

# ANALYSIS OF INDUSTRIAL AREAS EFFECTS IN RURAL DEVELOPMENT A CASE STUDY OF IRAN

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**Abstract** Rural industrialization means technical changes to improve quality of life for current generations of rural population. The purpose of this research was to investigate the impact of industrial areas on the development of rural regions (case study: Farahan industrial area in Iran). The research was conducted in the form of survey study. The populations of the research included employers in the industrial area, numbering to 236 by the selection procedure of random sampling. Data were collected through a questionnaire. The reliability of the questionnaire was calculated using a Cronbach alpha coefficient ( $\alpha > 0.85$ ) for different sections after conducting a pilot study. In recent studies, it has been indicated that Farahan industrial area has considerable significance in the rural regions nearby. It has attracted a considerable amount of unemployed population from nearby villages and therefore plays a great role in developing their quality of life.

**Keywords:** Rural Industrialization, Rural Development, Industrialization.

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## INTRODUCTION

Rural industrialization means technical changes to improve quality of life for current generations (Ahmed et al., 2011). At first it was thought possible to establish features like water, electricity, roads and other infrastructure facilities in rural areas to increase rural prosperity and prevent uncontrolled rural migration to cities. But today it has been proven that to create employment and income are important factors for rural development. Industrialization force by creating employment and increasing attempts to absorb agricultural surplus through rural industries with the capabilities and features will increase rural income. Also industrialization can has a positive effect on agricultural growth. During the industrialization, the demand for agricultural products increased rapidly, particularly for food. Since food production in the agricultural sector requires more labour than other sectors, increasing demand for agricultural products increased the final returns of capital and labour in this sector. Industrialization will increase employment in rural areas and will increase the volume of capital in the agricultural sector. Also this issue will help to increase the agriculture sector production. Growth of non-farm employment, therefore, is essential for overcoming

rural under-employment. Although the rural non-farm sector encompasses a wide variety of economic activities: industry/manufacturing, construction, transport, communications and storage, trade and services, yet the industry is usually the most dominant constituent, in terms of value of output of employment. No wonder, therefore, the approach to rural non-farm development becomes synonymous with rural industrial development and rural industry occupies a central place in long-term rural development, employment and welfare policies (Barel, 1984). Industrial towns are the certain areas that have established a set of industrial research, technology and support services such as engineering design, training, information, consulting and commercial intellectual rights, infrastructural facilities and essential services. The infrastructural facilities and services has dependent to type and extent of activities in industrial town and also effected the composition of industriy in industrial town.

The rural non-farm sector can contribute to economic growth, rural employment, poverty reduction, and a more spatially balanced population distribution. Also non-farm sector's income distribution in support of the poor is significant. Statistical results of the study in six Texas communities indicate that rural industrialization had a statistically significant positive effect on incomes for the

employed population (Parikh and Thorbecke, 1996). The regions that could take advantage of resources which local industries turned to account, were not so seriously affected by the population as purely agricultural regions, especially when the produce of the latter could not be processed by industries that might have made the products desirable at the time, as was the case of the dairy industry which underwent a sizeable expansion. Thus, the towns that could not support local enterprises, either financially or through their outlets, experienced a decrease in their influence, whereas others attracted enterprises, together with the countrymen who left their villages and fields because of the difficulties they were meeting with. For want of sufficient means, industrialization was not the remedy that might have been expected for rural population, which had persisted for more than a century in these regions, and favoured as they are from the viewpoint of farming and fishing (Foss, 1997). The importance of the small scale industries in rural areas is to create more jobs in rural areas than in urban areas (Chadha, 1996). A relatively equitable income knows distribution factors stimulating rural industry (Saith, 1992). Sigurdson indicated in a country like China with surplus labour and a shortage of capital, rural industry make a considerable contribution to economic development. At the same time, rural industry plays an important role in the social transformation of the Chinese countryside and contributes considerably to rectify the imbalance between urban and rural areas. Rural industrialization may have a limited impact on the employment pattern, with an estimated development (Xu and Tan, 2002). Parikh and Thorbecke (1996) examined the impact of rural industrialization on village life and economy. By social accounting matrix approach, the study relied on a comparison of two relatively similar Indian villages, the main difference between them is that one village is close to factory and another located in a remote area. Result showed that decentralization of industries has contributed considerably to rural development and poverty alleviation in rural area nearby to factory. People have become more aware of the advantages of education, investment in agriculture has increased, the exploitation of labour has been significantly reduced, and the factory salaries have reduced poverty and lowered income inequality among household classes.

