Chapter 3
RESEARCH METHODOLOGY

3.1 Introduction

Research on small enterprises is distinctive, particularly in the fieldwork stage. Hence decision on selection of methodology and design for small enterprise research poses subject specific challenges. This chapter addresses the research methodology and research design used in the study. From the point of view of the purpose, this study was mainly of descriptive type. But it also adapted explanatory type to address the research questions and hypotheses.

The research design includes developing sample frame, practical procedures for accessing the respondents of the research, and the methods used for data collection and analysis. This chapter describes the methodology with the following sections:

1. Research Questions and Hypotheses
2. Sampling frame and Samples
3. Measures Used and Survey Instrument
4. Data Collection
5. Methods used for data analysis

3.2 Research Questions and Hypotheses

3.2.1. Research Questions

The purpose of this research study was essentially to describe and analyse the nature of problems and prospects of small enterprise consultancy and to find out its determinants and impact, as perceived by their owner-managers. Based on the literature review
discussed in chapter 2 a set of research questions framed for the current study are as follows:

1. Why the demand for small enterprise consultancy is still low?
2. What are the problems, and perceived reasons given by the owner-managers in using / not using external consultants?
3. What are the key determinants of consultancy for small enterprises?
4. How do owner-managers perceive the impact of consultancy on the performance of their units?
5. Which are the desired competencies of small enterprise consultants?
6. How does consultancy intervention effect the managerial competency / owner-manager competency?

3.2.2 Hypotheses

In order to address the above research questions, the researcher formulated four working hypotheses as stated below.

**Hypothesis H1:** The key determinants of consultancy intervention for small enterprises will depend mainly on the management of complex production process and technology, high and risky investments in fixed assets and working capital, and economic / environmental changes.

**Hypothesis H2:** In small enterprises, managerial competency of the owner-managers will be positively associated with their use of consultancy assistance.

**Hypothesis H3:** The success of a small enterprise is positively associated with the use of consultancy assistance availed by its owner-manager.
Hypothesis H4: Owner-managers of small enterprises, believing in usefulness of the services of external consultants for problem solving and decision making, will also perceive a resultant overall improvement in their enterprise performance.

3.3 Sampling Frame and Samples

A combination of a survey method and case study method was adapted for the current study, considering the research purpose of describing as well as explaining the nature of problems encountered in using external consultancy, and the determinants and impact of consultancy intervention. A field survey was conducted for data collection from a sample size of 60 small enterprises located in Dakshina Kannada District (DK) a coastal district in Karnataka State. Further, 20 sample units were considered randomly for case study analysis.

Geographical Location: D.K. district was united till it was bifurcated in middle of 1997. Two districts, namely, Dakshina Kannada and Udupi districts, were formed from the erstwhile district of Dakshina Kannada. The purpose of bifurcation was to facilitate better governance and administration of development projects. However, as the premises of the study were broadly framed in 1996 themselves, the undivided district of Dakshina Kannada (DK) was considered as the main location for the study. Henceforth the term DK district denotes the undivided district, in its coverage of study location. District profiles of the present DK and Udupi districts are presented in the Chapter 4. The location of the study was based on the factors such as status of development of small enterprises, industrial infrastructure i.e., industrial estates/areas, category of small enterprises, and the proximity to and acquaintance of the researcher with the small enterprises.

Sampling Frame: As on 31-3-2001, DK district had a total number of 16,598 small enterprises according to the data furnished by the respective Departments of Industries.
and Commerce, Mangalore and Udupi districts. Large majority of them were tiny industries and small service based enterprises, having much lower capital investment of Rs 1,00,000 and less. These were mainly self-employment oriented enterprises having owners working themselves or along with less than about five employees. Such units did not essentially constitute the target population for the study, as their consultancy needs were very limited. Such units were catering to the market needs and customers mostly belonging to the locality or the villages or nearby towns.

In order to meet the objectives, the present study designed a sample framework based on the following broad criteria:

1. Only small enterprises located in industrial estates/areas developed by state development agencies such as Karnataka State Small Industries Development Corporation (KSSIDC), and Karnataka Industrial Area Development Board (KIADB), shall be considered for target population, as these are modern small enterprises.

2. Units having capital investment (initial) of Rs. 1,00,000 and above are considered.

3. The respondent units for study shall belong to mainly manufacturing category. 11 types of manufacturing category were selected

4. The respondent units shall have at least two years of operations from the commencement or three years including project implementation period, i.e., units started prior to the year 1999.
5. Units totally sick and closed shall be excluded, because of difficulty in obtaining relevant data.

