

## Evaluating the Role of Date Production Corporations in Occupational Development of rural Regions\* in Saravan using Factorial Analysis

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### ABSTRACT

The present study was carried out with the aim of evaluating the occupational development by date production corporations in rural regions of Saravan. The method used was factorial analysis. This research is based upon the participation theory, i.e. upon what these people consider as effective in their occupational development. The hypothesis applied for the research is as following. Date production corporations can form the most significant dimension of occupation in rural regions of Saravan. Since the economic and social conditions of these rural regions are different in boundary and non-boundary parts, the present study is composed of the two corresponding parts as well. The results of the current investigation in non-boundary rural regions indicated that among the five assessed field indexes<sup>†</sup>, date production corporations were the second of highest occupational development in rural regions of Saravan through achieving 89% variance. Furthermore, among boundary rural regions in Saravan, these corporations ranked fourth in occupational development among the 8 studied indexes, via acquiring 64% variance.

**KEYWORDS:** rural Regions; Saravan; occupational development; date production

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### 1. INTRODUCTION

In economics of most developing countries, the major part is agriculture which covers 45 to 90 percent of total occupations. Accordingly, economic development in such countries has a close relationship with progress in agricultural economics (Asayesh, 1383). As most economists believe, agriculture is one of the most significant and strongest economic parts of Iran, providing 1.5 percent of internal impure production, one third of occupations, more than 4.5 percent of foods, half of non-oil export, and approximately 1.9 percent of the requirements of industries (scientific promotion network, 1385). The province of Sistan and Baluchestan encounters numerous obstacles in agricultural development, arising from arid climate, shortage of rainfall, lack of permanent water flows, specific climate conditions, consecutive droughts, and specific social characteristics such as low literacy among farmers and traditional agriculture. On the other hand, this province has high potentials in agricultural development. Sistan and Baluchestan is an agricultural region and it is not an exaggeration to say that, agriculture is its economic key (Pars-vista consulting engineers, 1375). According to results of the statistics in 1383 among major groups of occupation, agriculture, industry, and services contributed 24, 28, and 48 percent, respectively (Sistan and Baluchestan management and planning organization, 1384). The fact that this province has been well-known as Iran's granary can show the significance of agriculture in Sistan and Baluchestan (Rakhshani, 1359).

The considerable differences among different regions, which are resulted from their natural economic and social facilities, have inspired the researchers to analyze this spatial imbalance in order to recognize the effective factors in it. Being acquainted with potentials, capacities, and limitations of different regions is of high priority to development programmers (Zomorrodian, 1364).

### 2. Statement of the Problem

During different historical era, palm has been considered as a holy plant and basis of forming human civilization, and its fruit has always been regarded as important. Palm cultivation has a long history in Iran and is currently one of significant and valuable products of the country (Hashempour, 1378).

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\* In this study, region represents rural district.

<sup>†</sup> The studied indexes are: 1) development of date production corporations; 2) general agricultural activities; 3) agricultural production corporations; 4) engagement in peripheral activities; 5) development of connection ways; 6) boundary trade; 7) development of boundary markets; 8) ranching activities.

Researches carried out by world organizations has led to the result that, man's need of agricultural products is increasing and such a demand doubles for developing countries (Hashempour, 1378).

High nutritional value of date, its pharmaceutical value, economic value of its core, and significance of alterant industries are considered as considerable factors in planning and justification of the specific attention paid to date in the region.

Having an arid climate, Saravan has a geographic scope coinciding with the growth territory of different kinds of date. Additionally, its soil is favorable for growth of the best palm tree in the world (Sepahi, 1387).

What has made the role of date remarkable in economics of residents of this region is its desirability and world request for this product.

As a result of lacking required substructures for development of economics of this product, there has not been an optimized use from its potentials in economics.

The present research includes two parts, namely the field and library study. In library part, the existing statistics pertaining to status of date product in rural regions of Saravan have been investigated. Due to significance of participation theory in present world's programming, it has been applied in field study of this research.

According to statistics, the categorization of occupations relating to major occupational groups in Saravan indicates that contributions of agriculture, industry, and service activities to occupations are 40.3, 21, and 38.2 percent, respectively. On the other hand, the ratios in the province are 33.1, 22.7, and 44.2 percent, respectively (provincial organization of planning and budget, 1376), which reveals the high significance of agriculture part in this city.

