Chapter 3

Research Methodology

This chapter explained the selection of the population and the samples used in the research. It also discussed the method of sampling, the tools used in research, methods of data collection, and methods of data analysis

3.1 Population and Samples

In this research, there were 3 groups of population.

3.1.1 The first group of population was SMEs operators in Bangkok and its vicinity. They were entrepreneurs who participated in New Entrepreneurs Creation Project in coordination with the Department of Industrial Promotion (DIP, 2011). The population of this research consisted of 480 SMEs owners in total. The criteria for the selection of samples were the samples aged below 40 years old and the business successors. There were 94 SMEs owners. 20 samples were selected by the researchers (p.p.14-15).

3.1.2 The second group of population the samples who had knowledge of finance. 5 samples were selected based on the criteria of entrepreneurs who participated in New Entrepreneurs Creation Project. 5 samples were selected from credit officers from financial institutions. 5 samples were selected from financial advisors. There were then 15 samples in total.

3.1.3 The last group of population was SEs operators in Bangkok and its vicinity who participated in New Entrepreneurs Creation Project in coordination with Department of Industrial Promotion. The total population was 457. The criteria for the selection were the samples aged below 40 years old the samples who graduated with MBA and the samples who were IT knowledgeable and the business successors. There were 62 SEs owners. The researchers finally selected 50 samples in total.

3.1.4 The population in this study is the population from the third group of samples, totaling 10 cases. Each sample was interviewed and observed for 3 different sessions.

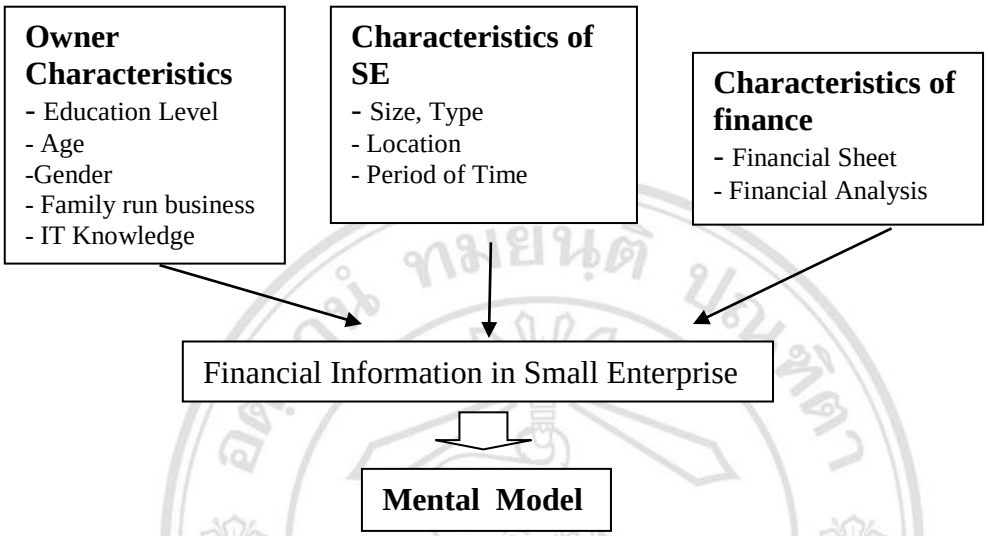

Figure 3.1 Shows a sample group used in data collect

3.2 Instruments

To collect data in this research, three types of instruments consisted of questionnaire, interviews, and observation issues.

3.2.1 The data were collected using questionnaires. The purpose was to collect data about the attitudes of SMEs entrepreneurs towards financial information. The questionnaires were used with the samples in the first year project (pp.15). The questionnaires consisted of two parts.

Part 1: General questions for entrepreneurs and managers of small and medium-sized enterprises. These questions explored the respondents' gender, age, position, education, types of business, number of employees, registered capital, location, and revenue of the business.

Part 2: Questions designed to explore the attitudes of the entrepreneurs toward financial information, the use of financial information in decision making, knowledge about the financial information, and financial instruments that helped in decision making (Appendix A).

3.2.2 The data were collected through the interviews using the tools called left hand column for the preparation of the interviews. The interviews were divided into two sets. The first set was used to interview the samples with knowledge of finance, including the entrepreneurs who used financial information in analysis and decisions, banking credit officers, and financial advisors. The objective was to obtain good financial model as the interviews explored the opinions of effective financial information (Appendix C). In the second set, the interviews were conducted with 50 SME operators to collect data on the behaviors of financial practice and attitudes. The interviews consisted of two parts.

Part 1: General questions for entrepreneurs and managers of small and medium-sized enterprises. These questions explored the respondents' gender, age, position, education, types of business, number of employees, registered capital, location, and revenue of the business.

Part 2: Questions designed to explore the attitudes of the entrepreneurs toward financial information on the behaviors of financial practice and attitudes. Questions of how and why were used (Appendix B).

3.2.3 To collect data in this stage, interviews and observation were used (Appendix E). The objective was to collect data concerning behaviors towards cloud computing finance system. The data consisted of two parts.

Part 1: The data were collected by the interviews concerning the opinions and the demands for cloud computing finance.

Part 2: The data were collected by the observations on changes in behaviors toward cloud computing finance system and the use in decisions and analysis.

