypothesis questions were asked to the investors from diverse socio economic backgrounds regarding their opinion about relative importance of their experiences and observations in the equity investment.
- The factor was grouped according to factor score and Eigen values.
- Further the weighted average score based upon the Likert scale shall help to obtain the relative scores after discounting no responses.
- More over the correlation shall help to identify the segments of investors based upon the scores and help to predict investor tendency to invest in equity through logistic regression.
3.8 RESEARCH METHOD

An exploratory research design has been proposed as the present study is an extension of previous studies conducted in the field.

3.9 COLLECTION OF DATA

A. Primary Data

In order to get first hand and authentic data the researcher has used the following method.

**Questionnaire Method**

The researcher has systematically framed the questionnaire to collect the data. The information sought from them by objective type questions through multiple choices. The structured questionnaire was preferred for following obvious reasons

- Low cost
- Ability to reach multiple respondents through volunteers
- Higher efficiency
- Low interviewer bias

B. Secondary Data

The various published sources such as reference books, journals, Newspapers, reports, records are helpful to collect secondary data.

**Reference books**

The researcher has gone through various reference books related to Indian investors and Equity Markets.

1. **Articles**

The researcher has referred number of articles published in the reputed journals pertaining to behavioral finance, investment and equity markets.

2. **Websites Related to equity markets**

The researcher has gone through various websites related to equity through internet to update the current development in marketing field.
3.9.1 Sample Size

The universe for the present study included ‘Investors’ as per working definition coined earlier. The following table gives sample size arrived from the population and also method of sampling is described below. The sampling method used is convenience sampling. The convenience sampling is proposed given the fact that the data is related to income and investments where in most of people tend to shy away and not respond. To overcome this inherent difficulty a convenience sampling method was proposed and to ensure the representativeness of the population post graduate commerce and management institutes were selected across India and the alumni and students were contacted.

The universe of financial planners is infinite. The sampling unit in case of investor is individual investor who has invested in any form of instrument including traditional investment options such as postal savings and fixed deposits or non traditional instruments such as bonds and debentures. The sampling frame was UGC website which included list of all types of universities whether deemed, private, state or central. A comprehensive list of post graduate institutes according to convenience was prepared and the respective institutes were approached through appropriate channels for request to fill in the data. The size of sample was calculated on basis of population size, variance of sample and budgetary constraints. A sample size of 1000 was arrived based on the Morgan table of sample size. Out of the 5000 questionnaires forwarded only 1020 questionnaires were retained thus giving a response rate of merely 20%. Out of these 1020 responses only 996 responses were tenable and could be included in the final data analysis.

3.9.2 Selection of Investors

Based on the classification of post graduate institutes according to their relative size in terms of student intake and years of establishment which ultimately contributed to the alumni database which was used for respondent selection appropriate respondents based on convenience were selected based on the availability of data with these institutes.
3.9.3 Data collection Instrument

A structured closed ended questionnaire was used for recording the responses of respondent. The questions included multiple choice questions, dichotomous questions and also questions based on a 5 point Likert scale. The data and information for the study is collected through primary as well as secondary sources. In the primary source, structured questionnaires are used to collect the information on various aspects of financial management from selected respondents. Questionnaires have been divided into four parts for investors as follows.

a) General information
b) Financial management practices.
c) Factors inducing investment or trade in particular stock
d) Factors governing Investment decision making process.

In the general information along with name his/her qualification, profession, contact details, age and gender, these attributes are covered. Other three questionnaires are based on five points or three point Likert scale. The questions on problems associated with no investment in stock are also included.

3.10 PRESENTATION OF DATA

The data through questionnaire is properly presented so as to give comparative self-explanatory and easy to understand summarizing picture. For the presentation purposes following diagrammatic technique were used.

1) Vertical Bar Diagram
2) Horizontal Bar Diagram
3) Multiple Bar Diagram
4) Pie Chart
5) Histogram
3.11 ANALYSIS OF DATA

Data presentation gives only the comparative overview of the information but for figurative comparison sound analysis is required. In the present study the data is analyzed into two steps.

