CHAPTER 3

RESEARCH METHODOLOGY

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3.1 INTRODUCTION

This chapter is a spirit of the study, in other words, it works as a roadmap where details mentioned regarding the plan or blueprint of the study. The previous chapter presented a review of the literature to highlight the gaps in research. This chapter presents the variables of the study, operational definition, conceptual framework, pilot study, sampling design, research tools and statistical design. This chapter is the most critical part of the study where a clear, complete and systematic way of conducting the research has been stated. At each stage, clear reasons and an adequate justification have been given for the way in which study was conducted; starting from the selection of variables for the study of the limitations of the study. This chapter is a mix of knowledge and art of designing a research plan. Whole framework or plan of research was discussed in a sequential order so that research may meet its objectives.

3.2 RESEARCH DESIGN

Characteristics of this study are: study having a clear research question, the research process is formal and structure, an objective of the research is testing the specific hypothesis and examine the relationship between and among selected variables, larger sample size (785 respondents), Data analysis is Quantitative in nature. Finding and results are conclusive, Finding used as input into decision making. Hence, this study has a conclusive research design, where both descriptive research and causal research design is part of it.

3.3 VARIABLES UNDERSTUDY

Variable selection for the study: Variables are derived from a literature review. It was stated in a literature gap analysis that this study having objectives to fulfil gaps present in selected research. Variables are taken from selected researches like Dasgupta and Majumdar (1996), Leelakulthanit and Day (1992), etc. Classification is done by using concepts to club together. The variables intend to test are as follows.
Demographic & Socioeconomic variables: Gender, Age, Educational status, Marital status, Income status, Location of residence (Urban/ Rural), Location of residence (Geographic zone).

Key Variables:
1. Overall Life satisfaction
2. Positive and Negative affect:
   a. Enjoyable - Miserable
   b. Interesting-Boring
   c. Active -Inactive
   d. Happy -Unhappy
   e. Meaningful-Meaningless
   f. Worthwhile-Useless
   g. Rewarding-Disappointing
   h. Easy -Hard
   i. Relaxed -Tightened up
   j. Full of fun -No fun at all
   k. Comfortable -Uncomfortable
3. Domains of Life-satisfaction;
   a. Government satisfaction
   b. Material possession satisfaction
   c. Environmental quality satisfaction
   d. Work life satisfaction
   e. Spirituality satisfaction
   f. Physical health satisfaction

3.4 OPERATIONAL DEFINITIONS

People: In this study ‘People’ refers to the persons who are doing a job, aged 26 or above, but not exceeding 55 years and residing in Gujarat State with, at least for 5 years at the same place (Village / Town / City).
Overall Life Satisfaction/ Perceived Quality of Life: In this study ‘Overall life satisfaction’ refers to happiness, a satisfaction of the people in their lives and their achievements in life. It is assessed by using The Life Satisfaction Scale is given by Diener, E., Emmons, R. A., Larsen, R. J., and Griffin, S. (1985).

Positive and Negative affect: Positive affect refers to the extent to which one feels active, enthusiastic, alert, etc., whereas negative affect is a dimension of distress and unpleasurable engagement (Diener, Suh, Lucas and Smith, 1999). It is assessed by Semantic Differential Scale.

Domains of Life satisfaction: Well-being relates to the life satisfaction in work, family, marriage, leisure, health, and finances (Diener, Suh, Lucas and Smith, 1999).

Lowe Income Group: Persons belong to a minimum income level of ₹ 1.2 lakhs per annum and not exceeding ₹ 2.5 lakhs per annum.

Middle Income Group: Persons belong to a minimum income level of ₹ 2.51 lakhs per annum and not exceeding ₹ 6 lakhs per annum.

Higher Income Group: Persons belong to a minimum income level of ₹ 6.01 lakh per annum and not exceeding ₹ 12 lakhs per annum.

Rural: According to Census 2011 Report, the basic units of rural areas are the revenue village.

Urban: According to census 2011 report, constituents of urban areas are statutory towns, Census towns and, Out Growths.

3.5 CONCEPTUAL FRAMEWORK

The conceptual framework which is used here is inspired from a system Model of Quality of Life by The University of Oklahoma School of Social Work. Overall quality of life is a composite assessment of the quality of the social, economic and physical environments.
Nine domains have been used to assess the external and internal conditions of overall quality of life. Six of them found significant and shows strong linear association with the overall quality of life. Six Domains of Life Satisfaction are Satisfaction with Material Possession, Satisfaction with spirituality, Satisfaction with Physical Health, Satisfaction with Government, Satisfaction with Environment and Satisfaction with Work Life. The quality of life of each domain was assessed by several indicators, which were then combined to create an overall quality of life.

