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SPATIAL ANALYSIS AND RANKING OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) INDICATORS OF THE EAST AZARBAIJAN PROVINCE CITIES

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ABSTRACT
Today, access to information and communication technology issues in all countries has a rising trend and different communities; each with respect to the numerous caused infrastructures uses advantages of this technology. Creating legal communication infrastructures, and educating workforce familiar with ICT, are some examples of the efforts made in this regard; Considering the growing digital divide between developed and developing countries, urban and rural communities, skilled, well-trained and unskilled citizens, there is no doubts about developing strategies and adherence to appropriate policies and approaches for achieving a modern information society that urban regional sciences managers and politicians should have coherent plans so they can take steps to have balanced urban and regional developments. This study has been conducted to the spatial analyze and ranking ICT indicators in East Azarbaijan province. Type of the research is applied-development and it has an analytic – descriptive method. For ranking, categorizing and specifying the differences between cities factor and cluster analysis was applied using the 21 indicators in 19 cities of the province; in such a way that the city of Tabriz has been placed in the first level and three cities of Keliber, Varzaghan and Charaoymaq have been located in the fifth level; planning in this regard should be made from the fifth to the first level to achieve a relative spatial balance in the province and to reduce the digital divide between the cities. In conclusion, suggestions and ways to achieve this important issue are offered.

Keywords: *Information and Communication Technology (ICT), Regional Development, Digital Divide, the East Azarbaijan Province*

INTRODUCTI
Development of many countries in recent years is due to the development of Information and Communication tools. Since the establishment and operation of electronic city [the City in connection with the region] is a new topic, experience of different countries and cities of the world on this subject is not high and there are fewer cities that have attempted to develop and use electronic city. Some of these cities include Toronto in Canada, Seoul the capital of South Korea, Singapore and Taiwan. Among these cities, Toronto in Canada and Seoul in South Korea, have taken important and effective steps to provide specific conditions and to obtain appropriate experience (Tohidi and Jabbari, 2011). There have emerged profound transformations in organizing workforce, the economic basis, politics rules and even the specific nature of the societies of industrialized countries in recent decades. Information has become a critical element in these societies. The increasing reliance on activities related directly with the production, distribution and use of information caused most of world's industrialized nations are called the information societies. Transition from old traditional industrial societies to information societies requires remarkable fundamental changes in the social structure. In the information society, according to the depth of the tasks and complexity of economic, cultural, social and political relationships the interactions era, cities are very important in information society.
So one of the important objectives in the use of ICT in societies is simplifying it and facilitating economic, social, cultural processes and utilizing its positive impact on providing service (Tayaranirad,

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2009). On the other hand, inequality and regional imbalances and unequal distribution of services and facilities are important characteristic of third world countries and Iran (Morsali, 2006; Ghaedrahmati *et al.,* 2010). As a result of these policies, a limited number of areas have key role and other areas are marginalized (Momeni and Saber, 2010). Digital divide among countries refers to widespread use of ICT in rich countries contrary to poor countries (Wallsten, 2002). With the release of information and communication in a geographic territory, parts of the territory that have higher information infrastructures obtain information much faster and more than areas without these facilities and as a result the gaps in knowledge and information among different parts of the territory increases (Hanifi *et al.,* 2007). In other words there is gap between those who access regularly and effectively to digital technology by the Internet and ones who do not have these capabilities (Bjorn and Stein, 2007). The special interest in the topic of ICT and its application in various areas throughout the world have been taken (Soltani *et al.,* 2008). ICT expenditures in developing countries have been also increased (Assari and Aghaie, 2008).

 The present study is based on the question that how is the spatial distribution of ICT indicators in the East Azerbaijan Province (cities)? How is the level of having these indicators foe cities? If this important issue is fulfilled and in geographic areas, principled planning and policy can be done to balance these indicators as the arteries of development among cities and its impact on regional development.