### 3. Study scope

Saravan is one of the cities of Sistan and Baluchestan province, located in its east, which is geographically contiguous to city Khash from north and north-west, to cities Iranshahr and Sarbaz from west and south-west, and to the country Pakistan from east and south-east.

The area of the city is 23880 square kilometers and it has a distance of 337 kilometers from the province capital. Saravan has 6 urban zones, 6 parts, 14 rural districts, and 835 inhabitable villages. Its average height from sea level is 1165 meters. This city is located in east side of Iran. The current study was performed in rural districts of Saravan.

### 4. Factorial Analysis technique

Factorial analysis model is a suitable technique for summarizing and categorization of high amounts of information. Summarization in this method is carried out in such a way that the summarized result is conceptually meaningful (Talebi and Zangiabadi, 1380). Due to variety of phenomena and differences among locations, it is not possible to investigate all phenomena in most cases, and it would not lead to favorable results even if it was possible. Accordingly, the information of locations and phenomena are first categorized in order to be studied. Factorial analysis has different applications and there are various methods, from viewpoint of their applications and objective of research subject, among which the two types (R) and (Q) can be mentioned. (R) type is applied whenever the researcher's purpose is to summarize a number of indexes as significant factors, while the latter is utilized with the aim of combining and summarization of several geographical regions in homogeneous groups in an area (Kalantari, 1382). The present research makes use of factorial analysis of type (R). The mentioned method is not only useful for clustering of the phenomena with numerous characteristics, but also as a criterion for making the locations hierarchic from perspective of being developed (Rahnama, 1373). The main terminology of factorial analysis is as follows:

- 1- Factor: a linear combination of major variables, which indicates a summarization of observed variables.
- 2- Factor loading: the correlations among major variables and factors, i.e. an indication of the correlations among factors and variables.
- 3- Factor matrix: indicates percentage of variance of each factor.
- 4- Rotated factor matrix: in this matrix, positions of variables change. In fact, this process is to balance factorial axis in order to reach significant and simple factors.
- 5- Factor weight: the coefficients given to variables to compute factor score.
- 6- Factor score: numerical weight calculated for each region by multiplying factor weight using standard (Z) equation.
- 7- Eigenvalue: shows the variance of each factor.

Among the characteristics of factorial analysis, the following ones exist from first factor toward next factor:

- 1- Variance value recedes +1 and gets close to +5.

- 2- Number of loaded variables in factors decreases.
- 3- Homogeneity of variables declines.
- 4- Effect of factors decreases.
- 5- Eigenvalues of factors have a decrease.
- 6- Perhaps no variable is loaded in the final factor.
- 7- Some final factors can be omitted when we do not require a defined amount of variance (Zangiabadi, 1378).

### 5. Procedure of factorial analysis

The procedure of factorial analysis can be reviewed in following steps:

- 1- Formation of data matrix from putting the indexes in columns and the 14 regions of Saravan rural districts in rows.
- 2- Calculation of correlation matrix: In order to perform subsequent calculations and determining the internal relationship among indexes, correlation matrix is used. Values of the index are sorted in positive direction.
- 3- Extraction of factors: This is carried out using the factor matrix, by which the common factors and relative importance of each index is determined. Then, eigenvectors are calculated for all nonzero values. Eigenvectors are in direction of the loading value corresponding to all indexes for the noted factor, in other words in direction of the factor weight. In factorial analysis, the only the indexes or factors used are those with correlation coefficient higher than 0.5 (Anderson, 1958). Extraction of factors of loaded indexes is accomplished through varimax rotation in factorial analysis.