Considering the criteria indicated above, a sample frame was derived, based on the data collected from KSSIDC and KIADB directories. A total of 600 units were short listed as target population for the study. Suggestions were sought from Kanara Small Industries Association (KSIA) Baikampady, and District Industries centres at Mangalore and Udupi to decide the sampling frame.

**Sample Size:** Out of 600 units in the final sample frame, a 10 per cent of the population was considered to determine the sample size. The sample units were selected randomly resulting in sample size of 60 units.

The selected respondents were belonging to manufacturing industries like automobile spare parts, building materials, metallurgical industries, chemicals, pharmaceuticals, engineering and electrical etc. It is important to recognise that these categories of manufacturing industries are the predominant type of small enterprises in the district.

**Design:** The research design choice, particularly for small enterprises, depends on the kind of problems being studied (Curran and Blackburn, 2001). Both quantitative based design and qualitative based design may suit research topics in small enterprises. In practice, a lot of researchers employ a mixed qualitative – quantitative approach. This helps to gain some of the advantages of both and of triangulation. The mixed approach has emerged as a common research design for small enterprises. (Curran and Blackburn, 2001). The approach in this study includes a combination of quantitative survey with a qualitative work such as case studies.
Method: The method used for the study was field survey and interviews. Mailing of questionnaires, based on the earlier experiences of the researcher, could not yield adequate response. There were practical difficulties for the same, as the owner-managers may be very reluctant or unwilling to share the data over telephone. Initial contact was done to ascertain prima-facie willingness of the respondents to participate in the field survey. In some cases ‘cold calls’ were also helpful. In case of selected units not responding to the survey, replacement units had to be selected. However it was taken care to avoid sampling bias as far as possible.

As this study on consultancy needs had a mixed approach, survey questionnaire was supported by qualitative type case study of 20 small enterprises selected out of the sample size of 60 units. The case studies endeavour to bring out answers on ‘why’ and ‘how’ issues, while the quantitative analysis is expected to add bulk to the findings by helping to support claims to generalisation.

In this particular study, attitudes of owner-managers towards the use of consultants, determinants of consultancy needs, and the behavioural aspects could be related statistically. But case studies would reveal answers to some of the issues by explaining how and why such relations should be valid, (Yin, 1984) and offer comprehensive description and analysis as a rigorous method of research. In his opinion “As a research endeavour, the case study contributes uniquely to our knowledge of individual, organisational, social and political phenomena” (Yin, 1984). The case study approach together with survey method was considered appropriate in view of the research topic, purpose and objectives.
3.4 Measures Used and Design of Survey Instrument:

3.4.1 Measures Used:

Part of the research plan involves devising operations of the study that would relate specific concepts to empirically observable events. The operationalisation and measurement is the process of assigning numbers or labels to units of analysis, in order to represent conceptual properties.

This research study deals with concepts such as small enterprise, consultancy, problems, performance, success/failure, managerial competency and roles, attitude towards consultants’ competencies, management strategies, growth and so on.

To test the hypotheses, and to analyse the research problems, measures were developed to relate various concepts stated above. Variables – both independent and dependent - were identified. The key independent variable was consultancy intervention and dependent variables were success/failure, performance. Attitudes towards consultants, determinants of consultancy needs, dependency on consultancy were other variables.

Nature of consultancy intervention was categorized into six broad categories i.e. production related, marketing related, finance related, human resources related, economic and environment related and general management related. Problems of small enterprises were also identified under these six broad categories.

Consultancy needs, depending on the type of consultancy, were classified into eight categories i.e. technical consultancy, project feasibility (for growth & development) new product development, project management, management consultancy (marketing finance, operations and human resource areas) accounting, taxation and legal matters, and
any other type. The consultancy availed, if any, were recorded for different stages of the life cycle of the enterprise, i.e., existence and survival stage, success-growth stage take off stage, and any other period.

To understand the owner-managers' attitude towards small enterprise consultants a questionnaire was framed, with multiple indicators, each one seeking self-reporting type responses on a Likert scale coded from 1 to 5. (1=strongly disagree, 2=disagree, 3=undecided, 4=agree, 5= strongly agree). Similarly benefits of engaging consultancy, determinants of consultancy, and dependency on consultants were measured by Likert type scale.

