Comparison of Iran Human Development Index (HDI) with the Region Selected Countries during 2010 and 2011

Abolfazl Shahabadi[a], Morteza Nemati *[b]

[a] Associate Professor, Faculty of Economy and Social Sciences, Bu-Ali Sina University, Hamedan, I.R. of Iran.

[b] *PHD student, Faculty of economics and social science, Bu-Ali Sina University, Hamedan, I.R. of Iran.*
Corresponding author

Abstract

The United Nations Development Programme (UNDP) has changed the calculation methodology of human development index in 2010.This leads to a change in the position of some countries in the world ranking. These changes include: calculation of expected years of schooling and mean years of schooling rather than adult literacy rates and enrollment rates at different levels of education in the education index, calculation of gross national income (GNI) per capita rather than gross domestic product (GDP) per capita in income index, but calculation of expected years of schooling similar to the previous report, with a slight change but the calculation of this indicator in 2011 is the same as in 2010. In fact, this paper seeks to answer this question that how is Iran situation in this index in during 2010 and 2011.

The findings show that the rank of Iran human development index has fallen one rank in the neighbor countries and 18 rank in the world and has declined from 70 rank in 2010 to 88 rank in 2011. The results indicate that although Iran's human development index has improved in 2011 compared to 2010, but its rank has declined.

Keywords: Human Development, life expectancy, GDP per capita, Education Index

1. Introduction

Health status is measured by life expectancy indicator such as the past, the only difference with past is that the minimum year of life for every person was 25 years earlier, and now is considered 20 years (UNDP 2010). However, the general indicator of "literacy" has been replaced with average years of schooling to check the status of education and "gross rates of entry to school" has been replaced with education expectancy. These two new indicators measure the status of actual and educational facilities potential of the countries. Other change is the replacing Gross national income (GNI) rather than the gross domestic product (GDP), which is consistent with the increasing globalization of the economies. Gross national income(GNI) is the income that reaches to residents of a country, while gross domestic product(GDP) is the volume of production in an economy and may be get out a large part of their with the expansion of international companies activities. Another significant change is the use of the geometric mean rather than an arithmetic mean to homogenize the final index. Geometric mean cause that different type of indicators is not considered in the calculations and the end results bias has been less. After calculating Score with this method, countries are placed in four categories: very high, high, medium and low in human development. In fact HDI is an index that measures the level of empowerment and shows that if the peoples have the three basic aspects of Life Expectancy, education and GNI will also be able to obtain the other opportunities (Abbasi nejad et al, 2006). The main theme of human development is that development should be more than the increase in income and wealth. The focus of development should be human and beside it, the main objectives as reduction of poverty and pursue facility fair of economic opportunities. This study investigates the Iran status in the cited index during 2010 and 2011 years and compares it with the number of country in the region.

Before 1950 to 1960 development measuring indexes have often quantitative approach. In this period, development is evaluated as a quantitative change and evolution and the major difference were not proposed between the two concepts of growth and development in economic literature. The most important parameters to measure the development of these years has been gross domestic product(GDP), gross national product(GNP), net domestic product (NDP), net national product(NNP) and national income. However, despite of many criticisms and discrepancies such as the ignore of income distribution and social gap, double counting, unclear expertise used in the production, production caused by the sale of assets or productive activities and problems of national accounting and etc. These indicators are also used. So, in order to enhance the ability of measurement has been created adjustments as change nation variables to per-capita variables and nominal variables to real variables. Finally, it can be named index like "real per capita production" that somewhat lacking some discrepancies that can be applied to previous indices.

