

SOCIO-ECONOMIC ASSESSMENT OF OIL EXPLORATION IN BARMER REGION OF RAJASTHAN

¹Roopali Sharma , ²Ritu Arora

¹Associate Professor, Birla Institute of Technology, Mesra, Jaipur Campus,

²Assistant Professor, Birla Institute of Technology, Mesra
Jaipur Campus, INDIA.

dr.roopalis@gmail.com, rituarora17@rediffmail.com

ABSTRACT

Natural oil is one of the energy resources and past experience suggests that oil exploration and related ventures lead to a multidimensional growth and development of the region and nation as a whole. With this viewpoint, this paper examines the recent oil exploration in the Barmer district of Rajasthan in India and its positive impact on socio-economic development of the region and country with special reference to employment generation and sectoral mobilization aspects. The present paper well considers and analyzes various issues in the case of oil finding in the region. New set of employment opportunities, sectoral mobilization, infrastructure development, industrial and service sector development, education and training needs are the key developments after oil finding. These would have great impact on the socio-economic structure of the region. The study is relevant and important considering the emergence of Asia and India in particular as new economic growth centers and the role of energy resources in sustaining this development process.

Keywords: Oil exploration, Sustainable Growth, Employment Generation, Sectoral Mobilization, Industrialization, Service Sector, Public-Private Partnership

INTRODUCTION

Energy resources have been closely embedded to development process since beginning of the civilization. Natural oil is important energy resource and India is one of the top ten oil-consuming countries in the world. The current production level does not match the existing demand of oil, thus with inadequate crude oil production, the country is heavily dependent on imports. Kapoor, B.B.S., (2001) This dependence on imports is increasing as the number of consumers and new applications are rising, specifically in the automobile and aviation sectors. In this scenario of rising demand, Rajasthan based oil exploration in the Barmer region which is the biggest onshore oil finding in India, along with a proposal of establishing a refinery in the region is expected to have the biggest oil related economic canvas in the country.

As witnessed in past oil discoveries in other parts of world, the finding of large quantity of natural oil and gas in the Barmer is decisively going to begin the multidimensional growth of the region mainly in the area of employment generation, sectoral mobilization, infrastructural and industrial development. With the envisaged development opportunities, there is an immediate requirement of factor endowment in these areas. A prior analysis of these factors, which in turn will facilitate socio-economic development of the region is thus an important research study

subject. The present paper well addresses this aspect along with identifying the important factors and analyzing their status and dynamics.

Review of the existing contour of the research area - Barmer, Rajasthan, India

Barmer one of the largest districts of the state of Rajasthan in India is largely arid and forms a part of Thar Desert. Its total area is 28,387 Sq. kms. Barmer had a population of 19,64,835 in 2001. The district has 3.48 percent of state's population and 8.29 percent area.

Agriculture, which is the mainstay of rural India, is an unattractive proposition here due to the frequency of droughts, the inhospitable terrain and the lack of irrigation facilities that plague the area. With a few industries around, the only source of income seems to be animal husbandry, the traditional craft of patchwork and mirror embroidery. Sharma, Hari Shankar., & Sharma, Mohan Lal. (1992)

In the recent times, Barmer has observed a structural change in its economy as depicted by district income estimates at current prices. Total income generated in 1999-2000 was Rs.165071 lakh, which increased to Rs. 259338 lakh in 2004-05; a 1.57 time increase. Simultaneously, the contribution of agriculture and allied sectors declined from 38.4 percent to 32.3 percent from 1999-00 to 2004-05. There is an increase in contribution of mining and manufacturing sector from 20.5 percent to 24.0 percent during this period. The contribution of service / tertiary sector improved from 41.2 percent to 43.8 percent. Construction sector has improved its contribution and in 2004-05 contributed 10.1 percent in the district's income. The major activity in service sector is trade, hotel and restaurants (14.4%) and is followed by real estate activities (7.92%) and other services (7.175 %). Transport, banking, railways, communication and public administration have gained in their shares in district income during the aforesaid period.