Fig. 3.1 Conceptual framework

3.6 PILOT STUDY

The pilot study was carried on to ascertain the variables and research design of the research. A PILOT study was conducted in Ahmedabad City in Gujarat state, with a 400 adult (aged 26-55years) sample. It investigated first the relation between variables (demographic and socioeconomic characteristics) and perceived quality of life and then the
relation between domain satisfaction and perceived quality of life. Both descriptive and causal research design has used. The survey instrument measures the residents’ life satisfaction in 10 domains: satisfaction with government, Infrastructure, Work-life, Material possession, Relationships, Self-development, Physical health, Environmental quality, Children’s education and Recreation activity. EFA, Multiple Regression analysis, PLS-SEM and CB-SEM techniques were used to predict perceived life-satisfaction of people in Ahmedabad city. A discussion with respondents also was conducted to give a brief about research topics to them and their suggestions were incorporated regarding the usefulness and other aspects of the study. Results and conclusions of the pilot study were used to finalize the questionnaire and research design.

3.7 SAMPLING DESIGN

Universe or Target population of the study: The universe/target population of the study includes all persons aged 26 years and above and range up to 55 years and living in the rural or urban areas of Gujarat for more than 5 years at the same place (Village / Town/ City).

Inclusion criteria:
1) The study has included only those persons who are doing a job.
2) The study has included the persons belongs to an age group of 26-55 years;
3) The study has included the persons with a minimum educational qualification of S.S.C.
4) The study has included the persons belonging to a minimum income level of ₹ 1.2 lakh per annum but, maximum income not exceeding ₹ 12 lakhs per annum.
5) The study has included those persons who are either married or unmarried.
6) The study has included both men and women.
7) The study has included respondents from both urban and rural areas.

Exclusion criteria:
1) The study has excluded the physically and mentally challenged persons.
2) The study has excluded the persons residing in tribal areas due to the inconvenience on approaching them.
**Sampling frame:** As per study requirement, no appropriate sampling frame was present. To prepare such type of source list/sampling frame at a state level is also not possible under time and resource constraint.

**Sampling method:** Quota sampling method was used for the study, which is a non-probability sampling method. Quotas were decided in a proportion of the sample as similar to the composition of the population (Bajpai 2017).

A Census of India 2011 was taken as a base to decide the sample in the exact proportion of the distributed population. Approx. 57% percent of the population lives in rural areas and 43% percent of the population in the urban areas of Gujarat. Approx. 60% percent of the urban population lives in the cities (Municipal Corporation’s area). A total population of Gujarat was divided into four zones of Gujarat; Central Gujarat, North Gujarat, Saurashtra and South Gujarat. Their proportions in respective zones are 37% in Central Gujarat, 17% North Gujarat, 29% Saurashtra and 17% in South Gujarat.

Here, four major cities were selected (Ahmedabad, Vadodara, Rajkot and Surat), One Notified Area (Gandhinagar), 5 towns (Palanpur, Surendranagar, Gandhidham, Palitana and Nadiad) and 22 villages of Gujarat (Denap, Rajpur, Tavadia, Sojitra, Dodhiya, Beraja, Panvi, Mesvan, Rampur, Vadala, Gudel, Khada, Vansal, Nar, Nikol, Rampura, Kareli, Kavi, Karjan, Rander, Abrama, Tarsadi). Details of the sample collection, analysis as explained in figure 3.2.

**Method of data collection:** Survey method was used for data collection. Different modes of a survey were conducted; a) Personal Interviews, b) Office Interviews, c) Self-Administered Questionnaire and d) Mail Survey.

**Sample size determination:** The Cochran formula allows calculating an ideal sample size given a desired level of precision, desired confidence level, and the estimated proportion of the attribute present in the population. Cochran’s formula is considered especially appropriate in situations with large populations.

\[ N = \frac{z^2(pq)}{e^2} \]
Where;
N = the sample size.
z = standard error associated with the chosen level of confidence.
p = estimated percent in the population
q = 100 - p
e = the amount of precision or allowable error in the sample estimate of the population.


