

## **IMPACT OF AN INDUSTRY IN THE DEVELOPMENT OF A RURAL AREA: A CASE STUDY OF FACOR IN ODISHA**

Lopamudra Behera\* and Mitali Chinara\*\*

### **Abstract**

Odisha being a mineral-rich State along with abundant labour force, industrialisation has a fair scope to generate industrial employment, income and economic growth. The current study aims to analyse the impact of FACOR, a Ferro-alloys company, established in one of the rural districts of Odisha. Industries have both backward and forward linkages; they not only create direct employment but are also capable of creating indirect and induced employment. The study has attempted to assess the employment generated by the company, both direct and induced. To study the employment elasticity, a regression analysis has been done, and CAGR has been calculated to know the growth rate. A field survey of the business establishments in the local market was conducted to look at the induced employment created. The study found that though the direct employment generated by the industry is not very satisfactory, it has provided livelihood to many households through induced employment. The study also found that FACOR has undertaken many CSR activities which are helpful to enhance the living standard of the locality.

**Keywords:** Odisha, Rural Development, CSR, FACOR.

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## Introduction

In a State with surplus labour force, abundant resources, generous land mass and a fair quantum of power generation like Odisha, industries have a significant role not only in the maintenance of economic growth by generating employment and income but also in all types of resource utilisation. No country or State aiming at swift economic progress can afford to neglect the industrial sector. The performance of Odisha's economy cannot be viewed as independent of rural development as the villages reflect the picture of real Odisha. Rural people basically depend on agriculture for their livelihood and the productivity of agriculture sector is not very encouraging in current times. So, there is a need for industries in rural areas to accelerate agricultural development, revitalise the rural sector, generate employment, and reduce the dependency on agriculture. Industries act as an engine of economic growth for achieving higher volumes of employment, technological advancements, creating income, and reducing urban-rural disparities. Surges in income, output and employment are directly related to the development of industries, which can open up the growth path for the backward areas of the State. Further, industries tend to exercise a profound influence on other sectors of the economy, including agriculture through backward and forward linkages. An industry creates employment (direct, indirect and induced), generates income, and with the CSR activities, it helps in the overall development of an area in which it is located. Along with employment and income generation, steel as well as ferroalloy industries play a very crucial role in industrial development. Odisha has been richly endowed with a variety of minerals and it accounts for more than 35 per cent of the country's natural resources (Government of Odisha, 2017). However, despite the advantages, industrial growth of Odisha has not shown any impressive results and industrial employment generation is very poor. To overcome these problems, the contribution of private industries like Ferro Alloys Corporation Ltd. (FACOR) is playing a significant role not only in the industrial growth process but also in the

employment generation and development of a district like Bhadrak. The data reveals that 87.66 per cent of the total population in the district lives in rural areas (Government of India, 2011). The problem of educated unemployment in this district is also very acute. Every year, a large number of the youth passing out from institutes offering diploma courses, ITIs, colleges, and universities can be found on the lookout for jobs. To address such a problem, this research work is undertaken to understand the impact of an industry like FACOR in ameliorating such problems of educated unemployment. The contribution of the activities towards uplifting the living standards of the people of the region undertaken by the industry as part of its corporate social responsibility has also been examined.

FACOR, incorporated in 1995, is one of India's largest producers and exporters of ferroalloys. They have a chrome plant in Bhadrak, Odisha that obtains its chrome ores from mines at Baula Kathapal, and Osthapal, both in Odisha. It also established a large chrome ore mining complex at Bhadrak in 1981 in Odisha. It exports its product to several countries like Korea, Japan, Italy, Netherlands, USA, Turkey, China, and Taiwan.

## Literature Review

Industry, being a prominent sector in a developing country like India, has an immense opportunity to absorb surplus labour force. This sector supplements and complements the growth of India's GDP, creates ample employment opportunities and helps to achieve sustainability in the growth process. Industrial growth of a county, a State and a region directly or indirectly leans upon the raw-material availability, especially minerals, where sustainable mineral growth creates a balance in economic and social well-being (Channabasavaiah & Naidu, 2021). This sector absorbs the excess labour force from agriculture and makes them employed (Kapur & Radhika, 2019; Bowman, 1968). Having a significant level of backward and forward linkages, it promotes

economic growth. In this process of interlinking, interdependency between industrial output and employment is being noticed with a strong statistical relationship (Wilson, 1960; Meller & Marfan, 1981). Steel is considered the central pillar of various industries in the process of industrialisation, and the growth of these industries depends upon the growth of steel as well as ferroalloys, the basic raw materials for making steel. The steel industry of India has witnessed a spectacular growth since 2004-05 and it continues till date (Sengupta, 2015 & Pal, 2013).