## METHODOLOGY

This study was based on applied research, which was carried out by using a survey method. Applying a multistage sampling technique, 236 people were selected from industrial area. Data were collected from structured interviews and field observation. To examine the reliability of the questionnaire a pilot test was conducted with 236 samples. Cronbachs Alpha coefficients for Likert type scales were calculated. Reliability of the questionnaire was determined on the basis

of Chronbach alpha test. Alpha value is in range 0 to 1 so that internal reliability of items is found through this coefficient. If this coefficient is zero, it will indicate full unreliability of items and if it is one, it will indicate full reliability. If alpha value is more than 0.7, questions and items are suitable for testing the concept or the related variable. According to Table 1 it is found that questions and items of the questionnaire are higher than 0.7. For this reason, it is scientifically valid to describe and test relations of variables.

**Table 1: Reliability analysis (Alpha)**

Scale Name	No. of items in the scale	Alpha value
Economic factor	10	0.888
Social factor	18	0.873
Infrastructure factor	4	0.930

To determine the appropriateness of data and to measure the homogeneity of variables from attracting farmers to group the Kaiser-Meyer-Olkin (KMO) and Bartlett's test measures were applied. These statistics show the extent to which the indicators of a construct belong to each other. KMO and Bartlett's test obtained for these variables show that the data are appropriate for factor analysis as indicated in Table 2.

**Table 2: KMO measure and Bartlett's test to assess appropriateness of the data for factor analysis**

KMO	Bartlett's test of sphericity	
	0.848	Approx. chi- square 2165.161

KMO= 0.848 was obtained and since this value is larger than 0.5, it is concluded that the number of samples is very suitable for factor analysis. As KMO value is closer to one, higher is the sample validity. According to Table 2, Bartlett's test of sphericity was obtained to be 1035.93 with significance level of  $p=0.000$  and since this value is significant, it is concluded that the factors have not been classified well and the questions included in each factor have congeneric correlative factor with each other.

The Statistical Package for Social Scientists (SPSS Version 18) was used for data management and analysis. This study used descriptive statistics, Kruskal-Wallis test and McNemar's test as the statistical techniques.

The Kruskal-Wallis test can be applied in the one factor ANOVA case. It is a non-parametric test for the situation where the ANOVA normality assumptions may not apply. Let  $n_i$  ( $i = 1, 2, \dots, k$ ) represent the sample sizes for each of the  $k$  groups (i.e., samples) in the data. Next, rank the

**Table 3: The variables of research**

Variable name	Unit	Label	Scale	Mod
Insurance Expansion (very low=1, low=2, middle=3, high=4, very high=5)	ranking	IE	1-5	4
Increase in Agricultural Income(very low=1, low=2, middle=3, high=4, very high=5)	ranking	IAI	1-5	3
Increase in Non-Agricultural Income(very low=1, low=2, middle=3, high=4, very high=5)	ranking	INAI	1-5	4
Employment Opportunities(very low=1, low=2, middle=3, high=4, very high=5)	ranking	EO	1-5	4
Temporary Job(very low=1, low=2, middle=3, high=4, very high=5)	ranking	TJ	1-5	3
Development Services(very low=1, low=2, middle=3, high=4, very high=5)	ranking	DS	1-5	3
Increasing Interest in Rural Life (very low=1, low=2, middle=3, high=4, very high=5)	ranking	IIRL	1-5	2
Increasing Interest to Stay in the Farmahin County (very low=1, low=2, middle=3, high=4, very high=5)	ranking	IISFC	1-5	3
Develop Learning Skills(very low=1, low=2, middle=3, high=4, very high=5)	ranking	DLS	1-5	3
Renovated Homes(very low=1, low=2, middle=3, high=4, very high=5)	ranking	RH	1-5	3
Improve the Roads(very low=1, low=2, middle=3, high=4, very high=5)	ranking	IR	1-5	4
The Use of Resistant Materials in Home Made(very low=1, low=2, middle=3, high=4, very high=5)	ranking	URMHM	1-5	2

combined sample. Then compute  $R_i$  = the sum of the ranks for group i. Then the Kruskal-Wallis test statistic is:

$$H = \frac{12}{n(n+1)} \sum_{i=1}^k \frac{R_i^2}{n_i} - 3(n+1)$$

The McNemar’s test evaluates changes in related or paired binomial attributes, whether changes in one direction is significantly greater than that in the opposite direction.

