Convergence of Development Levels in the Regions of Turkey

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Abstract

Although development economics has a broad range and captures all of the dimensions of human life, development was often seen in terms of increase in the level of productivity or income. This paper extends the convergence concept to the broader measures of development and standard of living. For this purpose, a development index was constructed as an alternative to Human Development Index of United Nations Development Programme by considering the critiques that were directed to it. Actually, we have two arguments in the approaches proposed as an alternative to the HDI. These are as follows: Calculating HDI without logarithmic transformation of the income dimension. Instead of multiplying the values of health, education and income, collecting the square roots of these three components in order to reach HDI. Two types of convergence (β and σ convergence) test was constructed with the new index and results indicated that there exists less convergence in the development levels of the 76 city in the Turkey for the years 1997-2014 against the results from original HDI which favors more convergence.

Keywords: Human Development Index, Convergence, Development.

Introduction

The human development, which centered on development economics, has become a concept frequently taken as reference while referring the development level that a country or economy has reached. The significant and vital position of human development that it has reached in years within development economics has brought to mind the question of how the referred concept will be measured / determined. In order to eliminate this requirement, an index called "Human Development Index (HDI)" had been brought in the economics literature by the United Nations Development Programme (UNDP). The development degrees of the countries have started to be compared by the help of this index. In the course of time, some measurements which would be able to meet this requirement had been suggested. But none of these measurements had become to the forefront as much as the HDI of UN.

HDI had first been calculated in 1990 by the Pakistani economist Mahbub ul Haq in cooperation with Amartya Kumar Sen and some other important economists, and since then it has started to be regularly published in the Human Development Report (HDR) by UNDP. HDI had been presented as an alternative to known measurements such as Gross Domestic Product (GDP) or GDP per capita that are being used in order measure the development of the countries (UNDP, 1990, 9). The ultimate objective of economic activities is to ensure the people to live a quality life. Accordingly, it is more meaningful to measure the life that the people live rather than the income they earn. This perspective distinguishes HDI from the income

based approach (Anand and Sen, 1994, 1-2). Thus, the fact that the only criterion is not economic growth, and that the key criterion is the people and their capacities is being brought to the forefront by HDI. While HDI is revealing a part of human development as simplifying it, it doesn't reflect the subjects such as inequality, poverty and human security (HDI, [01.12.2016]).

The human development approach of UNDP has been deduced based on the opinions of Amartya Kumar Sen. Since 1990, UNDP has used Sen's "capacity approach" as a conceptual frame in the HDIs. According to Sen, the improvements in life standards form the basis of development. Based on this, Sen defines the capacity approach as based on development as the increase of number of things that the humankind may actualize by forcing its limits (Fukuda-Parr, 2003, 301-309). HDI is an abstract combined index measuring the human development as addressing it under three dimensions within the scope of "health: long and quality life", "education: access to information", and "income: a good life standard". In the index, there are four indicators in total under the dimensions of health, education, and income. HDI gets a value in between 0 and 1. While the human development decreases as the value of index verges to 0, human development increases as it verges to 1 (UNDP, 1990, 13).

Harttgen and Klasen (2012) had specified that HDI is among the commonly used indicators for the comparison of welfare due to its simplicity, transparency, and comparability among all the other indices that have a past of about twenty years that try to measure human development, and that may be alternative. The purpose of this study, and its difference from the previous studies in literature is both to assert new calculation approaches for HDI to become a better criterion of development, and to perform convergence analysis over the results of HDI. Along the study, the weak sides of HDI were scrutinized, and various suggestions were asserted for strengthening it. It had been adhered to the three dimensions of HDI, and new suggestions were developed only in terms of calculation method:

➢ Not using logarithmic transformation. Accordingly, calculating HDI without subjecting the income component to logarithmic transformation.
➢ In order to obtain HDI, instead of taking cube root after multiplying the values of health, education and income components at the final stage, summing up the square roots of the three components.