Research Literature

It took years for humanity to gain access to information on radio and television, as in the twentieth century mankind was not familiar with this means of communication and depriving of information and knowledge that had a negative effect on all human life. Now, while we have entered the twenty-first century that we can see the advent of nuclear energy, space travel, computers, the internet and the virtual world, in other word we access to large amounts of information without the limitations of time and distance that has transformed economic, social and political structure of the nations have transformed. The more access cost to this information is reduced the more infrastructures and capacities are provided to it, the number will be added and we will have an integrated information society (Rahimi, 2002). Integrated information society, is a recrystallization of all the social traditional and conventional processes such as business, education, etc., and even personal activities such as recreation, etc. are in a modern context using ICT. So now, everyone will see that using ICT working practices and people's lives are changing in a positive way (Pahlevaniyan, 2004). Other features of information technology could be as follows:

1- Interactivity of technology (two-way process of communication),

2- Declassification (tendency to personal communication),

3- Asynchronous communication

4- Decentralization

5- Using higher capacity

6- Flexibility (Sanayeie, 2004)

However, despite all the achievements in information and communication technology, reviewing some realities indicates several limitations and shortcomings of the development of this important issue.

1- One third of the world's population still has no access to a telephone.

2- Population less than one fifth of the world's population still did not experience the Internet.

3- Much of the information available on the internet is exchanged in English, while this language is for only 10% of the world population (Rahimi, 2002). Therefore, measures should be taken to resolve these fundamental deficiencies and limitations in order to this technology will have a positive effect on communities. However the society believed in the development of the information, is hopeful for fundamental changes in all aspects of life. To have a sustainable development, region in the country, should prepare the ground for this by providing the basic infrastructures for the development of ICT and using it.

Because this technology is recognized as a major cause of economic growth by increasing productivity and increasing the speed of communication in the global production of goods and services, which affects markets and has significant impact on employment patterns and market (Pahlevaniyan, 2005) This has

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added importance to this technology. And personal life is woven with information technology tangibly and intangibly.
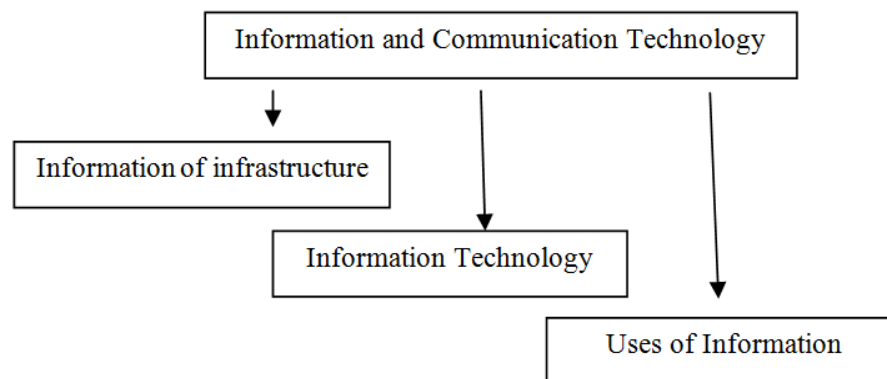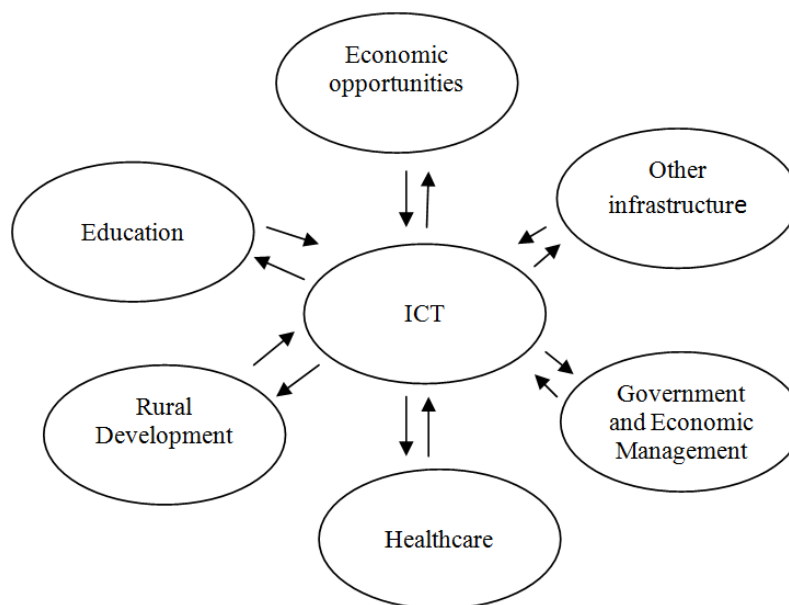

Figure 1: ICT infrastructure

Figure 2: Placement of the elements of the information infrastructure (Badraghe, 2006)