Some economic experts were claiming role and framework beyond quantitative factors for concept of development and they considered development phenomenon subject to social and cultural structures too and believed that development further is a qualitative change to quantitative change. So, they do not know suitable mentioned quantitative indices. From the 1970s onwards quantitative indices were questioned. Some economist introduced qualitative indices such as health, nutrition, education, mortality rates. Also it was introduced economic welfare indices like the enjoyment of goods and services, access to public facilities and etc. These indices did not last long; because, first, these indices are presented as relative. Second, matched them in all places and environment have faced with the many problems. Third, different nations and cultures have different allegiances and interests. So follow the evolution of the concept of development changed the instruments used to measure and how it. These changes continued until Mahbub Alhagh outlined the debate of human development index and it report established. In the first report that was published in 1990 by the United Nations development programme (UNDP), measures of life

expectancy, education acquisition and GDP per capita were introduced to calculate this index. Mentioned components are combined to achieve an average index of deprivation and acquired a combined index of human development. HDI is not measured absolute levels of human development in a country, but for a certain period, the countries are ranked In the relation to each other. The HDI rank of a country is in global distribution. Based on how that the minimum of country's HDI value namely zero has moved to the maximum value of mentioned index namely one. Countries whose HDI is lower than 0/5, respectively, were considered as a country with low human development. The countries with their index 0/5 to 0/8, have the average levels and more than 0/8 have high levels of human development, but from 2009 onwards, the ranking of this index changed and countries were ranked in four categories of human development: very high, high, medium and low instead of placing in the three categories of human development high, medium and low. Finally in 2010 in calculated of index were changed including consideration of GNI rather than GDP in calculation of income index.

2. Literature Review

Various studies have been conducted on the HDI In the national and international levels, which we will refer to some of them. Khakpour and Yavan Puri (2010) examined the HDI of Islamic countries. Results indicate that there are significant differences among Muslim countries in terms of HDI and in terms of ranking, the Islamic countries of West Asia, South and South-East Asia and the African countries are respectively. Also HDI of Islamic countries is lower than the HDI of developed and developing countries and world average. Ultimately arrive at the conclusion that the HDI of Islamic countries affected by the level of education is more than anything. Ahmadvand and Amir (2009) examined the components of the HDI in 2007 and they conclude that Iran has a progress in per capita income and education indicators, and has faced a setback in life expectancy at birth. Sharif Khatibi (2008) evaluated HDI in their study. He was the first to calculate the statistical HDI, Human Development in Islamic countries, the effects of war on its neighbors and its reflection on the HDI. In the end concluded that ascent and progress in the rankings of Iran HDI related to effective and appropriate government policies in use of wealth and total income in order to increase the level of well-being and social, cultural and human development. Bakhshoodeh (2006) has done comparison of HDI in the Iran and world. His results indicate that this index trend is improving which could be due to the growing trend of adult literacy rate and secondary school enrollment and improving the standard of living, although Iran's economic growth has contributed in this issue. Feyz Zade (2003), based on Human Development Report 2003 examines the status of Iran human development in recent years. His study shows that in 2001, Iran was ranked 90, in 2003 reached rank 106 that have declined compared to 2001. Decrease of gross enrollment rate of 73 per cent in 2001 to 64 percent in 2003 has been the main reason for falling rank of Iran, while it is among Iran's neighbors, except Iraq and Afghanistan than just Pakistan is lower than Iran in terms of human development. Grimm (2008) examined the HDI in terms of income groups for an average of thirteen medium and poor countries and two rich countries. He states the most criticisms of the HDI, because it does not account for inequality between countries. He suggests method that provides the possible to calculate all three dimensions and total HDI, calculating income distribution indices, comparison of levels of human development in poor and rich countries and comparisons between countries, especially in African countries. So, concluded that income inequality in the countries surveyed is more than inequality in education and life expectancy. Despotis (2004) initially estimated the HDI in form data envelopment analysis (DEA) for the number of countries in Asia Pacific. Then, offers the objective programming model to obtain a world estimation of the human development based on the general optimal weights for the next index. He defines an index that comparable and highly correlated with the index of human development. Hanham (2000) calculated HDI in the state of West Virginia in America. This study examines the indicators of education, income, life expectancy and poverty in different parts of West Virginia and ultimately achieves the result that the first

