

AN ANALYSIS OF REGIONAL DISPARITIES SITUATION IN THE EAST AZARBAIJAN PROVINCE

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Abstract:

The regional disparity in Iran is now a matter of serious concern. Measuring development has been a matter of debate for nearly half a century. The conventional way of assessing development by social and economic indicators only has been challenged many times during this period. Accelerated urbanization in developing countries and the concentration of activities and population in some regions, have led to regional imbalances. This is one of the important characteristics of the third world countries. This characteristics is affected by pole growth policies that have led to a concentration of facilities in one or more of several regions. In this case, regional planning science offers beneficial patterns to resolve problems. The first step is the identification of socio-economical disparities in these regions. However, this article attempts to survey development disparities in the East Azarbaijan province. In this survey 44 indicators were selected for the comparison of the counties, and the Numeric Taxonomic & Cluster Analysis methods were used to rank the regions. Finally this article presents priority of counties for investment in order to achieve social justice. According to the results of this research the west area of the province is prosperous and east area has a low degree of development.

Keywords: Development Ranking, Foresight, Regional Disparities, East Azarbaijan

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INTRODUCTION

In general, disparities between regions and inside them occur as result of some concentration, agglomeration, trends triggered by external phenomena, globalization, integration, or by internal ones, clustering, emergence of growth/development poles, involvement of local institutions in various aspects of economic life, etc. As a rule, regional disparities take the shape of differences between the level of incomes per capita and determine, at a given moment, a chain reaction of companies, authorities, inhabitants, etc., that attempt to counteract their escalation (Antonescu, 2012)

One of the characteristics for third world countries is a high concentration of population and activities, and space disparity in the enjoyment of social conveniences. This was found before the Revolution in Iran and in its effects after the Revolution in Iran. Based on this tendency, a main portion of facilities and the population concentrate in one or more places. Other regions act as boundaries resulting in regional disparities.

Regional disparities derive from two main fields: first the natural conditions in any geographical region and second the economical plan & policy makers' decisions. It should be mentioned that the first factor declines with technological development and the second factor is considered to be more important. The plan & policy makers' decisions play the most important role in creating regional disparity.

PROBLEM VIEW

Inequality and its different dimensions are the significant signs of underdevelopment. Regional inequalities represent a continuing development challenge in most countries, especially those with large geographic areas under their jurisdictions. Large regional disparities represent serious threats to countries as they create potential for disunity and, in extreme cases, for disintegration. Marginalized populations often are left excluded when important development and investment decisions are made. Regional disparities in Iran have been growing at an alarming rate leading to serious problems including migration with its associated problems from backward provinces to the more affluent ones. So that, the Human Development Report for Iran in 1999 reflected such disparities and reiterated that one of the major human development policies in the country's Third Plan is to "pay attention to the spatial planning as a long-term framework for social justice and regional balance". In order to provide a scientific basis to decrease regional inequalities, it is very necessary to comprehensively assess the status of regional development with regard to different indicators. Once this assessment is done and we get a clear idea of the backwardness of some regions, we can proceed to tackle the problems of backward regions. The aim of this study

is to assess the regional development inequalities in Iran at sub-province scale. In this way, multi criteria decision making methods were applied for evaluating regional development level of sub-provinces (Tagvaei, 2012).

Plan and policy makers propose the necessity for equal development for different reasons: first, to establish social equality in order to be enjoyed of facilities in equality and appropriate for many reasons. Second, political considerations serve as a parameter to decrease political unrests and third, social and economical considerations prevent immigration and over-concentration of people. Based on this, the Islamic Republic of Iran's constitution enforces the government to structure for a correct and fair economy to regulate justice-based economical plans in order to establish welfare, resolve poverty, eliminate deprivation and establish social justice.

It seems that despite executing some development plans for Azerbaijan, the Sharghi province's development, it is still remained subject to inequality and disparity in terms of facility distribution. Unequal distribution of facilities inevitably result from a high density of the population, activities and services in some regions, incompatible with the weight of population, activities and services in other regions that results in an increasing population flow so that officials face with considerable problems. This phenomenon causes current economical life of small towns and villages' in these regions to be inactivated, with increasingly mobile small cities' population and incapability to restrain big cities' population growth.

It is natural that the above-mentioned increase of centralization results in a wide variety of problems in the performance phase for managers and decision-makers. Based on this, it seems that no plan would be able to address this disparity or restrict its intensification unless it considered the suitable distribution of social facilities and services (Zali, 2000).