3.3 Data Collection

In this study, the data were collected with the details as follows:

3.3.1 Secondary data were obtained through the collection of information from theories, texts, documents, messages, news, statistics, articles, academic papers, reports from relevant agencies, and information published on the Internet.

3.3.2 Primary data were collected by questionnaire, interviews and observations. The data were first collected by 20 entrepreneurs of small and medium-sized

enterprises. Then, the data were collected from 15 interviews with the samples with knowledge about finance. Thirdly, the data were collected from interviews with 50 entrepreneurs of SMEs. Lastly, the interviews and observable were conducted with 10 samples. Each was interviewed and observed at 3 different sessions by the researcher.

3.4 Methodology towards solution

This research found that the entrepreneurs of SEs who had MBA with IT knowledge and were classified as the new generation were likely to accept a new challenge. Yet they were not paying any attention to the financial information and hardly used the information for making decisions. This was a result from their mental model. Ladder of inference was, therefore, applied to analyze the mental model and theories of behavior change were adopted to adjust the behaviors involved in each stage of the financial ladder of inference of the entrepreneurs of SEs. The adjusted patterns obtained from the adjustment of mental model were which later considered. From the literature review, the cloud computing shows its potential to solve the relevant problems. Therefore, the cloud computing will be applied as a solution tool. When analyzing the problems and applying the tools for adjusting the mental model, the certain issues are concerned with the analysis and presentation of the relationship between the perception of financial information and the mental model for creating cloud computing architecture. The proposed conceptual framework of solution method is illustrated in Figure 3.1. This research presents a different view from other researches which mostly work on the external side of the financial problems in terms of loan, knowledge distribution and consultation as a solution. However, this research focuses on fixing the financial problems from the individual factor. The pattern of the financial ladder of inferences is designed to be a model that can be used with all types of financial documents. Three types of financial documents, which are cash flow, income statement and balance sheet, are considered.

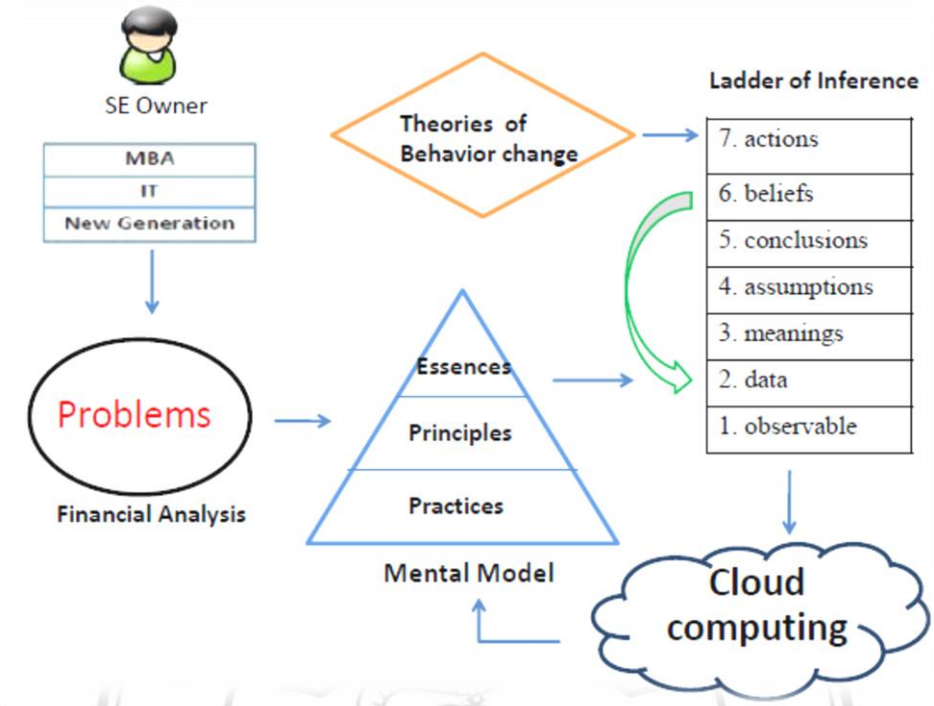

Figure 3.2 Conceptual framework towards solution

3.5 Analysis and Interpretation

After collecting the data in each stage, the process of analysis could be summarized as follows:

3.5.1 The data from the first part of the questionnaires were analyzed qualitatively by comparing the events with the behaviors of operators. The analysis focused on Know- What, Know-Why, Know-Who, and Who-How.

3.5.2 The data from the interviews with the samples with knowledge of finance were analyzed using CommondKADs to capture knowledge on the part of the task (to determine significant financial document). In the parts of domain and inference, the ladder of inference was used in the analysis to capture knowledge in each stage in order to obtain a good financial ladder of inference.

3.5.3 The data from the interviews with the samples who were SEs operators were analyzed using CommondKADs to capture knowledge on the part of the task (to determine significant financial document). In the parts of domain and inference, the ladder of inference was used in the analysis to capture knowledge in each stage in order to understand mental model that affected each stage of financial ladder of inference.

3.5.4 The data were analyzed from interviews and observations conducted with SEs operators, which affected cloud computing finance. The ladder of inference was used to analyze the financial information that was used in each step of decision making.

Table 3.1 5-point rating scale

Change(%)	**Rating scale**
=>80	Excellent
60-79	Good
40-59	Fair
20-39	Satisfactory
<20	Poor

Then, 5-point rating scale was applied to analyze the changes in behaviors.