Chapter 3
Research Methodology
3. Research Methodology

3.1 Statement of problem (compelling gaps for study)

- Very little empirical research on management education linkage with industry needs has happened in the Indian context and hence, there is an essential need to do the same in Indian context.

- A variety of studies have happened on managerial competencies in specific industry domains or hierarchy level but not in context to cross sectional generic managerial competencies hence this study will add great value to the area.

- Most of the Indian research on “Managerial competencies” and “Business schools’ focus” is opinion or case based hence, do not showcase an overall environmental picture and are not empirical studies. Hence, this study will initiate that process.

- Various Indian studies have focused on teaching practices and pedagogy but more or less empirically have not identified the pedagogy and teaching systems management teachers use and their impact on managerial competencies. This study will try to fulfill that gap.

- No study has been constituted on Gujarat (State) based management institutes, Gujarat being a very important state for industrial growth and corporate jobs the study will enumerate the various aspects of managerial work.

- In the Last one decade Gujarat has seen the emergence of more than 100 Management education institutions in various formats so a study which analyzes the overall management education environment is needed for future growth.
3.2 Objectives of the Research

1. To enlist and list the managerial competencies desired by the industry in their managerial people, especially in light to MBAs.

2. To empirically analyze the significance of each competency to distinguish highest and lower ranking competencies as per Indian managerial experience. (Indianized Managerial Competencies)

3. To map the management teachers’ knowledge and perception on the need of managerial competencies in a managerial role especially, in Indian corporates.

4. To find which teaching methods management teachers use in delivering the KSA in business schools and how suitable they are for ‘managerial competencies’ development.

5. To analyze the design and content of curriculum, courses and subjects to map which managerial competencies are more focused.

6. To analyze the difference in the industry managerial competencies’ needs and competencies that are being perceived by the management teachers and focused in the course design.
3.3 **Significance of the study**

**Significance to MBA Institutes**

- This study could be used by MBA institutes as reference to know ‘managerial competencies’ needed by Indian industry.
- The study can be used by corporate companies as base benchmark for mapping ‘managerial competencies’ for recruitment, training and performance appraisal purposes.
- The study can be used as reference for various pedagogical tools which can be used to develop competencies in students.
- This study could provide reference in the formulation of curriculum and program design to facilitate skill development. Not just in MBA Programs but also in executive development programs.
- The study can help in further design of studies for other professional sector and domain based studies like for hotel management industry, banking industry, retail industry and many more.
- The study has significance for students of management for mapping their progress and focus on managerial competencies so that they can offer a better fit for the industry.

**Significance for researchers**

- Researchers can use this work to develop tools to analyze curriculum and course design and impact of education on student development.
- This research can form a basis for actual testing of competencies development and identifying the impact of pedagogical tools on development of competencies.
Significance of Study in Gujarat

Gujarat continues to occupy a distinctive position in the Indian economy. With 5 percent of the country’s population and 6 percent of the country’s geographical area, Gujarat contributes to about 16 percent of industrial production in India. The State has witnessed an annual average growth of 9 percent in the last three years (GDP is estimated at USD 38.4 billion) and an average industrial growth of 15 percent for the same period. However, these macroeconomic statistics look much more impressive on a closer look at the industrial landscape of the State.

Accounting for 16 percent of the industrial production of India, Gujarat has demonstrated leadership in many areas of manufacturing and infrastructure sectors. Almost 50 percent of the country’s refined petroleum products and 45 percent of the drugs and pharmaceuticals is from Gujarat. The State’s exports stand at 14 percent of India’s total exports, exhibiting a strong global orientation of the industrial structure.

In the last five years, Gujarat has attracted highest investment among all states in India and is worth INR 1,82,998 crore. The fixed capital investment of the State stands at USD 18 billion, accounting for 18 percent of the fixed investment of India. This impressive investment focus has been a prime driver for Gujarat to generate and sustain accelerated economic growth. Further, the State has five of the country’s top post-graduate institutes and is becoming a key educational hub. The State plans to raise investments around INR 510 crore for education and make Gujarat a prime destination for higher education in India. All of this and much more is being attempted at policy level, and both investors and industry players have provided impressive support to these policies.

