CHAPTER 4
RESEARCH METHODOLOGY

4. INTRODUCTION

The primary objective of this study is to investigate the role of women in family business management. More specifically, the factors that influence the Perceived success of family business in the India context has been attempted at an exploratory level. The conditions required for the effective and harmonious functioning of the businesses are investigated. This chapter encompasses a description of the research methodology used to achieve the objectives set out for the study. This chapter will also highlights the methodology used for the study. More specifically, the research questions, the objectives of the study, the scope, the geographical coverage sample, method of data collection, instrument development and operationalisation, reliability and validity along with the data analysis has been included in the chapter.

4.1 Research Questions

The conceptual framework guided the development of some primary research questions for the study. They are

1. What are the factors that influence the Perceived success of women in family business in India?
2. What is the relationship between firm performance and perceived success?
3. What are the family based factors which influence firm performance?
4. What are family based factors which influence perceived success?
5. What are the business based factors which influence firm performance?
6. What are business based factors which influence perceived success?
7. What other factors influence family business management in Indian context?
8. What are the conditions required for the effective and harmonious functioning of family business?

All these questions have been brought together in a framework from studies conducted independently and in isolation to each other to address the questions and also objectives framed for the empirical study. As Storey (1994) puts it the vast bulk of studies have been conducted independently of each other. Frequently they address issues of specific interest to the researcher, but do so in a way which was comparability with other studies difficult. Nevertheless, the conceptual framework and the research questions provide a basis for the empirically investigate the factors influencing women in family business management in India.

4.2 Objectives

To help address the research questions of the study, the following objectives have been framed. They are:

- To examine the role of women in family business in India.
- The role of family based factors in family business management
- The role of business based factors in family business management
- To test the proposed conceptual model and to investigate the possible relationships between the Perceived success of family business, and the various factors influencing the Perceived success of a family business.
- To generate a conceptual model of the factors that affects the Perceived success of family business in Indian context.
- To elicit the opinions and perception of women on family managed businesses

4.3 Scope of the study

The scope of the study was determined based on the geographical area, managed by women along with the other members of the family in terms of decision making. Though no sectors specific limits have been identified, it was found through preliminary enquiry that most businesses were in the area of manufacturing, services and trade. Hence, all those industries
which are family owned and managed businesses in these sectors has been considered for the study. In way there was no upper limit for the number years, the enterprise age was determined with at least 10 years which was thought to be fit for the starting and establishment of the business. All the women spending time on the activities of the business and continuously invested time in the growth of a firm where other criteria followed in deciding the scope of the study.

### 4.4 Geographical Coverage

Keeping in view the cost, time, effort involved for the study, a few states have been chosen for the study. It was decided that the study be conducted in select locations in 6 states of India, which are follows:

(i) Andhra Pradesh
(ii) New Delhi
(iii) Gujarat
(iv) Maharashtra
(v) Tamil Nadu
(vi) Karnataka

These states have been chosen are because (1) many family businesses are situated in these states, (2) there is ample evidence of entrepreneurial climate in these states (3)the issue of the proximity of these states to the researcher in terms of time, access, and convenience was considered.

### 4.5 Sample Unit and Sampling Method

A *sample* can be defined as a subset of a population or group of participants who are carefully selected to represent a population (Collis & Hussey 2003; Cooper & Schindler 2007). According to Zikmund (2003), a sampling unit is a single element or group of elements that are subject to selection in the sample.
The process of defining a sampling unit takes place over two stages. The units selected in the first stage of sampling are referred to as primary sampling units (Zikmund 2003). Family businesses were initially identified and selected as the sampling unit for the present study, and are therefore the primary sampling units. If successive stages of sampling are carried out, the sampling units are referred to as secondary sampling units (Zikmund 2003). In the present study, the women in family businesses were later selected as the respondents, and are therefore the secondary sampling units.

When selecting a sampling method, there are two main categories to choose from, namely probability sampling and non-probability sampling. According to Zikmund (2003), probability sampling takes place when every member of the population has a known, non-zero chance of being selected, whereas non-probability sampling takes place when personal judgement or convenience forms the basis for selection. Convenience sampling refers to the process of acquiring sampling units or people who are most conveniently available. In contrast, snowball sampling refers to several processes through which initial respondents are selected using probability methods, and information provided by them is then used to acquire extra respondents (Katz 2006; Zikmund 2003). Snowball sampling is generally used when members of a rare population are sought, using referrals (Zikmund 2003). For the purpose of this study, convenience snowball (non-probability) sampling has been used.

The process began by contacting the family businesses comprising the sample group. They were selected based on a variety of sources. They are:

(i) Confederation of Women Entrepreneurs (COWE)

(ii) Association of Lady Entrepreneurs of Andhra Pradesh (ALEAP)

(iii) Confederation of Indian Industry (CII)

(iv) Association of Women Entrepreneurs of Bangalore (AWAKE)

(v) The Indus Entrepreneurs (TiE)

(vi) Self Employed Women Association, Gujarat
(vii) Other related associations of Indian Women Entrepreneurs of the states involved and some Local sources

Together with the respondents listed on the databases, research contacts, family members and friends across India were asked to identify any family business that they were aware of. After potential respondents were identified, they were contacted to confirm their suitability as well as to establish their willingness to participate in the study. As a result of the sampling technique and procedure implemented 323 family businesses which involved women that were either in business together at the time of conducting this investigation or were previously in business together, were identified as a result of the above, it was possible to minimize response error. The distribution of family businesses by geographical location is presented in table 4.1.