The Necessity of Regional Development
In the present word condition, the implications for regional development are accompanied by the deformation from a closed, governmental and centralized economy to an open, market and decentralized economy. New environment for regional development in a country is affected by three determining options. Role of factors such as the external and internal environment and the presence of a territory in internal environment of each country and innovativeness of the concept of state sovereignty constitute the main content of these options. New role for regional development in an era of global convergence can be explained in the above theoretical framework. Three characteristics (economic, administrative and territorial and spatial) will help to shape the conceptual framework.
The more development going ahead, specialization of functions progress more and communication networks due to it become more complex, and relationships with other functions are defined in it. In most cases, the regional development is defined as equivalent of economic growth of that region. However, we shouldn't consider only the economic aspects of the environment but we should also consider other

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aspects such as housing, immigration, infrastructure, etc. in such a way that environment creates interest for people of lifestyle and creates social mobility not causes the separation of classes. At present, some new points were raised in the regional development process. Regions as a basis for competition in the global economy, particularly in terms of establishing manufacturing and services firms and companies are important. On the other hand regions are the geographical structure to facilitate the exchange of knowledge, innovation, technology, and other external factors that can be traded between countries that finally the institutional and organizational training for new activities in the region can be formed (Eshkevari, 2005). Provided the context for the work to be provided, efficient government (e-government) is a complete closed control on the regions and to prepare the infrastructures and conditions for regions' sustainable growth, this is especially in developing countries, with more severely inequalities and limitations between regions that need to do things in their own regions to national development and finally their sustainable development.

The Role of ICTs in Regional Development
It is a relative of electronic technologies and services used to the process to store and publish information and to facilitate information implementation related to human activities. ICT networks seem are able to measure regions and reduce the physical distance between regions, its use in various economic activities led to the introduction of new business and the new concept of the atmosphere. Its development and introduction of new methods of commerce is not confined to the central regions but in contrast, a number of less developed regions use the advantages of this technology for example, even those areas that did not have an industrial background, but they were deformed by the use of information and communication technologies such as Cambridge, Milton Keynes and South Bavaria, in the German (Angelis, 2005). ACT progress is equivalent of economic performance development and competitiveness, especially the smaller size companies should not miss their chance to jump up and they should benefit from the current trends. ICT is another progressive force for innovation in other regions .For example, the classic industries like Machine Manufacturing Co., and mechanical engineering industries. Information technology of the industry, will be important stimulus for innovation in them, without information and communication technology most of progresses and developments would be unthinkable in Germany's key industries (Mertes, 2008).

This important issue provides education skills for all levels of the society according to their needs and provides special attention to youth, women and marginalized groups (Hearn *et al.,* 2003). It also plays a vital role in the functioning of the global economy and to overcome the barriers of geography, society, will help people regardless of the distance. And also it has significant effect on economic growth of the region. History of the world economy has shown that any changes in global economy and production leads to fundamental changes in society, and the role of technology in this case cannot be ignored. Many countries has an optimistic view of ICT role in promoting the growth of the surrounding areas, this technology creates a potential to advance the availability and stability of the final use of information for families and businesses, regardless of their position, so the unsuitable regions can more benefit from the advantages of ICT (Angelis, 2005).

In fact, ICT is often viewed as a major player that is able to create the national and regional economies to develop an organized community's capacity and expand new knowledge (Diego, 2008). Sustainable development of regions depends on a series of physical, economic and social indicators. Among these factors, proximity to markets, resources and encouraging central places seem to be important; and IT can have an important effect in fulfilling each of these indicators. In general, the conditions that should exist in a situation to be appropriate for a trade situation using ICT include the following:
1. Appropriate social conditions, adequate health, educational and cultural infrastructure.
2. Appropriate technology, in terms of commerce and its ability to access new technology and communicate with trades and other organizations that benefit from the new technology (Angelis, 2005).

The Role of ICT in Achieving Sustainable Development Indicators in the Region
Sustainable development requires a set of physical, social indicators, and if they aren't met by appropriate ways of these criteria, the region will be weak and will not be competitive with other regions. As

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mentioned in the UN report, the main objectives are to develop a set of key indicators that must be met in the region and the role of ICT cannot be ignored in this situation in case of availability of infrastructures, especially in developing countries. That is why the governments are trying to emphasize strategies that their goals are motivating growth and development of the regions. The processes that can provide these objectives can be necessary infrastructure of ICT and science and technology (King *et al.,* 2009).