In this direction, the consideration of regional disparities based on indices is supposed to be one of the most important planning tools by which plan makers can assess the results of a plan's execution in the context of geographical boundaries. If considered by plan makers logically and scientifically, such considerations can clearly reveal the strengths and weaknesses of planning in various areas and determine planning regions in aspect of enjoyment scale based on hierarchy and homogeneity of regions (Zali, 2000). The distribution of services and facilities can be evaluated through a comparative examination of various skeletal, social and economical indices in different regions. Indices compare the status of various geographical regions, prioritizing them based on the quality of their facilities and general conditions. In this way, we may be able to propose the capabilities and conditions of various geographical scopes in terms of their enjoyment

of services, infrastructures, etc. and to provide the necessary tools for decision-making and other objective determinations.

This paper examines the Azrbaijan Sharghi counties' access to social services and facilities, by compiling different indices and measurements in social, production, and infrastructural fields, and examining how facilities are distributed. The information can then be used to formulate the plans and specific objectives to achieve social equality and reduce regional disparity.

REGIONAL INEQUALITY THEORETICAL ARGUMENTS

The interaction of inequality and growth has been a topic with several questions but without clear answers. On the one hand, it is asked whether inequality is good or bad for growth. On the other hand, the question is whether growth increases or reduces inequalities. Thus, not only the direction of the relationship (positive or negative), but also the direction of causality is of interest. None of those questions has been answered unanimously in the theoretical and empirical literature. (Paas, 2009)

The literature on inequality and growth considers usually the effects of individual inequality to economic growth (an overview is Kanbur, 2000). There are a lot of empirical investigations (e.g. Barro, 2000; Forbes, 2000), delivering contradictory results. For example, Barro (2000) obtains only a weak relationship between income inequality and growth. He argues that this is consistent with the mixed theoretical arguments: the forces working in opposite directions cancel out each other.

The theories touching most directly on regional inequality and economic growth are trade and growth theories, considering also the persistence of regional inequalities. The most well known arguments for decreasing regional inequalities come from the neoclassical approach. In the neoclassical world with free trade or free movement of production factors and perfect competition, regional inequalities should vanish. The production factors are paid according to their marginal products and these would equalise over the space as the firms look for the location with lowest production costs. However, if regions are characterised by differences

in technological level or other factors that influence the productivity of the production factors, the inequalities may be persistent.

The neoclassical arguments for vanishing inequalities between nations or regions have been the basis for the convergence literature (e.g. Barro, 1991). The full equalisation of the prices of the production factors is captured by the concept of absolute convergence. In case of technological differences each region or country converges towards its own steady state, denoted by conditional convergence (Barro & Sala-i-Martin, 1995).

These convergence concepts are in line with the classical trade theory (Feenstra, 2004). The arguments for absolute convergence rely usually on the Solow growth model (Solow, 1956) which predicts the long run growth rate to approach the rate of technological progress in the long run. In fact, this model was rather constructed for analysing the growth path of one country than comparing the speed of growth across spatial units (Solow, 2001). Conditional convergence is consistent with endogenous growth models (Romer, 1986, 1990; Lucas, 1988) in which technological progress is modelled as depending on the contributions to the research and development sector.

Another group of models discussing the interaction of regional inequality and growth belongs to the field of new economic geography (NEG) models (Baldwin et al., 2003). These models are characterised by increasing returns to scale in production, monopolistic competition, costly interregional trade and factor mobility. In the first paper of the field, Krugman (1991) showed that regional inequalities might be persistent because of the so called home market effect: it is beneficial to locate production close to a large market as this enables to increase sales and profits. As splitting production between several regions is not profitable due to increasing returns to scale, each firm produces only in one region. Costly trade causes the prices of the products to be higher in regions that are served by exporting and, thus, the firms are able to sell smaller quantities of their products there than in the home region. Moreover, the low prices carry over to high real wages that attract mobile workers to the region with more firms. The wages are additionally drawn up in that region due to the competition of the firms for workers. The home market effect appears also if the workers are assumed to be immobile, but the products of the firms are used by other firms as intermediate inputs (Krugman and Venables, 1995).

As the result, in a two region setting the firms and workers concentrate in one of the regions (the core) if the trade costs are sufficiently low even if the regions are initially identical in their technological level and resource endowments. In fact, the home market effect was already present in Krugman's (1980) trade model without labour mobility. However, that model was unable to explain the emergence of agglomerations of economic activity in case of symmetric regions, i.e. the inequalities that can be observed in space. (Paas, 2009)

Some further developments in the field have directly tackled the interplay of growth and regional inequality. The first paper to address this question was Baldwin (1999). Abstracting from factor mobility, he shows that growth can affect inequality. This is achieved by the assumption that capital (utilised by the modern sector) depreciates and has to be replaced. Also, investment into capital construction will be done only if the present value of its expected flow of return is at least as large as the investment costs. Another assumption is that the constructed capital can be utilised for producing the consumer goods only in the region of construction.

