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ARTICLE

ANALYTICAL STUDY OF DIFFERENT DIMENSIONS OF PROCESSING AND COMPLEMENTARY INDUSTRIES IN SOME RURAL AREAS OF BAVI

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ABSTRACT

The development of industries in rural areas of the country leads to job creation and absorption of surplus labor force in the agricultural sector, causes foreign exchange increase, and the increase of exports to the country. This study was conducted aim to study different dimensions of processing and complementary industries analytically in some rural areas of Bavi in 2016. The method was descriptive-analytical with questionnaire. The population was rural residents of Bavi from Weis rural district, who were 23834 people, and the sample size was determined as 180 people using Cochran formula. Univariate t test was used to examine the research hypotheses and to analyze the specific questions related to them. Finally, data analysis was performed using analytical software spss. The results indicated that the functional assessment of the development of rural industries in villages of Weiss rural district has had relative and moderate influence in the rural development of the region. In other words, the positive effects of industrial development in villages have not been so pervasive and substantial, and negative environmental effects in spite of the relativity of the results have significantly increased compared to the past. The results also showed that the effect of the development of rural industries in the studied area is average regarding economy.

KEY WORDS
village, agriculture, employment, processing-complementary industries, development, Weis rural district

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INTRODUCTION

One of the biggest challenges of the present and the future in rural areas is creating the required jobs for surplus and displaced labor force from the agricultural sector. Inability of the agricultural sector in absorbing surplus labor and the provision of adequate income has led to an influx of rural migrants to the cities. Thus, creating job opportunities and income, especially for rural low-income groups, is a necessity. In this regard, one of the most important issues that have attracted the attention of politicians, thinkers, and researchers is the need to develop processing and complementary industries.

This study evaluates the effects of establishment and development of processing industries on various environmental-economic and social aspects, comprehensive development of the rural community, as well as the necessity of planning for the establishment of complementary and processing industries and development prospects in Weis rural district of Bavi, especially in the agricultural sector. In the following lines, some of the studies done in this field in Iran and abroad are discussed.

Industries that convert agricultural and livestock products into semi-finished or finished goods are called processing industries. This industry is considered as one of the most important fields of agriculture [1].

One of the most important rural industries is agricultural processing industry. Undoubtedly, the establishment of processing industries is one of the most beneficial linkages between agriculture and industry. In this regard, the experience of the past three decades of Asian countries, especially China, India, and South Korea shows that the processing-complementary industries of agricultural sector play a fundamental role in these countries' rural development [2]. This is to a degree that agricultural processing in India has been taken into consideration as a huge potential for economic and social development [3].

The establishment of processing industries in the village leads to thriving of agricultural sector and production of products similar to that of processing industries produced by the villagers and this has improved the status of their income [4]. The absence of processing industries in the villages as the reason of the decline in income of the villagers and the reason of increased rural to urban migration [4].

In another study, it was shown that processing industries preserve and maintain agricultural and food products for a long time and lead to job creation and increase in value added from export [3].

The establishment of complementary and processing industries could play an important role in reducing poverty, unemployment, immigration, and in increase of employment growth [2].

With the establishment of industry in rural areas, besides increase in household income, food consumption patterns, and durable goods have significantly experienced major changes [5].

The agricultural processing industry is advantageous for farmers from the perspective of generating income and employment: first through the purchase of agricultural products by agricultural processing industry and second, through the employment of the poor in factories of agricultural processing industries [6].

Agricultural processing industries increase employment opportunities, income levels, overcome the challenges of poverty and unemployment, and overall lead to rural development [7].

MATERIALS AND METHODS

This study is applied, regarding the research methodology, it is descriptive-analytical, and method of data collection is library and field. In the library method, data is collected through books, organizations documents, articles, archives of organizations, and various scientific websites. The second method is field studies and interviews where field studies are carried out through the preparation of the questionnaire and the classification.

The population of the study is households of Weis rural district of Bavi as 23834 people [8]. Cochran's formula was used to determine the sample size. Cochran's formula is one of the most widely used methods to calculate the sample size. In this formula, (n) is the sample, (N) is population size, (z) is the value of normal variable of the standard unit 1.96 at 95 percent level of confidence, (p) is the proportion of the population with a certain trait. Moreover, (q) is the proportion of the population lacking the certain trait (if the values of p and q are not available, one can consider it as 0.5), and (d) is the allowable error that is usually equal to 0.01 or 0.05.

$$n = \frac{N}{1 + N(d^2)}$$

Therefore, using Cochran's formula to determine the sample, the sample size was determined as 188 households. The questionnaires were distributed, completed, and gathered with the help of researchers.
In order to achieve the desirable validity of the questionnaire, it was revised using the comments of the supervisor, faculty members, and consulting with experts informed on issues related to the research topic, and finally the validity and the questionnaire being standard was confirmed.

