CHAPTER 4
RESEARCH METHODOLOGY

4.1 INTRODUCTION

Research can be defined as the search for knowledge through objective and systematic method of finding solution of a problem. It is a scientific and systematic search for relevant information on a particular topic. Research methodology is a way to solve research problem systematically. Research methodology is science of studying how research is done in scientific manner.

This chapter put in front the research methodology followed by researcher for the present study. It makes clear the research objectives and methodology to achieve those objectives. More specifically this section focus upon research method, type of data, sources of data, selection of the sample, tools used for the study, hypotheses of the study, significance of the study and type of data analysis.

4.2 PROBLEM STATEMENT

After food and clothing, shelter is on priority list for human being and cement is a key ingredient to meet requirement of shelter. Subsequent to China, India is the second largest producer of cement. Talking about industrial products manufactured in the world, cement stands on second rank in terms of volume. Along with growth it is equally important for cement companies to take care of society as cement production release hazardous chemical and carbon dioxide. It even uses nonrenewable resources in production process. As cement industry is leaving such environment footprints, cement companies need to follow healthy practices and ensure sustainability through parting handsome fund for CSR resources.

Corporate Social Responsibility (CSR) is the best way of assessing impact of an organization on society at large and evaluating responsibilities of business. By making amendment to the Companies Act and blending voluntary CSR with mandatory one, India become first country in the world having mandatory CSR practices by companies of certain size.
As per the Act companies falling under criteria have to spend their profit in areas like education, healthcare, poverty, hunger and gender equality etc. as specified in the CSR rules. Again as reported in the Times of India dated 11th February 2018, Companies have spent more than Rs. 28000 crore towards social welfare activities in nearly three years of CSR rules coming in to effect.

Moreover, amendment made in 2017 in the Act says eligibility criteria afterwards will be based on financials of ‘immediately preceding financial year’ instead of ‘last three preceding financial years’. As reported by ‘India CSR Network’ CSR spending reaches meaningful amounts, there is a need to improve the quality and impact of all amount spend on the ground.

All above facts about cement industry as well as growing importance on CSR has induced researcher to undertake this research study. By considering all above points the research problem entitled ‘AN IN-DEPTH STUDY ON CORPORATE SOCIAL RESPONSIBILITY OF SELECTED CEMENT UNITS IN GUJARAT’ has been selected by the researcher.

4.3 NEED OF THE STUDY

In past few years remarkable changes have taken pace. The Enforcement of companies Act, 2013 and the CSR rules (section 135 of the Act) direct that companies having net worth of Rs 500 crore, a revenue of Rs 1,000 crore or a net profit of Rs 5 crore have to mandatorily spend 2 per cent of their average profit as CSR and social development programme like providing education, health care and women empowerment. Eyeballing on CSR spend data shows upward trend and both disclosure and actual CSR spending have increased over past four years.

As per data published by Ministry of Corporate Affairs (MCA) in the year 2014-15 CSR spending by 7334 companies was Rs. 8803 crore, while in 2015-16 Rs.9982 was spend by 5097 companies.

According to KPMG ‘India’s CSR reporting survey 2017’ CSR spent by top 100 listed enterprises have shown rising trend since 2014-15. For year 2014-15 CSR spent was Rs. 5114.5 which gradually rise to Rs.6518.0 and Rs.7215.9 in the year 2015-16 and 2016-17 respectively. All this data itself validate growing interest on CSR by industrialist as well as academicians.
Further, the Paris accord of 2016 required countries to develop sustainable business practices which focus on reduce the impact of climate change, waste and water management. Going forward, in 2017 United Nations set out a programme called sustainable development goals (SDGs). All these developments, including the landmark Act of making CSR mandatory, have many common things out of which the important one is engagement of business in development of nation. Companies can map their CSR activities and projects with sustainable development goals (SDGs). Considering the above, one can say that it is an opportune time to evaluate CSR journey of Indian Companies and undertake research on CSR practices.

Cement is considered as the glue that holds construction and infrastructure sector. Growth of both this sector directly depends upon growth of cement industry. India is well-known as home to the world’s second largest cement industry in the world with almost 500 million tonnes installed capacity. Indian cement industry accounts for more than 8% of global installed capacity. Though Indian cement companies are among the world’s greenest cement manufacturer and growing its global footprint by adopting next generation technologies to enhance its productivity, it is equally important to commit efforts to reduce greenhouse gases impact and mitigate the issue of climate change.

