Evaluation of Rural Development in Guilan Province, Iran

Hamidreza Alipour¹ and Mohammad Sadegh Allahyari²

^{1,2} Department of Agricultural Management, College of Agriculture, Islamic Azad University, Rasht Branch, Iran

Allahyari@iaurasht.ac.ir

Abstract: The main purpose of this study was to measure the development level of Guilan rural districts based on Morris Inequality Index. The study employed a descriptive survey design. The statistical population of this study was all Guilan rural districts consisting of 109 rural districts in 2006. In order to investigate and to determine the key indexes of development or backwardness in each region, some variables in five groups (agricultural, health, infrastructure and social) had been used. For data analysis and assessment of development level, Morris Inequality Index was used. Findings revealed that out of the total Guilan rural districts in developmental situation, six rural districts were underdeveloped and more percent of villages were in less developed situation.

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1. Introduction

Development and Growth as an economic and social context, in one hand by economists and then by socialist and other researchers of some sciences such as geography had been paid attention and became as the base of planning. Permanent problems in study the economic development literature and social changes is to recognize the concept of development and growth (Ghadir Masoum and Habibi, 2004)

Development word has different definition and interpretation in view of development economists and researchers which including the increasing of production efficiency, promotion of life quality and quantity level, remove poverty and privation, promotion the health and therapy service level, removing unemployment problems and inflation and providing socio-economic requirements. In fact, development is a thing which influences our living. The ideal meaning of development is to improve all living quality (Khakpour, 2006). In other definition of development, we can consider it as an economic, social and political process which resulted from living standard and cause to improve the living level of increasing population. Development process has so importance that it must be observed parallel to population growth. The most important subject in definition of development is its attitude to humankind. One that is considering about development is its popularity, participation and endogenous. As we can say that, in fact, development is for human and about human and its final end is to reach human to satisfaction stage from his/her life (Eanali and Taherkhani, 2005).

During past decades, Iran, either before the revolution or after it had been had the witness of performing various development programs. Development quality and its infrastructure had been created major problems in developmental trend of the country areas because of undesirable past national and focused planning. So, the subject of government investment between the economic area, sections and sub-sections always had been considered in order to justice distribution and to reduce unbalancing.

Various dimension and structure complexity of this subject is considering as one of the main constrain in provide suitable model to distribute the credits. In order to solve the problems result from regional unbalancing, the first step is to identify and determine the level of regions in fitness rate in socio-culture and etc area (Rezvani and Sahneh, 2005). Therefore, the study of socio-economic and regional- province unbalancing is one of the basic and necessary actions to planning and reform in order to provide economic growth along with social justice which can influence the resources allocation with the aim of remove the regional unbalancing (Ahanghari and Saadat Mehr, 2007)

Although it is possible to simply state that there is no rural district which is higher developed or higher back warded than the other rural district, but measuring development level is not a simple work. As we said, development word has very meaning. Whether the meaning of development is economic development, social, educational, cultural and health development or a combination of them? Even we define development in a more exact concept; its measurement is problematic (Khakpour, 2006)

The main purpose of this study was to measure the development level of Guilan rural districts based on Morris Inequality Index.

2. Material and Methods

Guilan province has been located in the north of Iran in the area of $36^{\circ}34' - 38^{\circ}27'$ northern latitude and $48^{\circ}53' - 50^{\circ}34'$ eastern longitude from meridian as it is neighboring with Caspian sea and Azerbaijan by the north, and from the west by Ardabil province, and from the south by *Qazvin* and *Zanjan* province and from the east by *Mazandaran* province (figure 1).

The type of this study is applied and the research method is second analyzing attributive study of the existence information and documentary. Concerned indexes for each of the rural districts had been collected and dealing with ranking and leveling Guilan rural districts through suitable number taxonomy statistical methods. The indexes in this study had been collected by some organizations such as Iran Statistical Center, Health and Therapy centers, Education Department and Agricultural Organization by the separating of villages and rural districts. The statistical population of this study was all Guilan rural districts consisting of 109 rural districts in 2006. Rasht Township with the number of 18 rural districts and Bandar Anzali Township had been enjoyed from the most and least frequency, respectively. Data analyzing method was use of the indexes. Correlation rate, reducing the number of indexes into some general indexes and finally, grouping and ranking the rural districts in developing or deprivation point of view which performed using statistical software. In this research, in order to investigate and to determine the key indexes of development or backwardness in each region, some variables in five groups (agricultural, health, infrastructure and social) had been used.