Regarding measuring performance, capital investment made at start-up and later for expansion / modernisation, quantitative numerical data were collected. Sales revenue for the previous three years (1998-2001) was gathered, and growth in sales value was calculated. The profit before tax figures for the three-year period was collected. However these data had to be used with adequate caution, as due to various regulations, taxes and duties, the owner-managers of small enterprises might be reluctant to furnish correct data, or may furnish hidden operational data. Measuring venture performance presents significant challenges to researchers and consultants. Regarding performance there is some agreement that different fields of study use different measures of enterprise performance because differences in their research questions (Hofer 1983; Venkatraman and Ramanujam, 1986). Only a limited research work has focused so far on the development of performance measures for small emerging firms (Brush, 1990, Chandler and Hanks, 1991). Three most common approaches for measuring performance have been discussed by Chandler and Hanks (1993) These include 1) measuring firm performance in broadly defined categories, 2) the use of subjective measures of
performance, and 3) the use of subjective measures of firm performance relative to competitions.

Chandler and Hanks, (1993) in their study, requested performance in broad categories to measure growth and business volume. Growth was measured by 1) perceived growth in market share 2) change on cash flow and 3) sales growth. Three business volume measures were used 1) earnings 2) sales 3) net worth. Based on their study there was evidence that use of growth and business volume dimensions of performance measures in broad categories was favourable.

For the performance measure, similar measures of business volume and growth were developed in this study. Owner-manager competency, as defined by Chandler and Jansen, (1992) were designed to measure entrepreneurial competencies (three item scale), managerial competence (five item scale) and drive (four item scale).

Subjective measures of performance were also used to arrive at performance index of the enterprise. For a set of seven performance measures, responses on a five-point scale were elicited to each measure by indicating the emphasis given, and perceived satisfaction level of the owner-managers. An equal weight was given to these measures i.e., sales growth, return on sales, cash flow and so on. This instrument was a tested instrument used by Chandler and Hanks (1993). The score of each measure for emphasis was multiplied by respective score for satisfaction and was divided by 25 to get performance index for the variable. The average of seven performance indices indicated the overall performance index of the enterprise. The overall performance index and the scores for use of consultancy as well as success / failure of the enterprise were examined separately for correlation, if any.
Regarding overall perception of small enterprise performance, as successful or failure, the survey had a question with 14 characteristics, self-rated by owner-managers. These 14 characteristics pertain to the main or key entrepreneur, the start-up behaviours and enterprise behaviour and strategy. Duchesneau and Gartner (1990) have done a similar study covering 26 small firms in United States. Their study, and its results from the analysis, indicated significant differences between successful and unsuccessful firms. One of the characteristics analysed in the category of start-up behaviours was use of professional consultants. Univariate analysis closely indicated that use of professional consultant had a higher mean score for successful units.

The information regarding the background of the enterprises and its owner-managers were collected in the first part of the questionnaire. This included type of organisation i.e., proprietary, partnership, private limited, public limited, type of products manufactured, capacity, year of starting, educational / experience base of entrepreneurs, purpose of starting industry, nature of assistance taken for project identification and selection, nature of problems faced during implementation / operation stage, and confidence level at start up stage. These data were collected on nominal, ordinal and ratio scales, using mainly close-ended questionnaires.

3.4.2 Survey Instrument:

Based the measures explained earlier, the survey instrument (i.e. questionnaire) was developed focussing on personal, enterprise, start-up problems, enterprise performance, managerial heuristics, management strategies, owner manager competency and consultancy needs and attitudes and its usage. The questionnaire was developed in
four major parts namely personal and enterprise data, consultancy use and managerial heuristics, performance measures and overall success/failure measures.

The Part I consisted of 47 questions focussing on demographics of owner manager and his enterprise, enterprise start-up, current performance, consultancy needs, attitude towards consultants, benefits and determinants of consultancy, competency of consultants and dependency on consultancy. The first areas developed with multiple choices, and the remaining were developed five-point Likert scale.

In Part II, 22 questions were framed focussing on managerial roles and strategies of owner-managers. The questions in ‘managerial roles’ section were developed on three-point scale ranging 1 for ‘rarely used’ to 3 for ‘regularly used’. The managerial strategy section had statements with dichotomy answers.

Part III measured the growth of performance, subjective performance, owner-manager competency, manager competency, and success/failure. Growth of performance section had five questions on market share, cash flow, sales growth, sales volume and PBIT. The questions had multiple choices. The statements in the remaining four sections were developed on five-point Likert scale.

Part IV had nine open-ended questions for personal interview and in-depth discussions for developing case studies.

