CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Research methodology describes the design and implementation of the research techniques and tools used for the study. The methodology adopted and process used in the conduct of research is discussed in this chapter. The central concept underlying research is its methodology; it controls the study, prescribes the collection of required data, analysis of the data for rational relationships, sets up means of refining the raw data and specifies an approach so that sensible inference could be drawn to finally conclude with useful recommendations for adoption.

3.2 SCOPE OF THE STUDY

There are many levels in the hierarchy where succession could be planned in a family business. One of which are the managerial levels at which succession events could make or break the organisation which includes the psychology of succession procedures and the application of leadership styles. This study is conducted with a view to examine the reasons influencing or affecting the existence or non-existence of succession plan among the entrepreneurs in the Coimbatore district of Tamil Nadu.

This study has been conducted among the family business firms in the Coimbatore district. Coimbatore district was selected for the purpose of
this study because Coimbatore District is the third largest city in the state of Tamil Nadu and is one of the most industrialized cities in Tamil Nadu. It is also known as the textile capital of South India or the Manchester of the South. According to the statistics issued by the district administration (Coimbatore District administration: District at a glance) there are more than 25,000 small, medium, large sale industries and textile mills in the district. Moreover the statistics also reveal that Coimbatore has around 20200 industries providing direct and indirect employment to around 10 lakh workers. Moreover Coimbatore district houses industries in varied sectors like textile, auto ancillaries, foundries, chemicals, Motors and pumps and other Engineering goods.

3.3 OBJECTIVES OF THE STUDY

The objective of developing and managing a succession plan is to make sure, the stability in management in functioning of the organization and the sustainability of the business in the long run. This study has been carried out with the following objectives.

3.3.1 Primary Objectives

- To measure the degree of influence of various factors considered as general business and working capital dimensions on existence/non-existence of succession plan.

- To identify the reasons for non-existence of succession plan among entrepreneurs of family businesses.

- To identify the competencies required for a successor to lead an existing business.
3.3.2 Secondary Objectives

- To analyze the interaction effect of various general business and working capital dimensions on the existence/non-existence of succession plan.

- To map the influence of various general business and working capital dimensions on existence/non-existence of succession plan with various demographic factors.

- To map the various indicators used to capture non-existence of succession plan with various demographic factors.

- To map the competencies required for succession plan with demographic factors.

3.4 HYPOTHESES

3.4.1 Null and Alternate Hypothesis (Naresh K. Malhotra 2012)

Hypotheses are drafted for the purpose of analytical testing. A null hypothesis is a statement of status quo, one of no difference or no effect. If the null hypothesis is not rejected, no changes will be made. A null hypothesis is represented as $H_0$. An alternate hypothesis is one in which some difference or effect is expected. Accepting the alternate hypothesis will lead to changes in opinions or actions. Thus, the alternate hypothesis is the opposite of null hypothesis and is represented as $H_1$. 
3.4.2 Hypotheses Tested

The hypotheses drafted for the purpose of statistical testing are stated with brief explanation of the purpose for which the respective hypothesis was drafted:

In order to decide upon the statistical tools to be used for analysis, it is necessary to identify if the data is parametric or non-parametric in nature. One of the assumptions for the data to be parametric is that the data should follow normal distribution. For this purpose Kolmogorov-Smirnov test of Normality is done using SPSS. The hypothesis thus drafted to test if the data for various dimensions like working capital, general business, primary reasons and competency required in a successor follow normal distribution is

\[ H_0: \text{The distribution of various dimensions influencing succession planning is not significantly different from normal distribution.} \]

\[ H_1: \text{The distribution of various dimensions influencing succession planning is significantly different from normal distribution.} \]

To decide if the data is parametric or non-parametric, in addition to the distribution of data, the variance of data should also be studied. The hypothesis drafted for testing variance of data used to measure the various dimensions like working capital, general business, primary reasons and competency required in a successor is

\[ H_0: \text{The variance of data used to measure various dimensions influencing succession planning is not significantly different.} \]

\[ H_1: \text{The variance data used to measure various dimensions influencing succession planning is significantly different.} \]
In this study, for the purpose of statistical testing the rating of respondents on various factors that could have influenced the drafting of succession plan, the respondents are divided into two groups namely the group with existence of succession plan and the group with non-existence of succession plan.