Thus, in the absence of proper planning, even this project; ICT as a basic infrastructure for electronic city can be followed by some disadvantages; in the table below some of the potential advantages and disadvantages of ICT are mentioned:

Table 1: Potential advantages and disadvantages of Information and Communication Technology (Soltani, 2006)

Potential disadvantages	Potential advantages
Savings achieved in some activities may be ineffective by increasing inefficiency in some of other sectors, including additional costs associated with applying and maintaining ICT systems	Reducing administrative and management costs
In case of poor design and implementation of systems, services are difficult	Improving health, education, welfare and so on through the review of the allocation of manpower and other resources to best practices
Reduction or elimination of direct important contact	Faster and more accurate responses to the needs of citizens and their processing
Excessive centralization of services resulting in less flexibility in responding to local requirements	Better access to public services in remote areas during the day and night
Putting information in the network, is preferred to the attention to improving the quality, scope, usefulness and transparency of public information	Wider and easier access to all levels and types of public information through websites and access to documents via the Internet
Inability of the public sector to keep up with the innovation of ICT and investment in the private sector	Facilitate interaction between the public sectors and this sector with private sector
Creating new opportunities for cyber criminals/ creating need to virtual police	Reducing fraud in public services
Disasters or intentional events due to the application of technology	Advanced style of crisis management

The Digital Divide

By disseminating information and communication (ICTs) in a geographic territory, some parts of this territory with hardware and software infrastructures, that have higher information gain information much more and faster than regions without such facilities resulting increasing gaps in knowledge and information among different parts of this geographical territory (Fazelnia and Kiani, 2003). Today status of ICT in the world show the imbalance in the world regions in using this technology, this imbalance can be seen in many parts of the world and then there is a digital divide (Hanifi *et al.,* 2007).

The digital divide refers to the gap between those who are ready to access to communication and information technology and those without such access or skills (Khanjari and Kiani, 2007) and for the first time has been used in 1998 by the US Department of Commerce (Kubicek, 2002). Digital divide is defined by the American Library Association as: the digital divide refers to differences in access to information, networks of the Internet and other related technologies, based on social class, gender, geographical location, economic potential, knowledge and availability of information (Yazdanpanah and Mostajeran, 2008). Digital divide has various dimensions of economic, social and physical and each of these dimensions effectively affect citizens' access to ICT and its related tools (Hanifi *et al.,* 2007).
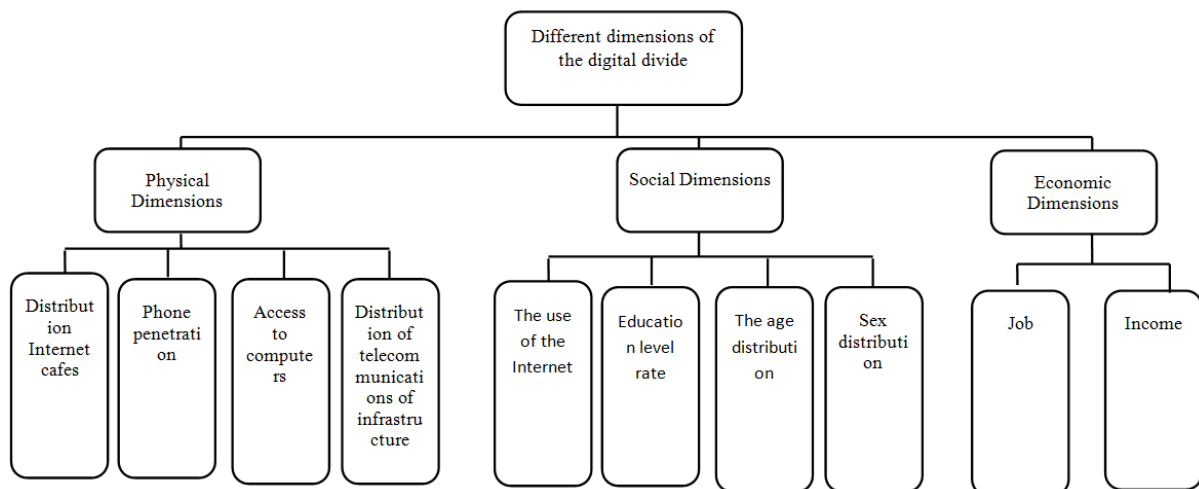
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Figure 3: Different dimensions of the digital divide (Hanifi *et al.,* 2007)