Table 4.1: Distribution of family businesses by geographical location

<table>
<thead>
<tr>
<th>Andhra Pradesh</th>
<th>New Delhi</th>
<th>Maharashtra</th>
<th>Gujarat</th>
<th>Karnataka</th>
<th>Tamil Nadu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyderabad</td>
<td>Gurguan</td>
<td>Mumbai</td>
<td>Ahmedabad</td>
<td>Bangalore</td>
<td>Coimbatore</td>
</tr>
<tr>
<td>Nalgonda</td>
<td>Thane</td>
<td>Surat</td>
<td>Mysore</td>
<td>Chennai</td>
<td>Salem</td>
</tr>
<tr>
<td>Vijayawada</td>
<td>Noida</td>
<td>Pune</td>
<td>Gandhinagar</td>
<td>-</td>
<td>Salem</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2011

The next step is to identify the sectors in which family businesses are run. Enquires from a variety of sources – ALEAP, COWE, CII, AWAKE, TiE, SEVA and other associations revealed that businesses were majority in manufacturing, service and trade sectors. An attempt was thus made to contact family businesses in these sectors. In all, 323 family businesses spread over the three sectors have been selected for the study. The distribution of family businesses by sectors in these 6 states is given in Table: 3.2.
Table 4.2: Distribution of family businesses by Sectors and location

<table>
<thead>
<tr>
<th>State</th>
<th>Manufacturing</th>
<th>Service</th>
<th>Trading</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andhra Pradesh</td>
<td>35</td>
<td>19</td>
<td>9</td>
<td>63</td>
</tr>
<tr>
<td>New Delhi</td>
<td>31</td>
<td>9</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>15</td>
<td>23</td>
<td>12</td>
<td>50</td>
</tr>
<tr>
<td>Gujarat</td>
<td>38</td>
<td>14</td>
<td>7</td>
<td>59</td>
</tr>
<tr>
<td>Karnataka</td>
<td>11</td>
<td>16</td>
<td>23</td>
<td>50</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>26</td>
<td>12</td>
<td>13</td>
<td>51</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>156</strong></td>
<td><strong>93</strong></td>
<td><strong>74</strong></td>
<td><strong>323</strong></td>
</tr>
</tbody>
</table>

Source: Field Survey, 2011

Table 4.3 provides the sectors wise distribution of family businesses. Businesses were some process of manufacturing went into the product were grouped under the manufacturing sector. The products like cookies, snacks, beauty products, food processing, jewelry, plastic items, cardboard items, chemical, medical equipments, textile packaging etc included in this sector. A total 156 family businesses across the 6 states constituted the sample in this sector. Similarly, trading of commodities and products like oil seed, grains, pulses, lentils, animal feeds, fish, spices, motor oil etc. were included in this sector. About 74 businesses formed the sample in the trading sector. Since the economy is categories majority by the service sector, a number of services are been offered by the family businesses. Services like advertising, retailing, tours and travels, employment services, software, education, real estate, construction, financial services, hotel, medical etc. were included in this category. 93 family businesses formed a sample in the services sector across the 6 sampled states. A total of 323 family managed businesses spread across these sectors and states formed the sample for the study (Table 4.3).

Table 4.3: Distribution of family businesses in sectors
<table>
<thead>
<tr>
<th>Manufacturing</th>
<th>Trading</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cookies and Snacks - 36</td>
<td>Oil Seeds- 12</td>
<td>Advertising – 5</td>
</tr>
<tr>
<td>Beauty Products – 6</td>
<td>Animal Feeds – 6</td>
<td>Tour and Travels – 8</td>
</tr>
<tr>
<td>Food Processing – 28</td>
<td>Processing and Packaging Fish Products – 8</td>
<td>Employment Services -9</td>
</tr>
<tr>
<td>Plastic – 11</td>
<td>Spices - 17</td>
<td>Software Services – 7</td>
</tr>
<tr>
<td>Jewellery – 7</td>
<td>Motor Oil – 6</td>
<td>Educational Services – 8</td>
</tr>
<tr>
<td>Chemicals – 13</td>
<td></td>
<td>Real Estate – 14</td>
</tr>
<tr>
<td>Medical equipment – 6</td>
<td></td>
<td>Construction – 13</td>
</tr>
<tr>
<td>Coil/Wire – 9</td>
<td></td>
<td>Financial Services – 4</td>
</tr>
<tr>
<td>Textile – 21</td>
<td></td>
<td>Overseas Education Consulting – 6</td>
</tr>
<tr>
<td>Packaging – 4</td>
<td></td>
<td>Hotel – 7</td>
</tr>
<tr>
<td>Total : 156 Family Businesses</td>
<td>Total : 76 Family Businesses</td>
<td>Total :92 Family Business</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2011

The final step is to select the sampling unit. A sampling unit is a single element or group of elements that are subject to selection in the sample (Zikmund 2003). For the purpose of this study, women in family businesses were considered as the sampling units. The following as defined by Vera and Dean (2005), was used to define the population of relevance:

(i) The majority ownership is controlled by the family, decisions about management are influenced by the family, and two or more family members are employed and actively participate in management of the firm.

(ii) The family business had to have female family members active in the business,

(iii) The female family members had to be involved in the family business on a daily basis,

(iv) Female family members can be: spouse, daughter, niece, in-laws, or siblings.