The establishment of a new industry in an underdeveloped area creates opportunities for income and employability for its inhabitants and reduces migration from the local area. It helps in breaking the low-level equilibrium trap with low savings and a lower standard of living. The concept of rural industrialisation is of immense importance for a rural-based economy. Rural industrialisation means encouraging the location of large and small-scale units away from urban areas or planned shifting of units from urban areas to rural areas (Das 2007; Ahamad & Pandey 2015). Industrialisation process in a particular region not only raises the standard of living by increasing employment and income but also increases the social and cultural life by providing attention towards health, education and infrastructure (Prasad 1957; Bertrand & Osborne 1959; Hilson 2002; Gray, 1969). By studying a large industry like NALCO, it is found that industry has a great role in employment and income generation as well as improving the livelihood pattern for the local people. To improve the per-capita income and the development of the living standard of the rural population, rural industrialisation has a bigger role which absorbs the excess labour force from agriculture and makes them employed (Kapur, 2019). But on the other hand, the total amount of cultivable land area is reduced and the industries create pollution. Water, air and sound are being polluted, and environmental degradation occurs, negatively affecting the local flora and fauna (Behera, 2015).

Industries have some responsibilities towards

the locality for the damage made by their industrial activity. Jain and others (2019), in their study of a CSR project undertaken by the IFFCO CSR unit at Kalol, found that through the CSR activities, the locality benefitted through soil testing, training of the local area women to earn their livelihood by tailoring, food processing and cooking and the like. CSR activities like construction of roads and water supply have reduced the problem of waterborne diseases and improved road connectivity which directly benefitted the locality. (Ganeshan & Vethirajan, 2021)

### Objectives of the study

- i. To analyse the turnover, direct employment and exports of FACOR
- ii. To analyse the induced employment generated by FACOR in its locality
- iii. To assess the impact of CSR activities carried out by FACOR in its locality

### Data and Methods

The data was collected both from primary and secondary sources. The primary data was collected from all the 132 business establishments in the local market (Randia market) through a well-structured interview schedule and also from the FACOR industry. Data regarding employment and turnover from 2008-09 to 2017-2018 was collected from the FACOR industry. Unstructured interviews and informal discussions were also held with the workers and local people. Data has been analysed using the 'Statistical Package for Social Scientists' (SPSS) in order to find out the trends and to draw inferences. To analyse the employment elasticity, a log-linear regression between turnover as the predictor variable and employment as the predicted variable was done. To know the growth rate, the Compound Annual Growth Rate (CAGR) has been calculated.

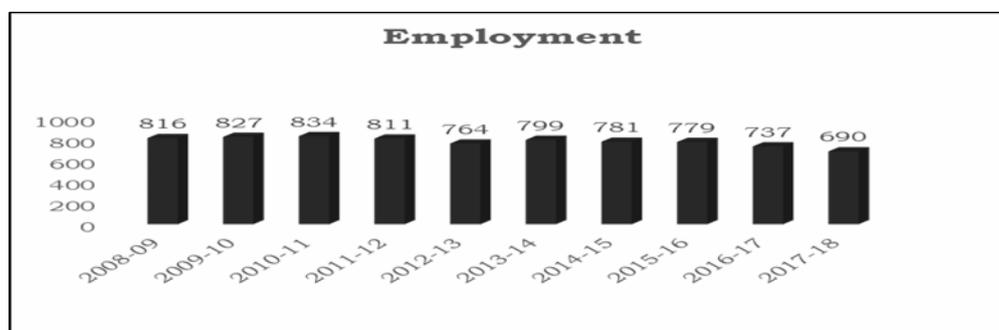
### Results and Discussion

To start with, we take a look at the direct employment and turnover of FACOR over the period under study.

## Employment

**Figure 1**

*Growth of Employment, FACOR (2008-09 to 2017-18)*



Source: FACOR, Bhadrak.