rank represents a part with high HDI to the value of 0.635 to 0.719 and areas with last ranking of the 0.504 to 0.287. Central parts have a value equal to 0.633 to 0.517. Srinarasan (1994) knows the quality of information in calculating of HDI as the main problems of this index. However, Mills (2002) has focused on greater impact of income on improving the HDI in poor countries. He believes that a $ 100 increase in income in poor country can substantially reduce the level of education or starvation. Whereas in a rich country may be spend extra hundred dollars for a meal or a piece of computer equipment. He has found little evidence of a relationship between literacy and enrollment rates by HDI in poor countries and believe that the HDI does not show anything in reducing of economic inequality and deprivation and participation level. Governments accountable to the people, reduce discrimination, effective treatment of economic and social problems and appropriate and homogeneous progress in the HDI is not seen, because human development is the expansion of people's choices, and choices and capabilities are not substituted. People are living longer and are associated with health, at the same time educated and realize their intellectual and creative abilities. Due to the differences in the regions, between rural and urban areas, between men and women, ethical and income groups and according to that most assessments are done in the national level. HDI can' not express all realities. Griffin and James (1981) stated that in order to promote in human development should be tendencies to education, health and social services. They believe that the progress of human capabilities will provide through greater allocation of government expenditures on education and health care, more attention to rural areas, observance of fairness and efficiency, basic public services and etc.

3. Methodology

This study is a descriptive - analytical. The data used to calculate the HDI comparisons between countries have been collected of various international resources such as United Nations Development Programme (UNDP) and World Bank.

3.1 Data Analysis

Method of calculate Human Development Index in 2011:HDI is an index that measures average achievement in a country in three basic dimensions of human development, that is the long and healthy life (which is measured by life expectancy at birth), access to knowledge (which is measured by expectancy of education and mean years of education) and a decent standard of living (which is calculated by Gross National Income (GNI) per capita based on purchasing power of the America dollars index). These three variables have different units. Since the obtained combined indicator should have the capability to ranking the different countries, first, each of the three indicators is converted by using a based index formula based on percentage and then HDI is obtained the geometric mean of them.

3.2 Creating the dimension indices

The first step is to create subindices for each dimension. Minimum and maximum values (goalposts) need to be set in order to transform the indicators into indices between 0 and 1. Because the geometric mean is used for aggregation, the maximum value does not affect the relative comparison (in percentage terms) between any two countries or periods of time. The maximum values are set to the actual observed maximum values of the indicators from the countries in the time series, that is, 1980–2010. The minimum values will affect comparisons, so values that can be appropriately conceived of as subsistence values or "natural" zeros are used. Progress is thus measured against minimum levels that a society needs to survive over time. The minimum values are set at 20 years for life expectancy, at 0 years for both education variables and at $163 for per capita gross national income (GNI). The life expectancy minimum is based

on long-run historical evidence from Maddison (2010) and Riley (2005).[1] Societies can subsist without formal education, justifying the education minimum. A basic level of income is necessary to ensure survival: $163 is the lowest value attained by any country in recorded history (in Zimbabwe in 2008) and corresponds to less than 45 cents a day, just over a third of the World Bank's $1.25 a day poverty line.

Table (1): The minimum and maximum amounts intended for every dimension of the HDI

Dimension	Observed maximum	Minimum
Life expectancy	83.4 (Japan, 2011)	**20**
Mean years of schooling	13.1 (Czech Republic, 2005)	**0**
Expected years of schooling	18 (Capped at)	**0**
Combined education index	0.978 (New Zealand, 2010)	**0**
Per capita income (PPP $)	107721 $ (Qatar, 2011)	**100**

 Resource: UNDP, 2011

It is worth mentioning that dimension forming the HDI, are calculated by the following formula:

1) $\text{Dimension index} = \dfrac{\text{actual value - minimum value}}{\text{maximum value - minimum value}}$