A pilot study and focussed group interview was conducted to test comprehensiveness and validity of the instrument. The focussed group discussion were held with small enterprise owner-managers, small enterprise association office bearers, consultants, general managers of District Industry Centre and Financial Institutions /
Banks. The final questionnaire was designed based on the feedback from the pilot study. The full text of the final version of questionnaire administered for data collection is provided in Appendix- II.

3.5 Data Collection

The instrument used in the study was intended to solicit the responses from the owner-managers of respondent units and generally arrive at a pattern of solutions to the problems, or answers to the questions. By self-administering the questionnaire the researcher collected the data from the respondents. The follow-up was done through frequent visits and face-to-face interviews.

As already indicated, the researcher personally visited the sample units located mainly in the Industrial estates/areas at Yeyyadi, Baikampady, Karnad and Shivalli.

Secondary data were collected from the office of the District Industries Centre, (Department of Industries & Commerce, Government of Karnataka) at Mangalore and Udupi. Besides, various publications of Government of India such as Census of Small Scale industries, Economic Survey, Report on Small Enterprises (Abid Hussain Committee), Bulletin of Reserve Bank of India, District Gazette, Directory of Kanara Small Industry Association and Kanara Chamber of Commerce and Industry, Mangalore were used to collect relevant secondary data pertaining to macro-scenario of small enterprises, definitions, sickness, category of small enterprise problems etc.

3.6 Method used for Data Analysis

Data collected from the structured questionnaires were analysed to find out the determinants and impact as well as problems and prospects of small enterprises consultancy. Since the researcher visited the respondent units personally for data
collection, all the 60 units responded to the questionnaire resulting in 100% response rate. The response from these sixty respondents constitutes the primary data for the current study. The quantitative aspects of the study describe the results from a number of cross-tabulations for demographic variables and variables in Likert scale used in the survey. Descriptive statistics were used to arrive at frequencies, range, mean and standard deviation of the variables studied. Factor analysis, was used for identifying the factors. Hypotheses were tested using correlation coefficient and ANOVA.

Twenty case studies were developed, to address the research questions. These case studies were used to assess the impact of consultancy on operating performance of enterprises. The case studies were also used to categorise the enterprises in the sample frame. In each case study, the owner-managers managerial competency score and information-seeking tendency were assessed. Similarly the consultancy usage score, perceived success rating and lifecycle stage were noted. Based on the overall success / failure classification, the enterprises were consolidated into four categories. The four categories are as follows:

Type 1 : Small enterprises, which used external consultants extensively and were successful

Type 2 : Small enterprises, which used external consultants extensively and were unsuccessful or were failures.

Type 3 : Small enterprises, which did not use consultants / had low usage of consultants, but were successful.

Type 4 : Small enterprises, which did not use consultants / had very low use consultant, and were unsuccessful.

Finally the study was intended to prove that:
3.7 Scope and Limitations of the Study

The limitations of this study are as follows:

i) The study area is the district of Dakshina Kannada (un-divided) in coastal Karnataka. The district has a position of third place among districts of Karnataka in terms of small enterprise development. The sample of 60 units reflect multi-product category units and at different life cycle stages. Therefore is difficult to generalise of the findings to small enterprises in the state or country.

ii) Due to considerable difficulty in obtaining quantitative data, particularly on sales and financial data, subjective measures and attitudinal scales were also used. This may limit the drawing conclusive inferences from the study.

iii) Data of past three years were collected to assess performance, but this period (i.e., 1998 to 2001) might represent different life cycle stages. Hence across sample units, generalisation was a limitation.

iv) As the study was intended to include the industries only in industrial estates, certain traditional industries located outside the industrial estate such as fisheries, beedi manufacture, (a tobacco based industry) small cashew processing units, tile manufacturing units, ice and cold storage plants were excluded.

3.8 Summary

In summary, the research methodology used was a combination of survey method and case study method. Four working hypotheses were formulated to meet the objectives
of the study. Dakshina Kannada district was chosen as geographical location for the study. The sample frame consisted of 600 units spread across the district. The sample size consisted of 60 small enterprises located mainly in industrial estates / areas. Structured questionnaire was self administered for data collection and follow-up was done through personal visits.

As the data was collected through personal visits, the response rate was 100%. The response collected were analysed using statistical techniques such as frequency distribution, cross tabulation and factor analysis. Hypotheses were tested using Pearson Correlation Coefficient and ANOVA. Subjective measures for perceived performance were analysed to develop subjective performance indices. The case study developed aimed at categorisation of the enterprises into four types, linking the level of use of consultancy intervention and perceived success / failure of the enterprises.

The responses received from respondents have been analysed and described in next chapters. The chapter 4 deals with socio-economic profile of study region.