### 6. Statistical society under study and method of evaluation of sample volume and sampling

The studied statistical society is Saravan in east of Sistan and Baluchestan province, located with a 337-kilometers distance from city of Zahedan, capital of this province. According to Iran's official divisions in 1386, this city has 14 rural districts and there has been emphasis on it in the present study to reach the result. In 1385, the rural population of this city has been estimated as 147000 persons. Sample volume in field study was calculated by Cochran method.

$$n = \frac{t^2 pq}{d^2} \left( 1 + \frac{1}{N} \left( \frac{t^2 pq}{d^2} - 1 \right) \right) \quad (1)$$

$$N = \frac{(1.96)^2(0.7)(0.3)}{(0.05)} \left( 1 + \frac{1}{147000} \left( \frac{(1.96)^2(0.7)(0.3)}{(0.05)^2} - 1 \right) \right) = 322 \quad (2)$$

where  $t$  is variable value in normal distribution (normal distribution relating to Gaussian curve) extracted from the corresponding table in required level of probability.  $p$  is the percentage of the characteristic distribution in society, i.e. ratio of people with studied characteristic.  $q$  is the percentage of people lacking the studied characteristic.  $d$  is the subtraction result of real ratio of the characteristic in society from estimated ratio of presence of that characteristic in society, whose maximum value is 0.05, and measurements and sample accuracy depend on it (Hafeznia, 1384). To increase the accuracy in performed procedure, we considered 420 questionnaires.

We made use of classified probability sampling method, in which questionnaires were randomly distributed among villages of the 14 rural districts. Chosen persons were from villagers of these regions.

### 7. METHODS AND TOOLS OF DATA COLLECTION

- 1- Theoretical and scientific resources were gathered through visiting scientific centers such as libraries.
- 2- The mentioned statistics have been collected from organizations and offices of Sistan and Baluchestan province, together with provincial organization of management and planning.

## 8. ANALYSIS OF DATA

The essential data and statistics were initially entered in SPSS statistical software. Afterward, analysis of these data was performed using factorial analysis and multivariable regression. Subsequently, we investigated the status of services in rural districts of the region under study and current status of indexes was identified and analyzed via depicting these indexes on map. Then, through combining all factors, conclusion and further suggestions were presented.

### 9. Soil status in the region under study

There exists no comprehensive research regarding soil type of Sistan and Baluchestan province. Only in fifth edition of the book "Soils" written by Kordavani, a brief part points out to this issue. The majority of regions in Saravan have a ready cell, which has subclasses. The problems caused by this kind of soil include the locations of these soils, shortage of water, high salinity of the soil, its being alkali, and its shallowness. Such soils are poor regarding nitrogen content, but have no potassium deficiency. It is therefore crucial to sweeten this type of soil using floodwater. Another kind of soil in this region belongs to group of anti cell soils, which are found mostly near rivers and their basins. A characteristic of these soils is that they have no horizontal evolution. The most important subclasses of it are alluvial soils, litho cell, rigors cell, and a kind of gellay. Use of such a soil is accompanied by problems caused by water and wind erosion. On the other hand, floodgate of the fields or association of sediments by water causes problem (Kordavani, 1371).

Some parts of Jalagh and Nahouk rural districts have a ready cell soil. As mentioned above, a characteristic of this kind of soils is the association of calcium carbonate. This type of soil may be the sign that this region has been more humid in previous years, compared to its current status (Banaee et al., 1383).

In Zaboli rural district, alluvium deposits of Rutak River together with floodwaters whose origin is the highest mountains of this region, i.e. Birak Mountain, provide one of the most fertile agricultural fields in the area. This part is devoted to cultivate high-grade dates of banquet type. In addition, deposits of Rutak River in Sibosuran rural district have formed the most desirable plain of the city, namely Moradabad Plain in Suran, for agriculture and development of palm trees.

### 10. Investigating the status of fields

Amongst the factors and parameters effective in development of agriculture are the type and amount of agricultural fields of the geographical place. Therefore, this part studies the current status of agricultural fields in villages of Saravan. The results indicate that 80.12 percent of flatlands in rural regions of Saravan are assigned to Chahar, Dehestan, Sibosuran, Zaboli, Paskouh, and Gasht. From this regard, the mentioned regions have the essential background for agricultural development. Also, 77.36 percent of the fields in region of rural districts Bam posht, Keshtegan, Hidouch, and Kent, are located in mountainous zone, hence it is necessary to use modern technologies and get familiar with type of the soil of fields in order to develop agriculture and improve its status in this region. Moreover, 47.5 percent of fields located in rural districts Bam posht, Keshtegan, and Kouhake Esfandak are both mountainous and flatland, thus the emphasis is better to be on development of gardens and ranching in order to develop agriculture in these regions.