An overview of the oil exploration venture

The oil discovery in Barmer comprises of the three fields Mangla, Bhagyam and Aishwarya. The Mangala Area, located in Block RJ-ON-90-1 is a major oil field located in the Indian State of Rajasthan. Mangala, one of the world's largest new onshore fields, is the biggest in India after Oil and Natural Gas Corporation's Gandhar in Gujarat that was discovered more than two decades ago. The Mangala Area sits in Barmer Basin and is thought to contain oil in place volumes of 3.6 billion barrels of which 1 billion barrels are thought to be recoverable. Pant, Girijesh. (2008) Cairn India, a private sector company is the current operator of the field, which is a subsidiary of Cairn Energy Ltd. Mangala's peak production has reached to 125,000 barrels per day (bpd) in the first half of 2010. Along with the production at its Bhagyam and Aishwarya fields, the aggregate peak production by Cairn India will be 175,000 bpd or 20 percent of India's domestic production.

RESEARCH METHODOLOGY

The study extends to a span of one year (November 2008- November 2009). A survey activity has been undertaken in the tehsils of Barmer district namely Barmer, Baitu, Gudhamalani, Ramsar & Shiv popularly known as Barmer-Sanchor Basin.

The required information has been gathered from primary and secondary sources. The research design for the present analytical study is conclusive and exploratory in nature. It aims to examine relationships between oil exploration and employment generation and sectoral mobilization aspects. The research process is formal and structured as the primary data collection tool is well defined and designed in advance.

The data has been collected with the help of structured questionnaire administered on two strata of the Barmer district i.e. the household and the industrial units.

For the primary data collection a sample of 1000 household respondents and 200 industrial units have been selected. To analyze the data, an advanced statistical software tool SYSTAT has been used.

This analytical research study helped in seeking the information from various groups like households, industrial units and government departments. During research study the information inputs about awareness level of oil exploration, acceptability and adaptability of existing workers to the new job opportunities, current infrastructural facilities, training and development needs of the work force, industrial set up of the district, existing sectoral allocation of the work force and sectoral mobilization of the work force as a result of the oil exploration have been collected.

KEY ASPECTS OF THE STUDY

Employment Generation and Sectoral Mobilization Aspects

Human Resource plays a vital role in the development and growth of any region. The recent oil discovery and setting up of oil refinery proposes a mammoth growth of Barmer and its people. It is expected that the oil related operations in Barmer will provide employment to about 20,000 people directly and 100,000 indirectly. The venture would need skilled, semi-skilled and unskilled workforce. This brings our attention to the fact that the Human Resource Development aspects need to be addressed on a priority basis. There is an emergent need to develop & train the local human resource to take up the new employment opportunities.

Further, the recent statistics in terms of distribution of workforce of Barmer depicts that the distribution of workforce in the manufacturing, processing, and repairing services is quite low, thus suggesting a need to develop the human resource in this domain.

This venture would further instigate sectoral mobilization of workforce, which includes transition and shift of occupations. There would be migration in search of job opportunities that paves the way to socio-economic and various other cultural changes. Predominantly, the secondary sector projects to receive the maximum transition. The reasons primarily responsible for this sectoral shift includes:

- **Low Social Status:** Generally employees in the primary sector belong to depressed classes, which have been neglected for ages. These classes have been socially handicapped and they were never given the courage and opportunity to assert them and grow. In the case of Barmer it is believed that this kind of oil exploration venture would encourage them to shift so that their social status and standard of living can be improved.

- **Unorganized sector:** Specifically the agricultural workers are ignorant and illiterate. They cannot be organized in unions since they are geographically scattered. Accordingly it is difficult for them to bargain with landowners and secure good wages. This venture would provide them a gateway to organize and acquire the power of collective strength. This would ultimately help them to earn better wages and a better standard of living.
- **Intermittent Employment:** The survey conducted reflects that large number of people are intermittently employed in Barmer; of those who are intermittently employed majority is employed for only 181-270 days in a year. Apart from underemployment there is also unemployment in rural areas. Unemployment and underemployment are two important factors responsible for low income and consequently low economic position of the workers. This situation will force employed workers to shift to the secondary and tertiary sector, which provides them with more lucrative regular employment.
- **Paucity of non- agricultural jobs:** Paucity of non-agricultural occupations in remote areas is another important factor for low wages and poor economic conditions of the farm and mine labourers in Barmer. For one thing, the growing pressure of population is increasingly felt in backward areas and the number of landless labourers is steadily increasing. For another, the unavailability of another occupation and lack of inter-regional mobility have been responsible for worsening the pressure of population in the region. This problem can be resolved by providing alternative and attractive job opportunities to this rising population and landless labourers. Such opportunities will be readily provided by the oil exploration venture.
- **Rural indebtedness:** The rural population is heavily indebted in Barmer. They act as bonded labourers getting very low wages and live a miserable human life. The new and challenging opportunities provided by the oil exploration venture would aim towards widening a scope of job opportunities in secondary as well as tertiary sectors.