To make an overall study that to what extent cement units of Gujarat are doing CSR practices and what are the focus areas for their spending, there is a need to study CSR practices of cement units in depth. This research work in humble attempt by researcher to explore facts and evaluate CSR practices by cement units of Gujarat.

4.4 NATURE OF RESEARCH

The study is ANALYTICAL in nature and aims to analyze CSR practices by selected cement units of Gujarat state.

4.5 OBJECTIVES OF THE STUDY

The objectives of a study offer a definite and proper path for any research activity. To make the present study more systematic following objectives are designed by the researcher:
1) To study conceptual framework of corporate social responsibility (CSR).
2) To examine CSR practices by cement companies of Gujarat.
3) To analyze CSR spending pre (before) and post (after) amendment of Companies Act 2013 by selected cement units of Gujarat.
4) To highlight various CSR activities carried out by cement units of Gujarat during the study period.
5) To explore sector/area wise CSR spending by cement companies of Gujarat.
6) To examine relationship between CSR spending and profitability of the selected cement units of Gujarat.
7) To study impact of CSR spending by the firm on its financial performance parameters.

4.6 HYPOTHESES FOR THE STUDY

Following are the null hypotheses employed for the present study:

H₀₁: There is no significant difference in average CSR spending among selected cement units of Gujarat.
H₀₂: There is no significant difference among average ROE, ROCE, ROA and CSR spent of selected cement units of Gujarat.
H₀₃: There is no significant difference in the CSR spending by selected cement units of Gujarat during the study period.
H₀₄: There is no significant difference among EPS, DPS, net sale, net profit, enterprise value and CSR spent during study period.
H₀₅: There is no significant difference between the budgeted CSR and the actual CSR spending by the selected cement units of Gujarat.
H₀₆: There is no significant difference in CSR spending pre (before) and post (after) amendments of the Companies Act 2013 by the selected cement units of Gujarat.
H₀₇: There is no significant relationship between the CSR spending and the financial performance and profitability of the selected cement units of Gujarat.
H₀₈: There is no significant relationship between EPS and all the selected variables of selected cement units of Gujarat.
H₀₉: There is no significant linear correlation between DPS and ROE, ROCE, ROA and CSR spent of selected cement units of Gujarat.
$H_0C$: There is no significant linear correlation between ROE and DPS, net sales and enterprise value of selected cement units of Gujarat.

$H_0D$: There is no significant linear correlation between ROCE and DPS, net sales and enterprise value of selected cement units of Gujarat.

$H_0E$: There is no significant linear correlation between ROA and DPS, net sales and enterprise value of selected cement units of Gujarat.

$H_0F$: There is no significant linear correlation between net sales and ROE, ROCE, ROA and CSR spent of selected cement units of Gujarat.

$H_0G$: There is no significant linear correlation between net profit and CSR spent of selected cement units of Gujarat.

$H_0H$: There is no significant linear correlation between enterprise value and ROE, ROCE, ROA and CSR spent of selected cement units of Gujarat.

$H_0I$: There is no significant linear correlation between CSR spent and EPS, DPS, net sales, net profit and enterprise value of selected cement units of Gujarat.

$H_0J$: There is no significant linear correlation between CSR spent and all the selected variables of ACL.

$H_0K$: There is no significant linear correlation between CSR spent and ROE, ROCE and enterprise value of JAL.

$H_0L$: There is no significant linear correlation between CSR spent and selected variables of JKCL.

$H_0M$: There is no significant linear correlation between CSR spent and EPS, ROE, ROA, net profit and enterprise value of SIL.

$H_0N$: There is no significant linear correlation between CSR spent and selected variables of SDCL.

$H_0O$: There is no significant linear correlation between CSR spent and all selected variables of TCL.

$H_0P$: There is no significant linear correlation between CSR spent and all selected variables of UCL.

- **Regression Line**

Regression analysis has been performed to study impact of CSR spending by the firm on its financial performance parameters.
- **Regression Line of CSR Spent** = \( a_1 (30.154) + \beta_1 (\text{EPS}) + \beta_2 (\text{DPS}) + \beta_3 (\text{ROE}) + \beta_4 (\text{ROCE}) + \beta_5 (\text{ROA}) + \beta_6 (\text{Net Sales}) + \beta_7 (\text{Net Profit}) + \beta_8 (\text{EV}) \) is significantly fitted.

- **Regression Line of CSR Spent** = \( a_1 (-1.168) + \beta_1 (\text{NP}) + \beta_2 (\text{ROCE}) + \beta_3 (\text{Net Sales}) + \beta_4 (\text{EPS}) + \beta_5 (\text{ROE}) + \beta_6 (\text{ROA}) \) is significantly fitted.