The spatial equilibrium is achieved if the expected return from capital covers exactly its construction costs: in that case there will be no growth. However, if from one of the initially identical regions one modern firm decides to relocate to the other region and the trade costs are sufficiently low, there starts a growth process in the now larger region and economic contraction process in the smaller region. The reason behind this result is again the home market effect, enabling the firms in the larger region to earn higher profits than before the relocation, and vice versa in the now smaller region. Construction of capital is then unprofitable in the smaller region as the firms are not able to earn sufficiently high profits to cover the capital construction costs. Thus, the initially small inequality increases gradually. If the two regions of the economy were initially identical, this agglomeration process lasts until the whole modern sector has concentrated into the larger region. If the regions are initially of different size, also partial agglomeration is possible, but in case of very low trade costs still full agglomeration occurs.

Such an agglomeration process can occur only if capital is immobile. Clearly, there are almost no mobility restrictions to the flows of monetary capital in the nowadays world. However, it is

difficult or impossible to move machines and buildings necessary for production. Thus, this crucial assumption of the model is not overly unrealistic.

In this constructed capital model growth and inequality interact in both directions: inequality has growth effects (increases the disparities in the growth rates of the regions) and growth in one and recession in the other region increases of course regional inequality. Thus, differently from the neoclassical growth theory in this model the richer region grows faster as also described by Myrdal (1957) with the concept of cumulative causation. However, once full agglomeration in the core has been achieved, its growth comes to a halt. If now liberalisation of trade continues, there will be gradual growth in terms of real income in the other, peripheral region. The reason behind this result is a decrease in prices as less has to be paid for transporting the goods from the core region. Still, even when trade is fully liberalised, there remain differences in the per capita incomes across the two regions though not as high as for a medium range of trade costs. However, if capital mobility is allowed, these effects vanish and convergence is achieved. Considering the whole economy's income per capita, the degree of regional inequality has according to the model no effect in the long run if trade costs do not change. (Paas, 2009).

Also endogenous growth models have been developed in the context of the NEG. In these models the degree of inequality has also consequences for national growth. The most well known endogenous NEG model is due to Martin and Ottaviano (1999), the spillovers model. Their model is an upgrade of the constructed capital model. For achieving endogeneity of growth, they assume spillovers in the capital construction sector: the more capital there is in the economy, the cheaper it is to construct new capital (global spillovers). It can also be assumed that the spillovers from the other region are not captured as easily as those from the home region, i.e. the local capital stock has a larger impact on the innovation efficiency (local spillovers). The conclusions from the spillovers models coincide largely with those from the constructed capital model (Baldwin et al. 2003), but give also new insights to the interplay of regional inequality and growth.

Differently from the constructed capital model there is a continuous growth in the national real per capita income also in the long run equilibrium.

However, as in the constructed capital model the income levels differ if the capital stock and modern sector firms are distributed unevenly in the space, also in case of completely free trade. The most important result reveals that the national growth rate is highest if the capital construction activity and thus, the production of the increasing returns goods are present only in one region given that the spillovers have local character and trade costs are sufficiently low. Moreover, if the share of the modern goods is sufficiently high in the consumption expenditures, the welfare level is higher in the peripheral region than it would be under a symmetric distribution of firms. Once again, if gradual liberalisation of trade takes place, the relative real incomes of the two regions change similarly to those in the constructed capital model.

The above introduction of the NEG models support positive correlation between regional inequality and the speed of economic growth. However, the models have some drawbacks, that might influence the outcomes of testing this conclusion empirically. First, the models are constructed for a two region economy, but in the reality countries consist of several regions and have interactions with regions from other countries.

However, it has been shown for the simple NEG models that the occurrence of agglomerations of economic activity holds also in multiregional context (Fujita et al., 1999). For the interaction with a foreign region, Krugman and Livas Elizondo (1996) have shown that integration with a region from abroad motivates a relocation within the home economy towards the border, especially if the foreign region has a large market.

The second issue considers the negligence of congestion cost. If lots of economic activity concentrates in just one region, the housing and land prices are driven up, there can occur environmental problems and the loss of efficiency due to e.g. traffic jams. Adding such aspects to the model would motivate the firms to move out of the core regions, as shown for example by Helpman (1998).

Finally Economic theorists have proposed many ideas to revive structural development. Some, like Rosenstein Rodan and Narcks have found that the simultaneous growth of economic sectors is necessary in order to achieve economic development. They believe multilateral and simultaneous investment in various economic sectors is necessary in order to break the debilitating cycle of poverty in developing countries. This is the balanced growth theory. In contrast,

Hirschman believes that developing countries do not possess enough capital to be able to perform such multilateral investments. These countries have to choose an area of focus in which to invest and thus pioneer development by establishing a growth pole until the growth rate of this area causes the growth of other areas (Beheshti, 1983).