In perspective of the geographical dimension the digital divide, is from international dimensions, urban-rural, intra-urban and inter-urban (Hanifi *et al.,* 2007) That other geographic units, such as between provinces or between cities, etc. can be added in terms of digital divide of within the country as well as intra- urban.
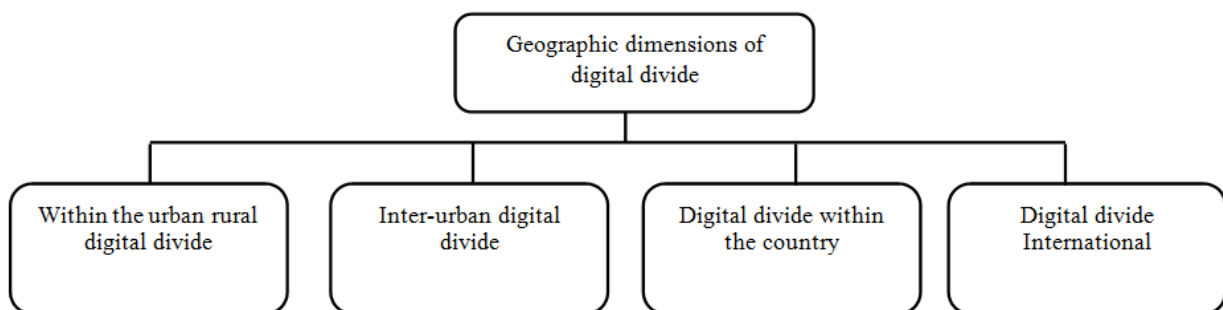

Figure 4: Geographic dimensions of digital divide (Hanifi *et al.,* 2007)

MATERIALS AND METHODS
The present research is an analytical and quantitative research and its study method is descriptive-analytic. The population includes 19 cities of East Azarbaijan province. Indices include 21 indicators on the ICT sector. Data were collected from 2008 Statistical calendar. The sample consisted of 19 cities of East Azarbaijan province and data were collected from 2011 Statistical calendar and Iran national port of statistics and to standardize the indicators and analysis, factor analysis method was used. Then cities are ranked using combined score and then they are classified and categorized through cluster analysis to homogeneous groups and finally, some strategies will be presented to develop ICT indicators and to reduce the digital divide between town / village, town / city and then the city / region.

Introduction Indicators
To evaluate cities of East Azerbaijan province 21 indicators on the ICT sector have been used as follows.
1-ratio of urban public telephone per 10 thousand urban population (X1),2- ratio of the remote public telephone per 10 thousand city population (X2), 3- ratio of GSM phone per 10 thousand city population (X3), 4 - ratio of the Mobile phone subscribers to the entire population of the city (X4), - 5 ratio of households with a computer in the city (X5), 6- ratio of households with a computer in the city (X6),7- ratio of households with computers in the village (X7), 8- ratio of households with a computer and internet use by one of the family members to all the households who has a computer in the city (X8), 9- ratio of households with a computer and internet use by one of the family members to all the households

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in the city (X9),10- ratio of urban households with a computer and internet use by one of the family members to all the urban households who has a computer in the city (X10), 11- ratio of rural households with a computer and internet use by one of the family members to all the urban households who has a computer in the city (X11), 12- ratio of rural households with a computer and internet use by one of the family members to all the urban households in the city (X12), 13- Percentage of rural areas with a telephone connection (X13), 14- Percentage of villages with rural ICT offices (X14), 15- ratio of rural ICT offices per 10 thousand rural population (X15),16- Diffusion coefficient of telephone in city households (X16),17- Diffusion coefficient of telephone in urban city households (X17), Diffusion coefficient of telephone in rural city households (X18), 19- ratio of the appointed telephone to the population of the city, 20- ratio of the active telephone to the population of the city (X20),21- ratio of urban households with a computer and internet use by one of the family members to all the urban households in the city (X21).

The Research Hypothesis
1- There is significant difference between East Azarbaijan province cities, in the enjoyment of ICT indicators.
2- There is a direct relationship between urbanism in East Azarbaijan province cities and development in terms of information and communication parameters.