(v) There is no age limit of the family business but businesses having at least up to ten employees
4.6 Method of Data Collection

According to Zikmund (2003), the technique that is most often used by researchers to produce primary data, is the use of surveys. A survey can be defined as a research technique where information is collected from a sample of people by means of a questionnaire. Surveys present researchers with a swift, cost-effective, efficient and accurate means of evaluating information regarding a population (Zikmund 2003). The survey technique was used in this study to gather raw data on the factors that influence the Perceived success of family business in India. The respondents were contacted personally with a structured, self-administered questionnaire.

The process of developing the measuring instrument will be described in the sections that follow. This description will include the questions used to determine if the respondents were suitable to participate in the study, as well as an operational definition for each of the variables. In addition, the process of developing valid and reliable measurement scales and the administration of the questionnaires is also discussed.

4.6.1 Instrument Development

In the present study, the measuring instrument employed consisted of a covering letter and two sections (See Annexure A). A detailed description of the purpose of the study and the type of information requested was provided in the cover letter. The cover letter also included a promise of confidentiality and instructions on how to complete the questionnaire. Some of the women entrepreneurs were also contacted telephonically to fill certain gaps and ascertain information from them. But a majority of the women entrepreneurs were personally visited and requested to provide the required information. Their hectic schedule also necessitated repeated visits either at their residence or at the enterprise location. In a majority of cases, the repeated visits varied between three and five at a convenient location. Since they personally supervised all the dimensions of business, taking time off to provide information was found very difficult. The questions were divided into three parts

Section 1 requested demographic information relating to the women in family business. The information requested concerning family business included the family background, age, marital status, education, work experience and business experience.
Section 2 related to enterprise - the organizational data, name of the organization, year of starting the business, nature of organization, type of ownership, activity of the business, current location, family business definition, generations in family business, number of family members involved in the business, number of women in the business, role of women in the business, status in the family business, reason to join the family business etc.

Section 3 consisted of statements (items) relating to the various family and business-based factors influencing a women in family business. A 4-point Likert-scale (Likert, 1961) which ranged from “strongly agree” to “strongly disagree” (4 = ‘Strongly Agree’, 3 = ‘Agree’, 2 = ‘Disagree’ and 1 = ‘Strongly Disagree’) was used to reflect the agreement of the respondents. Likert scales are widely used in most research in business and other related courses in social science literature (Garland, et al 1984). To elicit the cooperation of the respondents, the nature and purpose of the research were made known to the respondents and anonymity was assured. The respondents were promised access to the thesis if they so desired. Items were adapted and designed to measure the factors influencing the success of family business, as perceived by the respondents.

A pilot study was also conducted on fifty two women entrepreneurs selected from Andhra Pradesh. The pilot study was considered necessary (i) in order to determine the willingness of the respondents (ii) to have pre-knowledge of the reactions of the respondents and (iii) to know the responses of the respondents. The questions were tested on fifty two women who were employed in the family business from Andhra Pradesh from manufacturing, trade and service.

According to Czaja (1998) researchers optimized their research results by specifying clearly and precisely pre-testing objectives. After the pilot study, questions were constructed and clarified for the final survey instrument (0.731). The questions were prepared from previous researches (Brockhaus, 1986; Hisrich and Brush, 1986; Dubini, 1988; Otokiti, 1987; Soetan, 1991; Amit, Glosten and Muller, 1993; Orhan and Scolt, 2001; Olutunla, 2001; Ryan and Deci, 2002; Ogundele and Opeifa, 2003; Brunstein and Maier 2005; Gelin, 2005; GEM, 2005; Ojo, 2006; Minnit et al 2006). The survey was carried out between May 2010 and January 2011. This took about nine (9) months. In the process of collecting the data for this study, the researcher encountered a lot of challenges such as lack of cooperation, distrust and suspicion from the respondents.
4.6.2 The Process

Potential respondents were contacted telephonically to determine if they were willing to participate in the study. The respondents were contacted and an appointment was fixed for personal interview. A brief description of the study was made; and after confirming the appointment, a visit was made to the entrepreneur’s office. The entrepreneur was given a short summary of the objectives of the study, and the subjects to be covered in the interview. The type and nature of questions included in the interview were explained briefly. The scaling pattern was also explained. The primary data was collected from with a specifically designed schedule, which was standardized after pre testing on a limited number of sampled respondents. The schedule was designed to elicit the following information.

- The socio-economic profile of the entrepreneur – age, educational qualifications, work experience, marital status, background, family, family occupation etc.

- Profile of the enterprise – year of establishment, location of starting business, form of organization, number of employees,

- Business related information – nature of the business, number of women employed in the business, generations of family business, capital invested, and profits

- Family- and Business-based factors influencing the success of family business have been identified.

- The Family-based factors included: Trust and values, Family harmony, Open communication, and Commitment to the business.

- The Business-based factors included: Succession planning, Professionaly managed, Governance, Role Conflict and Strategic Planning

4.6.3 Scale Development and Operationalization

According to Cooper and Schindler (2007), an operational definition is stated in terms of specific criteria for testing or measurement. The operational definition should state the particular features of the object being defined, as well as how these features are to be observed. Hair et al. (2006)
proposed that the process of operationalisation commences by defining the constructs concerned, thus providing a foundation for selecting the individual indicator items. The actual operationalisation of the construct then entails selecting suitable items for the measurement scale, as well as the type of measurement scale.

The measuring scale developed was used as the primary source to generate items to measure the constructs in the present study. The literature study revealed several factors not accounted for in Farrington’s (2009) scales that could influence the success of family businesses. Additional items were therefore formulated to measure these factors from a rigorous analysis of secondary sources, as well as items that had proved valid and reliable in previous empirical studies.