Figure 1, site of study

The structure of Morris Inequality Index

United Nations Development Program (UNDP) had been applied a model to rank the areas in development point of view which it was both the most recent formal model used in global level and their extending and replacing capacity in the planned places are performable with various scales. This model is known as Morris Inequality Index. This model is important to determine establishing model of settlement network, to determine rural system or rural development area. Morris Inequality Index identified the developmental place of each unit based on each one of selected indexes using accessing information for every settlement unit and finally, it had been determined the average of indexes using development index analyze simply but with great attention and then it deal with the ranking of settlements. Calculation way of this index is as follow:

$$Y_{ij} = \frac{X_{ij} - X_{ij} (min)}{X_{ij} (max) - X_{ij} (min)} \times 100$$

 $\begin{array}{l} Y_{ij}{:} \mbox{ Inequality index to } i_{th} \mbox{ variable in } j_{th} \mbox{ unit } \\ X_{ij}{:} \ i_{th} \mbox{ variable in } j_{th} \mbox{ unit } \\ X_{ij(min)}{:} \mbox{ minimum rate of } i_{th} \mbox{ variable } \\ X_{ij(max)}{:} \mbox{ maximum rate of } i_{th} \mbox{ variable } \end{array}$

The most important point in this method is that the applied indexes must be monotonic or homo direction. In order to study the subject, all concerned indexes in the mentioned formula had been applied and finally, in order to find the main concerned development index for each unit, below equation was used.

$$D.I = \frac{\sum_{k=1}^{n} y_{ij}}{n}$$

In this relation, n and D.I are consider as the number of studied indexes and the development main index of each unit, respectively. Morris development index coefficient is range between 0-100 where the closer to 100 the greater the development level (Allahyari, 2010).

In order to measure what extends of an index had been distributed imbalance among the rural district; Coefficient of Variation method (CV) was used. Coefficient of Variation is calculated using the following formula (Kalantary, 2001).

$$C, V = \frac{\sqrt{\sum_{i=1}^{n} \frac{(X_i - \bar{X})}{n}}}{\sum_{i=1}^{n} - \frac{X_i}{n}}$$

In this method, the high number of (CV) indicating more inequality in the concerned index distribution.

C.V = Coefficient of Variation rate of an index X1 = an index rate in one region

X = The average of the same index

N = Number of regions (sector, rural district and village).

3. Results

43.1

4.6

0.9

94.5

99.1

100

Developmental coefficient of each one of Guilan rural districts had been calculated using the collected data in the form of health and therapy, agriculture, social and service indexes (18 indexes) and based on Morris Inequality Index. The results indicated that the developmental coefficient of rural districts was ranging between minimum of 4.51% to maximum of 75.2% as rural areas of *Yaylaghi* district in *Rezvanshahr* Township is enjoying the least developmental coefficient and at the other hand, rural area of *Licharegi* in *Bandar Anzali* Township is enjoying the highest development coefficient by 75.2% among the Guilan rural districts. In order to grouping rural area in Guilan province four categories were considered:

Under developed: 0- 24.99 Less developed: 25-49.99 Semi-developed: 50-74.99 Developed: 75-100

According to table 1, 53.2% (8 rural districts) from the studied rural districts are located in the less developed group and 40.4% (44 rural districts) are located in semi-developed group and only one rural district is in developed condition.

Table 1, grouping Guilan rural districts based on Morris Inequality Index

	Frequency	Percent	cumulative
			percent
Underdeveloped	6	5.5	5.5
Less developed	58	53.2	58.7
Semi developed	44	40.4	99.1
Developed	1	0.9	100

The results from the ranking of Guilan rural districts based on developmental coefficient and separate of each studied indexes indicated that in production indexes area (agriculture), this coefficient is ranging between 1.39% to 79.82% as *Lat Lil* rural district of *Langroud* Township and *Shirjou Posht* rural district of *Lahijan* Township had been enjoyed from the least agriculture developmental coefficient by 79.82% respectively.