The hypothesis drafted to study the rating of respondents with existence of succession plan on various dimensions measured is

\( H_0: \) The rating of respondents with existence of succession plan on various factors that would have influenced the drafting of succession plan is not significantly different.

\( H_1: \) The rating of respondents with existence of succession plan on various factors that would have influenced the drafting of succession plan is significantly different

The hypothesis drafted to study the opinion of respondents with non-existence of succession plan on various dimensions is

\( H_0: \) The rating of respondents with non-existence of succession plan on various factors that would have affected the drafting of succession plan is not significantly different.

\( H_1: \) The rating of respondents with non-existence of succession plan on various factors that would have affected the drafting of succession plan is significantly different.

After studying the influence of various factors under working capital dimension and general business dimension in drafting a succession planning, it becomes important to study the degree of influence, i.e. to study
which dimension, working capital or general business has more influence on the drafting of succession plan. The hypothesis drafted for the purpose is

\( H_0: \) The average scores of various factors considered as general business dimension and factors considered as working capital dimension is not significantly different.

\( H_1: \) The average scores of various factors considered as general business dimension and factors considered as working capital dimension is significantly different.

The hypotheses drafted to study the degree of influence of factors considered as general business dimension and working capital dimension on the existence or non-existence of succession plan among the respondents with existence of succession plan and non-existence of succession plan are:

\( H_0: \) Among the respondents with existence of succession plan, the average scores of various factors considered as general business dimension and factors considered as working capital dimension is not significantly different.

\( H_1: \) Among the respondents with existence of succession plan, the average scores of various factors considered as general business concerns and factors considered as working capital concerns is significantly different.

\( H_0: \) Among the respondents with non-existence of succession plan, the average scores of various factors considered as general business dimension and factors considered as working capital dimension is not significantly different.
H₁: Among the respondents with non-existence of succession plan, the average scores of various factors considered as general business dimension and factors considered as working capital dimension is significantly different

The hypothesis drafted for the purpose of statistically testing the perception of respondents towards factors considered under competency required, primary reasons, working capital and general business dimensions with respect to the demographic factors is

H₀: The overall ratings of perception of respondents towards factors considered under competency required, primary reasons, working capital and general business dimensions are not significantly different among the groups based on educational qualification, type of entity, age group of the entrepreneur and the nature of business.

H₁: The overall ratings of perception of respondents towards factors considered under competency required, primary reasons, working capital and general business dimensions are significantly different among the groups based on educational qualification, type of entity, age group of the entrepreneur and the nature of business.

3.5 RESEARCH DESIGN

Malhotra (2012) defines research design as a frame work or blueprint for conducting a marketing research project. It details the necessary procedures for obtaining the information needed to structure or solve marketing research problems. Research design can be classified into exploratory research design and conclusive research design. Conclusive research is further classified into descriptive research and causal research.
Exploratory research is to provide insights into, and an understanding of, the problem confronting the researcher whereas conclusive research is one designed to assist the decision maker in determining, evaluating, and selecting the best course of action in a given situation.

Utilization of proper research design helps to reach meaningful results in data analysis. Descriptive research describes the characteristics of a population or situation or attribute. Descriptive research design looks to determine the answers who, what, when, where and how questions. The reason for selecting descriptive research design is the use of accurate portrayal of the characteristics like, behavior, expectations, perceptions, opinions, beliefs, abilities and knowledge of an individual or a group of individuals, product or service, situation or event. In this study, the opinion of respondents on the reasons for non-existence of succession plan, the influence of various dimensions on the drafting of succession plan and the competencies required in a successor to take over the business are measured. Hence this study adopts descriptive research design.

3.6 SAMPLING DESIGN

Sampling is one of the components of research design. Malhotra (2012) speaks about five steps that are included in the sampling design process. The steps are closely interrelated. The steps are:

Step 1: Define the target population
Step 2: Determine the sampling frame
Step 3: Select a sampling technique
Step 4: Determine the sample size
Step 5: Execute the sampling process
3.6.1 Target Population

The target population is defined as the collection of elements or objects that possess the information sought by the researcher and about which the inferences are to be made.

For the purpose of this study, small scale family run businesses situated in Coimbatore District are considered as the target population. Coimbatore district was chosen for the reason that it is one of the most industrialized districts in the state of Tamil Nadu and it is home to more than 20000 small, medium, large sale industries and textile mills.