### 11. Study of the status of resources of agricultural water

Another important and effective parameter in agriculture is water availability, which becomes even more noteworthy in rural regions of Saravan being located in arid and desert zone of Iran. Water has a high significance in agricultural development of the region. Regarding this point, we investigated water availability in rural regions of Saravan. The results of this study indicated that the rural districts Sibosuran, Bamposht, Kent and outskirts compose 73.82 percent of deep and medium-depth wells of rural regions in Saravan. The mentioned wells have considerably suffered from water decrease in recent decade. Accordingly, it seems necessary to augment underground water resources and aquiferous activities in order to decrease water problems. The Zaboli, Paskouh, Birak and outskirts possess 71.14 percent of the aqueducts in Saravan. On the other hand, 60.85 percent of permanent springs of the region are assigned to the rural districts Bamposht, Goshtegan, and Hidouch, mainly located in mountainous zone of Saravan. It should be noted that most of seasonal springs are located in these rural districts, too. With the aim of increasing the amount of water and consequently decrease the problems of water shortage, it is possible to augment underground water resources in years with higher rainfall.

### 12. Investigating the status of agricultural machinery

Technology is considered a central factor in agricultural development, especially in arid zones and places with limitations and tough climates. As was mentioned in previous parts, Saravan is among regions with arid climate. Therefore, availability of suitable technologies consistent with current conditions has

valuable influences directly on agriculture and indirectly on economics status of the region. We thus analyze the status of current agricultural machinery in this part. The obtained results show that, the rural district Sibosuran gets the first rank, possessing 43.55 percent of available tractors, 33.33 percent of combines, and 61.53 percent of tillers. When we compare the agricultural fields of the rural districts divided by their availability of agricultural machinery, the heterogeneous status of this index becomes more obvious. For instance, the rural district Zaboli possesses only 7.7 percent of the total number of available tractors, while having 18.69 percent of plain fields. Also, farmers of Paskouh rural district have only 3.15 percent of tractors whereas they own 35.16 percent of plain fields. These examples reveal the importance of balance to be considered in agricultural planning. Hence, in order to form a balance in possessing the machinery effective in agricultural development, such as tractor and combine, distribution of such machinery should be based upon the area of agricultural field, type of the field, and number of farmers working on that field. The mentioned results are shown in Table 4.

### **13. Investigating the status of alterant industries of agricultural properties**

A significant parameter in agricultural development is the establishment of its dependent industries, which is effective in occupational development and population stay in rural regions. With this regard, we studied current agricultural industries in this section.

### **14. Date packing industries**

Among agricultural products, date of Saravan has high quality and it is the most considerable agricultural product of the region, being cultivated in all rural zones due to suitable climate conditions. So this part is devoted to study the status of its alterant industries in rural zones. The results of current status of date packing industries indicate that the rural districts Sibosuran and Zaboli have 77.77 and 22.22 percent of the villages with date packing industries, while no such industries exist in other rural districts of Saravan, as illustrated in Table 4.38. It seems that the dependent industries should also have balanced progress in other rural regions in order to reach agricultural development. In addition, the growth of other dependent industries, such as production of toddy and alcohol is vital.

### **15. Investigating field indexes**

With the aim of clarifying the status and recognizing the effective factors in occupations and determining the priorities of the necessities effective in development based on villagers' opinions, a questionnaire with 28 questions was designed and 30 distributed in a simple random way in each rural district, considering the population of each rural district. Since the needs and facilities of boundary rural districts are different from those of other regions, the studied indexes were classified into two groups, namely the indexes of boundary rural districts and indexes of non-boundary rural districts.

### **16. Studied indexes**

- 1-Date production corporations
- 2-Occupation
- 3-Agriculture
- 4-Connection ways
- 5-Agricultural production corporations
- 6-Boundary trade
- 7-Ranching
- 8-Boundary market

### **17. Results of studied indexes in boundary rural districts**

Based on the method of multiple responses in SPSS software, field pickups were scored and the obtained results are demonstrated in Table 6.

After determining the score of each rural district, the contribution of each index was accurately found out using factorial technique.