Table 2, is indicating the grouping of Guilan rural districts based on agricultural development index. As you can see, more than half of Guilan rural districts (51.4%) are in underdeveloped level in agricultural development. Generally 94.5% of rural districts are in underdeveloped to less developed level.

	agricultural index		
	Frequency	Percent	cumulative
			percent
Underdeveloped	56	51.4	51.4

47

5

1

Less developed

Semi developed

Developed

Table 2, grouping of Guilan rural districts based on

Also, in the health and therapy indexes area, developmental coefficient was ranging between 1.07% to 70.18%. The *Yaylaghi* district in *Rezvanshahr* Township and *Licharegi* rural district of *Bandar Anzali* are enjoying the least and the highest health and therapy developmental coefficient, respectively. According to performed grouping, it can see that none of the Guilan rural districts is located in developed health and therapy area as their 62 rural districts (%56.9) are in deprived level and also 36.7 are in less developed level.

 Table 3, Grouping Guilan rural districts based on health and therapy index

	Frequency	Percent	cumulative
	requeitey		percent
Underdeveloped	62	56.9	56.9
Less developed	40	36.7	93.6
Semi developed	7	6.4	100
Developed	0	0	-

In service and infrastructure indexes area. developmental coefficient is ranging between 5.36% to 64.27%. Out of this, The Yaylaghi district in *Rezvanshahr* Township is enjoying the least developmental coefficient of service and infrastructure and at the other hand Saravan rural district of Rasht Township is enjoying the highest developmental coefficient in service and infrastructure indexes. About 10 percent of Guilan townships are in less developed in services and infrastructure indexes and also 12.8% of Guilan rural districts are in semi-developed indexes.

Table 4, Grouping Guilan rural districts based of service and infra-structure index

	Frequency	Percent	cumulative percent
Underdeveloped	19	17.4	17.4
Less developed	76	69.7	87.2
Semi developed	14	12.8	100
Developed	0	0	-

In social indexes, developmental coefficient is ranging between 3.06% to 85.73%. out of Guilan rural district, the country- seat *Sayar Setagh* rural district of *Roudsar* Township and *Licharegi* rural district of *Bandar Anzali* Township were enjoy the least and highest developmental coefficient, respectively. 61.5% of Guilan rural district are in semi-developed level index and also 30 rural districts (27.5%) are in less developed condition (table 5)

Table 5, grouping Guilan rural district based on	n
social index	

	Frequency	Percent	cumulative percent
Underdeveloped	6	5.5	5.5
Less developed	30	27.5	33
Semi developed	67	61.5	94.5
Developed	6	5.5	100

In order to measure what extent of an index had been distributed among the rural districts, inbalancly, coefficient of variation (CV) method was used.

In this method, the high rate of CV indicating more inequality in the concerned index distribution. As you can see in table 6, the highest rate of coefficient of variation is related to production and agricultural indexes (57%) which in distribution of this index among the Guilan rural districts.

The least coefficient of variation rate is finding among the social indexes (30%). With regard to this in measuring this index, women and man literacy variables had been investigated, it is indicating that most rural district have the same condition relatively low coefficient of variation is expectable (table 6).

Table 6, Investigation of variance coefficient about the studied indexes

	Social	Service	Health	Agriculture
Standard deviation	16.6	11.82	13.52	14.63
Mean	53.98	35.42	25.76	25.66
CV	0.3	0.33	0.52	0.57

4. Discussions

Finding efficient and right method to measure development and then to provide service supply in rural area is very difficult. This is result from more frequency of rural, population dispersion, rural diversity and their distribution manner in the area, their communication situation, rural special characteristics, budget and developmental credit deficiency, expert personal deficiency and rural administrative management system deficiency and ignoring rural settlements in several past decades (Rezvani and Sahneh, 2005). With regard to this issue that no program can without objective, so in planning stage, balancing developmental situation of rural districts and balancing in enjoying rate of various possibilities and services and to improve this indexes in order to provide community health are considered the key goals, goal which cause to social justice and provide sustainable development area (Khakpour, 2006).

The results indicate that out of the total Guilan rural districts in developmental situation, six rural districts were underdeveloped and more percent of villages were in less developed situation. One of the regional planning goals, is to balance develop of region and to prevent from generating under developed area. Use the results of this study to reach to above goals. As in allocation of improvement credits, allocation credits to each region can determine according to developmental degree and distance rate of each rural districts from ideal condition. So, developed rural district will receive less budget and underdeveloped rural districts will receive more budget.

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Corresponding Author:

Dr. Mohammad Sadegh Allahayri Department Agricultural Management Islamic Azad University, Rasht Branch, Rasht, Iran E-mail: <u>allahyari@iaurasht.ac.ir</u>

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