For education, equation 1 is applied to each of the two subcomponents, then a geometric mean of the resulting indices is created and finally, equation 1 is reapplied to the geometric mean of the indices using 0 as the minimum and the highest geometric mean of the resulting indices for the time period under consideration as the maximum. This is equivalent to applying equation 1 directly to the geometric mean of the two subcomponents. Because each dimension index is a proxy for capabilities in the corresponding dimension, the transformation function from income to capabilities is likely to be concave (Anand and Sen 2000). Thus, for income the natural logarithm of the actual minimum and maximum values is used. The HDI is the geometric mean of the three dimension indices:

2) $(I_{life}^{\frac{1}{3}} * I_{Education}^{\frac{1}{3}} * I_{Income}^{\frac{1}{3}})$

In this section, after showing each of the declared values of the variables in Table 2 by UNDP, we will explain how to calculate each of indexes and calculate it for Iran.

Table 2: Observed values for each of the indicators in Iran in 2011

Indicator	Value
Life expectancy at birth (years)	**73**
Mean years of schooling (years)	**7.3**
Expected years of schooling (years)	**12.7**
GNI per capita (PPP $)	**10164 $**

 Resource: UNDP, 2011

3-3 Basic index of life expectancy

Life expectancy shows the expected survival of an individual at birth, provided that prevailing patterns of mortality stay the same at the time of birth. This index is function of health, quality of life, health facilities, access to a minimum of life, lack of anxiety, relaxation and enjoyment of economic and social security. In other words, achievement the health in the long run will reduce the level of vulnerability to

sudden illness or death (Baseri et al, 2008). The maximum lifetime related to Japan with 83.4 years and at least it has been in 20 years in calculated of expectancy life index. Thus, the gap between the minimum and maximum lifetime is 63.4 year. So life expectancy, using a formula based index, is calculated as follows:

3) $\text{Basic index of expectancy life} = \dfrac{\text{average of expectancy life in considered country} - 20}{83.4 - 20}$

According to the Human Development Report of 2011, the life expectancy for Iran, has announced 73 years, basic index of expectancy life for Iran is equal to:

4) $\text{Basic index of expectancy life} = \dfrac{73 - 20}{83.4 - 20} = \dfrac{53}{63.4} = 0.835$

4-3 Basic index of education

This index is calculated in two stages. In the first stage, the mean years of schooling index and expected years of schooling index are calculated. In the second stage, the combined index of education is calculated. Here we will discuss how to calculate indices:

Maximum observed mean years of schooling until 2011 has been 13.1 Years which is related to the Czech Republic in 2005 and minimum value of it is considered 0. Thus, Mean years of schooling based on basic index is calculated in this way:

5) $\text{Mean years of schooling index} = \dfrac{\text{Mean years of schooling in considered country} - 0}{13.1 - 0}$

The mean years of schooling for Iran has been 7.3 years. Thus, mean years of schooling index for Iran is equal to:

6) $\text{Mean years of schooling index} = \dfrac{7.3 - 0}{13.1 - 0} = 0.557$

In addition, maximum observed expected years of schooling has been 18 years which is related to the Australia and minimum value of it as mean years of schooling is considered 0. So, expected years of schooling based on basic index are calculated in following form:

6) $\text{expected years of schooling index} = \dfrac{\text{expected years of schooling in considered country} - 0}{18 - 0}$

In 2011, the United Nations Development Programme (UNDP) has announced the expected years of schooling for Iran 12.7 year. Therefore expected years of schooling index for Iran will be equal to:

7) $\text{expected years of schooling index} = \dfrac{12.7 - 0}{18 - 0} = 0.705$

Maximum observed education combined index up to now, which is roughly the average of two mentioned indices, has been 0.978 which is related to the New Zealand and minimum value of it is considered 0. Accordingly, education combined index is calculated in following form:

8) $\text{Education combined index} = \dfrac{\sqrt{\text{Mean years of schooling index} * \text{expected years of schooling index}} - 0}{0.978 - 0}$

There for, according to mean years of schooling index that was 0.557 and expected years of schooling index that was 0.705, education combined index for Iran is equal to:

9) Education combined index $= \dfrac{\sqrt{0.557 * 0.705} - 0}{0.978 - 0} = 0.640$