The various operational definitions of the dependent variables used in this study are presented in Table 4.4. These definitions are based on an interpretation of secondary sources as well as existing empirical studies. In addition, the source of the items used to measure the selected variables will be provided.

Table 4.4 Operationalization of the dependent, intervening and independent variables influencing the perceived success of women in family business

<table>
<thead>
<tr>
<th>Dependent variable: Perceived success</th>
<th>Items</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>The degree to which the women find their ongoing involvement in the family business as both satisfying and beneficial to their family, business and personal development.</td>
<td>7</td>
<td>Farrington 2009</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervening variable: Firm performance</th>
<th>Items</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refers to positive trends of growth in the number of employees and profits, as well as increasing revenue experienced by the family business.</td>
<td>7</td>
<td>Adendorff 2004; Northouse 2004; Sharma 2004; Venter 2003; Ward 2004.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent variable : Business-based factors</th>
<th>Items</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Succession planning: Refers to the need for control,</td>
<td>9</td>
<td>Handler, 1989; Handler and Kram, 1998;</td>
</tr>
<tr>
<td>Independent variable – Family – based factors</td>
<td>Items</td>
<td>Source</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-------</td>
<td>--------</td>
</tr>
<tr>
<td>Trust and values: Refers to the trusting each other and each other's opinions, as well as values of each other's integrity, judgement and abilities.</td>
<td>11 items</td>
<td>Macniel, 1980, Gambetta, 1988; Mayer, Davis and Schoorman, 1995; Powell, 1987; Bradach and Eccles, 1989;</td>
</tr>
<tr>
<td>Family harmony: Refers to women being emotionally attached to one another, appreciative of each other, caring about one another's welfare, enjoying spending special time together, sharing common interests, and getting along well both inside and outside the working environment.</td>
<td>13 items</td>
<td>Astrachan &amp; Kolenko 1994; Aronoff et al. 1997; Fahed-Sreih &amp; Djoundourian 2006; Lansberg 1999; Maas et al. 2005; Malone 1989; Santiago 2000; Sharma 2001.</td>
</tr>
</tbody>
</table>

| Professionally managed: Refer to the structures and mechanisms, systems to coordinate their activities, moving away from a coordination system. | 11 | Liebtag, 1984; Berenbeim, 1990; Francis, 1991, Berenbeim 1990, Francis, 1991 |
**Commitment**: Refers to the women being committed to their business, in that they really care about its fate and feel emotionally attached to the family and business.

**Open communication**: Refers to the women being able to communicate openly as well as sharing all information with each other.

<table>
<thead>
<tr>
<th>Commitment</th>
<th>Open communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refers to the women being committed to their business, in that they really care about its fate and feel emotionally attached to the family and business.</td>
<td>Refers to the women being able to communicate openly as well as sharing all information with each other.</td>
</tr>
</tbody>
</table>

### 4.6.4 Administration of Questionnaires

Potential family businesses were contacted telephonically between the months of April and September 2010, and asked to participate in this study. Those women who agreed to participate were contacted telephonically to fill certain gaps and ascertain information from them and were personally visited and requested to provide the required information. Their hectic schedule also necessitated repeated visits either at their residence or at the enterprise location. In a majority of cases, the repeated visits varied between three and five at a convenient location. Since they personally supervised all the dimensions of business, taking time off to provide information was found very difficult. In addition, electronic questionnaires were emailed to those respondents who requested them.

In order to improve the credibility of the study and increase the chances of the respondents actually completing and returning the questionnaires, all communication with the respondents was carried out. The questionnaire included a cover letter explaining the purpose of the study and the type of information being requested, as well as promising that all responses would be kept confidential.

The initial batch of questionnaires was administered at the end of July 2010, followed by several smaller batches, once additional respondents had been located, contacted, and added to the database. As a result, 1138 questionnaires were made available to potential respondents.

### 4.6.5 Response Rate
Hair et al. (2006) refer to five important considerations influencing the sample size required for Structural Equation Modelling (SEM), namely: the multivariate distribution of the data, the estimation technique, the model complexity, the amount of missing data, and the amount of average error variance among the reflective constructs. The sample size used should not be too small when performing Structural Equation analysis because SEM depends on tests that are sensitive to the sample size and the magnitude of differences in covariance matrices. Sample sizes usually vary from 200 to 400 for models with 10 to 15 indicators (Hair et al. 2006). In the present study, 348 completed questionnaires were returned by the respondents. About 25 questionnaires were incorrectly completed and could therefore not be used. The final sample size used for the purpose of this study was thus 323.

According to Zikmund (2003), the response rate is equal to the number of completed or returned questionnaires divided by the total number of suitable people contacted or asked to participate in a study. Therefore, the response rate for the present study was 30.58%. A more detailed breakdown of the response rate is provided in Table 4.5.

**Table 4.5: Response rate**

<table>
<thead>
<tr>
<th>Number of respondents</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of questionnaires</td>
<td>1138</td>
</tr>
<tr>
<td>Total number of questionnaires returned</td>
<td>348</td>
</tr>
<tr>
<td>Usable questionnaires</td>
<td>323</td>
</tr>
<tr>
<td>Response rate</td>
<td>30.58%</td>
</tr>
</tbody>
</table>
4.7 Measurement

According to Zikmund (2003), there are three main criteria for assessing measurements, namely: reliability, validity and sensitivity. **Reliability** refers to the extent to which measures are error-free and therefore yield consistent results (Zikmund 2003), whereas **validity** is concerned with the ability of a scale or measuring instrument to measure that which it is intended to measure (Zikmund 2003). **Sensitivity** refers to the ability of the measuring instrument to accurately measure any variability in stimuli and responses (Zikmund 2003). Cooper and Schindler (2007) suggest an additional characteristic of good measurement tools, namely practicality. **Practicality** is concerned with issues such as convenience, economy and interpretability (Cooper & Schindler 2007).