All these factors will contribute in enhancing sectoral mobilization when plethora of job opportunities will be open to the unemployed or underemployed people in the region because of the oil exploration activities.

Economic and Social Aspects

The double-edged sword of population growth and depletion of existing explored natural oil reserves has forced mankind to explore more oil reserves to meet the rising demand. In this scenario the exploration of oil in Barmer-Sanchor Basin in Rajasthan will play a significant role in the economic growth and development of the state and the nation as a whole.

According to recent statistics, India imports 80-90 million tons of crude oil annually, that cost over Rs. 85,000 crores against the total domestic availability of only 32-33 million tones. In this backdrop, oil reserves of Barmer will help in reducing the gap between the demand and domestic availability of the oil. The oil fields of Barmer will cut India's oil import bill by 7%. Patra, Debesh. C, (2004)

Besides this, the oil discovery in Barmer would provide a source of revenue to the State Government in the form of royalty and would benefit the local economy. It has been predicted that a few years down the line, instead of tourism, handicrafts and local arts, oil and gas would be the backbone of Rajasthan economy. The Barmer oil fields would earn the government \$ 30 billion across the life of the fields by ways of taxes, royalties and profit. The central government would get Rs. 46,000 crores as profit revenue. The Government of Rajasthan will also get Rs. 12,000 crore royalty revenue for the first five years.

The next expected stage of oil discovery is setting up of a refinery in Rajasthan. This would be significant not just in terms of revenues but also in terms of job creation and investment in and around the Barmer area. It has been estimated that based on its peak production potential, the Rajasthan block has the ability to be one of the top hundred oil fields in the world. It will facilitate huge amount of foreign direct investment in the region not only in oil sector but also in other related fields.

Same way, related to oil exploration, the Barmer region would witness substantial growth of industries that would be ancillary to or would use the bi-products of the crude oil industry.

New economic activities and related development always brings significant changes in societal order and way of living in the concerned area. The main among them are shifting of place, cohesive mixing of people of different background in a new work culture, improved living standard, improved education and skill set, etc

In nutshell, the oil discoveries in the Barmer region will not only have a positive relationship with economic growth and development, but it will also upgrade social standard of the region.

MAJOR FINDINGS OF THE STUDY

The main findings of the study have been summarized here to visualize their interconnectivity and interaction that ultimately lead to conclusive viewpoint about the dynamics of socio-economic changes:

- a. About 42% of the population of Barmer is engaged in agricultural and allied activities followed by 34% of the population engaged in the service or the tertiary sector. The contribution of tertiary sector has increased to the level of 43.8% in the income of the district, which indicates the structural change in the economy of Barmer.
- b. There will be an increase in the dimension and volume of the employment opportunities in the existing as well as upcoming service and manufacturing sector. 55% of the respondents believe that it is the hospitality and health service sector, which will witness an exponential growth in the region. But based on earlier experiences of oil exploration there would be phenomenal growth in construction, transport and telecommunication sector.
- c. Though most of the respondents were not aware of the upcoming ancillary and by product industries in manufacturing sector but it would definitely be a big part of the growth envisaged through this project.
- d. The type and number of firms in the service sector is increasing. This trend can be correlated with the fact that large number of service industries has rapid rate of growth of

employment. The shift of employment to service sector does not represent a sudden departure from traditional industries. This change in the composition of industries is the consequence of the process of economic growth and development in the region in the contemporary trend of service sector dominance. The growth process involves a rapid expansion of firms in both organized and unorganized sectors.

- e. 83% of the respondents foresee that oil exploration and the related ventures result into sectoral mobilization due to potential financial gains and the temptation of regular employment.
- f. Another interesting finding is that the majority (71%) of the masses are employed which is reflected by low rate of unemployment. But half of them are casually employed or underemployed which is generally treated as an index of deterioration in the equality of employment. This intermittent state of employment is area of focus for creating stable work force for new employment opportunities, undoubtedly with major plan for necessary training and skill development.
- g. The oil exploration and related ventures will primarily offer opportunities of regular employment, which could lure such casually employed workers towards the upcoming opportunities.
- h. As the decision of setting up of a refinery in Barmer is still pending, the industrial growth of the region is very slow because of the absence of backward and forward linkages of the oil industry when compared with the other oil discoveries in the country.
- i. There is an inclination amongst the local people towards industrial jobs as 1-3 people from 81% of household are associated with the current industries in the region. There is a labour flexibility and acquaintance, which can further helps in stimulating employment opportunities and growth prospects in the region.
- j. Due to the oil exploration venture, the rapid industrialization and the consequent growth of banking, finance, trade and commerce etc. are not only providing more employment opportunities but it is also facilitating the process of occupational shift in favour of secondary and tertiary sector.
- k. The role of private players has become equally important as that of government departments in ensuring overall socio-economic growth and development of the region. As various policies and programmes initiated at the government level is well supported by various programmes implemented under the purview of PPP (Public Private Partnership). It has substantiated better risk sharing, accountability, cost recovery and management of infrastructure.