Study of the investigated variables in this part shows that among present factors, two of them have most effect on boundary rural regions of Saravan. The first and second factors have 43.06 and 29.31 percent of variance, respectively. In the first factor, the indexes of boundary trade, occupation, and date production corporations have highest contributions, which were 95, 75, and 64 percent, respectively (Table 7). Additionally, factor scores of these indexes have been calculated in Table 8.

### **18. Results of studied indexes in non-boundary rural districts**

Based on the method of multiple responses in SPSS software, field pickups were ranked.

The results obtained from calculations indicate that the studied indexes have been summarized to two factors using factorial analysis technique. The first factor covers 60.17 percent of society variance, while the second one covers 22.41 percent of it. The percentage of variance related to the variables under study is depicted in Table 10. The factor scores of each rural district is also shown in Table 11.

### 19. Investigating the research hypothesis

As the third phase of research, this section scrutinizes the effective factors in occupational development in villages under study and subsequently investigates the hypotheses of the research.

Hypothesis: Date production corporations can establish the most significant dimension of occupation in rural regions of Saravan.

Among the studied indexes, this index covers 64 and 89 percent of variance in boundary and non-boundary rural districts, respectively. This indicates that these corporations are a key factor in occupation creation in non-boundary rural districts. Therefore, this hypothesis is validated.

### 20. Checking the question under study

From viewpoint of Saravan villagers, what are the effective factors to facilitate the improvement of occupational status?

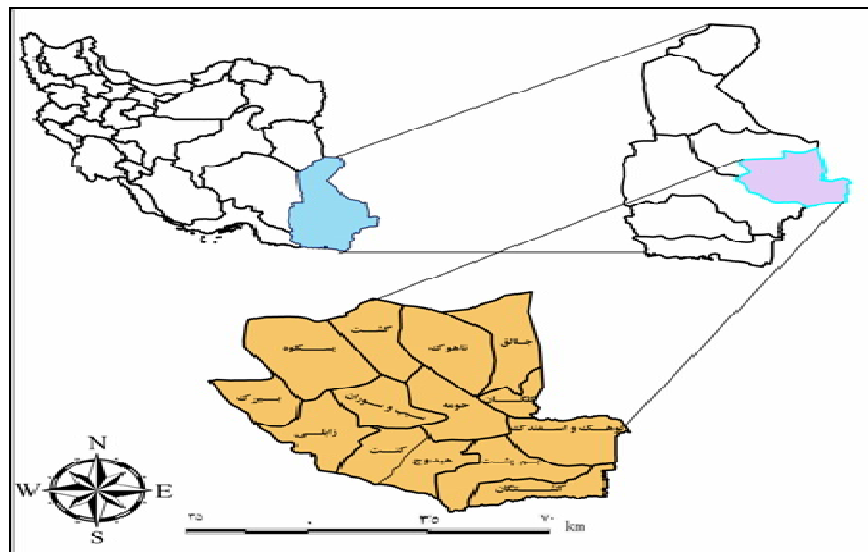
The results obtained from analysis of questions via Factorial analysis technique revealed that the contribution of different factors is 0.96, 0.89, 0.87, and 0.67 percent of variance for progress of connection ways, development of date production corporations, progress of agricultural production corporations, and occupational augmentation, respectively.

It can thus be concluded that the effective strategies suggested by villagers for development of these regions are: 1) progress of connection ways, 2) development of date production corporations, 3) progress of agricultural production corporations, and 4) occupational augmentation.