Within this frame, HDI values were calculated for the selected years for the 76 provinces of Turkey. The study consists of five sections under this scope. In the literature section, which is following the introduction section, the studies performed for Turkey within the scope of HDI are being examined, and in the third section –which may be deemed as the main section of the study-, suggestions alternative to HDI which had been calculated by UN since 1990 were asserted. In the fourth section, the HDI values for the provinces of Turkey were calculated both according to the original HDI formula and according to the newly asserted formula, and the convergence levels in time of the provinces were compared and analyzed. And in the conclusion section of the study, findings of the research were presented in the light of the calculations and analyses made for the provinces, and assessments were made for HDI to transform to a better development criterion within the frame of the obtained results, and policy suggestions were provided.

Literature Review

In literature, studies in which HDI calculations had been performed based on provinces or regions are very few. The main reason of fewness of province based studies is the constraint of data. In 1992, UNDP and the Government of Republic of Turkey had made a cooperation, and had organized the "First Conference of Turkey on Human Development". The proceedings that had been presented in the referred conference had then been compiles as a report. Akder (1992) had calculated the human development index at the levels of city (men, women, general) and rural (men, women, general) for the year 1990 in 67 provinces of Turkey in his notice of "UNDP Human Development Report, and Country Profile of Turkey" which had been presented at the referred conference (Akder, 1992, 13-15). In 1997, in the "National Human Development Report: Human Development, and Social Integration" named report of Turkish Economic and Social

Studies Foundation (TESEV), which had been prepared for UNDP, HDI for 76 province of Turkey and the values of dimensions had been calculated (UNDP, 1997b, 16-17).

Ünal (2008) had performed HDI calculation for NUTS Level-1 and Level-2. In this study, in which no econometric analysis had been made, the data of 2003 had been used for the sub index of life expectancy at birth under health dimension, the data of 2006 had been used for the rate of literacy, and the data of 2007-2008 had been used for the rate of combined schooling under the dimension of education, and finally the data of 2001 had been used for the dimension of income due to constraint of data.

Günsoy (2005), in his study in which he had performed HDI value calculation for years 1975, 1997 and 2000 for some selected provinces, had compared 14 provinces with the province of Eskişehir. While Eskişehir has ranked sixth in the initial calculation for the year 1975, it had ranked the last in year 2000. The falling of Eskişehir's growth rate behind Turkey average growth rate had been indicated as the reason of this decline among 14 provinces (Günsoy, 2005, 13-14).

In the common study of Çağlar et al. (2017), they had calculated the HDI of 81 provinces for the year 2013. In the study, while the health dimension had been obtained from TÜİK (Turkish Statistical Institute), the sub indices for the dimensions of education and income had been derived by the help of various variables. This path had been followed as all data as per the provinces are not available as also referred in the different studies above.

Taban (2013), in his study in which he had considered whether Turkey has convergence with the EU member states in terms of human development in the period of 1980-2010, had concluded that there was convergence in general sense. But it had been observed that there was divergence instead of convergence only in the component of income among the three dimensions of HDI. In the study, it had been suggested that it is required for Turkey to show a faster growth performance than the EU states for the referred divergence to turn to convergence.

Following the above explanations, now it is time to mention the province or region based convergence tests in literature. It is possible to specify as follows the province or region based convergence studies in literature.

Filiztekin (1998) had performed a convergence test as per GDP per capita based on 65 provinces for the period of 1975-1995. According to the obtained empiric findings, an absolute convergence is not in subject in the context of β convergence.

In 2000, Berber et al. had performed a convergence test for the GDP per capita. B convergence and σ convergence tests had been performed for the period of 1975-1997 for seven geographical regions of Turkey. According to the results obtained, it had been concluded that there was a divergence rather than convergence in the β convergence test, and that there was no convergence in the σ convergence test.

In the same manner, Erk et al. (2000) had performed β convergence and σ convergence tests for 67 provinces and seven geographical regions of Turkey for the period of 1979-1997 based on GDP per capita. According to the results obtained, no convergence had been obtained.

Altınbaş et al. (2002) had tested whether there was a convergence among the provinces for the period of 1987-1998 as per GDP per capita. According to the findings obtained, it had been observed that the income differences were increasing rather than decreasing, and it had been concluded that there was a divergence.

Gezici and Hewings (2004) had performed β convergence and σ convergence tests for 16 areas and for the provinces covered by them for the period of 1980-1997 by deeming the GDP per capita as criterion. In the

referred period, no proof could be found for both convergence types. Accordingly, it had been understood that there was no convergence as per the results of analysis.