The statistical techniques used to assess the reliability and validity of the results in the present study will be discussed in the sections to follow. In addition, the statistical techniques employed to establish the influence that the demographic factors had on the **Perceived success** of family business and the method used to verify the conceptual model, are briefly summarized.

4.7.1 Reliability of the Measuring Instrument

The primary concern of reliability is to determine the extent to which a measurement is free of random or unstable errors. A measure is therefore considered reliable if it generates consistent results. Researchers that use reliable instruments can be assured that temporary and situational factors will not get in the way of their research. As such, reliable instruments are strong and capable of working at divergent times, under divergent conditions (Cooper & Schindler 2007). In addition, reliability makes essential contributions to validity (Cooper & Schindler 2007).

Internal consistency is a popular measure of reliability. It is based on the assumption that the individual items or indicators of a measurement scale should all measure the same construct, and therefore be highly correlated (Cooper & Schindler 2007; Hair, Anderson, Tatham & Black 1998). According to Cooper and Schindler (2007), Cronbach’s alpha is a type of reliability estimate that is concerned with internal consistency. Cronbach’s alpha coefficients measure the extent to which the measuring instrument items are homogeneous and reflective of the same
underlying constructs (Cooper & Schindler 2007). A reliability estimate of 0.70 or above suggests good reliability, whereas reliability between 0.60 and 0.70 may be accepted if the other indicators of a model’s construct validity are good (Hair et al. 2006). Although 0.70 is generally the lower limit for Cronbach-alpha coefficients, it may be reduced to 0.60 for exploratory research purposes (Garson 2006; Hair et al. 2006). Cronbach-alpha coefficients that are greater than 0.80 are considered good (Bernardi 1994).

The reliability of the measuring instrument employed in the present study was measured using Cronbach-alpha coefficients. Therefore, (table 4.6) reveals the Cronbach-alpha coefficients were used to decide which items would be integrated as measures of the specific constructs. The software programme SPSS 17 for Windows was utilized to establish these Cronbach-alpha coefficients.

Table 4.6: Reliability analysis for the variables

<table>
<thead>
<tr>
<th>Dependent variable: Perceived success</th>
<th>Items</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>The degree to which the women find their ongoing involvement in the family business as both satisfying and beneficial to their family, business and personal development.</td>
<td>7</td>
<td>0.610</td>
</tr>
</tbody>
</table>

Intervening variable: Firm performance

<table>
<thead>
<tr>
<th>Items</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refers to positive trends of growth in the number of employees and profits, as well as increasing revenue experienced by the family business.</td>
<td>7</td>
</tr>
</tbody>
</table>

Independent variable: Business-based factors

<table>
<thead>
<tr>
<th>Items</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Succession planning: Refers to the need for control, power and meaning, person able to manage family conflicts and keep the family unit together.</td>
<td>9</td>
</tr>
<tr>
<td>Professionally managed: Refer to the structures and mechanisms, systems to coordinate their activities, moving away from a</td>
<td>11</td>
</tr>
</tbody>
</table>
coordination system.

**Governance:** Refers to the overall existence of governance structures, policies and procedures in the family business.

| Role conflict: | Refers to the role overload, work and family roles, dealing with inter role conflict. | 8 | 0.938 |

**Strategic planning:** Refers to the planning of the business privacy, business plan, growth.

<table>
<thead>
<tr>
<th>Independent variable – Family – based factors</th>
<th>Items</th>
</tr>
</thead>
</table>

| Trust and values: | Refers to the trusting each other and each other's opinions, as well as values of each other's integrity, judgement and abilities. | 11 | 0.941 |

| Family harmony: | Refers to women being emotionally attached to one another, appreciative of each other, caring about one another's welfare, enjoying spending special time together, sharing common interests, and getting along well both inside and outside the working environment. | 13 | 0.874 |

| Commitment: | Refers to the women being committed to their business, in that they really care about its fate and feel emotionally attached to the family and business | 11 | 0.671 |

| Open communication: | Refers to the women being able to communicate openly as well as sharing all information with each other. | 8 | 0.684 |

### 4.7.2 Validity of the Measuring Instrument

Validity is a measurement characteristic that is concerned with the degree to which a test measures what a researcher actually intends it to measure. In addition, any differences emerging
from the measurement tool mirror the differences between respondents drawn from the population (Cooper & Schindler 2007).

The ability that a set of measured items has to reflect the theoretical latent construct it was intended to measure is referred to as construct validity (Hair et al. 2006). Thus, construct validity is a validity estimate (Cooper & Schindler 2007). Construct validity is determined by the extent to which a measure confirms various related hypotheses, generated from theory founded on the concepts (Zikmund 2003). As a result, when using construct validity, both the theory and the measuring instrument must be considered (Cooper & Schindler 2007). In the present study, construct validity was used to determine if the measuring instrument measured that for which it was designed.

According to Venter (2003), a measuring instrument is considered to display construct validity if the scale has both convergent and discriminant validity. The extent to which scores on one scale correlate with the scores on other scales, which are designed to measure the same construct, is referred to as convergent validity (Cooper & Schindler 2007; Hair et al. 2006). In contrast, the extent to which the scores on a scale do not correlate with the scores from scales designed to measure different constructs is referred to as discriminant validity (Cooper & Schindler 2007). In addition, discriminant validity is the degree to which a construct is unique and captures some phenomena that other measures do not (Hair et al. 2006).