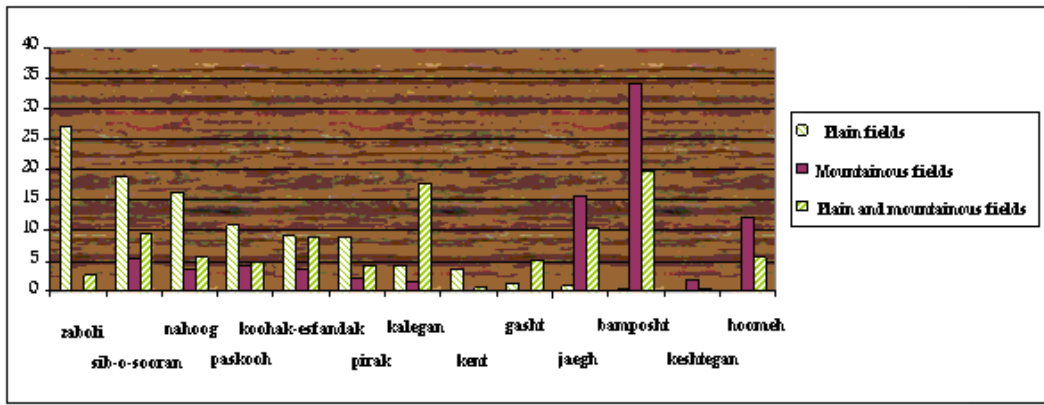
### 21. Strategies and Suggestions

Determining the priorities is one of fundamental principles in planning. Prediction of what improves the development levels in society is also of high importance. Based upon the stated points and considering the findings of current research, the following suggestions are presented with the purpose of improving the occupational status in rural regions of Saravan.

- 1-To facilitate the development of date industry, different steps of processing, investment, export, and marketing should be considered in an applied way.
- 2-Since different steps of date production, i.e. implanting, pickup, and cropping, are currently carried out traditionally, instruction and promotion should be regarded as the first priority in date production corporations.
- 3-In production corporations, initial capital is of great importance and the corporations require governmental assistance as long-term loans in order to reach the objectives.
- 4-Development of peripheral activities and alterant industries is highly significant.



Map 1. Illustration of the studied region in the province Sistan and Baluchestan and in Iran, 1387.



Graph 1. Illustration of field types in rural regions of Saravan in 1382.

Table 1. Political divisions of the province Sistan and Baluchestan and the city Saravan

locations	Number of cities	Number of parts	Number of rural districts	Number of towns	Number of inhabitable rural
The province Sistan and Baluchestan	10	37	98	32	8167
The city Saravan	1	6	14	6	835

(Reference: Organization of management and planning, statistics calendar of Sistan and Baluchestan, 1386).

Table 2. Covering type of the fields in rural regions of Saravan

Name of rural district	Village (%)	Plain fields (%)	Mountainous fields (%)	Plain and mountainous fields (%)
Bam-posht	18	0.46	34.24	19.6
Keshtegan	9	0.93	15.56	10.23
Koohak-esfandak	7	4.2	1.55	17.67
Jalegh	1.8	3.73	0	0.71
Kalegan	1.9	1.4	0	5.11
Nahoog	0.84	0	1.94	0.46
Babrak	5	11	4.28	4.65
Zaboli	10.4	18.69	5.44	9.3
Paskooh	7.8	16.53	3.5	5.58
Sib-o-sooran	9.1	27.1	0	2.79
Hoomeh	7.04	8.87	2.33	4.18
Gesht	7.46	9.11	3.5	8.83
Kent	0.16	0	12.06	5.58
Hiduch	2.1	0	15.56	5.11
Sum	100	100	100	100

(Source: Agricultural census, identity card of rural districts, Iranian center of statistics, 1382).

Table 3. Types of agricultural water resources in rural regions of Saravan in 1382.

Name of rural district	Deep and medium-depth well (%)	aqueduct (%)	Permanent spring (%)	Seasonal spring (%)
Bam-posht	22.10	1.49	27.06	29.41
Keshtegan	5.59	1.49	10.40	21.56
Koohak-esfandak	3.64	6.36	2.08	2.61
Jalegh	1.45	0	0	0
Kalegan	0.36	4.49	0	0.32
Nahoog	1.09	1.12	0.52	0.32
Babrak	1.21	12.73	2.86	0.65
Zaboli	1.45	29.21	8.97	0.65
Paskooh	1.94	16.85	3.25	0
Sib-o-sooran	26.03	3.74	4.81	0.65
Hoomeh	12.04	12.35	1.17	2.61
Gesht	0.60	3.27	8.32	4.90
Kent	13.38	5.61	7.15	3.59
Hiduch	6.44	1.12	13.39	32.67
Sum	100	100	100	100

(Source: Agricultural census, identity card of rural districts, Iranian center of statistics, 1382).

Table 4. Status of date agricultural technology in rural regions of Saravan in 1382.