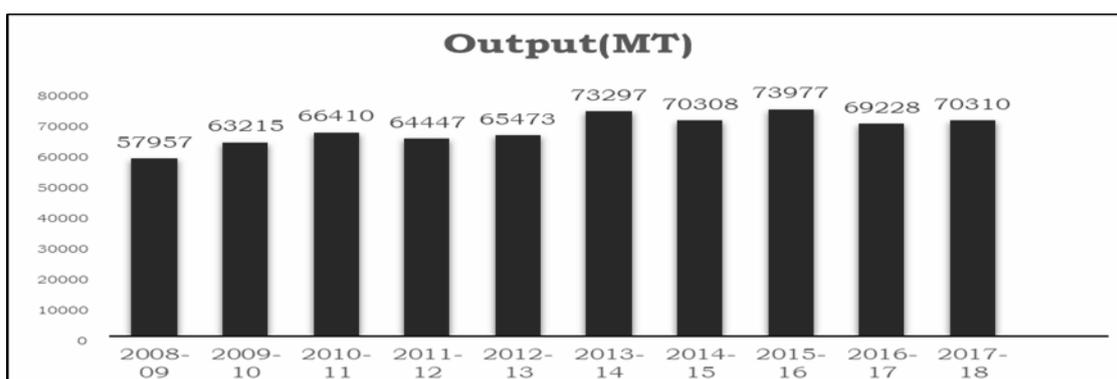
The figure above shows the direct employment generated by FACOR from 2008-09 to 2017-18. It can be clearly observed that employment is continuously decreasing over the years. The decrease in employment is due to the mechanisation of the industry. The increase in employment during 2008-09 to 2010-11 is due to the employment of contractual workers who were

appointed to maintain the machines. The decline in employment may also be due to the outsourcing of activities, which might have created some indirect employment and income, but it has reduced the direct employment provided by the industry. The CAGR of employment is -0.02, which indicates that employment is decreasing over the years.

## Output of FACOR

**Figure 2**

*Growth of turnover (2008-09 to 2017-18)*



Source: FACOR, Bhadrak.

The growth of the turnover of FACOR is portrayed in Figure 2. As we know, the production of any good depends upon the demand and its price; likewise, the production of ferrochrome too depends on both the growing demand for steel as

well as the increase in the market price of chrome. There is a continuous increase in the ferrochrome produced by FACOR, and this is due to the availability of power at a lower price, decrease in the cost of raw materials due to the supply of raw

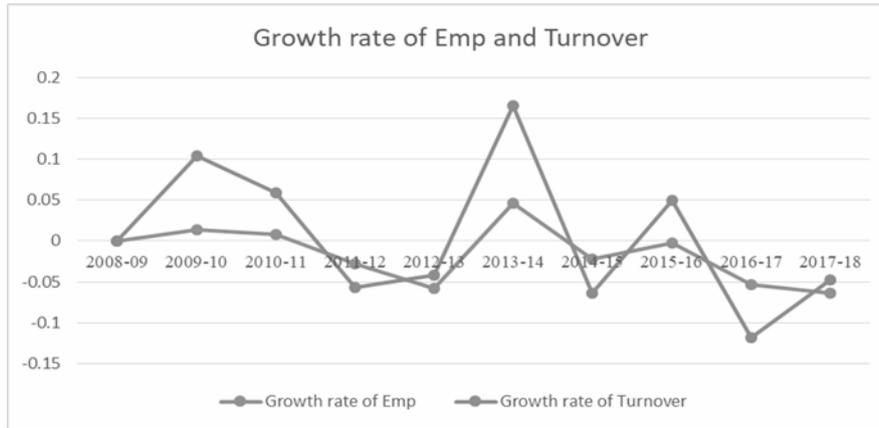
materials from their mines and most importantly easy availability of credit. The years 2013-14 and 2015-16 showed a record production of

ferrochrome in FACOR compared to the previous years due to higher demand for steel in those years.

### Growth rate of employment and turnover

**Figure 3**

*Growth rate of employment and turnover (2008-09 to 2017-18)*



Source: Calculated from data obtained from FACOR, Bhadrak.

An analysis of the growth rates of employment and turnover shows that the CAGR of turnover is 0.02 whereas the CAGR of employment is -0.02 over the last 10 years. The figure shows that fluctuation in turnover is much more than the same in the employment created. This can be explained in terms of the rise in demand for steel both in the local as well as in the international market which indirectly boosts the demand for ferroalloys, a key input for steel production. Employment creation is on a decline, first on account of technological advancement which replaces unskilled manpower

with machines and second, by the policy of outsourcing the non-core activities, which reduces the costs to the company.