Several researchers (e.g. Adendorff 2004; Farrington 2009; Venter 2003) have used the multivariate technique of factor analysis to measure discriminant validity. Therefore, exploratory factor analysis was performed to assess the discriminant validity of the research instrument in the present study. The software programme SPSS 17 was used for this purpose.

4.8 Data Analysis

Data was analyzed using different statistical techniques to analyze data collected in different sections. Descriptive statistic such as frequency and percentages were used for analyzing the factual information regarding the women and the enterprise related data, which was presented using graphs and tables where were found necessary. A four Likert scale (Likert 1961) was used to elicit their opinions and perceptions on the various family – based and business – based factors influencing the women in family business. The scale ranged between strongly agrees to strongly disagree with a score of 4, 3, 2, 1 respectively.
The frequencies and percentage was calculated to highlight the pattern that emerged. While there are no patterns in literature – both global and India, the criterion given in the literature is taken as the criteria to determine the real or perceptual problems as perceived by the women in family business after comparison with the results of the study. Thus, content analysis, interpretation of the various statistical tests is done to arrive at inferences and satisfy the objectives of the study.

The field of family business has invited interesting questions and these have been explored with increasing sophistication as times changed. However, the critics of scholarships in the field point out to a lack of central research paradigm thus forcing the scholars to devote inadequate attention to the issues of validity and reliability resulting in crude analytical methods. When there is no agreement on such issues it is difficult to bring in the rigor called for in the investigations in entrepreneurship (Cooper, 2005).

To understand the opinion of women on issues in family business a 4 point scale was used with a rating on a scale of 1-4 with 1 representing strongly agree, 2 representing agree, 3 representing strongly disagree and 4 representing disagree. The mean and standard deviation was calculated to check consistency in their perception. In addition, a factor analysis was done to resolve a large set of variables into factors. The data collected from the respondents was subjected to principal component, factor analysis by Varimax Rotation with Kaizer Normalization method by using the criterion that factors with Eigen value > 1.00 were retained. Loadings exceeding 0.5 were considered for determining factors. To avoid the crowding of factors, this measure was taken although the literature allows a loading of 0.33 to be the absolute minimum value to be interpreted. This criterion is being used more or less by way of convention (Vasanthi and Rayappan, 2006).

For the purpose of this study, Bartlett's Test of Sphericity and the Kaiser-Meyer- Olkin measure of sampling adequacy (KMO) to gauge the factor-analyzability of the data. According to Rennie (2002), the closer a KMO is to 1, the more factor-analyzable the data is more reliable. For the purpose of this study, data with KMO's of >0.7 (p<0.05) is considered factor-analysable. In addition, Eigenvalues of greater than 1 are considered significant and are used to explain the variance captured by a factor. Eigenvalues of less than 1 are considered insignificant and therefore excluded (Hair et al. 1998).

The extraction and rotation method, as well as Bartlett's Test of Sphericity, will be reported for
each submodel in Section Chapter 6. In addition, the Eigenvalues, Percentage of Variance explained and the individual factor loadings for each construct in the various submodels, will be elaborated on.

To test the various dependent and independent variables, Structural Equation Modelling (SEM) has been used. There are various steps that are involved in using this techniques.

SEM presents a change from exploratory to confirmatory analysis because of its ability to comprehensively evaluate relationships (Hair et al. 1998). SEM is also more suited to theory testing than theory development, as it encourages confirmatory modeling instead of exploratory modelling (Garson 2006; Structural Equation Modeling). SEM is a better technique for empirically testing a theoretical model than Multiple Regression, as it entails having the measurement model and the structural model in a single analysis (Hair et al. 2006). Therefore, contrary to other multivariate techniques, SEM permits the evaluation of both measurement properties as well as testing for key theoretical relationships in a single technique (Hair et al. 2006). Consequently, SEM has been adopted to test the relationships between the various independent and dependent variables in this study.

(a) Steps/stages in Structural Equation Modelling
In Table 4.7, the steps or stages of SEM as recommended by Hair . (2006; 1998), are presented. In Table 4.7, a comparison is made of how the different stages of SEM, as proposed by Hair . (1998; 2006), have changed over the years.

Table 4.7 : Steps in Structural Equation Modelling

<table>
<thead>
<tr>
<th>Stages</th>
<th>Hair et al. (2006)</th>
<th>Steps</th>
<th>Hair et al. (1998: 592-616)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Defining individual constructs</td>
<td>1</td>
<td>Developing a theoretical model</td>
</tr>
<tr>
<td>2</td>
<td>Developing and specifying the measurement model</td>
<td>2</td>
<td>Constructing a path diagram of causal relationships</td>
</tr>
<tr>
<td>3</td>
<td>Designing a study to produce empirical results</td>
<td>3</td>
<td>Converting the path diagram into a set of structural equations and measurement models</td>
</tr>
<tr>
<td>4</td>
<td>Assessing the measurement model validity</td>
<td>4</td>
<td>Choosing the input matrix type (correlation matrix or covariance matrix) and estimating the proposed model</td>
</tr>
</tbody>
</table>
Farrington (2009) states that although the two proposed procedures for implementing SEM overlap, the six-stage decision process (Hair et al. 2006) includes broader aspects of research design (stage 3) and measurement development (stage 1) than the original seven-steps procedure (Hair et al. 1998). A clear overlap exists between the remaining stages in the six-stage decision process (stages 2, 4, 5 and 6) and the seven steps originally suggested by Hair et al. (1998). Farrington (2009) suggests that in their later writing, Hair et al. (2006) have just assumed a different approach for presenting their discussions on SEM.