There are probably identical methods over regions development. The concept of a growth pole was proposed by François Pro (French) in the 1960s. He believed that growth poles would include some industries and high-functioning factories with a high growth rate. He identified that the advanced and basic industrial growth was an engine for the growth of the national economy, and that imbalanced growth would occur. New industries would inevitably be settled on neighboring infrastructures, stimulating certain growth points. Such centralization would encourage backwardness of other regions and result in geographically regional polarization and heterogeneous development. Several seminal works will ensure the correction of the imbalance (Harvy, 1997). It is possible to detect those regions being far away from social equality standards via this method (Hakimi, 1992).

It is his belief, that if development is not accompanied with a coherent social policy that directly addresses the reasons for poverty and underdevelopment, it will be impossible to attain a solution that will address the poverty and disparity in the various regions and communities. Regional development follows three objectives: productivity, society and biology. Regional development attempts to provide the best condition and facilities for comprehensive development, minimize life quality differences between regional and inter-regional and finally resolve it (Mokhber, 1988).

In late 70s and early 80s, concern about increasingly economical disparities in the third world resulted in new approaches toward development policy that focused on resolving basic needs. These approaches derived from a concern that even redistribution policies associated with growth would not be able to improve the welfare of the poorest classes of the society. In the 1980s, neoclassic theorists established neoclassic reciprocal revolution theory. This notion focused more on privatization and less on governmental interference, and emphasized a belief in the free market. Such theories advanced the ideas that disappointment in development gains originates from excessive government interference in economic affairs (Ardeshiri, 2000).

Accordingly, a new theory of growth was outlined based on innate growth and constant development in this decade. Constant development is being followed seriously in the recent years, meaning not only preservation of environment but the new concept of economic growth which offers life facility and equality for all people in the world, not just for a few people.

METHODOLOGY

Comparing geographical regions based on one or more development index value might be possible in two ways: first, instance comparison, i.e. to determine the development scale of each region based on any index that is neither logical nor actually represents development scale in each region. Second, through a general comparison and selection of those indices that represent the development symptoms of the region we specify a quantity from the indices scientific aggregation, and classify regions according to this quantity. It seems that the second method is especially suitable to detect quality of life statuses. It is essential to use statistical and analytical models to gauge and compare these figures, by compiling a number of indices to obtain the status of any region against other regions. There are several scientific methods in this field including: Numeric taxonomy, factor analysis, deprivation coefficient, cluster analysis, the Murrin method and the sum of standard data method.

Among these, the numeric taxonomy method is considered to be one of the most current methods for classification, well-regarded most by plan makers in recent years. Nevertheless, this technique is not free from limitation. For instance, it does not encourage the translation of indices into analysis and classification. Those indices that usually define each other locate together, probably boosting each other to manipulate the results of analysis. According to experts, despite such defects, it is more reliable to use the numeric taxonomy technique rather than any of the other techniques mentioned above.

Taxonomy as a general name refers to those methods that separate similar cases from dissimilar ones. One of the most important is numeric taxonomy which is capable both of classifying a series as a scale and of identifying the under-development status of regions (Borzooyan, 1995). Taxonomy is regarded as a statistical method to specify units or any homogeneous types into a latter N diagram space without the use of variance regression or correlation analysis (Bidabad, 1983).

This method was first offered by Adanson in 1984, and proposed by Prof. Zygmunt Hellwing from Rekla economy premier college in UNESCO as a tool for the classification of the under-development scale between various nations. This method is considered as a premier method for the rating, classification and comparison of countries of different regions, regarding their development scale. In the taxonomy method, the indices maximum quantity is chosen as the target quantity for the region's rating after indices harmonization and standardization, and measuring the distance of other resources with the target index. Those regions showing less distance from the intended target will be regarded as more developed regions. The taxonomy output will

show as a quantity called F_i that represents the deprivation scale for any region ranging from zero to one, so that the higher the index, the higher the deprivation on this scale.

The scale is arrived at by the cluster analysis method to determine the homogeneous groups after rating. This method divides counties based on their distance from the intended target with other counties in the same homogeneous classes. Under this method, the quantitative properties of the counties of each group possess relative and close similarities toward one another.

SELECTION AND CLASSIFICATION OF INDEXES

In this study 44 indices among several indices as counties enjoyment scale were chosen, regarded as a base to rank counties in several regions. Among these, there were 8 basic indices, 8 production indices, 15 social indices and 13 infrastructure indices which wholly listed separately as below:

• BASIC INDEXED

Employment rate, family density, municipalities' per capita income, per capita tax, the number of bank branches as for 10,000 people, high educated employed percentage, population density, urbanism percentage.

• PRODUCTION INDEXES

Cultivated area for each beneficiary, consumptive water coefficient in production section to total electric consumption, one hectare garden products turnover per hectare, cultivation products turnover per hectare, utilization ratio of agricultural instruments per every 10 hectare of agricultural field, the ratio of large industrial workshop workers per total workers, the number of industrial active and cooperative co. workers per 100,000 people

• SOCIAL INDEXES

Literacy rate, student ratio to training cadre, sport fields area per capita, public library books per capita, cinema capacity, number of printing office, number of nurseries, number of students, number of health care and treatment centers, number of hospital beds, general practitioners, dentists, number with access to health care and birth control centers per 100,000 people.