In another study, regression analysis had been made for β convergence and σ convergence for GDP per capita regarding 67 provinces for the period of 1975-2000. Despite there was 81 provinces in our country during the period of the study, calculations had been made for 67 provinces as some locations gained provincial status in the recent period. According to the results of the analysis, it had been observed that there was a divergence rather than convergence. Accordingly, it had been concluded that increases were occurring in the income differences of the provinces for the referred period (Karaca, [15.03.2018]).

Ersungur and Polat (2006) had considered whether there was a convergence among the income levels of areas in Turkey being within the scope of NUTS Level-1 for the period of 1987-2000. Regression analysis had been made for β convergence and σ convergence. According to the analysis, it had been concluded that there was a strong convergence in 12 areas being within NUTS Level-1. And the occurring crises had been indicated as the reason of this convergence.

When the above studies performed as specific to Turkey are considered in general, it is drawing attention that province or region based studies are a few. As there are province based studies performed as per the original HDI, in literature there are no convergence studies made for these. On the other hand, the province or region based convergence studies are convergence tests performed considering only the income dimension of HDI which consists of health, education and income dimensions.

Methodology

In all the suggested formulas, while the health and education dimensions had been calculated as in the original HDI, the income dimension had differentiated from original HDI in some suggestions, and had not been subjected to logarithmic transformation. On the other hand, maximum and minimum values of all three dimensions had been considered as to be the same with the original HDI. The dimensions are the same with the ones in the original HDI. The weights added to these dimensions had been selected equally as in the original HDI. Because many alternative weighting examples had been found to be highly related with each other in statistical tests. UNDP had proven the reliability of Principal Component Analysis and equal weighing method in the Human Development Report (1993).

The referred formulas had been named as Index 1, 2, 3 for the formulas not to be compared with each other. The original HDI formula was named as Index 1;

$$\text{Index } 1 = \sqrt[3]{\text{Health} * \text{Education} * \text{Income}} \qquad (1)$$

Index 2 was calculated considering all the other calculations and construct as in the original HDI without subjecting to logarithmic transformation the sub index of only the income dimension in the asserted initial formula suggestion. And in the final stage, while obtaining the HDI value, the geometric mean was taken by multiplying the three dimensions as in the original approach. During the calculation of Index 2, the sub index of income was included in the formula as follows.

$$\text{Income Sub Index} = \frac{[(\text{Re al Value}) - (\text{Minimum Value})]}{[(\text{Maximum Value}) - (\text{Minimum Value})]} \qquad (2)$$

$$\text{Index } 2 = \sqrt[3]{\text{Health} * \text{Education} * \text{Income} (\text{No log})} \qquad (3)$$

While geometric mean was taken by multiplying the values of three dimensions in original HDI in the status at the final stage in which the HDI value was calculated, in the calculation methodology of suggested Index 3, the value obtained after summing up the square roots of the three dimensions was divided to three:

$$\text{Index } 3 = \frac{\sqrt{\text{Health}} + \sqrt{\text{Education}} + \sqrt{\text{Income}}}{3} \qquad (4)$$

One of the main reasons of infeasibility of HDI is that while it is arguing that health, education and income are the key features of human life, it follows different approaches in the calculation of the referred three components. According to UNDP, due to limited state of desires of people under some conditions, and due to side income not being much valuable after meeting of some main luxury requirements, the side income level doesn't contribute to elevation of the choices of people of high income levels compared to people of low income levels. The thing suggested theoretically in this article is that it is required to apply this argument also to the other dimensions of the index. Moreover, it can be alleged that UNDP is not considering the income levels of the countries, and that it is making the results of development calculations inclined to convergence by subjecting the income components to decreasing returns, and thus that it is ending up with the decrease of income in the calculations in rich countries.

In the light of this information, as some of the professions doesn't require higher education and literacy, increasing the literacy rates and enrollment rates more following the required high levels is not being more important than the state at low levels. If the concern of countries and policy makers is to present at the least the minimum conditions to all the members of the society after reaching the sufficient number of undergraduates and postgraduates, providing primary school and secondary school education to people - who don't have access to undergraduate and postgraduate levels- should be more important than to increase the number of people being university graduates. When the component of lifetime is considered, everyone - except the extreme examples- wants to survive 1 more year as from age 30 rather than age 60.