As in Farrington’s study, stage 1 and to a certain extent stage 3, of the six-stage decision process, have already been addressed in the present study (Chapter 5). Farrington (2009) argues that the remaining stages of the six-stage decision process are addressed in a more detailed and sequential manner in the seven-step process. Taking cognizance of Farrington’s (2009) suggestions on implementing SEM, the discussions in the present study are based on the seven consecutive steps proposed by Hair et al. (1998) in their earlier writings. A brief summary of the seven steps of SEM is presented in the paragraphs to follow, as well as a description of how each step will be implemented in this study.

Step 1: Developing a theoretical model
The Structural Equation Modelling process begins with the specification of a model, based on theory. The theoretical justification or theoretical rationale of the model under investigation is the foundation that underpins the method of Structural Equation analysis (Hair et al. 1998). A model represents a theory, and a theory is considered to be a systematic set of relationships that consistently and comprehensively explain phenomena (Hair et al. 2006).

In the present study, a conceptual model of factors influencing the Perceived success of a family business was presented for empirical testing (see Chapter 5). An in-depth study of the existing literature and empirical findings provided the foundation for this model. In addition, based on
theoretical support, hypotheses concerning the relationships between the numerous factors in the model and their potential influence on the *Perceived success* of a family business were formulated.

**Step 2: Constructing a path diagram of dependence relationships**

Hair *et al.* (2006) assert that a path diagram portrays a dependence relationship between two constructs, i.e. the impact of one construct on another construct. When constructing a path diagram of dependence relationships, the hypothesised relationships between the constructs incorporated in the theoretical models, are depicted. According to Hair *et al.* (2006), path diagrams provide a handy way of depicting models in a visual form. In SEM, constructs are referred to as *latent variables*, which are measured according to their individual indicators, and consist of independent, intervening, and dependent variables (Garson 2006). If a variable is not predicted or “caused” by another variable in the model, it is referred to as an *exogenous* construct. In contrast, if a variable is predicted or “caused” by any other construct in the model, it is referred to as an *endogenous* or *dependent* construct (Hair *et al.* 2006; Hair *et al.* 1998). Endogenous variables are both intervening variables and pure dependent variables (Garson 2006). In the present study, the path diagrams proposed will be presented in Chapter 5.

**Step 3: Converting the path diagram into a set of structural equations and measurement models**

According to Hair *et al.* (1998), this step involves formalizing the model using sets of equations. In addition, the structural equations linking the constructs, the measurement model, and a set of matrices are defined by means of these equations. The purpose for this is to link the operational definitions of constructs to theory, for suitable empirical testing.

In SEM terminology, a conventional model actually consists of two models, the measurement model and the structural model (Hair *et al.* 2006). Specifying the measurement model involves assigning indicator variables to the constructs that they represent. On the other hand, specifying the structural model involves assigning relationships between constructs founded on the proposed theoretical model (Hair *et al.* 2006). After a theory has been proposed, the SEM model is developed. To begin with, this entails specifying the measurement theory and validating it by
means of confirmatory factor analysis. The researcher can then test the structural model once the measurement model is deemed valid (Hair et al. 2006).

Step 4: Choosing the input matrix type (correlation matrix or covariance matrix) and estimating the proposed model

In this step, the input matrix type must be chosen, and the proposed model estimated. Either the variance-covariance or the correlation matrix is used as the input data type in Structural Equation analysis. For the purpose of the present study, a covariance matrix of all the indicators in the model is used as the data input type. According to Hair et al. (2006), covariance matrices include better information content and therefore provide the researcher with greater flexibility. Following the specification of the structural and measurement models and the selection of the input data type, estimates of free parameters from the observed data must be obtained. In the present study, the software programme LISREL 8.8 (Jöreskog & Sörbom, 2006) was utilised for these estimations.

Step 5: Assessing the identification of model equations

In step five, the software programme must be assessed to determine if it has produced any insignificant or illogical results while trying to identify the structural model (Hair et al. 2006; Hair et al. 1998). There is no single rule to establish the identification of a model (Hair et al. 1998), but guidelines are available. The most straightforward of these guidelines is the three-measure rule, which states that constructs with three or more indicators will always be identified. None of the constructs in the present study have less than three indicators, showing a low risk of model-identification problems arising.

Step 6: Evaluating the results for goodness-of-fit

When evaluating the Goodness-of-fit results, a researcher must consider the extent to which the data and the theoretical models meet the assumptions of SEM. Goodness-of-fit tests establish the extent to which the structural equation model fits the sample data (Hair et al. 1998; Structural Equation Modelling n.d; Venter 2003), or how well the theory fits reality as represented by the
data (Hair et al. 2006). The validity of the measurement model is dependent on the Goodness-of-fit for the measurement model, together with detailed proof of construct validity (Hair et al. 2006). The closer the structural model Goodness-of-fit is to the measurement model, the better the structural model fit will generally be (Hair et al. 2006).

Some of the most popular model-fit criteria employed by researchers are the Chi-square statistic ($\chi^2$), the Goodness-of-fit index (GFI), the adjusted Goodness-of-fit index (AGFI), and the Root-Mean-Square residual (RMR) (Hair et al. 1998).