3.6.2 Sampling Frame

The sampling frame is defined as the representation of the elements of the target population. It consists of a list for identifying the target population.

Since this study involves the opinion of entrepreneurs who own/run their own businesses in the SME sector, the researcher has considered the members of Coimbatore district small scale industries association for the purpose of this study.

3.6.2.1 About CODISSIA

CODISSIA started functioning in the year 1969 with 40 members and now the membership strength base has crossed 5200. The Association serves for the growth and prosperity of industries and it has made a significant contribution towards building a strong and stable industrial city of Coimbatore. The Association besides functioning as a grievance redressed
unit is functioning as a development oriented association conducting series of seminars / training programmes / exhibitions / industrial trade fairs / industrial visits etc. so as to develop and create awareness among industrial entrepreneurs. CODISSIA represents in all the advisory and consultative committees at the District / State and National Levels and plays a leading role in policy formulation and grievance redressed for the Small scale Industries.

In short CODISSIA has dedicated itself to the cause of small-scale industries and has made a mark at the District/State and National levels by its selfless service to SSIs in a variety of ways. The Association renders guidance and help to the new entrepreneurs in the identification of products, preparation of project reports, getting financial assistance from banks etc. and licenses from various departments.

The members of CODISSIA are involved in different fields of business unlike specific industrial associations were a member would belong to that particular industry. Considering a population size of 5200 members running small and medium enterprises, which are family owned provide the required representation of population across varied sectors for the purpose of this study. Hence the researcher identified the members of CODISSIA as the target population and this list was taken as the sample frame.

3.6.3 Sampling Technique

Sampling technique is the technique in which respondents are selected from the population. Sampling techniques can be classified into non-probability sampling and probability sampling techniques. Non-probability sampling techniques do not use chance selection procedures. Rather they rely on the personal judgment of the researcher whereas in probability sampling
technique each element of the population has a fixed probabilistic chance of being selected for the sample.

This study involves statistical projection of results to a target population and the sampling technique is used to eliminate any bias on selection of sample probability. Among the various probability sampling techniques, simple random sampling technique was used in this study to determine the respondents. Totally 458 respondents were selected randomly using inbuilt function of Microsoft Excel package. Steps involved are

Step 1: After entering data into excel sheet, go into data analysis tab available in the tool bar

Step 2: In the resulting dialog box, select sampling

Step 3: Highlight data of interest and place in input range window

Step 4: Type the number of samples required into the number of samples window

Step 5: Click on the output range window and click on a blank cell

Step 6: Click ok

3.6.4 Sampling and Observational Unit

Sampling unit is defined as a single section selected to research and gather statistics of the whole whereas observational unit is one on which the measurements are made.

In this study an individual firm is taken as the sampling unit and an individual who is the head of the firm is considered as the observation unit.
3.6.5 Determination of Sample Size

The initial sample size sample size of 458 has been determined based on the level of significance, variance, precision level, completion rate and incidental rate. Some terminologies used that play a central role in sample size determination is defined in the following list

**Precision Level:** When estimating a population parameter by using a simple statistic, the precision level is the desired size of the estimating interval. This is the maximum permissible difference between the sample statistic and the population parameter.

**Statistic:** A statistic is the summary description of a characteristic or measure of the sample. The sample statistic is used as an estimate of the population parameter.

**Completion Rate:** The percentage of qualified respondents who complete the interview.

**Incidental Rate:** The rate of occurrence of persons eligible to participate in the study expressed in percentage.

**Confidence interval:** The confidence interval is the range into which the true population parameter will fall, assuming a given level of confidence.

**Confidence level:** The confidence level is the probability that a confidence interval will include the population parameter.
Malhotra (2012) specifies the equation for sample size determination as

\[
\text{Initial Sample Size} = \frac{\text{Final Sample Size}}{\text{Incidental Rate} \times \text{Completion Rate}}
\]  

(3.1)

and

\[
\text{Final Sample Size} = \frac{Z^2 \sigma^2}{D^2}
\]  

(3.2)

where

- \(Z\) is the number of standard errors a point is away from the mean
- \(\sigma\) is standard deviation from mean and
- \(D\) is the level of precision.