In management education though, Gujarat has very limited things to showcase if central autonomous institutes like IIM Ahmedabad and IRMA are not presented in the list. But, it has a good sample to study the management education challenges and what is happening in the field of management education.

It has all types of stated institutions like UGC Univ B schools, Fully Autonomous, Self-Financed AICTE, Private uni. Programs, Private Institutes and also International degree programs. A long history of established institutes.
Today, nearly 13000 students are passing out every year and are being recruited across the country and abroad.

There are approx. 145 B schools offering MBA and Equivalent courses and has a faculty pool of nearly 1200 Management teaching professionals.

Due to limitations of funds, geographic spread, high number of B schools and the limitation’s as an individual researcher like time, capacity, reach etc. The study is limited to B school of Gujarat state. But the study variables, design and sample are designed to enable the study to be generalizable to pan India B schools.

Based on the review of literature which was done using research publications from top international and national journals, editorials from business magazines, books and articles in media, a list of gaps, needs and under investigated areas were discovered. The following are the key areas of key gaps that need further investigation and are converted into statements of problems and further translated in the form of objectives of the study and Hypothesis to be tested.

The factors like ‘sample population ’ and the ‘characteristics of the respondents’ will determine the demographic data that may be required to be collected.

The research design to be used to explore the entire area of “managerial competencies and the Management education situation in the state of Gujarat has been drawn below also:
3.4 Research Hypothesis

Three issues relating to the broad area of management competencies and management education are under investigation in this study.

The first relates to the Faculty understanding of managerial competencies needed in managerial role i.e.; Managerial role requirements

**Hypothesis 1** There is significant difference between industry expectation and perception of management teachers on needed key managerial competencies.

\[ H_0 : \text{There is no significant difference between the average score for perception towards managerial competencies of corporate and managers respectively} \]

\[ H_1 : \text{There is significant difference between the average score for perception towards managerial competencies of corporate and managers respectively} \]

The second relates to the management competencies that are being given significant inclusion in the curriculum which is being taught to the students which are more linked to behavioral and knowledge part of competencies’ development.

**Hypothesis 2** There is significant difference between industry expectation of and course curriculum inclusion on needed managerial competencies.

**Hypothesis 3** There is significant difference between industry expectation and overall academic emphasis on needed managerial competencies.

\[ H_0 : \text{There is no significant difference between the average score for perception towards managerial competencies of corporate and academic emphasis respectively.} \]

\[ H_1 : \text{There is significant difference between the average score for perception towards managerial competencies of corporate and academic emphasis respectively.} \]
3.5 Research Design

Figure 8. Research Design Pictorial map

- Literature review based 'managerial competencies model' identification
- Deriving Indian Managerial competencies expectations - Corporate Managers survey of Importance & frequency of use
- Faculty Survey on their perception of managerial role needed competencies-importance wise
- Multistep classification of 'course inclusions' in the curriculum
- Faculty survey of emphasis on work style of students
- Faculty survey of use of pedagogical tools while teaching
- Hypothesis Testing 1 Difference between Manager expectation and faculty perception of Importance
- Hypothesis 2 Difference between required MBA curricula and corporate expected behavioural and knowledge competencies
- Hypothesis testing 3 Results of two H1 and H2 and difference on corporate expected workstyle competencies and emphasis by management teachers in their teaching
Figure 9. Hypothesis 1 Steps

Hypothesis 1

- Literature based competency model identification
- Survey of Indian Managers' expectations
- Survey of Management teachers' opinion

Figure 10. Hypothesis 2 Steps

Hypothesis 2

- Survey of Indian Managers
- Results of 'Behavioural and knowledge' competencies
- Analysis of courses included in the curriculum
- Results
Figure 11. Hypothesis 3 Steps

- Results of the Hypothesis 1
- Result of Hypothesis 2
- Faculty pedagogical and work style emphasis
A review of the literature identified a wide array of management competencies considered essential for effective management both from an industry and a theoretical perspective. However, for the purpose of this research the Corporate Recruiters Survey GMAC (2007) reported a total of 18 competencies which are mix of behavioural, knowledge, skill and work style competencies which are key to performance of managerial role successfully.