- **Regression Line of CSR Spent** = \( a_1 (-1.283) + \beta_1 (\text{NP}) + \beta_2 (\text{ROE}) + \beta_3 (\text{DPS}) + \beta_4 (\text{Net Sales}) + \beta_5 (\text{EPS}) \) is significantly fitted.

- **Regression Line of CSR Spent** = \( a_1 (-.946) + \beta_1 (\text{NP}) + \beta_2 (\text{DPS}) + \beta_3 (\text{Net Sales}) + \beta_4 (\text{EPS}) \) is significantly fitted.

- **Regression Line of EV** = \( a_1 (-2622.679) + \beta_1 (\text{NP}) + \beta_2 (\text{Net Sales}) + \beta_3 (\text{DPS}) + \beta_4 (\text{EPS}) \) is significantly fitted.

- **Regression Line of EV** = \( a_1 (-2622.679) + \beta_1 (\text{CSR Spent}) \) is significantly fitted.

- **Regression Line of EV** = \( a_1 (-724.941) + \beta_1 (\text{NP}) + \beta_2 (\text{CSR Spent}) \) is significantly fitted.

- **Regression Line of EV** = \( a_1 (-724.941) + \beta_1 (\text{CSR Spent}) + \beta_2 (\text{CSR Prescribed}) \) is significantly fitted.

### 4.7 PERIOD OF THE STUDY

Present study is undertaken for the period of five year commencing from 2012-13 to 2016-17.

### 4.8 TOOLS FOR THE STUDY

- **Statistical Tools**: As per the requirement of the study statistical tools have been used by the researcher. The data collected from annual reports and websites of selected cement units were tabulated and analyzed with the help of different statistical tools. Various statistical tests have been employed using SPSS such as correlation, regression, ANOVA, t-test etc. To evaluate CSR items simple average and percentage has also been used.

- **Presentation Tools**: To highlight CSR practices and area wise/sector wise CSR spending by selected cement units various presentation tools like charts, graphs and tables have been used.
Content analysis: As stated by (Gray et al., 1995) content analysis has been widely used in corporate social and environmental responsibility research work. As per (Holsti, 1969) content analysis is a “technique for making inferences by objectively and systematically identifying specified characteristics of messages”. Companies are putting more efforts to disclose even minute information in annual report.

After mandatory CSR provision Indian companies have started reporting CSR activities in their annual reports. With this rising trend it is very important to perform content analysis of key CSR practices reported through annual reports and websites of selected units. To examine CSR practices of selected cement units content analysis has been used.

4.9 RESEARCH VARIABLES

The main variable used in the study is CSR spent by selected cement units during the period of the study. Along with actual CSR spent, prescribed CSR as per CSR rules (2014) also examined. To measure impact of CSR activities and spending on financial performance and profitability below mentioned variables have been used.

- Return on Assets (ROA)
- Return on Equity (ROE)
- Return on Capital Employed (ROCE)
- Dividend per Share (DPS)
- Earnings per Share (EPS)
- Net Sales (NS)
- Net Profit (NP)
- Enterprise Value (EV)

4.10 SAMPLING DESIGN

4.10.1 Population

The study focus on CSR practices by cement units of Gujarat. The population for the presented research on cement units has been all cement units located at Gujarat state.
4.10.2 Sample

This study includes examination of CSR practices by nine cement units located at Gujarat state. Throughout the study cement units means cement plants operating in Gujarat state. From of the record of department of Industrial Policy and Promotion, Government of India (http://eaindustry.nic.in/cement) following nine cement units functioning in Gujarat state have been selected as sample for the study.

1) Ambuja Cements Ltd
2) Gujarat Sidhee Cement Ltd
3) Jaiprakash Associates Ltd (Jaypee Cement)
4) JK Lakshmi Cement Ltd
5) Sanghi Industries Ltd
6) Saurashtra Cement Ltd
7) Shree Digvijay Cement Co Ltd
8) Tata Chemicals Ltd
9) UltraTech Cement Ltd

4.10.3 Sampling Method

The samples for the study have been selected using PURPOSE Sampling in which the items for the sample are deliberately selected by the researcher. Here, researcher has purposively selected cement units of Gujarat as sample for the study. The rationale behind selecting cement units as sample is lack of much research work in the area.