Data Analysis
Factor Analysis
After converting the selected variables to the statistical indicators finally, 21 statistical indicators on ICT in different sectors were recognized suitable for factor analysis and factor analysis technique was performed using SPSS software. Factor analysis steps were used to indicators of ICT in East Azarbayjan province.

Among the techniques that the researcher by which is able to determine the suitability of data for factor analysis is KMO test. KMO test results indicate that the adequacy of the model is confirmed moderately and it demonstrates the suitability of factor analysis model for the operation of the present study and Bartlett's test also confirms this fact.

Extracting Factors
In this section, the correlation between the indicators (variables) and factors are analyzed and the main factors are extracted using the correlation matrix. The correlation matrix is calculated and extracting factors are tried. To provide reasonable and appropriate relationship between the indicators (variables) and factors, some indicators are used that their correlation coefficient is more than 0.5 (Taghvaei and Shafie, 2009). Accordingly, in the present study 21 indicators decreased to 4 indicators that they account for 75.34 percent of variance and represent a satisfactory factor analysis, and studied indicators. The results are presented in Table (2).

Table 2: Extracting final factor of data analysis

% Of cumulative variance	Percentage of variance	Eigen values	List of factors
34.235	34.235	7.189	1
51.383	17.148	3.601	2
65.175	13.792	2.896	3
75.340	10.166	2.135	4

Matrix Rotation
A simple structure is obtained in this research by integrating the indices around a factor and according to Table 1 the extracted factors explain 75.340 percent of changes due to the previous variables (Taghvaei and Shafi'e, 2009). The correlation coefficient of matrix is calculated by forming data matrix and then it reduces to 4 final factors by factor analysis in ICT indicators that explains 75.340% of the total variance and demonstrated good summary that by factor rotation in varimax method variables of each factor were determined. According to Table 2 the first factor has more significant contribution to the total variance (ANOVA).

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Table 3: The rotated factors

% Of cumulative variance	Percentage of variance	Eigen values	List of factors
25.079	25.079	5.267	1
47.769	22.690	4.765	2
62.548	14.778	3.103	3
75.340	12.79	2.686	4

Labeling Factors
According to the correlation of each indicator, factors were named as follows.
According to the correlation of each index with each other; those indicators that have the highest correlation with each other are loaded in a factor.
First factor: the specific amount of this factor explains 5.267 and 25.079 percentage of variance. Six indicators are loaded in this factor that the highest correlation exists between them.

Table 4: Loaded Indicators in the second factor

Correlation	Number of rows in calculations	Index	Row
0.703	X2	ratio of the remote public telephone per 10 thousand of city population	1
0.901	X15	ratio of rural ICT offices per 10 thousand rural population	2
0726	X16	Diffusion coefficient of telephone in city households	3
0.901	X17	Diffusion coefficient of telephone in urban city households	4
0.564	X18	Diffusion coefficient of telephone in rural city households	5
0.804	X19	ratio of the appointed telephone to the population of the city	6

The Second Factor: five indicators are loaded in this factor and they are correlated. The Eigen value of this factor is 4.765 that explain 22 690 percentage of variance.

Table 5: Loaded Indicators in the second factor

Correlation	Number of rows in calculations	Index	Row
0.745	X3	ratio of GSM phone per 10 thousand city population	1
0.901	X5	ratio of households with a computer in the city	2
0.795	X10	ratio of urban households with a computer and internet use by one of the family members to all the urban households who has a computer in the city	3
0.602	X13	Percentage of rural areas with a telephone connection	4
0.668	X21	ratio of urban households with a computer and internet use by one of the family members to all the urban households in the city	5

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The Third Factor: three indicators are loaded in this factor, that they have the highest correlation with each other.

Table 6: Loaded Indicators in the third factor

Correlation	Number of rows in calculations	Index	Row
0.540	X18	Diffusion coefficient of telephone in rural city households	2
0.803	X20	ratio of the active telephone to the population of the city	3
0.679	X14	Percentage of villages with rural ICT offices	4

The Forth Factor: Eigen value of this factor explains 2.686 and 12.793% of the variance. Two indicators are loaded in this factor that has a significant relationship with each other.