In order to achieve the validity of the questionnaire using the Comments of Supervisor and faculty members, consulting with experts informed on issues related to the research topic, the questionnaire was modified. Finally, standardized questionnaire and its validity were confirmed.

To test reliability of the 20 items scored on Likert scale, Cronbach's alpha was used, and as the calculated value is close to 0.7, the questionnaire is reliable. The Cronbach's alpha was obtained as 0.93, indicating the reliability of the questionnaire.

Independent variables of this research were agricultural complementary-processing industries, and the dependent variable was positive socio-economic and social effects.

Data analysis and hypothesis testing were done using SPSS 20 in descriptive (frequency, mean, standard deviation) and inferential methods statistical methods such as Chi-square test and Pearson and Spearman correlation analysis.

RESULTS

Camel descriptive findings

Based on the results of the questionnaire, 69% of the respondents were married and 31% were single, 67% of the respondents were male and 33% female, 39% were illiterate, 62% had elementary education, 65% had diploma, 4% bachelor and above. Of the respondents, 69% were farmers, 6% employees, 17% workers, 8% were self-employed, 6% of the respondents have a monthly income of less than 500 thousand tomans, 12% have 500 thousand to 650 thousand, 30% from 650 to 850, and 52% over 900 tomans.

Analytical findings

[Table 1] shows the values of the impact of economic indices on establishment of agricultural complementary-processing industries in the studied region. According to this table, mean and standard deviations for income, jobs creation, and investment are 3.34±0.68, 3.21±0.51, and 2.96±0.362, respectively. The increase in diversity and revenue opportunities for the villagers with an average of 3.33, the increase of changes in the type of crops to local industries of the village with an average of 3.21, increase in industry revenues in the villages with an average of 3.08 have more effect on villagers' life compared to other social aspects. Moreover, creating new employment opportunities for villagers with an average of 3.38 and utilization of surplus labor of the villages with an average of 3.04, and development of road facilities such as mosques, restaurants, and so on with an average of 3.67 are more effective.

Table 1: The values of the impact of economic indices on the creation of agricultural complementary-processing industries in the studied area

Variable	Item	Mean	SD	t statistic test
Creating revenue	Increasing industry revenues in the villages	3.08	1.077	18.229
	Private sector investment in rural areas	3.09	0.692	12.636
	Increase the variety and revenue opportunities for villagers	3.33	0.327	3.103
	The possibility of selling crops and livestock industries easier	3.11	1.106	24.491
	Changes in the type of crops to increase local village industries	3.21	0.212	4.187
Job creation	Use of rural surplus labor	3.04	0.664	6.60
	Creating new job opportunities for villagers	3.38	0.375	3.34
Investment	Quantity and quality of transport networks between rural development	3.00	1.000	18.89
	Development of road facilities such as mosques, restaurants and ...	3.67	1.673	34.71
	Improving the quality of rural services (water, electricity, gas ...)	2.56	-0.442	-6.250
	Development of IT infrastructure communication (telephone, mobile and internet ...)	2.47	-0.529	-7.320
	Development of facilities and services such as mechanical and electrical work ...	3.11	0.106	1.940

The value of impact of social factors on creating agricultural complementary-processing industries in the studied area is presented in [Table 2]. Based on these results, mean and standard deviation for the participation and rural migration are 3.4±0.41 and 2.7±0.596 respectively. Increase of the people's residence in the village with an average of 3.44 is effective compared to other options.

Table 2: The values of impact of social indices on creating agricultural complementary-processing industries values in the studied area

Variables	Item	Mean	SD	t statistic test
Participation	Interest of villagers to work in rural industries	3.44	0.442	4.835
	More activity of rural cooperatives	3.36	0.356	3.920
	Increased rural population cooperation with state institutions responsible for the industry	3.42	0.433	3.364
Immigration	Increase in the shelf life of the people in the villages	3.44	0.442	5.566
	Accepting immigration from outside the village	1.96	-1.038	-11.467

The values of the effect of physical indices on creating agricultural processing-complementary industries in the studied area are presented in [Table 3]. Based on these results, the mean and standard deviation for physical changes and quality of access are 2.52±0.456 and 3.37±0.38, respectively. Improving the quality of rural roads (curbing, Chipseal, and so on) with an average of 3.41, and communication infrastructure development of roads with an average of 3.35 is more effective than other items.