Step 1: Specifying confidence level and determining \(Z\) Value:

A 95% confidence level is desired. From the statistical tables the associated \(z\) value for a 95% confidence level is 1.96.

Step 2: Level of Precision:

This is the maximum level of precision between the sample mean and the population mean. In this study the minimum rating for a factor is 1 and the maximum rating is 5. Hence in order to get a more precise sample, the precision level is fixed at \(\pm 1\) of the true population value. (i.e.) \(D=\pm 1\)

Step 3: Determining the variance of the population:

The variance for the rating of factors considered to influence the succession plan was found using SPSS. This study measures the influence of four dimensions namely general business dimension,
working capital dimension, reasons for non-existence of succession plan and competencies required for a successor to take over the business on succession planning. The variances for the above dimensions was found to be

a) The variance of competency required is 27.78
b) The variance of general business dimension is 61.57
c) The variance of working capital dimension is 40.06
d) The variance of primary reason is 88.02

From the above variances, the highest variance is seen for rating of primary reason dimension at 88.02. So this variance was taken for sample size determination.

Step 4: Determining the sample size:
The sample size obtained by applying the above values in equation 3.2 is

\[
\text{Final Sample Size} = \frac{Z^2 \sigma^2}{D^2} = \frac{1.96^2 \times 88.0^2}{1^2} = 338.14 \approx 338 \text{ samples}
\]

For the purpose of statistical analysis, 350 samples were studied.

Step 5: Determining initial sample size:
A size greater than 350 samples is required considering the incidental rate and completion rate. Hence based on the pilot study, the incidental rate and the completion rate are calculated as follows:

- Sample size assumed: 50 samples
- Incident level: 46 samples
• Completion level: 43 samples
• Incidental rate: \((46/50)*100=92\%\)
• Completion rate :\((43/50)*100=86\%\)

From the above values based on pilot study, a rounded figure of 90\% as incidental rate and 85\% as completion rate was assumed for the purpose determining initial sample size. Applying the value of incidental rate 90\%, completion rate of 85\% and a final sample size of 350 samples in equation 3.1 the initial sample size was calculated as

\[
\text{Initial Sample Size} = \frac{350}{0.90 \times 0.85}
\]

\[
= 457.5 = 458 \text{ (rounded to the next higher integer)}
\]

In the pilot study analysis, medium and large effect had been witnessed. Based on Cohen (1992), at a standardized alpha level of 5\%, and 80\% statistical power, 85 samples are required to detect a medium effect size. Since the calculation of sample size based on level of significance, variance, precision level, completion rate and incidental rate during pilot study returned a higher figure of 458 samples, this number was taken as the initial sample size for the present study.

From this initial sample size of 458 samples considered, based on the witnessed incidental rate of 90\% and completion rate of 85\%, a final sample size of 350 samples were studied.

3.7 DATA COLLECTION

For the purpose of this study both primary and secondary data have been used.
3.7.1 Secondary Data

Secondary data are data collected for some purpose other than the problem at hand. Secondary data helps in better identification and defining of the problem.

The secondary data sources used for this study were reports, journal articles, conference proceedings and past thesis that were taken from the web and software like EBSCO and ADPRO.

3.7.2 Primary Data

Primary data is defined as data originated by the researcher for the specific purpose of addressing the research problem. Primary data can be classified as qualitative data and quantitative data. Qualitative research is an unstructured, exploratory research based on small samples that provides insights and understanding of the problem setting. Quantitative research is a research methodology that seeks to quantify the data and typically applies some form of statistical analysis. This study follows quantitative research methodology and a descriptive research design.

For the purpose of this study, the primary data was collected from the respondents with the help of a pre-tested structured questionnaire. The questionnaire used to collect data is enclosed in Appendix 1.

3.8 INSTRUMENT AND DESIGN

3.8.1 Instrument Used

In this study, questionnaire was administered as an instrument of data collection from the respondents. Malhotra (2012) defined questionnaire
as a structured technique for data collection that consists of a series of questions, written or verbal, that a respondent answers.

Wider coverage and distribution, speedy response, reduction of response error, cost effectiveness, ease of handling and an efficient mode of communication were the guiding factors to select questionnaire as the data collection instrument. A suitable and adequately framed questionnaire with close-ended questions is utilized for the present study.