### Employment Elasticity

Employment elasticity measures the percentage change in employment associated with a one per cent point change in turnover. The employment elasticity indicates the ability of turnover to generate employment opportunities. Here, we calculate the point elasticity with the help of the following regression:

$$\ln E = \alpha + \beta \ln T + U_i$$

Where variables E and T denote employment and turnover respectively and "ln" stands for the natural logarithm of the relevant variables. Here, the regression coefficient  $\beta$  serves as the employment elasticity and  $U_i$  refers to the error term.

**Table 1***Regression Results*

Variables	Values
R <sup>2</sup>	.198
F-value	1.974
P- value	0.197
Intercept	4.575
Independent variable (Turnover)	-0.445

*Source:* Author's own calculation from data obtained from FACOR, Bhadrak.

$$\ln E = 1057.319 - 0.004 \ln T$$

The above analysis in Table 1 shows that turnover and employment share an inverse relationship - as turnover increases by one per cent, employment decreases by 0.4 per cent but the relationship is not statistically significant. The model is insignificant as indicated by the low F-value for regression sum squares. Factors like technological improvements in the industrial sector, outsourcing of services and non-replacement of employees who have retired have reduced the possibility of labour employment in this sector.

#### **Socio-Economic Profile of the Owners of Business Establishments**

It was found that there are a large number of small business establishments around the place of location of FACOR (Randia) which primarily depend upon it for sustenance. These establishments have provided livelihood to many households and they can be treated as proxies for induced employment generated by FACOR.

The socio-economic profile of a community has great importance in the primary survey. This provides the researcher with a picture of the area under study, the kind of people inhabiting it, their

economic status and the economic activities undertaken by them (Table 2).

Age is one of the most critical parameters determining the working-age population in a community. Table 2 shows that 95 per cent of the total respondents belong to the working age group i.e., 15-59 years among them 94 per cent are males. Out of 132 respondents, only two per cent were found to be illiterate, thus making 98 per cent literate, and 85.60 per cent have savings bank accounts which implies that most of the respondents are financially included. As far as the economic category is concerned, 50 per cent of respondents belong to the BPL category, and 22 respondents (16.66 per cent) belong to the APL category but do not hold a card. Hindu respondents were more in number than Muslim respondents. Out of 116 Hindus, 41 belong to the general category, 40 belong to OBC and only six belong to scheduled tribes, whereas others are in the SC category. Regarding household details, we found that most of the respondents live in their houses and only six per cent stays in rented houses. Sixty-seven per cent of houses are concrete-based and the rest are asbestos and mud-based.

**Table 2***Socio-Economic Profile of the Shop Owners (Randia Market)*

	<b>Groups</b>	<b>Percentage(%) respondents</b>
Age group	15-59	95
	60 and above	5
	Total	100
Gender	Male	93.93
	Female	06.07
	Total	100.00
Level of education	Illiterate	2
	Primary	27
	Secondary	35
	Higher Secondary	21
	Graduates	15
	Total	100
Bank account availability	Having bank account	85.60
	No bank account	14.4
	Total	100
Economic category	APL (Without card)	16.66
	BPL (without card)	22.72
	APL	4.56
	BPL	56.06
	Total	100.00
Religion	Hindu	87.87
	Muslim	12.13
	Total	100.00
Caste	General	31.06
	OBC	30.30
	SC	19.69
	ST	6.85
	Others	12.12
	Total	100.00
Household details	personal	93.93
	Rented house	6.07
	Total	100.00
House type	Concrete based	66.66
	Mud-based	26.51
	Asbestos	6.83
	Total	100.00

*Source:* Compiled and calculated by authors from primary data.

**Occupation**

Table 3 represents the occupation of the shop owners, primary and secondary, and hence shows

whether they are solely dependent on the shops for their livelihood or partake in any other activity for earning their livelihood.

**Table 3**

*Occupation of the Respondents (Randia Market)*

Primary occupation	Secondary occupation					Total
	No secondary occupation	Agriculture	Business	Private job	Others	
Agriculture	0	0	1	0	0	1
Business	88	18	0	2	21	129
Government job	0	0	1	0	0	1
Private job	0	0	1	0	0	1
Total	88	18	3	2	21	132

*Source:* Compiled and calculated by authors from primary data

The study found that business is the primary occupation of most of the respondents (129). Though the remaining three have occupations other than business, it remains their secondary occupation. It is clear that almost all respondents were dependent on business as their primary income source.

**Residential Status**

Table 4 here shows that a maximum of the respondents were from the local area (97 out of 132 which is 73.5 per cent of the total) and 35 respondents were from other areas. It can be concluded that the local market is largely captured by the local people.