95% level of confidence is used, so z = 1.96. Next, the p = q = 50% situation is customarily assumed as it is the worst possible case of variability. Let’s take a ±3.5% sample error.

Using the sample size formula, the sample size, n, is calculated as follows.
Sample size computed with p = 50%, q = 50%, and e = 3.5%

\[
N = \frac{1.96^2(0.5*0.5)}{0.035^2}
\]

\[
N = \frac{3.84(0.25)}{0.001225} = \frac{0.96}{0.001225} = 784 \text{ (rounded up).}
\]

Source: Burns, Veeck, and Bush (2017), Marketing Research, pp.276.

- The Sample size for the study was determined by two parameters; a) supervisor as well as expert’s advice and b) by considering resource and time limitation.

- Initially, a sample of 1000 responded was shortlisted but after the data cleaning process, 785 respondents constituted for this study.
Sampling framework has described by tables and charts as mentioned below.

### Table 3.1 Sample collections in North-Gujarat

<table>
<thead>
<tr>
<th>North- Gujarat (Ss =132)</th>
<th>Urban (Town) - 57</th>
<th>Rural - 75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal Corporation- 30</td>
<td>Municipality -27</td>
<td>District</td>
</tr>
<tr>
<td>Gandhinagar (30)</td>
<td>Palanpur (27)</td>
<td>Mahesana</td>
</tr>
<tr>
<td>Mahesana</td>
<td>Kadi</td>
<td>Rajpur (20)</td>
</tr>
<tr>
<td>Patan</td>
<td>Sidhpur</td>
<td>Tavadia (20)</td>
</tr>
<tr>
<td>Patan</td>
<td>Chanasma</td>
<td>Sojitra (15)</td>
</tr>
</tbody>
</table>

### Table 3.2 Sample collections in Central-Gujarat

<table>
<thead>
<tr>
<th>Central-Gujarat (Ss =290)</th>
<th>Urban (Town) - 125</th>
<th>Rural-165</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal Corporation- 109</td>
<td>Municipality -16</td>
<td>District</td>
</tr>
<tr>
<td>Ahmedabad (85)</td>
<td>Ankleshwar (16)</td>
<td>Anand</td>
</tr>
<tr>
<td>Vadvodara (24)</td>
<td>Anand</td>
<td>Tarapur</td>
</tr>
<tr>
<td>Anand</td>
<td>Umret</td>
<td>Vansol (21)</td>
</tr>
<tr>
<td>Anand</td>
<td>Petlad</td>
<td>Nar (21)</td>
</tr>
<tr>
<td>Kheda</td>
<td>Kapadvanj</td>
<td>Nikol (20)</td>
</tr>
<tr>
<td>Kheda</td>
<td>Kapadvanj</td>
<td>Rampura (20)</td>
</tr>
<tr>
<td>Bharuch</td>
<td>Jambusar</td>
<td>Kareli (20)</td>
</tr>
<tr>
<td>Bharuch</td>
<td>Jambusar</td>
<td>Kavi(21)</td>
</tr>
</tbody>
</table>
### Table 3.3 Sample collection in Saurashtra

<table>
<thead>
<tr>
<th>Urban (Town) - 99</th>
<th>Rural-132</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal Corporation - 21</td>
<td>Municipality -78</td>
</tr>
<tr>
<td>Rajkot (21)</td>
<td>Surendranagar (26)</td>
</tr>
<tr>
<td>Gandhidham (26)</td>
<td>Jamnagar</td>
</tr>
<tr>
<td>Palitana (26)</td>
<td>Junagadh</td>
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<tr>
<td></td>
<td>Junagadh</td>
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<tr>
<td></td>
<td>Amreli</td>
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<td></td>
<td>porbandar</td>
</tr>
</tbody>
</table>

### Table 3.4 Sample collection in South-Gujarat

<table>
<thead>
<tr>
<th>Urban (Town) - 57</th>
<th>Rural-75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal Corporation - 57</td>
<td>Municipality -00</td>
</tr>
<tr>
<td>Surat (57)</td>
<td>Surat</td>
</tr>
<tr>
<td></td>
<td>Surat</td>
</tr>
<tr>
<td></td>
<td>Navsari</td>
</tr>
<tr>
<td></td>
<td>Navsari</td>
</tr>
</tbody>
</table>
Fig. 3.2 Sampling framework

