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INFRASTRUCTURE DEVELOPMENT AND CEMENT INDUSTRY IN HIMACHAL PRADESH

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ABSTRACT

Infrastructure development provides the foundation for capital formation in any economy. Cement industry is one of the core sector industries in India, which weights 5.37 per cent in IIP (Base: 2011-12=100) and also considered an important driver of economic development. India ranked second after China in production of cement. Production of cement in India has increased with a compound annual growth rate of 3.06 per cent during last 4 years. Himachal Pradesh is a hilly State and cement industry of Himachal Pradesh provides cement for housing and construction sector. The objective of the paper is to study the impact of cement industry on infrastructure development of Himachal Pradesh w.r.t. demographic, economic and social factors of the sample population with and outside the cement plants of the state. The research methodology is based on both primary and secondary sources of data, the analysis and interpretation is consisted of percentage, mean, standard deviation and chi-square test. The summary, conclusion and suggestions are highlighted on the basis of factors that are dependent, associated and significant and are detrimental in the present study.

KEYWORDS

infrastructure development, cement industry, demographic, economic and social variables, dependent factors.

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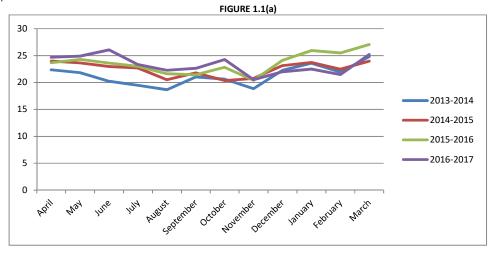
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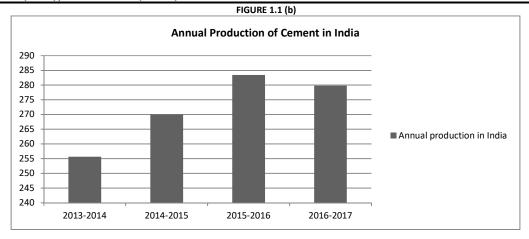
The Indian cement industry is the second largest market after China. Though lot many cement brands are available but still cement is largely considered as commodity. This industry is freight intensive and so the priority of each company is to sell it at the nearby areas only as long distance transportation generally makes it non-economical. This makes it regional dominant industry and broadly Indian cement market is divided into five regions namely east, west, north, south and central. Among these, the south zone has the largest installed capacity, which accounts for almost one third of total capacity. As far as overall demand and capacity is concerned, the capacity in India was always more than the demand and during sluggish period, it gives a lot of pressure to margins of cement companies. Table 1.1 shows the monthly production of cement in India from the year 2013-14 to 2016-17. Figure 1.1 shows that production of cement was highest during the year 2015-16 as compared to rest of the years.

2016-17 2013-14 2014-15 2015-16 Month For Month Cum For Month Cum For Month Cum For Month Cum April 22.35 22.35 23.98 23.98 23.66 23.66 24.69 24.69 47.64 47.95 May 21.82 44.17 23.65 24.29 24.89 49.58 June 20.24 64.41 22.96 70.60 23.62 71.57 26.06 75.64 19.48 83.89 22.70 93.30 23.01 94.58 23.33 98.97 July August 18.66 102.55 20.51 113.81 21.62 116.20 22.28 121.26 September 21.03 123.58 21.80 135.61 21.44 137.64 22.63 143.88 October 20.61 144.19 20.36 155.97 22.84 160.47 24.26 168.15 18.86 163.05 20.76 176.72 20.41 180.88 20.52 188.66 November December 22.28 185.33 23.15 199.87 24.11 204.99 22.00 210.66 23.58 208.91 23.74 223.61 25.93 230.91 22.49 233.15 January 25.49 21.94 230.85 22.46 246.07 256.41 21.45 254.61 February March 24.80 255.65 23.97 270.04 27.05 283.46 25.21 279.81 CAGR 3.06 per cent

Table 1.1: Cement Production in India (In million tons)

The total production of cement is increased to 279.81 million tons during 2016-17 as compared to 255.65 million tons during 2013-14 showing a compound annual growth rate of 3.06 per cent.