5-3 Basic index of income

Index of gross national income per capita is calculated like two mentioned index by using the based index formula and minimum and maximum values that targeted for it. Accordingly the maximum GNI per capita that has been experienced is related to Qatar in 2011, with revenues of over U.S. $ 107,721 and the observed minimum is $ 100. Because of large gap between high and low income countries to calculate this index, for the modified index, Instead of absolute amount of GNI per capita in purchasing power of the dollar is used the logarithm of GNI per capita in purchasing power of the dollar. Thus, the income index is calculated based on the following formula:

10) Income index $= \dfrac{LN(\text{GNI per capita in considered country}) - LN(\text{minimum of GNI per capita in the world})}{LN(\text{maximum of GNI per capita in the world}) - LN(\text{minimum of GNI per capita in the world})}$

So, for Iran with GNI per capita $ 10164 for the year 2011, income index is calculated in following form:

11) Income index $= \dfrac{LN(10164) - LN(100)}{LN(107721) - LN(100)}$

According to equation (2) and the indices obtained above, Iran HDI in 2011 is achieved through:

12) $HDI = \sqrt[3]{0.835 * 0.640 * 0.661} = \sqrt[3]{0.3532} = 0.707$

So, Iran HDI in UNDP calculation will be 0.707. The same procedure is done for other countries. Finally each country that has HDI closer to 1 placed in higher ranking.

4-1 Iran's position in the Human Development Index in 2011

In the Human Development Report 2011 by United Nations, among the 187 countries studied the rank of 88 has assigned to Iran with HDI 0.707 and is located in the row of countries with high human development. Hence, it has fallen rank 18 compared with the previous year (2010) which was rank 70. According to this report, Norway with 0.943 is in the first rank, Australia with 0.929 is in the second rank and Netherlands with 0.910 is located in the third rank. Burundi with 0.316 is rank 185, Niger with 0.295 placed in the rank 186 and Congo whit 0.286 is assigned the rank 187 and last rank in UNDP ranking.

In the tables (3) and (4) Iran's position in each of the components are presented separately for the years 2011 and 2010.

Table (3): Iran's position in HDI in year 2011

GNI per capita(PPP)	Expected years of schooling	Mean years of schooling	Life expectancy	HDI
1. Qatar (107721)	1. Australia (18)	1. Norway (12.6)	1.Japan (83.4)	1. Norway (0.943)
76. Iran (10164)	90. Iran (12.7)	111. Iran (7.3)	94. Iran (73)	88. Iran (0.707)
187. Liberia (265)	187. Sudan (4.4)	187. Mozambique (1.2)	187. Sierra Leone (47.8)	187. Congo (0.286)

Resource: UNDP, 2011 and researcher calculation

Table (4): Iran's position in HDI in year 2010

GNI per capita(PPP)	Expected years of schooling	Mean years of schooling	Life expectancy	HDI
1.Liechtenstein (81011)	1. Australia (20.5)	1. Norway (12/6)	1.Japan (83.2)	1. Norway (0.938)
67. Iran (11764)	52. Iran (14)	97. Iran (7.2)	90. Iran (71.9)	70. Iran (0.702)
169. Zimbabwe (176)	169. Niger (4.3)	169. Mozambique (1.2)	169. Afghanistan (44.6)	169. Zimbabwe (0.140)

Resource: UNDP, 2010 and researcher calculation

Iran in year 2011, 18 steps down and dropped to rank 88 compared to the previous report of UNDP, which was published in 2010 and now with index 0.707 is located in the high human development countries. As the tables show that Iran HDI has increased compared to 2010, but it rank faced with decline. This means that Iran movement in the direction of human development has been slow compared to other countries and other countries have been able to surpass in this direction of Iran.