LESSONS FOR SUSTAINABLE GROWTH & DEVELOPMENT IN THE REGION

Based on the observed local figures and findings, the study suggests following recommendations for planned growth as consequence of oil exploration in Barmer region.

- i. The state of Rajasthan in general and Barmer region in specific is moving up on the road of economic development but is miserably lagging on the roads of human resource

development. It would be desirable to replace 'trickle down approach' for economic development by employment generation growth, which can ensure full and regular employment to the working population. Beside this, it requires a heavy investment in social sector like health and education so that a better equipped labour force improves productivity and thus can claim a better share in the fruits of development. The hard working and tough living virtues of people of desert region has to be intelligently and usefully embedded to the new emerging industrial work requirements.

- ii. A major thrust should be given to mobilize the abundant work force in the region for the purpose of regional economic development. An effort should be made through adequate training and development to enhance the productivity and suitability of labour so that large employment could be provided at rising levels of income. Rapid progress in infrastructural facilities, basic industries, banking, insurance other trade and services, would generate new avenues of employment. For the locals, incentives should be given to encourage the setting up of agro-based industries, small and large workshops and factories in rural areas to provide alternative employment to agricultural labourers that are ultimately supportive to upcoming industrial town needs as well.

Ancillary employment work like reclamation work, machine repair, local transport, small restaurants services etc should be promoted to maintain rural employment at a high level. Urban areas, with main oil, ancillary and bi-product industries growth, should be promoted with corresponding expansion of services like hospitality, health, education, communication etc which are having a tremendous potential to increase employment in the secondary and the tertiary sectors. In this way an effort can be made to canalize the changing occupational pattern of the working force based on suitability for the planned economic development.

CONCLUSION

Requirement of new energy resources is an integral part of the development process. It is dominating as a major prerequisite in the present era where development is industry and technology based which is mainly energy dependent. The compulsion of global connectivity and exploring the space in view of shrinking earth resources further emphasize focus on new energy resources. Undoubtedly, social, economic, environmental and management issues are always related to such new exploration of energy resources.

The present paper well considers and analyses these issues in a case of oil finding in Barmer region of the Rajasthan state. The study is presenting some factual inputs, which are useful in planning the related development process;

1. The oil finding will substantially add to self-reliance of the country in the energy sector
2. Considering the huge volume and related economic and managerial investment, the project has well been planned under public-private partnership approach. This approach has to be carefully sustained with gradually opening it to inclusion of entrepreneurs, NGOs and other related entities.
3. New set of employment opportunities, sectoral mobilization, infrastructure development, industrial and service sector development, education and training needs are the key

developments after oil finding. These would have great impact on socio-economic structure of the region.

In nutshell, in view of its typical geographical, political and social background, the development in Barmer region would have different requirement and direction. This distinguishes it from earlier cases and pattern of development in oil findings. In the environment of conducive technology and managerial breakthroughs, the case of Barmer oil finding and related socio-economic developments should be well planned and managed. The present analytical study is a positive step in this direction.

ACKNOWLEDGEMENT

The paper is based on the research study conducted for the project funded by the Ministry of Labour & Employment, Government of India in the year 2009.

REFERENCES

Books:

Kapoor, B.B.S., (2001). *An assessment of natural resources of the Indian desert*. India: Madhu Publications.

Pant, Girijesh.(2008). *India- the emerging energy player*. India: Pearson Education India.

Patra, Debesh. C., (2004). *Oil industry in India: problems and prospects in post-APM era*. India: Mittal Publications.

Sharma, Hari Shanker., & Sharma, Mohan Lal.(1992). *Geographical facets of Rajasthan*. India: Kuldeep Publications.

Government Reports:

Academic Foundation, India Planning Commission. (2006). Rajasthan Development Report.

Administrative Reforms Commission, Government of Rajasthan, Jaipur. (2001). Eleventh Report on Petroleum, Gas, Lignite.

