Chapter 3

Research Methodology
3.1 Introduction

Research methods have been designed by initiating the formulation of the objectives of the research. To develop the objectives, background of the topic was considered important. Public policies are known to be frequently designed for guidance to the society for the coordination of efforts to promote national awareness. Strategic tool has been recognized to endeavour economic prosperity that deliberately incorporates planning and priorities. Based on this, designing policies for business has already commenced, however the significance of policy design was frequently missing in the business sphere principally pertaining to the small and medium enterprises. The long-standing dilemma of designing policies for this class thoroughly needed priority and has therefore been considered as the foremost theme whilst study of auto component sector as the next.

Accordingly this research study is undertaken and aimed to acquire an improved understanding of the basis of designing policies for business and arrive at universal methodology and Approach. Preliminary process requirements included obtaining real time data, ensuring the accuracy of data, and correctly analyzing the data so that it was relevant to the research objectives. Auto component industry that contributes greatly towards economic development has been considered as an imperative illustration of the small and medium enterprises which often seek new ‘Approaches’ for dealing with business challenges due to changing business environment. The subject matter, as a result, demanded to classify the study in two major themes for expediency and deliberation.

The central goal of this study primarily intended to suggest “Model-Approach”, in order to compose internal determinants of the designing process, by integrating the entrepreneurial-character with the firm-features. Therefore, the study curiously meant to provide a better knowledge of the innermost grounds that led entrepreneurs towards distinctive paths of policy design. In the Indian context, SMEs persistently looked for ‘Approaches’ to promote Indian products, services and ideas on the global arena. These
SMEs have been classified by the Indian Government on the basis of investment pattern by their policy introduced in the year 2006.

Further research was for that reason indispensable for an in-depth acquaintance of existing schemes and ‘Approaches’ constructive for framing policies and to evolving universal mechanism for the knowledge, advantage and implementation in small and medium enterprises.

In the captioned research problem of “Designing policies for business-A study of Auto Component Sector”, the goal of the research has been to identify key factors both driving and constraining that form the basis of design for the adoption and implementation of business policy with a study of Auto-Component manufacturing industries. Evidence based Approach has been used to validating the results of this research.

3.2 Research Rationale and Objectives

The rationale directing this inquiry stems from the need to develop and apply a basis for a business policy. Very little research has been conducted in the past to identify the determinants of ‘Policy Designing’ and related to the implementation in small and medium Enterprises. In light of this rationale, the goal of this exploratory research project is: to identify key factors both driving and constraining the adoption and implementation of business policy for SMEs. To achieve this goal, the following objectives were established:

Qualitative case study research is beneficial when attempting to collect empirical data to develop an understanding of complex social phenomena (Merriam 1990; Robson 1993; Yin 1994). Yin (1994:3) suggests that case study research “allows an investigation to retain the holistic and meaningful characteristics of real-life events” through inquiry into a case or cases. Qualitative research reflects an awareness of the individual and is based on a humanist point of view emphasizing the importance of the ‘surrounding social context’ as stakeholders and research informants perceive that context. In qualitative research, the researcher is the instrument of data collection.
3.3 Theoretical Frame Work of the Study

The structure for the study is formulated on the basis of my research objectives to have focused Approach to enable concentration on each of above themes by splitting them further down as given in Table-5.

<table>
<thead>
<tr>
<th>Designing Policies for Business</th>
<th>A study of Auto-Component Sector</th>
</tr>
</thead>
</table>
| **Meaning of Design & search for its basis.**  
  1. To explore factors related to design  
  2. To explore Approach to the design | • Study of Auto-Component Industry.  
  • How such industries design their policies |
| **Meaning of Policy & search for its basis of formulation.**  
  1. To explore factors related to policy  
  2. To explore Approach to formulating policy | How do these industries implement their business policies |
| **Meaning of Business & search for the Approach to it.**  
  1. To explore factors related to business Model  
  2. To explore Approach to business | How do these industries address their business challenges |

Table-5

3.4 The Objectives of the Research:

**Objective-1,**
To explore, examine and understand the variables and methodology used as basis to design policies.

**Objective-2,**
To understand meaning, explore and understand the process of formulating policy objectives by studying the types of policies designed in the past.

**Objective-3,**
To study the business of the Auto-Component industry based on the challenges in the Auto-Component industry and ‘Approaches’ used by these industries to tackle them.