**Table 4**

*Residency Details*

Origin	Numbers	Percentage
Local Area	97	73.5
Other Areas	35	26.5
Total	132	100.0

*Source:* Compiled and calculated by authors from primary data.

**Income distribution**

The income of a respondent gives an idea about his/her living standards. It also provides us an idea about the contribution of the local

industries, if any, to their income. Table 5 gives an idea about the income distribution of the respondents in Randia market where FACOR is established.

**Table 5***Income Distribution (Annual) (In Rupees)*

Primary Income	Secondary Income					Total
	Less than 10000	10001-50000	50001-100000	100001-150000	More than 150000	
50000-100000	30	5	5	0	0	40
100001-150000	43	8	0	0	0	51
150001-200000	10	5	0	0	0	15
200001-250000	10	3	0	0	1	14
250001-300000	7	3	0	0	0	10
300001-350000	1	1	0	0	0	2
<b>Total</b>	<b>101</b>	<b>25</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>132</b>

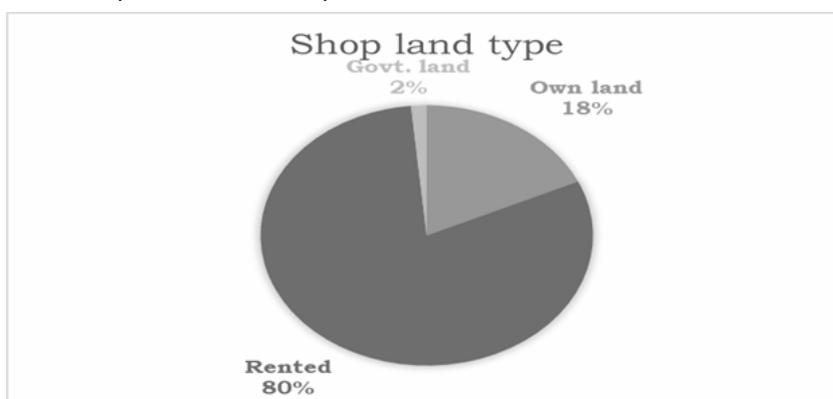
Source: Compiled and calculated by authors from primary data

Table 5 shows the incomes of the respondents from both primary and secondary sources. The annual income from primary source varies between Rs.50,000 and Rs.3,50,000, whereas the secondary income varies between less than Rs 10,000 to 1, 50,000. The cross-tabulation between primary and secondary income sources shows that out of 132 respondents, 40 have primary income between Rs.50,000 and Rs.1,00,000 with secondary income less than Rs.10,000. Most respondents have an annual income of

Rs. 1,00,001 to Rs.1, 50,000 with a secondary income of less than Rs.10,000.

#### Ownership Status of the Shops

Figure 4 shows that most of the establishments were operated on rented premises. Only 18.2 per cent of the establishments were on the own land of the shopkeepers. It was found that these establishments provide gainful employment to 180 people in the Randia market.

**Figure 4***Ownership Status of the Shops*

Source: Compiled and calculated by authors from primary data

### Employees Working in the Shops

**Table 6**

*Employment Generated and Number of Persons Supported by the Business Establishments*

	Category	Percentage of Respondents
Number of employees working in the shop	Only the shop owner	60.6
	Shop owner with one helping hand	24.2
	Shop owner with two helping hands	12.2
	Shop owner with three helping hands	3.0
	<b>Total</b>	<b>100.0</b>

*Source:* Compiled and calculated by authors from primary data

Table 6 depicts that out of 132 establishments, 60.6 per cent are managed only by the shop owner, 24.2 per cent have one helping hand along with the shop owner and 12.2 per cent of shops have two helping hands along with the shop owner.

### Number of People Dependent on these Establishments

**Table 7**

*Family Member/s Dependent on the Income from Shops*

Size and number of family members dependent on the income from the shops	Percentage of total
Two	1.5
Three	19.7
Four	22.0
Five	33.3
Six	13.6
Seven	6.8
Eight	1.5
Nine	1.5
<b>Total</b>	<b>100.0</b>

*Source:* Compiled and calculated by authors from primary data

From the above table, it is clear that 44 (33.3 per cent) shop owners have a family size of 5 and 29 (22 per cent) shop owners have a family size of 4. A total of 623 people are dependent on 132 shop owners for their livelihood, and we can conclude that these many people are directly dependent upon the shop.