REVIEW OF LITERATURE

Lola (2010) recommended that a centrally coordinated, internally consistent and a holistic approach and a linkage between the various sectors of the economy towards the development of infrastructure services is important to the development of manufacturing sector. Bhattacharyajea and De (2012) concluded that the combination of successive increases in cement prices was only due to decreasing capacity utilization and increasing capacity installation by big players for the purpose of fixing of price and limiting the supply of cement. Gopi (2015) evaluated the financial performance of three cement companies viz. ACC, Gujarat Ambuja and UltraTech Cement with the help of DuPont approach and concluded that all three leading cement companies declined drastically during 2006-2015. Bediako et al. (2016) concluded that the green cement had a delayed setting time than Portland cement. The application of chemical mixture was necessary to improve the flow properties of the green cement. Anantharaman (2017) in a study on energy audit in cement industry identified the possibility of saving thermal energy upto 1000 kJ per kg of clinker by controlling the air infiltrate, reducing the size of fans and drives etc. for better energy conservation in cement industry and emphasized to conduct periodical energy audit to measure the efficiency.

NEED AND SCOPE OF THE STUDY

Cement is considered as one of the basic ingredient for infrastructure development. Cement industry in Himachal Pradesh is dominated by private sector and there is no comprehensive study found on the performance of cement industry in Himachal Pradesh. The present study is focused on three major cement producing companies in the state viz. ACC Limited, Jaypee Associate Ltd. (acquired by UltraTech), and Gujarat Ambuja Cement Ltd.

METHODOLOGY OF THE STUDY

The present study is based on both primary and secondary sources of data. A sample of 300 respondents has been selected on random basis from the sample population. Data is analyzed with the help of CAGR, percentage, mean, standard deviation, and chi-square test and the results have been presented in the form of figures, charts and diagrams. Summary, conclusion and suggestions have been given on the basis of analysis and interpretation of data with the help of SPSS software and MS Excel programme.

ANALYSIS AND INTERPRETATION OF DATA

Table 1.2 shows the income based classification of respondents. It shows that a large number of respondents earned Rs.1.5 lac to Rs.2.5 lac annually. It is evident from the table that 63.3 per cent of total respondents fall in this category.

TABLE 1.2: INCOME-WISE CLASSIFICATION OF THE RESPONDENTS

CLASSIFICATION	FREQUENCY	PERCENT
Below Rs. 50,000	22	7.3
Rs. 50,001 to 150,000	60	20
Rs. 1,50,001 to 2,50,000	190	63.3
above Rs. 2,50,000	28	9.3
Total	300	100

FIGURE 1.2

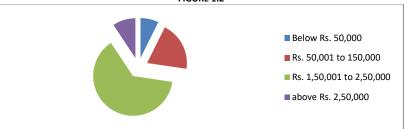


Table 1.3 shows the age-wise classification of the respondents. It is evident from figure 1.3 that 53.3 per cent of respondents are between 45-55 years' of age as compared to 1.3 per cent at the age of 55 years or above.

TABLE 1.3: AGE-WISE CLASSIFICATION OF THE RESPONDENTS

CLASSIFICATION	FREQUENCY	PERCENT
Below 35 years	34	11.3
35-45 years	102	34
45-55 years	160	53.3
Above 55 years	4	1.3
Total	300	100

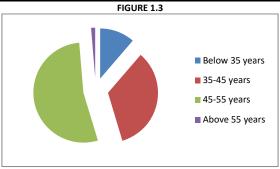


Table 1.4 represents the gender-based classification of the respondents under study and shows that 74 per cent of respondents are in male category as compared to 26 per cent of female.

TABLE 1.4: GENDER-WISE CLASSIFICATION OF THE RESPONDENTS

CLASSIFICATION	FREQUENCY	PERCENT
Male	222	74
Female	78	26
Total	300	100

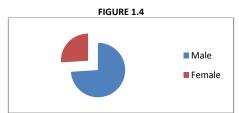


Table 1.5 shows the education-wise classification of respondents. It shows that the 51.3 per cent of respondents are up to matric and only 5.3 per cent are graduated or above.