If b = the number of positive cases that converts to negative, and c = the number of negative cases converted to positive, then the McNemar’s test

Chi Squares =  $(abs(b-c)-1)^2 / (b+c)$  degree of freedom = 1.

### RESULTS

The results of Kruskal-Wallis test showed that industrial areas can be the significant positive effects in rural development in fields such as job creation in rural areas, increase in non-agricultural income, balance of income and extension of credit institutions (banks) in rural areas in the viewpoint of rural resident.

The results of McNemar’s test showed that industrial areas can be the significant positive effects in rural development in fields such as reducing migration from rural areas, interest in rural life, increased investment outside the village and the improve of the social security insurance in rural areas.

**Table 4: The results of Kruskal-Wallis test of industrial areas effects in rural development**

Variable	Rank mean	Df	Chi-square	Sig
Job creation in rural areas	Negatives 1	2	-13.184	0.000**
	Positives 219			
	Same rank 16			
Increase in non-agricultural income	Negatives 0	2	-13.451	0.000**
	Positives 203			
	Same rank 33			
Balance of income	Negatives 32	2	-10.159	0.000**
	Positives 186			
	Same rank 18			
Extension of credit institutions (banks)	Negatives 15	2	-10.601	0.000**
	Positives 152			
	Same rank 69			
Increasing interest in rural life	Negatives 23	2	-12.141	0.000**
	Positives 166			
	Same rank 47			

**Table 5: The results of Kruskal-wallis test of industrial areas effects in rural development**

Variable	Scale	Before the creation of the industrial areas	After the creation of the industrial areas	Chi-square	Sig
Reducing migration from rural areas	Yes	32	111	8.840	0.003**
	No	70	23		
Interest in rural life	Yes	28	108	8.158	0.004**
	No	69	31		
Increased investment outside the village	Yes	54	97	16.674	0.000**
	No	47	38		
Having the social security insurance	Yes	16	117	20.809	0.000**
	No	56	47		

## DISCUSSION

The result of this study suggested for rural development practitioners that more environmental friendly industrial should be established in rural areas in order to bring about development for nearby villagers. The variables of research showed that the priorities of rural residents for impact of rural industrialization were impact of industrial sites on job creation in rural area, increased motivation to stay in rural areas, raising the income of rural people, improved peasant income, increase social insurance, creation of temporary employment, and increased motivation to stay in rural areas.

In rural development, industrialization has played an effective role. Thus industrialization, regarding its crucial effects on social and economic development of the country, is regarded as one of solutions for rural problems. These problems include income difference between rural and urban families, increase of unemployment in labour force, migration as a result of unemployment problems. One of the most important problems in many of developing countries is that of unemployment. Expansion of industrial plants in rural regions can increase the rate of employment and income in these regional areas. Increased income and employment are the important factors in industrial town in the rural areas. The findings of this study indicate that employment in the rural areas increases the non-agricultural income. The farmers buy the land from others. To acquire more land and increase income in the agricultural sector is what they are looking for. It also helps in employment and ancillary jobs, such as temporary workers from the rural labour force. The development and expansion of social insurance and income stability have to be associated with it. Industrialization is an approach for achieving sustainable development and accelerated social and economic growth. Nowadays in many developing countries, rural development depends on industrialization of rural areas. Otherwise agricultural unit cannot respond to rural needs, and then we should notice the rural industrialization approach. Rural

industrialization or establishing industries in rural area as an important and most prevalent procedure for non-agricultural economic development is discussed and this process affects the economic and social characteristics of rural area. Lack of some main agricultural production parameters like water resource, rich and suitable soil, in these areas, in spite of plenty manpower, directs the situation to day-by-day increasing immigration rate from rural area and involving other (destination) areas by these immigrations. In view of describing situation, industry establishing in the rural areas that have low agricultural potential level may act as an effective tool for avoiding immigration, stabilizing rural people in their own home, and improving diverse social and economic lifestyle index such as employment and income. Industry establishment in rural areas during past tens of years has been considered by the regional planners to achieve rural sustainable development. In addition to promotion of the human resources, economic indicators and poverty reduction it is effective with regard to regional balance.

## CONCLUSION

Industrial zones have been considered as the instrument of economic development policy. Industrial zones aim to create employment for people living around. The expansion of industrial plants in rural regions can develop combined activities of agriculture and industry which increases the rate of employment and income in these regions.

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