Table 7: Loaded Indicators in the forth factor

Correlation	Number of rows in calculations	Index	Row
0.663	X11	ratio of rural households with a computer and internet use by one of the family members to all the urban households who has a computer in the city	1
0.933	X8	ratio of households with a computer and internet use by one of the family members to all the households who has a computer in the city	2

Table 8: Ranking of cities of East Azarbaijan province on the basis of combined score

Ranking	Combined score	Scores of each factor				City	Row
		The forth factor	The third factor	The second factor	The first factor		
3	1.42	0.6354	0.3768	0.2868	0.30565	Azarshahr	1
13	-0.32	0.1487	1.5259	-0.5176	-0.27311	Osko	2
9	0.75	0.7654	-0.0880	2.1866	0.54468	Ahar	3
8	0.85	0.3495	0.1467	-0.7940	-0.3801	Bostan Abad	4
4	1.27	0.3509	-0.2452	0.0145	0.6924	Bonab	5
1	3.06	-1.6265	0.3432	0.6520	0.0499	Tabriz	6
11	0.33	-1.4231	-0.1421	0.0384	-1.0866	Jolfa	7
19	-3.39	-0.6179	-0.6271	-1.1943	-0.8086	Charaoymagh	8
10	0.34	0.7020	2.0542	-0.7170	1.4322	Sarab	9
6	0.99	0.5075	0.3425	-1.0801	0.3040	Shabestar	10
15	-1.35	-1.3592	-0.8197	1.0246	-0.5713	Ajabshir	11
17	-2.46	1.4779	-1.7077	-0.5783	-0.4365	Kaliber	12
2	2.02	-0.1023	-0.5234	-0.8976	0.6329	Maragheh	13
5	1.20	1.8068	0.9431	-0.1157	-1.1450	Marand	14
14	-1/32	0.7149	-0.8285	2.1586	-0.1293	Malekan	15
7	0.96	-0.7228	-1.1222	-0.5172	2.8449	Miane	16
18	-2.49	-0.2788	-0.0751	-0.3237	0.4555	Varzeghan	17
16	-1.49	0.3423	-0.8285	-0.7448	1.7068	Haris	18
12	0.10	-0.1410	1.5259	0.8285	0.9431	Hashtrood	19

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Cities Ranking

After performing the above steps, we can rank the cities by using the factor scores calculated for each of the cities. Ranking of cities using the combined score showed that Tabriz with a combined score of 3.06 is located in the first level and three cities of Kaliber, Varzeghan and Charaoymagh 2.46, 2.49 - and 3.39 are located in the fifth level. Table 8 shows ranking of East Azerbaijan province based on the factor scores.

Grouping Cities of East Azerbaijan Province using Cluster Analysis

After factor analysis based on the calculated scores and composite index, it was tried to identify homogeneous groups in cities of East Azerbaijan using the cluster analysis. With this method, the cities with the highest similarity in factor scores are classified in a cluster. In this case the values of the scores for each factor indicate the degree of importance of each of the regions. Figure 1 shows the province in three homogeneous clusters. In the cluster analysis performed based on the average linkage method, the cities of the province are located in three levels. This grading indicates that places in one level have high similarity, but there are no significant differences with the other levels.

According to table (9) city of Tabriz is located in the first level, Maragheh, Azarshahr, Bonan, Marand, Shabestar,Miane, Bostan Abad and Ahar are located in the second level, Sarab, Jolfa, Hashtrood and Osko are located in the third level, Malekan, Ajabshir and Haris are located in fourth level and finally Kaliber, Varzeghan and Charaoymagh are located in the fifth level; After completion of the extraction process, a combined score was obtained using the sum of factor scores and each of these cities, based on the feedback gained from the development were divided into specific categories, and according to the mean and standard deviation of the combined score , five categories were defined for classification of cities and each of the cities on the basis of scores obtained from factor analysis are located in one of five categories: very high, high, relatively high, low and very low.