Gujarat
N=785

North Gujarat
N=132

Central Gujarat
N=290

Saurashtra
N=231

South Gujarat
N=132

Urban
N=57

Rural
N=75

Urban
N=125

Rural
N=165

Urban
N=99

Rural
N=132

Urban
N=57

Rural
N=75

Symbols

City (Municipal Corporation Area) = △

Town (Municipality Area) = ○

Village (Gram Panchayat) = □
3.8 RESEARCH TOOLS

Life satisfaction scale
The Life Satisfaction Scale of Diener, E., Emmons, R. A., Larsen, R. J., and Griffin, S. (1985) has been used in the study. A 5-item scale was designed to measure global cognitive judgments of one’s overall life satisfaction. Participants expressed how much they disagreed or agreed with each of the 5 items using 7-point scales that range from 1 strongly disagree to 7 strongly agree. Test-retest reliability coefficient (Cronbach’s alpha value) of this scale in the present sample was found to be as high as 0.681.

Semantic differential scale
Campbell et al. (1976) designed a scale using "Semantic Differential Technique." With the help of 17 bi-polar adjectives they solicited from people how do they feel about their present life. The current study has modified the same scale and used 11 bipolar adjectives for measuring how they feel about their present life. Test-retest reliability coefficient (Cronbach’s alpha value) of this scale in the present sample was found to be as high as 0.886.

Life-domain satisfaction scale
A sense of wellbeing was assessed by using the "life domain satisfaction scale." Initially, 38 statements (variables) were drafted, but later on, at the model validation stage, it was reduced to 20 variables which give six latent factors. A seven-point scale (from strongly disagree to strongly agree) has been used to measure satisfaction with each domain. Test-retest reliability coefficient (Cronbach’s alpha value) of this scale in the present sample was found to be as high as 0.884.

3.9 STATISTICAL DESIGN

Analysis of the collected data was subjected by statistical methods using M. S. Excel: 2010, SPSS (Statistical Package for Social Sciences): 21 and AMOS: 21 software. Tables and charts used for presentation of statistical method output are for clear understanding and to derive inferences.
I. The scores of the Semantic Differential Scale were subjected to exploratory factor analysis with varimax rotation to determine the underlying latent factors of one's Quality of Life. Ratings of satisfaction with life scale were further classified into groups. Compare means, method has been used to compare means of factors of semantic differential scale and means of classified groups.

II. Classification methods like Tree Segmentation Method have been used for data mining and better graphical segmentation of the sample of overall life satisfaction with different demographic and socioeconomic variables. The Tree Segmentation technique gives an idea to the reader that how the whole sample has segmented.

III. General characteristics of the sample in terms of age, gender, marital status, education, income, residence and other key variables were identified by calculating descriptive statistics such as mean and percent.

IV. The Likert’s scale has been used for data measurement. Normality of data was assumed. Parametric tests like one sample t-test, Independent sample t-test; One Way ANOVA has been used for hypothesis testing.

V. Multiple regression analysis was used to predict the relationship between overall life satisfactions with six domains of life satisfaction.

VI. Confirmatory factor analysis was used to confirm the reliability and validity of the Perceived Quality of Life (PQoL) model.

3.10 LIMITATIONS OF THE STUDY

The present study targets persons only from two areas i.e., rural and urban areas of Gujarat, as such the findings cannot be generalized to tribal areas of Gujarat and also persons residing all over India. The study is restricted up to persons who are doing a job with a certain age group, income group, and education status. Advance aged people were excluded from the sample as they were non-earners/ unemployed.
Three scales have been used: a) Satisfaction with life scale; b) Semantic differential scale; and c) Life domain satisfaction scale. The whole study examines the Subjective Well-Being of people in Gujarat, following the theory of Diener et al. (1999).

3.11 CONCLUSION

In this chapter, the practical way in which the whole research project was organized has discussed. To conduct this research in a systematic way a proper justification and supportive arguments added in each sub-parts of the study, so that the reader, as well as examiners, may understand the spirit behind each move of the research. This chapter was divided into many subparts: research design, variables under study, operational definitions, conceptual framework, pilot study, sampling design, research tools, statistical design and limitations of the study. Here, both theoretical and practical aspects of the conduct of the research were discussed in order to achieve sense and simplicity. The discussion starts with how the epistemological stance which has been adopted provides a link between the aims and the practical methodological issue of collecting data. An epistemological approach was used which consists of the assumptions regarding the study, concerning the nature of the knowledge which is as valid in order to resolve the research question.