To determine whether the model should be rejected or not, Goodness-of-fit tests are used. However, these general fit tests do not determine if the specific paths in the model are significant. The path coefficients in the model can be examined and interpreted, if the model is not rejected. In poor-fitting models, “significant” path coefficients are not important (Cooper & Schindler 2007; Garson 2006). It is important to note that a “good fit” and relationship strength are two different issues. It is possible to have perfect fit, yet all variables in the model are completely uncorrelated. Researchers should therefore not only report the Goodness-of-fit measures but also the structural coefficients, in order to assess the strength of paths in the model. Readers should not automatically conclude that a model is strong just because the “fit” is good (Garson 2006).

In the present study, to ensure that the overall fit of the proposed model of factors influencing the Perceived success of a family business is satisfactory, the following measures will be employed:

**Table 4.8: Criteria for testing the Goodness-of-Fit**

<table>
<thead>
<tr>
<th>Goodness –of-fit criteria</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goodness-of-Fit Index (GFI)</td>
<td>0 to 1</td>
</tr>
<tr>
<td>Adjusted Goodness-of-Fit Index (AGFI)</td>
<td>More than 0.80</td>
</tr>
<tr>
<td>Comparative Fit Index (CFI)</td>
<td>0 to 1</td>
</tr>
<tr>
<td>Bentler- Bonett Fit Index (NFI or TLI)</td>
<td>0.90</td>
</tr>
<tr>
<td>Root Mean Square Residual (RMSR)</td>
<td>Closer to 0</td>
</tr>
</tbody>
</table>
Root Mean Square Error of Approximation (RMSEA) Less than 0.05

Step 7: Making the indicated modifications to the model if theoretically justified, and interpreting the results

In the final step of the Structural Equation analysis, the proposed model must be modified in search of a better fit and an understanding of the outcomes. This model respecification will generally follow the estimation of a model with indications of poor fit. The process of respecifying the model necessitates that the researcher fix previously free parameters or free previously fixed parameters (Cooper & Schindler 2007, Structural Equation Modelling). The process of model respecification also involves adding or deleting estimated parameters from the original model. These modifications should be carefully carried out, once theoretical justification has been obtained for what is considered empirically significant (Hair et al. 1998).

A proposed structural model cannot only be supported by good model fit as the individual parameter estimates, representing each hypothesis, must also be examined. A conceptual model is supported and considered valid to the extent that the parameter estimates are statistically significant and in the forecast direction (Hair et al. 2006).

This study has proposed a model and interpreted the results which have been included in chapter 5.

4.9 LIMITATIONS OF THE STUDY AND RECOMMENDATIONS FOR FUTURE RESEARCH

Although the present study has endeavored to make a significant contribution to the body of research relating to women in family business, several limitations were encountered. When interpretations and conclusions about the findings of this study are made, these limitations should be taken into account. The study has not only investigated and developed a greater understanding of family business; it has also revealed opportunities for future research.
It is but natural for research studies to encounter limitations either in the field work or sample selection and other dimensions of the research work. In the present study, the sampling method proved to be a limitation. The convenience snowball sampling method has several disadvantages such as being less representative of the population, and providing a limited generalization of the results and potential sampling bias (Talbot 1995; Zikmund 2003). Snowball sampling is also likely to result in bias entering the study (Katz 2006; Zikmund 2003). Therefore, the findings of this study cannot be generalized to the general family business population. Despite this limitation, the findings of the study provide important insights into the conditions necessary for women’s success in the family business.

The sample size (323) is a limitation of the present study as Structural Equation Modelling (SEM) is very sensitive to sample size. The time period allowed for the respondents to return the questionnaires was also limiting as only 323 usable questionnaires, out of 1138 questionnaires, after the nine-month period. In order to overcome this limitation in future studies, researchers should consider setting more time aside for the usable questionnaires, and employ other techniques to ensure a larger sample size. Studies of which are exploratory in nature find it difficult to arrive at a conceptual framework more so because new phenomena understand and in a developing context like India. This limits the factors that could be examined. As a result of the sample size and the statistical technique employed, this study could only focus on a specific number of family- and business-based factors influencing the success of family business. In addition, this study did not investigate potential environmental factors that may influence the success of family business. Future studies concerning family business should also investigate the influence that certain external market conditions will have on the success of family business. Moreover, this study is limited to the urban areas and large towns and covered 6 states in the country. Hence, suggestions have to be made with caution as they apply to those designated regions.

Future studies could endeavour to investigate the factors influencing the success of family business in countries other than India not only the metropolitan cities. The extent, to which the factors influencing the success of family business in India differ from those influencing the
same family businesses in overseas, could be established. The influence of culture on Indian family business as well as family business abroad is an additional avenue for future research.

Above all the absence of research culture among the subjects was a serious limitation. Repeated visits, calls, and meeting them for data and the time frame for data collection is evident enough for the absence of research culture in India. Nevertheless, the results of this study make a significant contribution to the existing body of research on women in family business, even though various limitations were encountered. As such, many opportunities for future investigation into family business exist.

4.10 SUMMARY

The purpose of this chapter has been to briefly describe the activities involved in the research design and methodology chosen for this study. A description of the sampling unit and sampling technique was presented. Each of the variables comprising the conceptual model was operationalised by means of clear and brief definitions, and the development and administration of the measuring instrument were explained. The methods of data collection and the statistical analysis along with the limitations of the study are included. Finally, the Structural Equation Modelling (SEM) technique used to confirm the proposed conceptual model was elaborated on. In Chapter 5, the results of the different statistical analyses performed will be presented and discussed.