Table 9 Managerial Competencies Model Of Dierdorff, Erich C., & Rubin, Robert S

<table>
<thead>
<tr>
<th>Behavioral competencies</th>
<th>Knowledge competencies</th>
<th>Skill Competencies</th>
<th>Foundational Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing Strategy &amp; Innovation</td>
<td>Knowledge of Technology, Design, &amp; Production</td>
<td>Interpersonal Skills</td>
<td>Work-style Competencies</td>
</tr>
<tr>
<td>Managing Human Capital</td>
<td>Knowledge of Human Behaviour &amp;</td>
<td>Operations Skills</td>
<td>Learning, Motivation, &amp; Leadership</td>
</tr>
<tr>
<td>Managing Tools &amp; Technology</td>
<td>Knowledge of Media Communications &amp; Delivery</td>
<td>Strategic &amp; Systems Skills</td>
<td>Interpersonal Orientation</td>
</tr>
<tr>
<td>Managing Decision-making</td>
<td></td>
<td>Foundational Skills</td>
<td>Conscientiousness</td>
</tr>
<tr>
<td>Managing Administrative Activities</td>
<td></td>
<td></td>
<td>Generative Thinking</td>
</tr>
<tr>
<td>Managing the Task Environment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


This model forms for the base for the development of questionnaire and has been used throughout the study for the mapping of Indian manager’s opinion, Faculty opinion. Assessment of curriculum and all major other steps.
3.6 Sample

The research was majorly segregated on three parts and three Primary data sets were collected:

1. Corporate managers Data (Competencies Significance, Competencies frequency of use)

2. Management Faculty Data (Competencies Survey, Pedagogy Survey, Work behavior Survey)

3. Curriculum Data (MBA, PGDM, PGPM etc.)

1. Corporate managers’ Survey- On the simple random sampling basis responses were recorded for 355 corporate managers comprising of a rich mix of demographic factors, representing the managerial class of the nation.

2. Management teachers’ Survey - Simple random sample, responses of 122 MBA teachers/professors, from different B schools of Gujarat were recorded.

3. Curriculum Survey – All the 28 different curriculums being used in Gujarat based B schools for MBA & Equivalent programs were collected and a classification of subjects was done to competency categories using an expert panel. A total of 625 subjects were classified and recorded
3.7 Data collection (Tools & method)

The survey was designed and created online, hosted on a server and a web link of the domain was posted using Email of ‘invitation letter’, LinkedIn invitations, Facebook, SMS link invitations, WhatsApp invitations, -- [www.competencies-research.org](http://www.competencies-research.org)

Three different questionnaires have been developed namely

1. Corporate Managers’ Survey (Managerial competencies)
2. Management Teachers’ Survey (3 parts)
   - On Managerial Competencies
   - On Teaching Style Preference
   - On Work Style Preference

*Attached in list of appendix*

Using the Dierdorff, Rubin 2006 managerial competency model the questionnaires were designed.

Emailing of questionnaire link to the respondent with a forwarding letter indicating the purpose of research and requesting support were sent to managers and management teachers.

Key features of the online questionnaire tool:

- It is convenient for the respondent to participate whenever they have time.
- It is easy to use as it offers a very swift browsing, as the questionnaire uses dropdown menus to select options quickly.
- The site has requisite material to understand the concept and definitions.
- The email can be further sent by the respondents to other corporate managers to invite a list of other respondents.
- An inducement in the form of free e-books and other interesting reading material to download from the site has been kept to encourage respondents.
The site has instant query mail box for clarification and support.

A unique method to collect data in a backend excel sheet is available to reduce error of data entry.

Each statement was rephrased to reflect managers’ experience and expectations of managerial competencies required for high performance on managerial role. However, the same meaning was retained for each statement.