• INFRASTRUCTURE INDEXES

The asphalted village road ratio to total village roads, the number of working cable phones, cell phones, the percentage of households with gas pipes, villages

enjoying healthy drinking water, four-lined main roads per county area, number of urban sewerage divergence to urban household, road density, mailed postage per capita, post offices rendering Pishtaz services, electric power subscribers as a percentage of the population, county center distances from the nearest airport, county center distance from the nearest railway station. These two indices remain from a minus of county center distance from relative facilities as maximum as the distance between counties from relative facilities.

AN ANALYSIS OF REGIONAL DISPARITIES IN EAST AZARBAIJAN PROVINCE

As described in this paper, the counties' comparative indices have been compiled into 4 sections of production, infrastructure, basic and social in the statistical period of 2006, using the numeric taxonomy and cluster analysis techniques to rank counties. The results of the analysis in various regions are as followed:

• RANKING BASED ON BASIC INDEXES

Basic indices are those that represent the county's general image, according to dominant development criteria, for example: urbanism scale, literacy rate, employment rate, tax payment per capita and other indices that show the general development level of the society. Based on analysis, Tabriz, Jolfa, Azarshahr, Shabestar, and Maraghe are the five counties with the least deprivation compared to other cities of the province. In contrast, Charoymagh, Bostanabad, Haris, Varzaghan and Ahar show the highest levels of deprivation and the lowest standards of living indices compared to other counties.

An important matter for ranking and disparities analysis is that it takes into account that differences between counties based on the deprivation scale index do not perfectly represent the county's status in relationship to other counties. There may be an inconsiderable difference in the ranking of a county located at the middle of table with the ranking of a county located at the end of table and reasons to set them at a similar level. In order to wholly represent the picture, the calculated deprivation scale is divided into homogeneous groups through the numeric taxonomy method and the cluster analysis method, to demonstrate the relative similarity of counties in each group.

In basic section, the results from cluster analysis represent 4 homogeneous classes with similar properties. Tabriz as the capital of the proper county and the regional center of the northwestern Iran stands in the first level of the basic indices provision, being at a considerable distance from the second class of deprivation scale. Jolfa, Azarshahr, Shabestar, Maraghe, Miane, Sarab and Bonab counties stand in the second level of provision, with deprivation scale ranging from

0/65 to 0/72. With exemption of Jolfa, Sarab and Miane, which are located in the respective northwest and east parts of the province, other counties of this group are situated by the connection road between Tabriz-Miandoab, and are neighboring each other. Southwest parts of the province are also provided with appropriate infrastructure, production and social facilities on top of basic indices.

Third group contains Oscu, Marand, Ajabshir and Hashtrood counties which have deprivation on a scale ranging from 0/74 to 0/81. These counties differ in several ways from the previous counties of the province regarding the provision indices. This difference for counties situated in the 3rd group equals the half of Tabriz index of provision, and this indicates severe disparity between the counties of the province. The 4th group of counties, which contains the most deprived ones, includes 7 of them: Kalibar, Malekan, Ahar, Varzaghan, Haris, Bostanabad and Charoymagh. The important point here is that 6 out of 7 counties in this group are situated in the east part of the province and only one county is situated in the southwest part of the province. It's worth looking into deprived and prosperous counties' spatial distribution in reference to the basic indices analysis and that should be well-regarded in planning.

• RANKING BASED ON PRODUCTION INDEXES

In this chapter we discuss the production indices of the counties in different fields of agriculture and industry, and we try to use the most appropriate index to represent the production properties of the counties. Based on this analysis, counties like Shabestar, Azarshahr, Tabriz and Bostanabad stand at the first level of production indices provision rating. Shabestar County, due to its numerous productive agricultural territories and because of its industrial centers; then Azarshahr, due to its industrial zone called Salimi with high concentration of industries and also because of its existing valuable cultivation land and gardens; followed by Tabriz due its concentration of the key industries along the roads which go to Tabriz, and because of the industrial zones in its surroundings; and Bostanabad, due to its industrial centers and watered grounds with high cultivation, take from 1st to 4th rank based on production indices. Charoymagh, Kalibar, Ahar, Ajabshir, Hashtrood, Varzaghan and Haris counties are considered as the deprived ones in terms of production properties, and apart from Ajabshir they are all situated in the east part of the province. They also have unfavorable status in terms of other social, infrastructural and basic indices.

Grading through hierarchy and Dendogram diagram points to 4 homogeneous classes of counties regarding the production indices' level. Shabestar, Azarshahr,

Tabriz and Bostanabad are in the 1st class of homogeneous counties. Bonab, Sarab, Miane and Marand are considered as 4 counties situated in productive plains, which also have some production industries by which they are listed in the second class. Osku, Maraghe, Jolfa, and Malekan counties are in the 3rd class. Varzaghan, Hashtroud, Haris, Ahar, Kalibar, Ajabshir and Charoumagh are deprived counties in terms of production indices.

