CHAPTER 4

RESEARCH DESIGN

Research design is a systematic process which starts with collection of data and ends when significant results are obtained. In the present work, the data has been collected keeping two aims into consideration. First to find out the important factors affecting decisions of VCs in selection of IT firms, determination of the key investment objectives of VCs while making such kind of funding decisions and second to find out the relative relationship of choice of factors and assignment of weights to each factor by different investors during screening process of IT firms in Indian context.

4.1 Nature of Research

The present work is exploratory and descriptive in nature. In the process of an experiment, a hypothesis is used to determine the relationship between two or more than two variables. The present work first determines the relationship between factors of selection criteria and key investment objectives as independent variables and its role in the decision process of VC’s investment decision as dependent variable, and second creates a relationship between assignment of weights to each factor as independent variable and choice of factors for assignment of weights as dependent variable.

Extensive literature review is done in order to obtain the variables for the study and for the process of research design. Variables obtained from the previous empirical research have been used in the questionnaire for collecting the data from respondents. Secondary sources have also been reviewed for gathering the required information as a support for collection of primary data. The outcome of the research determines the key selection criteria and key investment objectives of VCs along with relationship among the choice of factors and assignment of weights to each factor by different investors during selection process of IT firms for investment decision.
4.2 Sampling Plan

Sampling plan is to be considered as one of the important step towards the completion of any research. It includes the frame of data collection and sampling methods, area of data collection, sample size and tools used for analysis purpose.

*The Sampling plan for present work is as follows:*

4.2.1 Sampling Frame

Both primary and secondary data has been used to collect the necessary information and to obtain the objectives. Primary data has been collected through a structured questionnaire developed with the help of previous empirical literature and was mailed to various respondents who are engaged in venture capital investment activities and provide funding support to VC firms, which include venture capitalists, financers, financial consultant, financial institutions, fund managers, private banks and public banks of various cities within India. The collected information through questionnaire is based on the qualitative and quantitative aspects on various dimensions which is a mirror image of previous empirical literature. In the questionnaire, five point likert scale has been used to study the relevance of each aspect. Secondary data has been obtained from various sources which are as follows:

- Academic journals
- Business Magazines
- Newspapers
- Research articles
- Books
- Websites

4.2.2 Sampling Method

The firms for the collection of data have been selected using convenience random sampling method. The random sample of 160 firms providing investment to various sectors of economy including IT sector were selected for generating necessary responses and the designed questionnaire was sent through mail to all selected firms.
4.2.3 Sampling Area

The present work is based on the VCs investment in Indian IT sector. The data has been collected keeping in view the structure of Indian IT sector and hence investment firms of various cities of India have been chosen for data collection purposes that are making investment in IT sector. Various VC firms, public and private sector banks, financial institutions, fund managers of Delhi NCR region, Uttarakhand region, UP region, Mumbai and Chandigarh were taken as respondents.

4.2.4 Sample Size

The questionnaire gathered the responses about the various aspects of selection criteria which are the main part of the study. The questionnaire was offered within India to 160 respondents which include fund managers, venture capitalists, managers of financial institutions and bank managers.

While doing the literature review, it has been observed that many researchers like Tybje and Bruno (1984) took 46 VC firms as their sample size, Macmillan, Siegel and Narsimha (1985) selected 102 VC firms as their sample size and Shepherd (1999) took 66 venture firms as sample size for obtaining the results. Drawing from the work of above literature, the questionnaire was offered within India to 160 respondents who are related with venture capital investment and out of 160 respondents; we were able to get responses from 104 respondents which disclose the response rate of 65%. Refer Table 4.1

Table 4.1: Categories of Respondents

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Category of Respondents</th>
<th>Category Volume</th>
<th>Percentage on Total Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Financiers</td>
<td>11</td>
<td>10.58%</td>
</tr>
<tr>
<td>2</td>
<td>Financial Consultants</td>
<td>10</td>
<td>9.62%</td>
</tr>
<tr>
<td>3</td>
<td>Financial Institutions</td>
<td>10</td>
<td>9.62%</td>
</tr>
<tr>
<td>4</td>
<td>Fund Managers</td>
<td>16</td>
<td>15.38%</td>
</tr>
</tbody>
</table>
4.3 Data Analysis Tool