Name of rural district	Number of Rumani tractors	Number of Messi	Ferguson tractors	Number of John Deer tractors	Other tractors	Total number of tractors in each rural district	Number of combines	Percentage of combines	Number of tillers	Percentage of tillers
Bam-posht	27	0	0	0	27	7.73	2	66.66	1	7.69
Keshtegan	10	1	0	0	11	3.15	0	0	0	0
Koohak-esfandak	6	5	1	0	12	3.43	0	0	0	0
Jalegh	1	0	0	0	1	0.28	0	0	0	0
Kalegan	3	2	0	0	5	1.43	0	0	2	15.38
Nahoog	3	3	0	0	12	3.43	0	0	0	0
Babrak	16	3	0	0	19	5.44	0	0	0	0
Zaboli	23	4	0	1	27	7.73	0	0	0	0
Paskooh	7	6	0	1	11	3.15	0	0	0	0
Sib-o-sooran	130	21	1	5	152	43.55	1	33.33	8	61.53
Hoomeh	11	2	0	2	15	4.29	0	0	0	0
Gesht	0	2	0	1	0	0.85	0	0	0	0
Kent	12	11	0	0	23	6.59	0	0	2	15.38
Hiduch	26	0	0	0	26	7.44	0	0	0	0
<b>Sum</b>	<b>279</b>	<b>60</b>	<b>2</b>	<b>10</b>	<b>349</b>	<b>100</b>	<b>3</b>	<b>100</b>	<b>13</b>	<b>100</b>

(Source: Agricultural census, identity card of rural districts, Iranian center of statistics, 1382).

Table 5. Status of date packing industries in rural regions of Saravan in 1382.

Name of rural district	Bam-posht	Keshtegan	Koohak-esfandak	Jalegh	Kalegan	Nahoog	Babrak	Zaboli	Paskooh	Sib-o-sooran	Hoomeh	Gesht	Kent	Hiduch	Sum
<b>Date packaging (%)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22.22</b>	<b>0</b>	<b>77.77</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>100</b>

(Source: Agricultural census, identity card of rural districts, Iranian center of statistics, 1382).

Table 6. The scores of field indexes in boundary rural districts of Saravan.

No.	Index	1	2	3	4	5	6	7	8
	<b>Name of rural district</b>								
1	Bam-posht	22	28	20	30	26	30	20	30
2	Keshtegan	21	27	19	29	25	29	19	29
3	Koohak-esfandak	22	26	17	30	27	30	18	30
4	Jalegh	27	29	16	30	25	28	19	30
5	Kalegan	24	30	17	30	25	28	19	29
6	Nahoog	25	29	27	29	30	27	18	28

Table 7. Variance of field indexes of boundary rural districts in Saravan.

	First factor	Second factor	
Index	Variance percentage	Index	Variance percentage
Boundary trade	0.95	Agriculture	0.68
Occupation	0.75	Connection ways	0.65
Boundary market	0.69	Ranching	0.57
Date production corporations	0.64	-----	-----
agricultural production corporations	0.64	-----	-----

(Source: Author's calculations).

Table 8. Factor scores of field indexes in boundary rural districts.

Name of rural district	Factor 1	Rank	Factor 2	Rank
Bam-posht	-0.954	1	0.156	6
Keshtegan	-0.465	5	-0.471	5
Koohak-esfandak	-1.015	3	-0.779	4
Jalegh	0.249	6	1.252	1
Kalegan	0.651	4	1.053	3
Nahoog	1.534	2	-1.210	2

(Source: Author's calculations).



Table 9. Factor scores of field indexes in non-boundary rural districts.

No.	Index Name of rural district	1	2	3	4	5
7	Babrak	24	27	26	30	25
8	Zaboli	29	29	30	29	30
9	Paskooh	27	30	30	28	29
10	Sib-o-sooran	29.5	30	30	29	30
11	Hoomeh	26	30	26	27	28
12	Gesht	27	27	27	28	27
13	Kent	25	29	28	27	27
14	Hiduch	24	28	26	30	29

(Source: Author's calculations).

Table 10. Variance of field indexes in non-boundary rural districts of Saravan.

Index	Variance percentage	Index	Variance percentage
Date production corporations	0.89	Connection ways	0.96
Agriculture	0.89	-----	-----
Agricultural production corporations	0.87	-----	-----
Occupation	0.67	-----	-----

(Source: Author's calculations).