Table 3: The values of the effect of physical indices on establishing industrial complementary-processing industries in the studied area

Variable	Item	Mean	SD	t statistic test
Physical changes	Recovery and rehabilitation of rural housing	2.342	0.389	-8.895
	Construction development in rural areas	2.524	-0475	9.815
	Improving the quality of rural homes	2.674	0.492	9.948
	Increasing rural architecture changes	2.535	-0.468	-9.948
Access quality	Improving the quality of rural roads (curbing, Chipseal, and so on)	3.41	0.413	3.653
	Development of infrastructure for roads	3.35	0.346	3.233

In [Table 4], the value of the impact of environmental factors on creating agricultural processing-complementary industries in the studied area is given. The results showed that the mean and standard deviation for environmental degradation and environmental pollution are 3.52±0.62 and 3.24±0.82, respectively. Unplanned construction with an average of 4.14, improving methods of waste disposal with an average of 3.87, increased destruction of vegetation due to the establishment of industries in the region and increase of the destruction of vegetation due to the establishment of industries in the region with an average of 3.86 are more effective than other items.

Table 4: The values of the impact of environmental factors on creating agricultural processing-complementary industries in the studied area

Variable	Item	Mean	SD	t statistic test
Environmental destruction	Unplanned construction	4.14	-0.144	14.940
	Increased land use changes in farms and gardens	2.43	0.433	7.976
	Increasing destruction of natural beauty	3.79	0.788	9.944
	Increased destruction of vegetation due to the establishment of industries in the region	3.86	-0.144	-0.996
	Increase in wildlife habitat destruction with the development of rural industry	3.40	-1.596	-33.015
Environmental pollution	Increased water pollution	3.55	0.546	8.996
	Village atmosphere odor pollution by industries	3.05	0.452	6.264
	Increased discharges to surface water sources and so on	3.86	0.856	13.227
	Improved methods of waste disposal	3.87	-1.135	-16.929
	Noise pollution caused by industrial units	1.88	-1.125	-18.102

CONCLUSION

According to the study, the economic variable average in the studied area is 3.60, and the t value obtained for comparing this mean with three is less than 0.05. Thus, the hypothesis denoting the lack of difference of the mean with three and considering the confidence interval values obtained that contains positive numbers, it could be said that the mean is significantly higher than three. Therefore, the mean of the variable is significantly higher than three, and it is concluded that that in order to create new jobs, to increase in investment, and to decrease unemployment in the studied region, establishing and development of processing industries seems essential. The results are consistent with findings of [9], [7], [10] confirming that the findings are inconsistent with the findings of the research by [11] and [8]. Moreover, according to the results, social variable mean is 3.15, and the t value obtained for comparing this mean with three is less than 0.05. Thus, the hypothesis denoting the lack of difference of the mean with three and considering the confidence interval values obtained that contains positive numbers, it could be said that the mean is significantly higher than three. Therefore, the mean of the variable is significantly higher than three, and it is concluded that creating and development of processing industries new jobs have been effective in increasing the role of rural women in economic activities and the development of the studied area and it is acceptable. This finding is consistent with findings of [7] and inconsistent with the results [12].

Moreover, considering that the environmental variable mean in Weiss rural district was 3.03, and given the confidence interval obtained that includes negative numbers, it can be argued that the mean is significantly less than three. Thus, in order to protect agricultural lands, pastures, and plant species, reducing the detrimental environmental impact and the development of processing industries seem essential in the studied area. The result obtained are consistent with the findings of [13], [14], and inconsistent with the results of [12].

According to the study findings, the mean obtained for investments is 3.07, and the value obtained for comparing this mean with three is less than 0.05. Thus, considering the confidence interval values obtained that contains positive numbers, it could be said that the mean is significantly higher than three. Therefore, the mean of the variable is significantly higher than three, and in order to increase the time of preserving and exports of agricultural products in the studied area, the development of processing and complementary industries seems necessary. The results are consistent with the findings of [3], [10] and aligned, and are not consistent with the results of [15].

CONFLICT OF INTEREST
Authors declare no conflict of interest.

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