To check the reliability and validity of the construct, Cronbach’s Alpha has been used. Based on the analysis of previous studies that investigated the key factors of VCs funding decisions and their investment behaviors and to determine the role of VCs as a tool for financial development of IT sector, factor analysis\(^5\) has been used to find out the key factors of selection criteria & key investment objectives of VCs. Correlation and ANOVA has been used to study the relationship among the choice of factors and assignment of weights to each factor by different investors.

SPSS version 17.0 is used for analysis purpose. The data are presented through pie charts and analytical tables.

### 4.3.1 Factor Analysis

Factor analysis is considered as one of the important multivariate technique used in most of research studies, widely used in studies related to social and behavioural sciences. This technique is used to find out the systematic interdependence between a set of variables and to determine the most important variables without losing the originality of observed variables. With the help of factor analysis, large set of measured variables are grouped under certain categories which are termed as factors (based on correlation among the variables).

\(^5\) (Backhaus et al. (2006) recommend conducting a factor analysis in order to verify the variance of the data.)
The factor analysis has been used to reduce the number of variables for obtaining the key factors of selection criteria without losing the significance and originality of the variables. For the first analysis, total 31 variables are reduced to 16 variables, grouped under four factors and for the second analysis, total 42 variables are reduced in to 28 variables, grouped under four factors. All the factors have been extracted through principal analysis and rotated by means of Varimax, with Kaiser Normalization till no cross loading and values below .5 were deleted to find out the cross loading situation. An Eigen value of more than 1 is used as a condition for extracting factors.

4.3.2 Correlation and ANOVA

Analysis of variance is an important technique to compare a situation where comparison between more than two populations is required. We can also judge the means of two samples with the help of z-test or t-test but in order to determine the difference amongst more than two samples, these tests are not possible to draw the significant results; hence ANOVA allows judging and checking this simultaneous test. ANOVA is essentially a procedure for testing the difference among different groups of data for homogeneity. ANOVA has been used to find out the difference between the choice of factors among different investors and their assignment of weights to each factor.

For obtaining the results from concerned respondents through questionnaire, five point likert scale has been used. While recording the corresponding weights to each factor, difference in weight assignments has been viewed and studied with the help of correlation. The study reveals two important objectives, first to determine the key aspects of selection criteria opted by VCs while selecting IT firms for funding decision, key investment objective opted by VCs while selecting IT firms for investment decision and to find out the relationship among the corresponding weightage assigned by various investors during their screening process. Factor analysis has been used to determine the necessary results for first objective and Correlation & ANOVA has been used to find out the second objective.
4.4 Significance of Research

Investment is often considered as an important tool for the growth and development of any sector. It involves huge cash outflow from the side of perspective investor. Generally investment decisions take place after a rigorous process which involves a series of action plan. These action plan results in both way, acceptance and rejection. The reason for rejection of a project is based on multiple factors. The significance of present work focuses on to highlight the factors affecting decision process of VC’s action plan towards selection of IT firms.

The study aims at providing a platform to new IT firms towards fulfillment of their financing requirements through venture funding and to determine the quantitative and qualitative aspects of VC firms from their final decision point of view. In order to make an effective business plan, the present study will be more useful to new IT firms in the determination of key selection criteria opted by VCs and their key investment objectives related with investment decision.

Following are some of the significance of research:

i. The research will have implications on the decision making process of VCs in the selection of IT firms for venture funding decision.

ii. The study will signify some factors of selection criteria and key investment objectives towards selection process of IT firms in Indian scenario.

iii. The research will help IT firms to make their business plan as per the standards of VCs by considering the identified factors from the study.

iv. The study will help IT firms to understand the overall structure of VC management team related with investment decision.

v. VC is an important financing tool for startups hence this work has significance for young startups to attract this special kind of investment source by making a sound business plan.