Table 11. Factor scores of field indexes in boundary rural districts.

No.	Name of rural district	Factor 1	Rank	Factor 2	Rank
7	Babrak	-1.341	2	1.172	3
8	Zaboli	1.237	3	0.584	5
9	Paskooh	0.709	4	-0.544	6
10	Sib-o-sooran	1.443	1	0.306	7
11	Hoomeh	-0.398	8	-1.491	1
12	Gesht	-0.582	6	0.110	8
13	Kent	-0.616	5	-1.219	2
14	Hiduch	-0.452	7	1.081	4

(Source: Author's calculations).

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Date:

Questionnaire number:

Questioner's name:

Name of rural district or village:

Dear responder,

The following questionnaire has been prepared as a part of M.Sc. thesis in geography and rural planning with the topic "investigating the spatial structure and analysis of rural development indexes (case study: Saravan) with the aim of promoting the development levels from villagers' viewpoint". It is clear that filling this form is a step toward a stable rural society. So, please answer the questions carefully. We are much grateful for your help.

- 1- Gender: a) male; b) female.
- 2- Education:
  - a) Elementary; b) guidance school; c) high school; d) diploma; e) college; f) B.Sc. or higher
- 3- Marital status: a) single; b) married.
- 4- Number of children:
- 5- Number of family members:
- 6- Occupational status: a) without job; b) have job.
- 7- Type of job:
  - a) Governmental; b) private; c) self-employment; d) student or scholar; e) other (please mention)
- 8- Occupational group:
  - a) Industry and mining; b) agriculture; c) services; d) other (please mention)
- 9- Salary:
  - a) Without salary; b) less than 50 thousand tomans; c) 50-149 thousand tomans; d) 150-200 thousand tomans; e) higher than 200 thousand tomans.
- 10- What issue your salary ha the most contribution to?
  - a) food and clothes; b) house renting; c) medical treatment; d) education; e) other (please mention)
- 11- To which of the following regions do you go more?
  - a) City center; b) Section; center; c) center of rural district; d) other (please mention)
- 12- Where do you go for providing your initial needs such as clothes and food?
  - a) City center; b) Section; center; c) center of rural district.
- 13- Where do you go for treatment?
  - a) City center; b) Section; center; c) center of rural district.
- 14- Where do you go in case of acute disease?
  - a) City center; b) Section; center; c) center of rural district.
- 15- Where do most of your relatives stay if they live out of rural district or
  - a) City center; b) Section; center; c) other cities or villages.
- 16- Which of the following facilities exist in your rural district or rural ?
  - a) water; b) electricity; c) sewerage; d) gas agency; e) telephone; f) mobile; g) all options.
- 17- Which facilities or services are necessary for your village or rural district?
  - a) ..... b) ..... c) ..... d) ..... e) ..... f) .....
- 18- If you had more financial facilities, what would you do?

- a) Buy an agricultural field; b) agricultural organizations; c) improving the condition of your house; d) immigration; e) other (please mention).
- 19- If your answer to previous question was the option (d), explain the reason.
- 20- Does your village or rural district have a place for entertainment or for tourism? a) Yes; b) No.
- 21- What actions do you consider effective for improvement of economical and social conditions of the people in this village or rural district?  
a) occupational development; b) improvement of agricultural status; c) progress of connection ways; d) development of agricultural production corporations; e) development of date production corporation.
- 22- In your opinion, what option is more effective in occupational development of your village or rural district?  
a) making use of resources and mines; b) agriculture; c) boundary trade activities; d) other (please mention).
- 23- Have anybody from your village immigrated in recent years?  
a) Yes; b) No.
- 24- If yes, where they have immigrated?  
a) City center; b) Section; center; c) other cities or villages.
- 25- Do you live in a boundary village or rural district?  
a) Yes; b) No.  
If yes, answer the following questions.
- 26- If yes, what is the most important dimension of occupation in your boundary village?  
a) Boundary trade; b) agriculture (date industry); c) ranching; d) other (please mention).
- 27- If your answer to previous question was the option (a), why do you think that boundary trade has not yet been successful in occupational development?
- 28- Does any boundary market exist in your village or rural district?  
a) Yes; b) No.