3.8.2 The Pilot and Preliminary Study

A pilot study was conducted to pre-test the questionnaire, with a sample of respondents before finalization. Pre-test was done (1) to test whether the instrument would elicit the response required to achieve the research objectives (2) to test whether the content of the instrument was relevant and adequate (3) to test whether the wording of the questionnaire was clear and understandable to the respondents (4) to test the structure and sequence of statement for their suitability for eliciting unambiguous and unbiased responses and (5) to test the reliability of the scales included.

For pre-testing, the questionnaire was administered to 50 respondents in Coimbatore district. Their response was the basis to make a few changes in the questionnaire. These respondents were excluded from the sample selected for the study.

3.8.3 Design of Questionnaire

The purpose of this study is to assess the existence of succession plan among entrepreneurs, the reasons behind the existence/non-existence of succession plan, and to understand the linkage between the various attributes
with respect to succession planning. For this purpose, well structured, non-disguised and close-ended questionnaire was administered as the survey instrument for collecting required data from the respondents. Prevailing literatures on succession planning in family owned businesses were used to insert contents in the questionnaire.

The questionnaire used in this study consists of five parts. The first part records information about the personal profile of the respondents, year of establishment of business, the nature of their business, the type of ownership, age group of the entrepreneurs, and the educational qualification of the respondents.

The second part of the questionnaire makes an assessment of the likely involvement of the second generation family members in the business, the period for which the member is involved and the likely reason for non-involvement of the successive generation. This section also records the existence or non-existence of succession plan among the entrepreneurs.

The third part of questionnaire makes an attempt to assess the financial health of the business in the form of working capital and a few dimensions considered as general business concerns which studies the non financial operating environment related to the business. An effort was made to study which of these dimensions play an influencing role during succession planning. Few factors covered under working capital dimensions used to measure the financial health of business and general business dimension were adopted from the questionnaire “Basic Corporate Financial Health check” contributed by (Forest) to the “Business Insights” booklet published by the business financial services of the standard chartered bank. The questionnaire was used by the bank to measure some early symptomatic indications of problem areas commonly found in business. The various factors measured
and studied under working capital dimension are problems with delivery of products to customers, existence of overdue problem to bank and other creditors and refusal of additional credit line by banks, the rate of increase in cost is higher than the growth in revenue or revenue falling and floor stock increasing. A positive response to all the above factors would mean that the business is in a state of financial stress where the entrepreneurs could find it difficult to run the business. Further a question about the availability of non-performing assets was asked to study if need be further credit could be raised in case the entrepreneur wants to continue a stressed business. To sum up the working capital dimension speaks of the financial health of the business. The dimension general business concern was included to study the entrepreneur’s expectation from a successor or the reason for not involving a successor in a business of good financial health. The factors measured under this dimension are to maintain the present culture of the organization, to pursue the vision and mission of the promoters, is a successor is expected to improve the profit margin of the entity by providing additional investment in business. The role the entrepreneur sees for the family in business and a likely shrinkage in market share. It was also studied, if the involvement of scions in different fields has played a role in drafting of succession plan.

The fourth part of the questionnaire deals with some of the reasons that could affect the drafting of succession plan among the entrepreneurs. The factors considered are general reasons weighing on the personal front of the leader and not related to the business dimensions. The factors studies in this part are reluctance on part of entrepreneur to let go of power and control in the business and the resulting loss in identity if the entrepreneur steps down from being at the helm of the organization, the dependence of the clients on the founder, cultural values if any that could discourage succession planning, financial insecurity after stepping down from the business and the timing of succession plan.
The fifth part deals with the competencies that a successor might need to take over and run the business effectively and successfully.

3.8.4 Scale Used

All the above dimensions relating to general business, working capital, primary reasons and competencies required were measured using a Likert type scale. The dimensions were measured on a scale of 1 to 5, 1 representing unimportant for competency required and very weak influence for the other dimensions to 5 representing highly important and very strong influence respectively. The intermediate points 2, 3 and 4 refer to weak influence, neutral and strong influence. The reason for using this type of scale is that this type of scale is easy to administer and the respondents will be able to readily understand this kind of scale. Another reason for using this kind of scale is that, this study requires the respondents to indicate the degree of agreement or disagreement with each of the factors considered under various dimensions that could influence the drafting of succession plan.