1) Descriptive summary statistics.
2) Advanced statistical techniques.

In descriptive summary statistics, mean, mode, variance, standard deviation are calculated as follows.

**Mean:**

If \( X_1, X_2, X_3, \ldots, X_n \) is set of observation then Mean = \( X = \frac{\sum X_i}{n} \)

**Mode:** The observation with maximum frequency is treated as mode.

**Variance:** To measure the dispersion or variation in the data variance is given by

\[
\sigma^2 = \frac{1}{n} \sum (X_i - X)^2 = \frac{1}{n} \sum X_i^2 - X^2
\]

**Standard Deviation:** Standard deviation is positive square root of variance

3.11.1 Advanced Statistical Techniques

In the advanced statistical technique Chi square test of independence, test for equality of proportions, Cluster Analysis and Factor Analysis are used. The collected data is cross tabulated on profession and financial planning aspects. Chi square test is used to investigate the independence of financial planning practices and professionals. The details of the Chi square test are as follows.
Suppose factor ‘A’ is classified into r groups say A₁, A₂…Aᵣ. Similarly factor B is classified into ‘C’ groups like B₁, B₂… Bᵢ, then the observed frequency of this classification is tabulated as follows.

<table>
<thead>
<tr>
<th>Aᵢ \ B</th>
<th>B₁</th>
<th>B₂</th>
<th>……</th>
<th>Bᵢ</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A₁</td>
<td>O₁₁</td>
<td>O₁₂</td>
<td>……</td>
<td>O₁ᵢ</td>
<td>(A₁)</td>
</tr>
<tr>
<td>A₂</td>
<td>O₂₁</td>
<td>O₂₂</td>
<td>……</td>
<td>O₂ᵢ</td>
<td>(A₂)</td>
</tr>
<tr>
<td>……</td>
<td>……</td>
<td>……</td>
<td>……</td>
<td>……</td>
<td>……</td>
</tr>
<tr>
<td>Aᵣ</td>
<td>Oᵣ₁</td>
<td>Oᵣᵢ</td>
<td>……</td>
<td>Oᵣᵢ</td>
<td>(Aᵣ)</td>
</tr>
<tr>
<td>Total</td>
<td>(B₁)</td>
<td>(B₂)</td>
<td>……</td>
<td>(Bᵢ)</td>
<td>N</td>
</tr>
</tbody>
</table>

In the table Oᵢⱼ means observed frequency for AᵢBⱼ Cell, (Aᵢ) denote total frequency of (Bⱼ) Cell and N denote grand total. Under the hypothesis of independent of factor A and B the expected frequencies for (I, j)ⁿ th cell is computed as

\[ eᵢⱼ = \frac{(Aᵢ)(Bⱼ)}{N} \quad I = 1,2 \ldots \ldots r, \quad j = 1,2 \ldots \ldots c \]

The test statistics is

\[ \chi^2 = \sum \sum \frac{Oᵢⱼ}{Eᵢⱼ} - N \sim \chi^2_{(r-1)(c-1)} \]

The table value of \( \chi^2 \) at \( \alpha \)% of significance is say \( \chi^2 \) tab then decision rule is

- If \( \chi^2_{cal} < \chi^2_{tab} \) \( \Rightarrow \) independence of A and B is accepted.
- If \( \chi^2_{cal} > \chi^2_{tab} \) \( \Rightarrow \) independence of A and B is rejected.
3.11.2 Cluster Analysis

The technique of cluster analysis is a tool of analyzing multivariate data is applied to investigate the possibility of clustering or grouping different professions as well as variety of financial planning practices, impact of financial planning on individual development and problems associated with financial planning. This technique theoretically based on clustering on the basis of similarity.