### 3.5 Research Methodology Diagram

![Research Methodology Diagram]

*Figure 11*

Figure-11 typically shows the research methodology starting from the Objectives to arrive at the Findings of the research through literature and field survey and analysis.

### 3.6 Identification of Case Studies

The cases for the study have been selected using a purposive case selection strategy (Neuman 1991). During purposive sampling, the researcher employs a significant amount of judgment in selecting cases that are unique in character or uncommon and resulted in the collection of informative data that is relevant to the objectives of the study.
Approach to Qualitative Research

<table>
<thead>
<tr>
<th>Purpose of Survey</th>
<th>Type of Approach</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>To find out diverse ‘Approaches’ used in this industry to deal with challenges.</td>
<td>Case Study</td>
<td>To attempt to shed light on ‘Policy Designing’ phenomena by studying in depth a single case example. The case is related to an Auto-Component Industry.</td>
</tr>
<tr>
<td>To identify &amp; understand diverse ‘Approaches’ used in this industry to deal with challenges.</td>
<td>Grounded theory</td>
<td>To develop theory inductively from a corpus of data acquired.</td>
</tr>
<tr>
<td>To identify &amp; understand diverse ‘Approaches’ used in this industry to deal with challenges.</td>
<td>Grounded theory</td>
<td>To attempt to understand the professionals’ opinions on ‘Policy Designing’</td>
</tr>
<tr>
<td>To identify the Auto-Component industry sampling frame.</td>
<td>Observation</td>
<td>To make use of this sampling frame for field survey.</td>
</tr>
<tr>
<td>To identify the variables or factors involved in designing Policy for business.</td>
<td>Historical Data</td>
<td>To evaluate data through systematic collection of data related to past occurrences in order to test hypotheses concerning causes, effects, or trends of these events that helps to explain present events and anticipate future events. (Gay, 1996)</td>
</tr>
</tbody>
</table>

Table-6

A criterion has been developed to lead the purposive selection of cases. This is to enable the selection of cases that would result in the generation of informative data in order to meet the research objectives. The criterion that has been determined also allowed the investigator to constrain potential cases on pragmatic grounds related to the availability of time and money. The selection of cases followed the criteria as listed below:

1. Each case must contain at least one business lead.
2. Each case must originate from the industrial, particularly auto component sectors;
3. Each case must have been operating during the data collection phase of the proposed research, and;

4. Each case and the associated respondents must be located in Pimpri Chinchwad and Bhosari area of Pune District for practical reasons related to the availability of time and financial resources.

Table-5, typically exhibits the Approach considered for the Qualitative Research.

![Diagram of Methods of Data Collection](image)

**Figure 12**

### 3.7 Data Collection Procedures

Figure-12, shows the methods of data collection that are undertaken in this research study.

1. Data originated mainly from written records and documents supplemented the interview data. Records and documents were solicited from each respondent at the
time of the interview, although a relatively small amount of data was actually gleaned from records and documents.

2. Verbal data was collected during face-to-face, structured interviews. In each case the interviews took place in a location that was convenient for respondents. The investigator travelled to meet respondents in two main settings, which included the respondent’s offices and the sites where the four cases studies are located. Case Studies of the industries undertaken are listed in Table-7, which shows Auto-Component Industries based in Pune.

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>NAME OF THE INDUSTRY</th>
<th>STATUS</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Auto Line Industries</td>
<td>Operating</td>
<td>Pune</td>
</tr>
<tr>
<td>2</td>
<td>Mahindra Hinoday industries</td>
<td>Operating</td>
<td>Pune</td>
</tr>
<tr>
<td>3</td>
<td>Tata Auto-Components Ltd.</td>
<td>Operating</td>
<td>Pune</td>
</tr>
<tr>
<td>4</td>
<td>Spaco Carburetors</td>
<td>Operating</td>
<td>Pune</td>
</tr>
<tr>
<td>5</td>
<td>Vighnahar Industries,</td>
<td>Operating</td>
<td>Pune</td>
</tr>
<tr>
<td>6</td>
<td>Devchhaya Industries</td>
<td>Operating</td>
<td>Pune</td>
</tr>
<tr>
<td>7</td>
<td>Dynamic Industries</td>
<td>Operating</td>
<td>Pune</td>
</tr>
</tbody>
</table>

Table-7

3.8 Verification Procedures

1. In undertaking qualitative research one assumes a methodical, complex and often laborious process in order to validate the findings and accurately meet the research objectives.