TABLE 1.5: EDUCATION-WISE CLASSIFICATION OF THE RESPONDENTS

CLASSIFICATION	FREQUENCY	PERCENT
Illiterate	40	13.3
Up to Matric	154	51.3
10+2	90	30
Graduate & above	16	5.3
Total	300	100

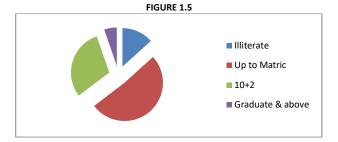


TABLE 1.6: NATURE OF RESPONSES ON DIFFERENT STATEMENTS ON THE BASIS OF INCOME-WISE CLASSIFICATION OF RESPONDENTS

Statement	SA	Α	N	D	SD	Total	Mean	S.D.	X ² Value	P Value
Modernization of Infrastructure	108	68	30	40	54	300	3.45	1.524	37.727	.000*
	(36)	(22.7)	(10)	(13.3)	(18)	(100)		1.324	31.121	.000
Housing Development Facilities	42	114	34	58	52	300	3.12	1.348	34.024	.001*
	(14)	(38)	(11.3)	(19.3)	(17.3)	(100)	3.12		34.024	.001
Construction of Parks & Picnic Spots	28	130	32	50	60	300	3.05	1 202	23.479	.024**
	(9.3)	(43.3)	(10.7)	(16.7)	(20)	(100)	3.05	1.302	23.479	.024
roviding Electricity & Water Supply Facility	38	126	28	46	62	300	2 11	1.379	42.854	.000*
	(12.7)	(42)	(9.3)	(15.3)	(20.7)	(100)	3.11	1.379	42.054	.000
Onening of Consumer Coads Shops	36	118	32	52	62	300	3.05	1.370	47.252	.000*
Opening of Consumer Goods Shops	(12)	(39.3)	(10.7)	(17.3)	(20.7)	(100)		1.370	47.232	.000
Providing Road Facilities	118	34	32	52	64	300	3.30	1.622	88.865	.000*
	(39.3)	(11.3)	(10.7)	(17.3)	(21.3)	(100)			00.005	.000
Cantuib uting towards Environment Duataction	35	112	36	57	60	300	3.02 1	1.355	19.336	.081***
Contributing towards Environment Protection	(11.7)	(37.3)	(12)	(19)	(20)	(100)		1.333	19.550	.001
elping Women Empowerment	31	108	30	58	73	300	2.89	1.391	9.589	.652***
	(10.3)	(36)	(10)	(19.3)	(24.3)	(100)		1.391	3.369	.032***
Drawiding Dahahilitation and Danattlement Facilities	35	112	30	50	73	300	2.95 1.409	1 400	17 570	.129***
oviding Rehabilitation and Resettlement Facilities	(11.7)	(37.3)	(10)	(16.7)	(24.3)	(100)		17.578	.129***	

Source: Primary Survey, *significant at 1% level, **significant at 5% level, ***insignificant, SA-Strongly Agree, A-Agree, N-Neutral, D-Disagree, SD-Strongly Disagree

Table 1.6 signifies the nature of responses of primary data on the basis of income-wise classification on different aspects related with infrastructure development in the state of Himachal Pradesh and shows that mean score is highest (i.e. 3.45) as compared to average mean score (i.e. 3) on the statement that cement industry in Himachal Pradesh contributing towards modernization of infrastructure and chi- square test also supports the result whereas the mean score is lowest (i.e. 2.89) as compared to average mean. This signifies that the cement industry is not contributing to empower women of the local area and the P-value of chi-square test is also insignificant at 5% level of significance which also supports the results.

SUMMARY, CONCLUSION AND SUGGESTION

On the basis of above analysis, it can be concluded that cement industry in Himachal Pradesh contributing significantly towards infrastructure development of the State in various ways like modernization of infrastructure, providing road facilities and constructing parks and picnic spots in nearby areas of plant. The study recommended emphasizing on contributing women empowerment and rehabilitation and resettlement facilities to the displaced people of mining-affected areas. Further, it is also suggested to take immediate steps to protect environment as a whole.

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