3.11.3 Factor Analysis

As the first step we conducted an exploratory factor analysis, a principal component analysis, in order to determine the underlying dimensions of the financial attitudes and behavioral tendencies. The chosen solution with five principal components was constructed using the direct oblimin rotation technique and can explain per cent of the total variance. Different opinions concerning what constitutes a high loading are found in the literature, e.g. 0.3 (Gardner, 2001). Here, the rotated factor loading of 0.5 was chosen as a threshold. (Gaur, 2009)

Kaiser’s criterion and scree plot were selected as technical criteria to determine the number of factors. The Kaiser’s criterion (Eigen value greater than 1) was chosen here as the minimum requirement. Additionally the Scree test (Cattell, 1966, as cited by Bryman and Cramer, 2005, p. 330), which plots the Eigen values against the number of components, suggested in this case five substantive factors. The ranking of factor 1 to 5 reflects the declining Eigen values.

3.11.4 Analysis of Variance ANNOVA

Analysis of Variance is used to test the homogeneity of means of different samples. The following definition was given by R.A.Fisher; analysis of Variance is separation of variance ascribable to one group of causes from the variance ascribable to other groups. The technique of ANNOVA essentially consists of portioning the total variation in an experiment into components of different sources of variation. These sources of variation
are due to controlled and uncontrolled factors. The ANNOVA technique is mainly based on linear model which depends upon type of data used in linear model. (Gaur, 2009)

3.11.5 Use of Software

Since there are two set of questionnaire each for 722 investors and 320 professionals of different type, for presentation, summarization and analysis of data software are used. For presenting the data effectively with different types of graphs, charts and diagrams, MS-EXCEL is used. For applying chi square test, cluster analysis and other statistical techniques Minitab software and SPSS is used.

3.12 LIMITATIONS OF THE STUDY

The study covers only selected post graduate commerce and management institutes the present study is confined to the investors or respondents in the selected post graduate commerce and management institutes only. The concept of investment planning varies with person and profession also. The study takes a narrow view of the term, planning log. The major issues covered in the study in respect of investment of the selected respondents are financial planning practices, budgetary provision of investment, perception of investors towards macro factors, financial investment decision making. Hence, the basic thrust of the discussion is to examine the investment practices among various investor classes... Though hundreds of factors influencing investment exist limited number of factors is considered for the study. The investment practices are different for different investors. Similarly investment practices of each person vary as per his life style and profession.

It is the comparative study of various factors influencing behavior of selected investors.

The financial planning can be studied from different aspects such as risk tolerance, financial literacy and political literacy to name a few which could exert influence on investor behavior which are not included in the present study.
3.13 CHAPTER SCHEME

The complete study is systematically arranged in six chapters.

The following details give the brief accounts of chapter scheme and its contents.

**Chapter I: Introduction**

This chapter is Introductory in nature and is concerned with definitions, concept, and features of behavioral finance. The theories of behavioral finance are also discussed in brief.

**Chapter II: Review of Literature**

In this chapter different research based articles of esteemed researcher published in national and international journals are chronologically surveyed. Similarly number of reference books, articles in newspapers, magazines are also reviewed. This chapter throws a light on continued research in investor behavior planning in different angles. Such a study is of course useful for planning of present study.

**Chapter III: Research methodology**

This chapter includes the scientific research design of the present study including the sample size, sampling method, tools used for data collection and data analysis.

**Chapter IV: Analysis and Interpretations of Data**

In these chapters the statistical analysis of survey is presented in table form along with detailed comparison are presented in terms of graph, charts, and diagrams. The result of statistical test, decision and conclusion there from is also sufficiently discussed. The emphasis is given to examine the validity of hypothesis discussed in chapter four. The data analysis of responses of investors is presented in chapter IV whereas data analysis of responses by financial planners is presented is presented in this chapter.

**Chapter V: Findings, Conclusions and Suggestions**

This chapter correlates the finding of the study with theoretical concerns of investor behavior. Varieties of conclusions are also discussed and few suggestions are also mentioned for designing appropriate literacy design programs for different set of respondents based on socio demographic attributes.

At the end of the study the annexure is attached in which bibliography, questionnaires are enclosed.