• RANKING BASED ON INFRA-STRUCTURE INDICES

Infrastructure is one of the most important factors which plays an important role in the regional development. Infrastructure is considered as a series of correlative networks, energy networks, and information networks, and various water pipelines and services. The research indicates counties' infrastructure facilities and services provision level. Tabriz, Jolfa, Azarshahr and Bonab are considered as the most privileged counties, whereas Charoumagh, Kalibar, Varzaghan and Haris are regarded as the deprived ones. Based on the ranking results, the distance between the most deprived and most privileged counties is approximately double. Infrastructure indices rating show the predominance of counties like Tabriz, Jolfa and Azarshahr in comparison to other counties regarding the infrastructural facilities provision. The deprivation scale of these counties ranges from 0.5 to 0.56. Accessibility to better correlative networks, provision of adequate energy networks, accessibility to telecommunication and information lines, are considered as qualities of counties situated in the 1st group. Bonab, Malekan, Shabestar, Osku, Maraghe and Marand with deprivation scale ranging from 0.6 to 0.7 are situated at the 2nd level of provision. These counties are located at the western correlative paths of the province. There is no county in east part of the province with correlative networks status in the 2nd group.

An interesting point to be considered here is that the counties from the 1st and 2nd group are all in the west, whereas other eastern counties stand in the next two groups with the least infrastructural facilities provision. Bostanabd, Ajabshir, Ahar, Hashtroud, Sarab and Miane counties are in the 3rd group of infrastructural facilities provision. As mentioned before, all other counties in this group are situated in the east, except from Ajabshir which is the only county located in the western part. Deprivation scale for these counties ranges from 0.73 to 0.8. Haris, Varzaghan, Kalibar and Charoumagh are the counties which are at the lowest level of facility provision, ranging from 0.801 to 0.99 on the deprivation scale.

• RANKING BASED ON SOCIAL INDICES

The set of social indices includes level of education, culture, sports, health and care that all reveal the social life level of the counties. Based on the results of numerical Taxonomy, the provinces like Tabriz, Azarshahr, Maraghe, Shabestar and Jolfa are the 5 counties with a low level of deprivation or the counties which have a high level of facilities in the province, where the index of facilities provision ranges from 0.69 to 0.54. The counties like Charoumagh, Varzeghan, Malekan, Bostanabad and Haris are among the very deprived ones in the province since they have the lowest social facilities and services provision. The deprivation index of these counties is between 0.96 and 0.89, and that shows a very high level of deprivation, especially in the counties like Charoumagh and Varzeghan.

Ranking of social indices which was conducted by cluster analysis reveals that there are four homogeneous groups from the viewpoint of social indices. The counties like Tabriz, Azarshahr, Maraghe, Shabestar, Jolfa and Sarab with indices ranging from 0.7 to 0.54 are at the first level of facilities provision. Among the counties that are at the first level, all apart from Sarab are located in the western part of the province. Counties like Ahar, Hashtroud, Marand, Asko, Banab and Miyaneh are at the second level homogenous counties of the province and their index ranges from 0.77 to 0.64. Counties like Bostababad, Haris and Ajabshir are at the third level, and counties like Malekan, Varzeghan and Charoumagh are at the fourth level. The counties of third and fourth level are among the most deprived ones in the province from the viewpoint of social indices.

REGIONAL DISPARITIES ANALYSIS ACCORDING TO ALL INDICATORS

Evaluation of total indices of development of the counties in the province shows a large correspondence to the individual index ratings for the counties. Counties like Tabriz, Azarshahr, Shabestar, Jolfa and Banab are the 5 counties with respectively highest levels of development in the province, and their development index ranges between 0.6 and 0.74. Counties like Maraghe, Sarab, Marand, Asko and Miyaneh, with development index between 0.75-0.81 are between the 6th and 10th grade. Counties like Hashtroud, Bostanabad, Malekan, Ahar, Ajabshir, Haris, Kalibr, Varzeghan and Charoumagh are between 11th and 19th grade. The deprivation grade of the least performing counties is nearly equal in ratings for each one of them.