2. The rigor exhibited in qualitative inquiry is exemplified in various techniques that are used to increase the trustworthiness and credibility of the data and findings.

3. Various methods are used in qualitative research to verify findings. Verification procedures are an essential in securing legitimacy of qualitative case study research (Stake 1995; Cresswell 1998). Synthesizing the works of various authors, Cresswell and Miller (1997: 202-203) list multiple verification procedures that are suitable to be employed in naturalistic inquiry and suggest that the utilisation of two or more techniques are adequate in attempts to gain accuracy.
4. The verification techniques of triangulation, narrative description and peer review are often employed in qualitative research to establish the trustworthiness of the findings (Cresswell and Miller 1997).

Following are the verification methods used for the purpose of validity and accuracy:

1. Triangulation between methods, respondents, records and documents, has been used to increase accuracy between sources (Creswell and Miller 1997).
2. Study of the cases of auto component units to support the validity of research.
3. Study of the opinions of the 21 global professionals received through an open ended questionnaire that was launched on professionals’ website “Linked in” and analyzing the response for Approach and method adopted for ‘Policy Designing’, particularly to understand the views of global leaders in the scenario of ‘Globalization’.
4. Analysis of the data collected in this research study has been carried out employing appropriate means of evaluation including the key performance indicators that were already tested, having face validity and made known from the literature.

3.9 Secondary data

Table-8 is shown to sources of secondary data and the purpose of data explored through them.

Secondary sources such as Government and other reliable publications have been particularly selected to collect the data on Auto-Component industry. The sources facilitated to make assessment of their needs / objectives to understand the styles of business and their operations. Data has then been organized in the form of tables, graphs and pictures to help in analyzing the requirements of research.
### 3.10 Primary Data

Population and Sampling for Field Survey: Auto-Component industries are spread across three geographic regions such as Pune, Gurgaon and Chennai in India. Chennai and Pune are the traditional locations of the industry. Delhi and its surrounding areas are the new locations that came into existence mainly because of Maruti. Pune region was selected for the study.
Primary data was obtained through field investigation personally by the researcher in the Pune region to study the Auto-Component sector. There are 510 Auto-Component industries in the Pune industrial region that were identified from the industrial directory of Pune of year 2008, published by MCCI & A, Pune. Among them 15% are positioned as Proprietary and 19% in Partnership category amounting to a population of 173. Mix of these two ownership types was intentionally selected to understand their philosophy, challenges and performance, and priorities. At this time it was considered that the private limited or limited companies are better organized and lean towards large scale industries. Survey was therefore conducted to obtain data on 120 random samples, of proprietary and partnership mix ownerships, all from the Pimpri, Chinchwad industrial area to maintain statistical homogeneity in the samples as basis on geographical and industry ownership class to keep away from sampling errors.

Jamie Decoster (2000) explains, ‘Validity and reliability are independent of each other. Validity is often thought of as the accuracy” of the scale while reliability is its precision.” Scales that lack validity have systematic biases to them, while those that lack reliability have large random errors associated with their measurement’. Obviously, you want your scale to be as valid and reliable as possible.

3.11 Evaluation of Data Reliability and Validity

Repeated evidence of the results has been considered to prove reliability. For instance when the consistency in respect of a particular Approach, tool, instrument and philosophy was observed the reliability has been considered as established. For illustration “Customer focused Approach” has been every time responded by the industries proving its reliability. Statistical techniques have been used for studying the variance of the respondents. Statistical values proved affirmative on the Hypothesis.
3.12 Study of Industry Cases:
The research study has been conducted by obtaining information on SMEs engaged in Auto-Component manufacturing to explore the Approach used by them in dealing with variety of challenges and to find the consistency of such data.

3.13 General Method of Data Analysis

Analysis of the data has been carried out on the basis of evaluation of answers obtained for each of the questions contained in the questionnaire. The answers obtained on themes have also been evaluated.

The researcher supports the views of Anne ,et al (1988), that, “To perform the task of design, comparative policy analysis is needed in which common elements that exist in virtually all policies are identified and the underlying structural logic of the policies is made explicit”. Generic elements found in policies, describe and compare some of the more common design patterns, and discuss the circumstances thereby thwarting the effectiveness of the policy.