Directorate of Economics and Statistics, Jaipur, Rajasthan. (2003). District Statistical Review – Barmer.

Directorate of Economics and Statistics, Jaipur; Rajasthan. (2005). Statistical Abstract-Rajasthan.

National Council of Applied Economic Research, West And Central India. (2002). Human Development Report. Oxford University Press.

FIGURES

Figure 1

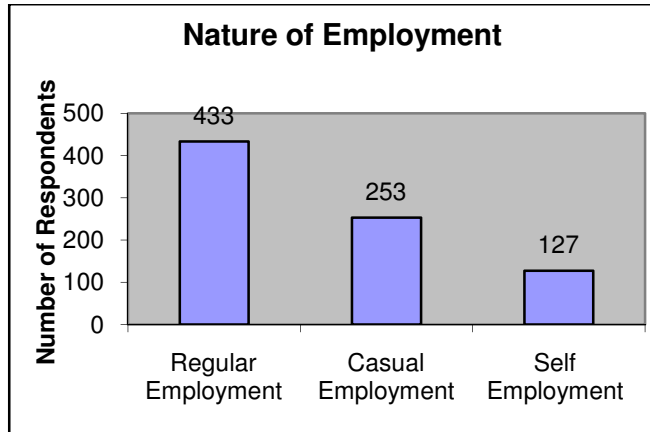


Figure 2

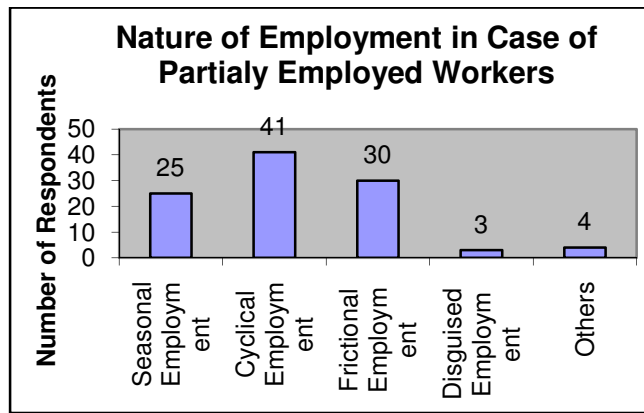


Figure 3

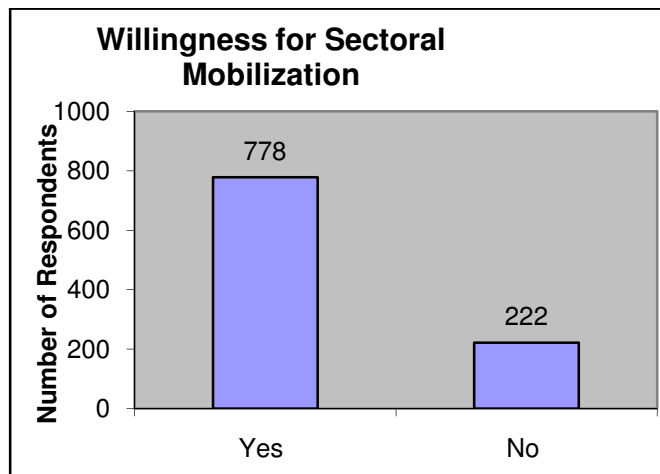


Figure 4

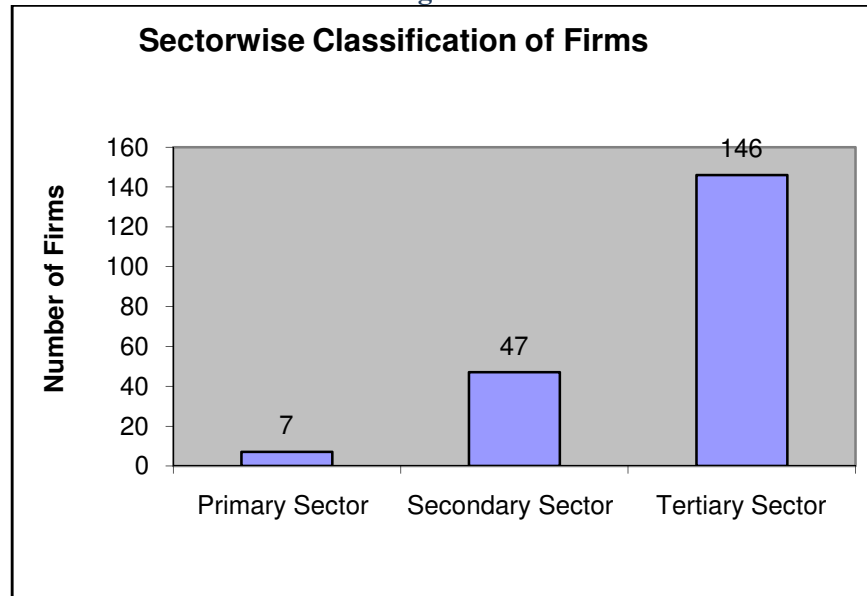


Figure 5

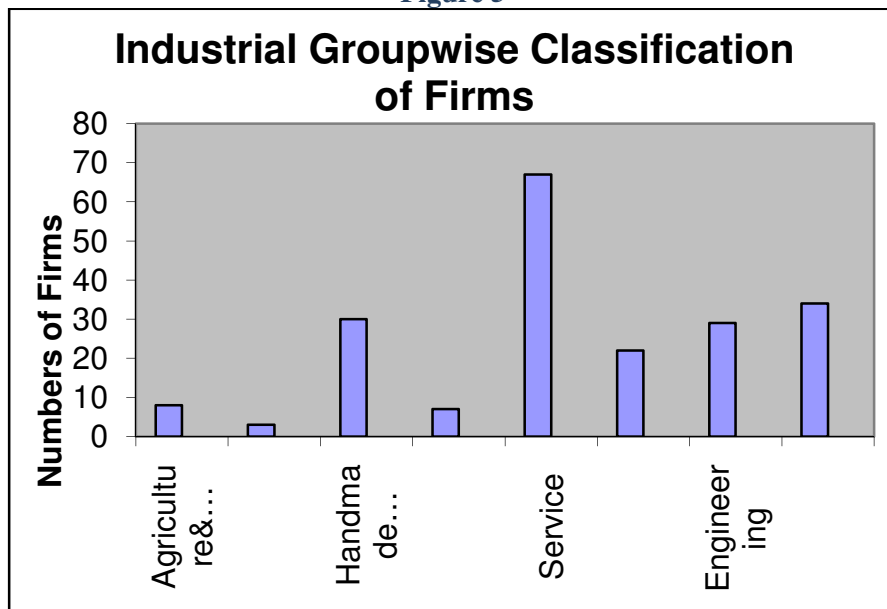


Figure 6

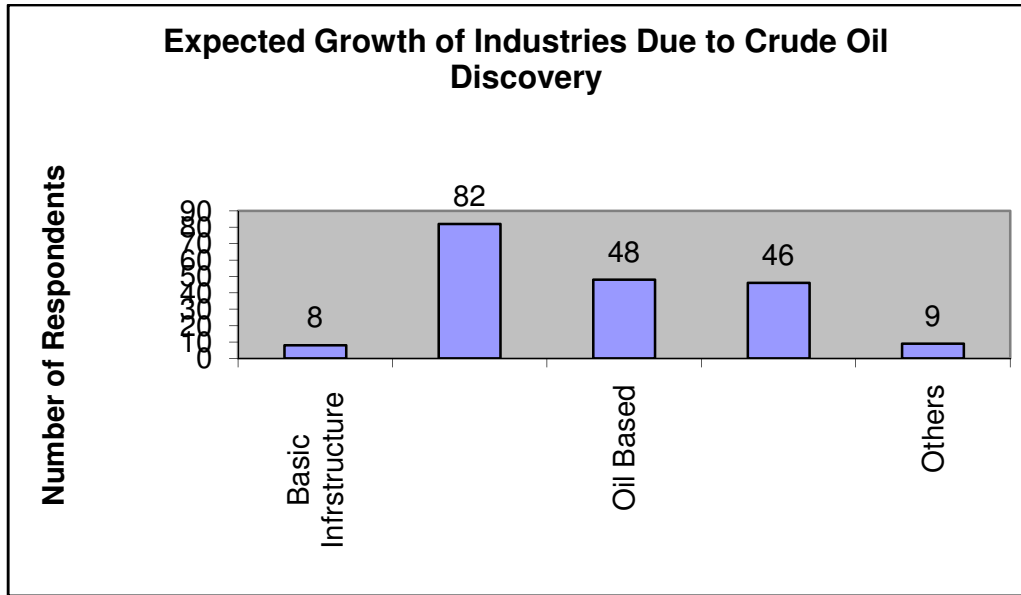


Figure 7