Total ranking of the counties of the province according to the development indices shows that there are four rather homogenous groups of counties. Counties like Tabriz, Azarshahr, Shabestar and Jolfa take first to fourth grade of facility ranking which goes

between 0.6 and 0.7. Counties like Banab, Maraghe, Sarab, Marand, Osko and Miyaneh are between 5th to 10th grade of ranking with indices between 0.73 and 0.81, and they are at the second level of facilities provision. Counties like Hastroud, Bostanabad, Malekan, Ahar and Ajabshir are at the third level with grades between 11th and 15th, and they have facility indices ranging from 0.82 to 0.87. Counties like Haris, Kalibar, Varzaghan and Charoumagh are regarded as the most deprived ones in the province with indices between 0.9 and 0.99, and are at the 4th level of development, with grades ranking from 16th to 19th. For better understanding of the deprived geographical regions and those with facility provision, the counties of Azarbayjansharghi province have been classified according to their proximity in four parts: northwest, northeast, southwest, and southeast, and the number of deprived counties and those with facility provision in each part has been identified and the average indices for them have been evaluated.

The results of this classification for the northwest part of the province, with an average index of deprivation equaling 0.72, show the lowest grade of deprivation. The southwest part with seven counties and average derivation index equaling 0.75 is in the second grade. The western part of the province has good quality of facilities whereas the eastern part of the province is deprived of them. The northeast part with 5 counties and average deprivation index of 0.87 is among the most

deprived ones in the province, together with the southeast part of the province with 4 counties and average deprivation index of 0.86.

Table 1. Geographical zoning of the province, status evaluation and average utilization index

Region	Province	Number of region	Development regions	Deprivation index average
North west	Jolfa – Marand- Shabestar	3	3	0.72
East north	Ahar- Kaleibar- Heris- Sarab	5	0	0.87
South west	Bostan Abad- Myane- charouimag -Hashatroud	4	1	0.86
South east	Tabriz- Azarshahr- Ouskou- Ajabshir- Marageh- Malekan- Bonab- Province	7	5	0.75
		19	9	0.8

Table 2. Provision level of East Azerbaijan provinces in different sections

Explanation	Basic (General)		Social district		Foundational section		Production section		All indices total		
	Fi	grade	Fi	grade	Fi	grade	Fi	grade	Fi	grade	
1	Azarshahr	0.665	2	0.647	2	0.552	3	0.658	2	0.682	3
2	ouskou	0.786	9	0.760	11	0.665	7	0.838	11	0.775	10
3	Ahar	0.858	14	0.750	10	0.801	15	0.904	17	0.862	15
4	BostanAbad	0.851	12	0.903	16	0.739	10	0.681	4	0.899	18
5	Bonab	0.735	5	0.724	7	0.600	4	0.732	5	0.726	7
6	Tabriz	0.600	1	0.541	1	0.507	1	0.678	3	0.407	1
7	Jolfa	0.697	4	0.690	5	0.535	2	0.848	12	0.657	2
8	Charoumag	0.981	19	0.954	19	0.990	19	0.962	19	0.905	19
9	Sarab	0.774	7	0.694	6	0.764	12	0.769	8	0.726	6
10	Shabster	0.684	3	0.656	4	0.652	6	0.576	1	0.720	4
11	Ajabshir	0.868	15	0.878	14	0.739	11	0.896	16	0.794	11
12	Kalebar	0.924	17	0.826	13	0.979	18	0.910	18	0.838	13
13	Marageh	0.756	6	0.648	3	0.688	8	0.833	10	0.725	5
14	Marand	0.784	8	0.738	8	0.694	9	0.763	6	0.767	9
15	Malekan	0.855	13	0.921	17	0.632	5	0.822	9	0.842	14
16	Myaneh	0.800	10	0.779	12	0.777	13	0.763	7	0.742	8
17	Varzegan	0.933	18	0.940	18	0.894	17	0.871	14	0.890	16
18	Heris	0.909	16	0.893	15	0.861	16	0.867	13	0.897	17
19	Hashtroud	0.824	11	0.747	9	0.798	14	0.873	15	0.811	12

Table 3. Town's exploitation levels according to expansion indices

Level	Foundational indices	Social indices	Production indices	Basic (General) indices	All indices
1	Tabriz-Jolfa-Azarshahr	Tabriz-Jolfa Azarshahr Sarab-Shabestar- Maraghe	Azarshahr-Tabriz – BostanAba Shabestar-	Tabriz	Tabriz-Jolfa Azarsha
2	Bonab-Malekan-Shabestar – ouskou- Maraghe- marand	Ahar-Hashtroud- Marand-Ouskou- Bonab-Myaneh	Marand- -Bonab- Myaneh-Sarab	Jolfa-Azarshahr- Sarab-Shabestar- Maraghe-Bonab- Myaneh	Sarab- Marand- Ouskou Bonab- Myaneh
3	BostanAbad- Ajabshir-Ahar- Sarsb-Hashtroud- Myaneh	Bostan Abad- Ajabshir Heris	Ouskou -Maraghe- Jolfa	Marand - Ouskou Ajabshir- - Hashtroud	Malekan-Ajabshir Hashtroud -
4	Heris-Varzeghan- Charouimag	Heris-Varzeghan- Charouimag- Malekan	Ahar -Ajabshir Hashtroud- Heris- Varzeghan- Charouimag- Maleka n	-Kaleibar- BostanAbad Malekan- -Ahar Heris - Varzeghan Charouimag- Malekan	Heris - Varzeghan- Kaleibar Charouimag-

CONCLUSION

Balanced development and policy making have always been the main problems for planners and managers, who attempt to prepare and execute suitable programs for decreasing the imbalances and to reach the balanced development by using different methods based on several models. According to methods that were used here, the counties of Azarbaijansharghi province have been ranked by different indices from the aspect of having high level of facilities provision, thus the deprived counties and those with high facility provision have been distinguished.