Table 9: Ranking cities of East Azarbaijan province on the basis of factor scores

Developing levels	percent	number	city	levels	row
Very high	23052	1	Tabriz	The first level	1
high	35.29	8	Maragheh, Azarshahr, Bonan, Marand, Shabestar,Miane, Bostan Abad and Ahar	The second level	2
relatively high	23.52	4	Sarab, Jolfa, Hashtrood and Osko	The third level	3
low	17.64	3	Malekan, Ajabshir and Haris	The forth level	4
Very low	16.21	3	Kaliber, Varzeghan and Charaoymagh	The fifth level	5
	100	17			total

Thus, the differences in the classification show inequalities in having ICT indicators. As the city of Tabriz with 23.52% is located at very high level, Maragheh, Azarshahr, Bonan, Marand, Shabestar,Miane, Bostan Abad and Ahar with 35.29 are located at high level , Sarab, Jolfa, Hashtrood and Osko with 23.52 percent are located at relatively high level, Malekan, Ajabshir and Haris with 17.64 percent are located at low level and ultimately Kaliber, Varzeghan and Charaoymagh with 16.21 percent are located at very low level and the hypothesis that there is a difference between cities based on the ICT indices are confirmed.

The results show that the higher the level of urbanization the knowledge and access to ICT indicators are equally higher which this has been tested using Pearson's test to study this hypotheses.

Based on the study of cities urban population and ICT indicators in the region (city, vilage) it can be invoked that the calculated significance level is (sig =.002) is less than the desired significance level (α=0.05). Therefore, this hypothesis was confirmed in other words, the more the level of urbanization increases, the development and the attainment of the facilities results in desired indices and the relationship between these two variables is positive and is about 0.645 indicating a strong positive

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relationship between these two variables. Table (10) shows the results of the Pearson test. . So the ICT infrastructures and the application of the criteria by citizens that need information literacy should be created in the city that need regional and urban managers' attention.

Table 10: Pearson r test to examine the relationship between urbanization and city development in the field of ICT indicators

Desired alpha	Correlation intensity	Significance level	Type of test
$\alpha = 0.05$	0.645	sig=0.002	Pearson

RESULTS AND DISCUSSION
Cities generally and major cities specifically have potential capability to use ICT and adoption of manifestations of information knowledge, the result of applying this important issue in people social life have important impacts such as increasing social participation (plan, project, etc.), increasing urban managers efficiency, reducing administrative corruption and bureaucracy, cost and time savings, reduction of the waiting queues and to fulfill the motto "every citizen, a city manager," and so on. These goals require the development of citizens' access to information knowledge at work, residence and city, Development of information infrastructures in urban- rural areas, having information literacy and adoption its manifestations, and taking some steps by the state and city managers.
The results of factor analysis revealed that the cities of East Azarbaijan are not matched in terms of having resources and ICT indicators and most of them are not satisfactory in terms of ICT. In such a way that the provincial capital (Tabriz), have the most amenities and services related to information and communication technology and it has been like an attracter in this area and it needs to change attitudes of urban and regional politicians and administrators in this field. The results of the spatial analysis of cities of East Azarbaijan province and enjoying ICT indicators are as follows.
First Level: Tabriz
Second Level: Maraghe, Azarshahr, Bonab, Marand, Shabestar, Miane, Bostan Abad and Ahar
Third Level: Sarab, Jolfa, Hashtrood and Oskoo
Forth Level: Malekan, Ajabshir and Harris
Fifth Level: Kalibar, Varzeghan and Charaoymaq,
That need urban and regional planners and managers' attention to reduce the digital divide and to achieve social justice in this regard and these levels should be planned in reverse (i.e. from the first to the fifth level).
Suggestions
In this paper, using 21 indicators of ICT we addressed classification and studying the welfare level of the cities and position of the cities was determined in terms of development in the ICT sector, and the results showed that there is a type of divergence and heterogeneity among the atmosphere system of the province. So making programs efficient and consistent with reality to the city's development and poverty elimination is necessary. Based on these results, the following guidelines are provided.
- Towns that are located in deprived or very deprived regions and have less scores should be the first priority in planning and funding. That is very poor and deprived districts need emergency and short-term programs.
- It is recommended that medium term programs to be considered for cities with relatively high or medium welfare.
- High and medium-term programs are suggested for high ranked cities.
So the programs' success requires attention to potential, reinforcing strengths and overcoming weaknesses or exclusion and a holistic view of managers, urban and regional planners, and some solutions are provided to enable areas:
- Educating citizens in the field of internet usage.
- Today broadband internet is one of the important signs of development and just internet connection is not enough so internet speed should be increased in the country.

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- To resolve differences between urban and rural areas, rural areas must also be equipped with ICT facilities so that we can increase services to rural areas and to educate villagers about and raising awareness of the benefits of ICT is essential.
- Equipping organizations and offices to make electronic civil administration for services to citizens.

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