### Year of Establishment of the Business Establishments

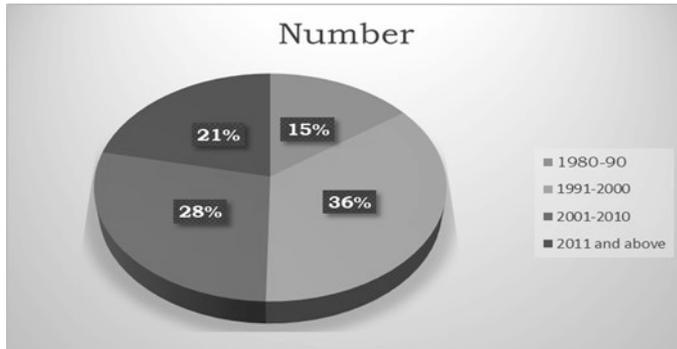
During the survey, we found that Randia is an old market. Earlier, it was a small local market, where only 10-20 vendors used to come and sell their goods, and it was open for only three days a week. But after the establishment of FACOR, the situation has changed drastically. Now there are

about 132 establishments in the market and it remains open throughout the week. Since there is no other industrial enterprise in and around Randia

market, the recent developments of the market over the last 30 years may be attributed to FACOR (according to the shop owners).

**Figure 5**

*Year of Establishment of the Business Establishments*



Source: Compiled and calculated by authors from primary data

#### **Corporate Social Responsibility (CSR) activities of FACOR**

CSR can be defined as a concept that relates to organisations taking on their social and environmental responsibilities and it includes factors such as provisions for employees, participation in the local community, and good corporate governance. CSR is a concept under which organisations, especially (but not only) corporations, have an obligation to consider the interests of customers, employees, shareholders, communities, and ecological considerations in all aspects of their operations. CSR is basically a business model that helps the company to be socially accountable to itself, its stakeholders and the public. The concept of CSR has been introduced by Section 135 under the Companies Act, 2013. Like other industries, FACOR has also carried out many CSR activities.

During its initial period of launch, i.e., in 1993, FACOR was providing tube wells within a radius of 5-7 kilometres, in peripheral villages like Randia, Olanga, Baudpur, etc. In the year 1995, FACOR started organising free health check-ups in the village of Olanga, for the local people, FACOR employees and their family members. After two years of initiating health check-ups, an

eye check-up project was undertaken by FACOR in Baudpur village. In the year 2012, FACOR established a Science block in the Bhadrak Women's College. During 2000 and 2014, many CSR activities have been taken up by the industry, like constructing the school boundaries in Randia High School and constructing three school buildings for classes VI to VIII in the Randia Primary School. All these activities have benefitted not only the employees of FACOR but the local residents as well.

#### **Conclusion**

In the development of an economy, the development of the industrial sector assumes significance. When one thinks of the development of a rural area, establishment of an industry with backward and forward linkages can play a vital role. The present study was aimed at finding the extent to which the establishment of a large industry like FACOR has made an impact on a rural area. After a detailed analysis of the data collected, the study found that the industry (FACOR) is growing at a CAGR of 0.02 per cent in terms of turnover and at the rate of -0.02 per cent in terms of employment, which indicates that the rise in production has not led too much of direct employment generation.

The regression analysis between employment and output shows that there is an inverse through the statistically insignificant relationship between the two variables. However, though the direct employment generated by FACOR is poor, its forward and backward linkages are quite strong. The analysis of primary data found that almost all the 132 shopkeepers in Randia market are educated. The shop is the primary occupation for most of the respondents. Around 85 per cent of establishments were in rented houses, which means that it generates income for the shopkeeper and the house owners. These 132 establishments employ 180 people, and 619 people depended on the income generated from it. Thus, the induced employment generated in the business

establishments that have come up in the local market provides livelihood to a large number of people and supports their families. As revealed through focus group discussions, the local market has expanded in terms of the number of establishments and the number of operating days in a week. These business establishments are primarily dependent on FACOR and its employees. The CSR activities of the FACOR have also enhanced the quality of life of the local people, thereby earning a lot of goodwill for the industry. Hence, one can conclude that the industry has initiated the process of development in the rural area which can be further accelerated by its faster growth.

#### **Author's Contributions:**

Lopamudra Behera: Conceptualisation, Investigation, Formal analysis, Data curation, Software, Writing first draft, visualisation.

Mitali Chinara: Methodology, Supervision, Validation, Resources

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