3.8.5 Reliability and Validity of the Instrument

Validity is the ability of a scale or measuring instrument to measure what it is intended to measure. Validity can be of three forms; such as content validity, concept validity and construct validity. Content validity refers to the degree to which an instrument represents the factors under study. Questions were framed in the questionnaire as per the understanding and experience of the incumbent business leader with a view to bring content validity. The questions were selected after extensive study of previous literatures in the area of succession planning. Concept used in the questionnaire is easily understandable and assist to collect the exact answer for the questions. In order to bring more clarity in the data collection, the questions were designed
in the simple and clear language. The questions in the questionnaire were arranged in a proper sequence so that there is no ambiguity in the mind of respondents. Construct validity also ensures external validity; all the incumbent business leaders approached to participate in the study completed the questionnaires without any refutation. A second consideration is reliability, which is the ability of the instrument measure to produce the same results under the same conditions. For this purpose appropriate test of Cronbach’s Alpha is done using SPSS. For the working capital dimension the test returned a satisfactory standardized alpha of 0.75. The reliability statistic for general business dimension, primary reasons and competency required was 0.70.

3.9 TOOLS USED FOR ANALYSIS

Based on the fulfillment of parametric data, it has been decided to apply equivalent parametric and non-parametric tests. The data in this study was non-parametric in nature since it did not fulfill the conditions for parametric data. This is discussed in detail in chapter IV. Hence equivalent non-parametric tests such as Friedman test with K-Related samples and appropriate post hoc test of Wilkoxon Signed rank test is used. In order to map the demographic factors with factors under various dimensions, Mann-Whitney U Test and Kruskal Wallis test of k-independent samples is applied.

The Friedman’s ANOVA-Differences between several related groups, compares several conditions when the same participants take part in each condition while the resulting data are not normally distributed or violate an assumption of one-way repeated measures of ANOVA. The assumptions under which one-way repeated-measures ANOVA is reliable are, data should be from a normally distributed population, the variances in each experimental
condition are fairly similar, observations should be independent and the
dependent variable should be measured on at least an interval scale. For the
compliance of first two conditions, it has been decided to conduct the
Kolmogorov-Smirnov test & Shapiro-Wilk’s test of Normality and Levene’s
Test for Homogeneity of Variance.

Post Hoc multiple comparison tests were used to know which one
differs from the others, when the null hypothesis is rejected. According to
(Field, 2009) the post hoc test for Friedman test is the Wilkoxon Signed rank
test.

The Wilkoxon Signed Rank test for comparing two related
conditions is used in situations where, there are two sets of scores to compare,
but these scores come from the same participants who take part in each
condition and the resulting data are not normally distributed or violate
assumptions of the dependent t-test.

Effect Sizes are useful because they provide an objective measure
of the importance of an effect. An effect size is simply an objective and
standardized measure of the magnitude of the observed effect.

Mann-Whitney U test is used to test the difference between two
conditions and different participants have been used in each condition and
when more than two conditions are to be tested then Kruskal Wallis test of
k-independent samples is applied.

For the purpose of statistical analysis, statistical Packages for
Social Sciences (SPSS) software was used.
3.10 LIMITATIONS OF THE STUDY

The study has been conducted with several limitations. The limitations are as follows:

1. The study is founded on simple random sampling. Consequently all limitations of simple random sampling design are applicable to this present study.

2. Questionnaire had been adopted as survey instrument for the collection of data from the respondents. Data collection is subject to the risk of personal bias and restraint, hesitation to disclose full and complete information about the fact. However, cross-questioning with the respondents has maintained this risk at minimum.

3. The data for the study was collected within the time span of one year from May 2012 to April 2013. Hence analysis and interpretation are drawn according to the prevailing information in that period.

4. The study applies to entrepreneurs in Coimbatore district alone and not anywhere else.

5. This study was largely considered limited samples; hence the results obtained may be or may not be true while applying to the whole universe.

6. The consistency and reliability of the data mainly depends on the information obtained from the respondents.
7. This study deployed only limited statistical tools for the analysis of data collected from the respondents.

8. Due to the numerous management layers and increased professionalism associated with large firms, the focus of study was on small and medium sized firms in the sample area.

9. The time and cost involved in the study also acted as an important limitation.