The results of the analysis show that in reference to infrastructure, production, social and macro indices, the counties like Tabriz, Azarshahr and Shabestar always are within high grades of ranking while counties like Charouymagh, Kalibar and Varzaghan are always within low grades of ranking. In relation to the balanced development foresightedness, it seems that a long term planning should be based on thought of social justice in attaining different indices of development. It seems that the important thing in planning is to pay due attention toward counties with the lowest grades of social, economical and infrastructural facilities.

Based on this graph, the difference between the most deprived county and the county with the highest level of facilities is very large and it is necessary that in future development programs a special care is put toward counties like Charoumagh, Kalibar, Varzaghan, Haris, Ajabshir and Ahar, which are among the most deprived counties. For example, by policy making based on the least index, during a time period of 4 years the deprived counties or counties having low level of facility could be improved.

Based on the results of ranking the counties of the province in different sectors, the counties like Tabriz, Azarshahr, Shabestar and Jolfa have shown the first grade and the first level of development in the final analysis. From the viewpoint of economical and productive infrastructure, especially in the sector of industry because of concentration of big industrial centers like tractor manufacturing, Eidem, petrochemical complex, automobile manufacturing, Tabriz refinery, Salimi industrial estate, industrial - commercial free zone and other variable infrastructures, these counties are regarded as the ones which have a high level of facility provision in the western part of the province.

According to the ranking results of the counties, it is shown that counties like Tabriz, Azarshahr, Shabestar, jolfa, Banab, Maraghe, Sarab, Marand and Oskou fall within first to ninth grade. With exemption of Sarab county in the east, all counties of this group are located in the western part of the province, thus it could be inferred that the western part of the province is more developed than its eastern part. Therefore, we can assume a linear developed axis for the western part of the province.

The above mentioned counties that are on a development axis have some common characteristics. Firstly, they are located in the railway corridor or they have easy access to the railway. Secondly, they are located in the vast plains of the western part of the province, e.g. in Tabriz plain, Maraghe plain, Marand plain, or they are located near these plains. From the viewpoint of their size and fertility, these plains are regarded as the biggest and the best plains of this province. Another characteristic of these counties is the high ratio of urbanism in comparison to other counties,

so that counties of the first rank, which are located in the western part of the province are 75% urbanized in average. Even if we exclude the Tabriz county from this group, the average level of urbanization is again higher than 55%. On the other hand, other counties that are mainly located in the eastern part of the province have in average 30% of urbanized population. By this analysis there is a direct correlation between the level of urbanization and the degree of development. The development axis that is located in the western part of the province shows a concentration of facilities, services and urban population, while the axis of underdevelopment in the eastern part of the province includes rural societies with low infrastructure facilities and weak communication networks.

According to the linear development axis in the western part of the province, and according to formation of two completely different parts which are either deprived or with high facility provision, the priority of investment is in the eastern parts of the province. This point must be stressed that if there is a will to reach development in its real concept, when special attention should be made towards adequate distribution of facilities and population in geographical space of a region. Meanwhile, only those kinds of programs whose initial point would be how to deal with growth and development in deprived regions, could reach the desired goals.

Production as an index that is directly correlated with the amount of investments of government or private sector, and with the level of infrastructure provision indices, in counties like Charoumagh, Kalibar, Ahar, Ajabshir, Hashtroud, Varzeghan and Haris is low due to environmental and natural characteristics of these counties and due to centralized management decisions on services distribution, economical and social activities. Although there are some natural and environmental impediments in the above mentioned counties, there are also some unique activities here, hence their improvement could be based on economical and social dynamism and their deprivation grade could decrease especially because of the existence of valuable mines.

From the viewpoint of macro indices there is a similar status. In comparison to other counties of the province, the counties like Charoumagh, Bostanabad, Haris, Varzeghan, Ahar, Malekan and Kalibar got worse conditions, and there is an urgent need to pay attention to these counties. The results show that counties Charoumagh, Varzeghan, Kalibar and Haris are among the most deprived ones according to the infrastructure, social, production and macro indices. Also, the counties like Ahar, Malekan, Bostanabad, Ajabshir and Hashtroud are quite deprived. From the total of 9 deprived counties in the province, 7 are located in its eastern part, whereas only the deprived counties like

Ajabshir and Malekan are located in the western part of the province.

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