**Managerial Survey Scales**

As all the competencies enlisted are already stated as the most important managerial competencies, the distance between competencies ratings are going to be difficult to determine so a Likert scale of importance 1-7 has been used.

Table 10. Likert Scale Of Importance

<table>
<thead>
<tr>
<th>Level of Importance</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Of major importance (essential)</td>
<td>7</td>
</tr>
<tr>
<td>Very important</td>
<td>6</td>
</tr>
<tr>
<td>Important (Desired)</td>
<td>5</td>
</tr>
<tr>
<td>Neutral</td>
<td>4</td>
</tr>
<tr>
<td>Of some importance</td>
<td>3</td>
</tr>
<tr>
<td>Of little importance</td>
<td>2</td>
</tr>
<tr>
<td>Unimportant</td>
<td>1</td>
</tr>
</tbody>
</table>


At the same time, to understand the use of a particular competencies, in the managerial work and role performance, ‘frequency of use’ is also being measured.

Using a Likert 1-5

Table 11. Likert Scale Of Frequency of Use

<table>
<thead>
<tr>
<th>Frequency of Use</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every time</td>
<td>5</td>
</tr>
<tr>
<td>Almost every time</td>
<td>4</td>
</tr>
<tr>
<td>Occasionally/Sometimes</td>
<td>3</td>
</tr>
<tr>
<td>Almost never</td>
<td>2</td>
</tr>
<tr>
<td>Never</td>
<td>1</td>
</tr>
</tbody>
</table>

Faculty Survey (3 Parts)

The faculty survey is divided into three parts and has questions and scales created to collect data providing key information and classifications.

Part 1- As all the competencies enlisted are already stated as the most important managerial competencies, the gap of which ones are the most important is going to be different so each of these statements is rated on a Likert scale of importance 1-7 has been used.

**Level of Importance**

Table 12. Likert Scale Of Importance

<table>
<thead>
<tr>
<th>Level of Importance (essential)</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very important</td>
<td>6</td>
</tr>
<tr>
<td>Important (Desired)</td>
<td>5</td>
</tr>
<tr>
<td>Neutral</td>
<td>4</td>
</tr>
<tr>
<td>Of some importance</td>
<td>3</td>
</tr>
<tr>
<td>Of little importance</td>
<td>2</td>
</tr>
<tr>
<td>Unimportant</td>
<td>1</td>
</tr>
</tbody>
</table>

Part 2 - Using a Likert-type ranking scale in order of usage of a particular teaching tool increasing usage to less usage

Table 13. Likert Scale Of Frequency of Usage

<table>
<thead>
<tr>
<th>Frequency of Usage</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every time</td>
<td>7</td>
</tr>
<tr>
<td>Usually</td>
<td>6</td>
</tr>
<tr>
<td>Frequently</td>
<td>5</td>
</tr>
<tr>
<td>Sometimes</td>
<td>4</td>
</tr>
<tr>
<td>Occasionally</td>
<td>3</td>
</tr>
<tr>
<td>Rarely</td>
<td>2</td>
</tr>
<tr>
<td>Never</td>
<td>1</td>
</tr>
</tbody>
</table>

This scale is being used to provide respondents with a flexibility to discriminate between the teaching process used for different teaching and evaluation assignments being used by them.
Part 3- The data will be collected applying a non-comparative scaling, using a Likert-type scale in order of increasing emphasis where:

Table 14. Likert Scale Of Priority

<table>
<thead>
<tr>
<th>Priority</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential</td>
<td>5</td>
</tr>
<tr>
<td>High priority</td>
<td>4</td>
</tr>
<tr>
<td>Medium priority</td>
<td>3</td>
</tr>
<tr>
<td>Low priority</td>
<td>2</td>
</tr>
<tr>
<td>Not a priority</td>
<td>1</td>
</tr>
</tbody>
</table>

This scale is being used to provide respondents with a greater flexibility to discriminate between the importance of the different work style attributes.
Curriculum Mapping:
Data regarding the required academic curriculum of the various B-schools was collected from the website of the respective B-schools. All the different type of B schools operating in the state of Gujarat were part of this data collection.