1. Analysis of the variables has been considered as more appropriate option to understand ‘Approaches’ through comparison more particularly by the commonality - variability analysis.
2. Synoptic Approach has a considerable utility, implied by the concept of design to offer a more accurate description of reality.
3. Assessment and appraisal of the impact is considered important for the analysis.
4. Means to evaluate the ‘Approaches’. Sorting classification systems by unique ‘Approaches’ to help identify some basic schools of thought for conducting an evaluation.
5. Summarizing the ‘Approaches’ in terms of a few important attributes is another important aspect.
6. Evaluation of ‘Approaches’ to justify and make their unique contributions to solving important problems on the basis of strengths and weaknesses when deciding which Approach to business.


8. Business process analysis is any activity that helps you understand how a business unit fulfils its mission. Since every process requires resources, a common analysis Approach is to focus on a single resource such as time, information usage, cost, or such.

9. Evaluate how effectively the business process utilizes the chosen resource and how to make it better.

10. Requirements express conditions that any acceptable solution should meet. Business requirements specify end-user conditions regarding the functionality, performance or usability of the solution. System specifications define technological conditions such as operating system, programming language, database, hardware configuration, etc.

11. Evaluating potential design solutions is the process which leads to the selection of the best of several alternatives. It requires alternatives to be identified and determine how to compare them. The selected solution may contain components that can be implemented quickly, changes to business processes, or modifications to the information systems.

12. Cost / Benefit analysis compares the estimated cost of delivering a specific solution to the estimated value of the expected tangible and intangible benefits.

### 3.14 Method of Data Interpretation

By questioning methodology interpretation of the data has been carried out. Following are the illustrations of questions that were generated to satisfy the study. Is the research measuring what it is supposed to measure? What do the results indicate? What do they imply? How do they relate to other reported research in the literature about the research topic? What is important in the results? What relevance do they have for other researchers? What relevance do they have for people in the real world beyond...
universities? Interpretation will be validated on key strengths or weakness outcome. Is the method of data gathering leads to consistent results for reliability?

3.15 Means of Evaluation of the Data

The second source of data originated from a document review, a common source of data in qualitative, case study research (Merriam 1990; Cresswell 1994). Documents are an objective and unobtrusive source of data because they are created for a reason other than the research process itself and thus are not affected by it (Merriam 1990; Robson 1993). Merriam (1990) notes that if a document can be obtained easily and in a systematic manner, then it is probably a good source of data. Potential sources of documentation that were sought and specifically inquired about during the interviews included: company reports, agency records, project reports and newspaper articles. All documents that were collected were reviewed and analyzed for significant content in relation to the research and were used to supplement and triangulate the information collected during interviews. A list of all relevant documents and records associated with the case studies is annexed.

Observation Analysis: Data obtained by reviewing literature was subjected to scrutiny of the enterprise, the firm on the variables and the basis in arriving at the determinants for policy design. Interpretation meant bringing out the meaning or outcome of the data. Method of induction was used for drawing conclusions. During the inductive phase reasoning was brought about after observation.

Logical Analysis: - This type of analysis was found to be apt in analyzing the views of researchers or the businessmen, obtained through Literature Survey, on implementing particular Approach for the business. Therefore analysis of the “leads” to business formed additional basis to supporting the Approach to business.

Rational Analysis of Professionals’ views: - Analysis of the philosophy or views in making a choice of a particular Approach, obtained through Field Survey, as expressed
by the professionals or experts in the line leading to the conclusive evidence of the Approach to business.

**Insight-stimulating examples:** Field Survey on Case Studies reveals the citations of industries that actually make the utility of a particular Approach to the business have been deduced through exhaustive reading and interpretation. This basis furthermore enabled studying each case, by segregating the objectives and instruments used for designing policies.

**Statistical analysis:** Data on the attitude of Auto-Component industry people has been obtained through field survey in 5 point Likert Scale format that facilitated its statistical analysis to test the Hypotheses. One way analysis of variance is used to test for significant differences of variable entrepreneurship Approach to the strategic management. ANOVA is preferable in testing the equality of three or more sample means. Based on the means, inference can be drawn whether samples belongs to same population or not. This statistical technique, for that reason, allows for testing the F values between and within the samples. By comparing the value of F obtained with the critical value of F such as 5% level of significance for the applicable degree of freedom. If the difference in sample means is not significant then a null hypothesis is said to be acceptable whilst large F values indicate rejection. Inferences have therefore been drawn on this basis.

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