Fortunately, Iran with 73 years in life expectancy index is 3.2 years higher than the world average by 69.8 years. Also, Iran GNI per capita with $10164 is higher than the world average that is $10082. In expected years of schooling index the world average is 11.3 years that Iran with 12.7 years is higher than the world average, too. Unfortunately the mean years of schooling of persons over 25 years of Iran is 7.3 years that is less than the world average of this index with 7.4 years. Generally, Iran HDI is 0.707 that is more than the world average by 0.682. In life expectancy Iran has located in the 94world rank with 73 years. The life expectancy in 2010 is equal to 71.9 years that 1.1 years has been added to it in 2011. Therefore, Iran has been faced with progress in this index. In the mean years of schooling of adults (persons 25 years and older), Norway holds the first rank with 12.6 years. In this index, Iran has placed in world rank 111 with 7.3 years and has grown only 0.1 compared to 2010. In expected years of schooling, Australia has standing in first rank with 18 years. This index is 12.7 years for Iran that has led that Iran in this index no having a rank better than world rank 90. Unfortunately, the Iran has been declining in this index, because value of this index was 14 years in 2010. In the index of GNI per capita, Qatar with $ 107721 is allocated to the first rank. Iran has 76 world ranking in this part with $10164. Among the different indexes, it is the best index for Iran that most of it is related to revenues of oil exports. Of course Iran is faced with declining in this index, too. Perhaps the most important reason is that international sanctions against Iran.

5. Iran HDI position in comparison with other region countries in 2010 and 2011

Since it is based on perspective document, Iran should be first rank of economy, science and technology in the region in the next 20 years, thus understanding the current situation and position of Iran is important in terms of various development indexes such as HDI in the region in planning and appropriate policies to achieve these goals. In the table (5), HDI index have represented for 21 countries in the Middle East and Iran neighbors. Based on the data presented in this table, the highest HDI is related to UAE with rank 30 in the world and the lowest HDI is related to Yemen with rank 154 and Afghanistan with rank 172. Iran is located in world rank 88 and has 58 rank distances with the first country in region and between 21 countries in region is ninth. Persian Gulf oil countries like the United Arab Emirates, Qatar and Bahrain are in the first to third rank in the region also are in the row of high human development countries in the UNDP ranking. After this group of countries, five countries Saudi Arabia, Kuwait, Kazakhstan, Georgia and Armenia are also higher than Iran, but these five countries along with Iran and two countries Turkey and Azerbaijan that are lower than Iran have taken place in the row of high human development countries. Jordan, Turkmenistan, Egypt, Uzbekistan, Syria, Kyrgyzstan and Tajikistan are the next countries that are in the category of countries with medium human development and Pakistan, Yemen and Afghanistan are in the category of countries with low human development. It is worth noting that the HDI rank of Iran has been declining one rank in the region and 18 rank in the world in 2010. Of course, except Qatar and UAE that have progress two and one rank respectively, all countries in the region have been falling in the world. Although the HDI all countries except two countries Azerbaijan and Turkmenistan has been growing process, however have faced with decline rank. This means that case study countries compared with other countries have not been able to move quickly in the Human Development. Table (5) shows Iran HDI position in comparison with other region countries in 2010 and 2011.

Table (5): Iran HDI position in comparison with other region countries in 2010 and 2011

Rank / Country	2010 Ranking			2011 Ranking			Rank Increase (Decrease) in 2011 compared to 2010	
	HDI	Region	World	HDI	Region	World	Region	World
United Arab Emirates	0.815	1	32	0.846	1	30	0	+2
Qatar	0.803	2	38	0.831	2	37	0	+1
Bahrain	0.801	3	39	0.806	3	42	0	-3
Saudi Arabia	0.752	5	55	0.770	4	56	+1	-1
Kuwait	0.771	4	47	0.760	5	63	-1	-16
Kazakhstan	0.714	6	66	0.745	6	68	0	-2
Georgia	0.698	9	74	0.733	7	75	+2	-1
Armenia	0.695	10	76	0.716	8	86	+2	-10
Iran	0.702	8	70	0.707	9	88	-1	-18
Azerbaijan	0.713	7	67	0.700	10	91	-3	-24
Turkey	0.679	12	83	0.699	11	92	+1	-9
Jordan	0.681	11	82	0.698	12	95	-1	-13
Turkmenistan	0.699	13	87	0.686	13	102	0	-15
Egypt	0.620	14	101	0.644	14	113	0	-12
Uzbekistan	0.617	15	102	0.641	15	115	0	-13
Syrian Arab Republic	0.589	17	11	0.632	16	119	+1	-8
Kyrgyzstan	0.598	16	109	0.615	17	126	-17	-1
Tajikistan	0.580	18	112	0.607	18	127	0	-5
Pakistan	0.490	19	125	0.540	19	145	0	-20
Yemen	0.439	20	133	0.462	20	154	0	-21
Afghanistan	0.349	21	155	0.398	21	172	0	-17