Measures

Only those B-Schools providing a Two-Year Full Time MBA (or its equivalent) Course were considered. Those B-schools which did not provide sufficient information about their MBA curricula on their website were not included in the study. In addition, only ‘Required Core-Courses’ in the First Year of Study were studied. It might be noted that the required core-courses are those courses which are covered in the first year of study and are introductory in nature covering many different fields (Segev, Raveh, &Farjoun, 1999).

To generate a list of core-courses, the websites of the business schools were visited and information related to the courses was retrieved. A total of 625 core courses were identified. The next task was to classify each course as belonging to one of the competency Category identified (MDP, MHC, etc.) in Dierdorff et al. (2009).

An expert committee of three academicians was formed and they were free to mark the courses as falling under each competency category or mark it as ‘unclassified’ category in case the courses did not fall in any of the categories identified by Dierdorff et al. (2009).
Table 15. Classification Model Adapted From Rubin AndDierdorff (2009)

<table>
<thead>
<tr>
<th>Competency Category</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing Decision-Making Processes</td>
<td>Managerial Decision Analysis; Decision Models; Applied Statistical Analysis; Managerial Statistics; Quantitative Methods</td>
</tr>
<tr>
<td>Managing Human Capital</td>
<td>Organizational Behavior; Human Resource Management; Leadership Dynamics; Organizational Theory; Negotiation; Managerial Effectiveness</td>
</tr>
<tr>
<td>Managing Strategy &amp; Innovation</td>
<td>Strategic Planning; Strategy Implementation; Strategic Analysis; Competitive and Corporate Strategy</td>
</tr>
</tbody>
</table>

3.8 **Place of work**

The place of work has been Ahmedabad city where I used all the database resources like EBSCO, Emerald, DOAJ, IIM-A Library, IBS A library, Google search and many such resources to build suitable review of literature and also data collection for primary data for my empirical work.
3.9 Data Analysis Method And Tools

For data recording, analysis, report development, presentation and for the generation of results the researcher used different resources like: MS Excel 2007, IBM SPSS statistics 20, MS Word 2007, MS PowerPoint, online calculators etc.

The data for the research is unpaired and parametric. There is no control group but independent group of 2 samples. Variances of both the samples were unequal and known hence, a parametric test like ‘t test’ is used for testing the significance of the difference between the two samples.

The use of Two tailed test is appropriate here as we have to compare the means of both the samples with reference to significance level. The level of significance at which the hypothesis is tested is 0.05 as it is more reliable and we want to test the difference at a high level i.e. alpha value has been set at 0.05. The decision to use .05 as the threshold in testing the null hypothesis is completely arbitrary. The researchers credited with establishing this threshold warned against strictly adhering to it when appraising a study in which the test statistic is greater than .05.

The researcher will have to consider other important measurements, including effect size, confidence intervals, and power analyses when deciding whether to accept or reject scientific findings that could influence research practice.

The $P$ value is the probability that the results of a study are caused by chance alone. In every study, researchers put forth two kinds of hypotheses: the research or alternative hypothesis and the null hypothesis. The research hypothesis reflects what the researchers hope to show—that there is a difference between both the groups. The null hypothesis directly competes with the research hypothesis. It states that there is no difference between both the groups.

After formulating the null and research hypotheses, researchers have decided on to a test statistic that has been to determine whether to accept or reject the null hypothesis. The
fixed level $P$ value has been set at .05 and serves as the value against which the test-generated $P$ value must be compared.

A comparison of the two $P$ values determines whether the null hypothesis is rejected or accepted. If the $P$ value associated with the test statistic is less than the fixed-level $P$ value, the null hypothesis is rejected because there’s a statistically significant difference between the two groups. If the $P$ value associated with the test statistic is greater than the fixed-level $P$ value, the null hypothesis is accepted because there’s no statistically significant difference between the groups.