4.11 SOURCES OF DATA

The study is based on secondary data. The information related to corporate social responsibility practices by cement units of Gujarat have been derived from following sources:

- Annual reports of selected cement units
- Business responsibility reports and CSR reports of selected cement units
- Books, Journals and magazine
- Research publications
- Websites
- Reports of surveys undertaken by private institutions
- CSR report by various organization like KPMG, NGOBOX, CSRBOX, Karma Yoga
- Blogs on CSR

As, financial data of major units was mentioned in different units of measurement like thousand, lakh, crore it was converted for standardization into crore for all the units. Thus, a comparable approach can be used for analysis.

4.12 SIGNIFICANCE OF THE STUDY

The present study would be useful to many users and it is significant from various viewpoints. The study would throw the light on the fact that what cement manufacturing units in Gujarat are doing as a part of social responsibility.

It would be helpful to internal users like employees as well as management to understand what their enterprises are doing for betterment of society as well as where they are compare to other cement units. It can be useful to external users like government, tax authority, customers, suppliers as well as bank authority.

The present study also shows what the cement industry is doing for practicing corporate social responsibility. It also helps the cement companies to move further in the direction for practicing best CSR.

Till date most of the studies were undertaken on CSR disclosure instead of CSR expenditure. This study focuses on CSR expenditure as well as its impact on variables indicating financial performance. It also attempts to access the mandatory effect of CSR policies and rules under Companies Act 2013 on selected cement units by comparing CSR practices before and after amended Law of 2013.

Further, this research work enriches the contents of the related subject. The study would surely lay an important brick in the build of the subject.

4.13 COMPOSITION OF THESIS

The present study is divided into six chapters and the content of these six chapters are organized as below:
Chapter 1: Conceptual Framework of Corporate Social Responsibility

This chapter explains theoretical aspects of CSR like meaning of CSR, CSR Models, principles of CSR, arguments in favor and against of CSR, provision of section 135 of Companies Act, 2013 related to mandatory CSR, CSR in cement industry, various codes and guidelines as well as CSR in India.

Chapter 2: Review of Literature

This chapter presents reviews of existing literature on CSR practices by Indian companies as well as foreign companies and showing the research gap. More specifically, this chapter includes review of various conceptual studies on CSR, studies showing impact of CSR on financial performance, CSR practices after Companies Act, 2013 etc.

Chapter 3: Growth and Prospects of Cement Industry in Gujarat

This chapter contains history of cement industry, growth of cement industry, cement production and consumption during last five years, export of cement from India and import of cement to India, cement plants in Gujarat state, profile of selected cement units, problems faced by cement industry in Gujarat and further prospect of cement industry.

Chapter 4: Research Methodology

These chapters dwells on research design, need of the study, objectives of the study, scope of the study, hypotheses of the study, sampling design, type of data and sources of data collection, significance and limitation of Study.

Chapter 5: Data Analysis and Interpretation

As mentioned earlier, the study analyzed CSR practices by cement units of Gujarat. In this chapter data have been analyzed by using statistical test like ANOVA, t-test, Pearson’s correlation as well as regression analysis. Presentation tools like tables and graphs have been used wherever required. In nut shell, this chapter is exclusively devoted to analysis of data and interpretation of results thereof.

Chapter 6: Major Findings, Recommendations and Conclusion

In this chapter an attempt has been made to present major findings of the study and derive conclusion based on the analysis carried out and points out the
deviations. Based upon the analysis CSR spending by selected cement companies of Gujarat various recommendations are proposed for cement companies in particular and cement industry in general.

4.14 LIMITATIONS OF THE STUDY

1) Geographical scope of the study is limited to cement units of Gujarat state only.
2) The study is based on secondary data collected from annual reports as well as websites of selected cement units of Gujarat.
3) The time period of the study is limited to five years only.
4) This is an analytical study which provides the explanation as understood by the researcher only. Since the thinking, ideas and interpretation varies from person to person and also from area to area, this research can be interpreted in many other ways than can be different from interpretation and inferences drawn by researcher.
5) Sample size of the study is small and sample of the study has been selected using purposive sampling which has its own limitations and it automatically applies to this study.

4.15 CONCLUSION

Present chapter on research methodology highlighted step by step process which has described the entire procedure of what, why, which, when and how the research study has been conducted. An overview about the research problem, research objectives, research design, type of data, sources of data collection, sample design and data analysis plan helped to understand the methodology adopted for the research study. The data collected with the help of secondary sources have been tabulated and analyzed with the help of statistical tools and presentation tools. The next chapter discusses growth and prospects of cement units of Gujarat.