Resource: UNDP, 2011 and researcher calculation

6. Results

HDI is an index that measures the level of empowerment and shows that if the peoples have the three basic aspects of life expectancy, education and GNI will also be able to obtain the other opportunities. Iran's HDI in 2011 was equal to 0.707 that is more than value of 0.702 of this index in 2010. However, in the overall rankings of the United Nations Development Programme in 2011 compared to 2010 with 18 steps down is reached from rank 70 to rank 88. Although, Iran have a growing trend in life expectancy index and mean years of schooling but has been declined in both expected years of schooling and GNI per capita. However, these cases are not caused that decrease the mentioned index and in total has increased 0.05, but rank it has fallen 18 steps. This means that Iran movement in the direction of human development has been slow compared to other countries and other countries have been able to surpass in this direction of Iran. Of course all countries except Qatar and the UAE have had the same situation with Iran and facing downgrades.

References

Abbasinejad, H. and Rafiei Emam, A. (2006), Assessment of human development index in rural region of Iran, Journal of economic research, Vol. 72, No. 1, pp. 31-54(in persion).

Ahmadvand, M.R. and Amiri, N. (2009), Look at the human development index and the position of Iran in enjoyment of human development compared to other countries, Economic Journal-Bio Monthly Journal of Economic Issues and Policies, Vol. 89, pp. 5-15(in persion).

Anand, S. and Sen, A. (2005), Human Development Index: Methodology and measurement, Human Development, Report Office Occasional Paper 12, UNDP, New York.

Bakhshudeh, M. (2006), Human development trend in Iran, Journal of Development and Droductivity, Vol. 1, No. 2, pp. 1-9(in persion).

Baseri, B. and Farhadi Kia, A. (2008), The analysis of factors affecting human development index in Zanjan Province, Quarterly Journal of Economic Research and Policies, Vol. 16, No. 47, pp. 5-23(in persion).

Despotis, D.K. (2004), Measuring human development via data envelopment analysis: The case of Asia and the Pasific. Omega- The International Journal of Management Science,No 132, pp. 245-259.

Feyz Zadeh. A. (2003), A comparative study of human development indicators in Iran and neighboring countries, Social Welfare Quarterly, Vol. 3, No. 9, pp. 13-27(in persion).

Griffin, S. K. and James, J.(1981), The transition to egalitarian development, London, Macmillan,Chap 4.

Grimn, M. (2008), A Human development index by income groups, World Development, Vol. 36, No. 12, pp. 2527-2546.

Hanham, A. (2000). A human development index for West Virginia counties. Working Paper. Number 2005, Morgantown WV: Regional Research Institute, West Virginia University.

Khak pour, B. and Bavanpouri, A. (2010). Investigate of human development index in Islamic country. 4th International Congress of the Islamic World Geographers(ICIWG). Zahedan, Iran(in persion).

Sharif Khatibi, L. (2008), Human development index, Rahyaft Journal, No. 42, pp. 46-53(in persion).

Srinarasan, T. N. (1994), Human Development, A new Paradigm or Reinvention of the Wheel, American Economic Review, Vol. 84, No. 35, pp. 238-243.

UNDP, 2011. Human Development Report 2011, At: http://hdr.undp.org/reports/Global /2011/.

UNDP, 2010. Human Development Report 2010, At: http://hdr.undp.org/reports/ Global/ 2010/.