By combining these arguments, an index was formed which is applying square root formula individually to all the three components in some formula suggestions whose details are provided in the previous section, and which is subjecting each to decreasing return. For applying this formula, it is based on Paul's (1996) suggestion of using the strengths of the index in order to award the increase at high values. In addition, the implementations in our study are the exact opposite of Paul's arguments, and of MHDI that he had brought in the literature. Moreover, the individual application of square root function to the components (not to the total) suits the opinion that they are principal. In the original HDI and in Paul's MHDI, a decrease at the level of any component of any level may be compensated with an equal increase at the level of other components of any level; marginal rate of substitution is the same at each level. The new formula suggestions being asserted in this study are considering these conditions. For instance, the index asserted in this study doesn't require the increase in lifetime expectancy during ages 20 and 50 to be compensated with the same amount of increase in income level. Thus, it attaches more importance to compensate the invalid value of any variable with an increase in another variable (if the variable being increased is at lower levels requiring a more balanced development).

As explained in detail in the previous section, the HDI –which has started to be calculated since 1990- faced some changes both in the context of sub index components and calculation methodology. HDI, which had faced a few changes in the process following 2010 in which the most extensive change occurred, had took its current form. It was required to diverge a bit from the current calculation methodology while performing the HDI calculation as per provinces due to constraint of data. Deviation had only been in the dimension of education. Accordingly, the calculation methodology in 2014 HDR was used while calculating the dimensions of health and income except the dimension of education. By following the path whose details are provided below, HDI values as per provinces were calculated. We obtained from the following sources the data that we had used while performing the HDI calculation of the provinces for years 1997, 2009 and 2014:

We obtained the data of 1997 for fife expectancy at birth, being required for the calculation of health dimension, from the study of UNDP (1997b), and we obtained the data of 2014 for the same from the Life Tables statistics published by TÜİK. As TÜİK started to publish in 2014 the statistics of life expectancy at birth as per provinces as per the data of year 2013, there is no value for the previous years. Accordingly, as there is no data for the year 2009, we derived the data of year 2009 based on the population as per age group of provinces which was also published by TÜİK. Health data was derives as per a calculation method suggested on a math platform on the web. (Wolfram Mathworld, Life Expectancy, [03.04.2018]). On the other hand, the conformity of the obtained values was approved by the Kolmogorov-Smirnov test.

And in the education dimension, as it is known, average schooling and expected schooling year sub indices are being used in the recent updates. But at the level of province, no such value had been calculated and published by TÜİK. In the common study of Çağlar et al. (2017), data had been derived for these two indicators under the dimension of education while calculating the HDI of 81 provinces for the year 2013. Apart from that, in literature there is no data set for average schooling and expected schooling years at the level of provinces. As it will be recalled, adult literacy rate and total enrollment rate sub indices were being used for the dimension of education while calculating HDI in 1997 HDR. As there is no data set at provincial level regarding average schooling and expected schooling years, and as adult literacy rate and total enrollment rate values at provincial level for year 1997 is present in the study of UNDP (1997b), we had to use the calculation methodology of 1997 HDI instead of the current calculation methodology while calculating the dimension of education.

We obtained the data of year 1997 of education dimension from the study of UNDP (1997b). And we derived the data of years 2009 and 2014. While calculating the sub indicators of education dimension at provincial level, we benefited from the population and education statistics as per the age groups of provinces according to NUTS Level-3 published by TÜİK. We obtained the adult literacy sub indicator by dividing the population number of "Age 15+, and Illiterates" to population number of "Over age 15+" of the relevant province, and by subtracting it from a hundred. And we obtained the total enrollment rate sub index by the dividing the total primary school and secondary school and undergraduate and associate degree student numbers of the relevant province to the total population number of "Ages in Between 5-24". About the aforementioned calculations regarding the dimension of education, the calculations for the year 1997 had been performed based on the changes made in 1995 HDR. While performing the HDI calculation for the year 1995, the calculation formula in the sub indices of education had been used as follows:

$$\text{Education} = \frac{2}{3} \text{ x (Adult Literacy Rate)} + \frac{1}{3} \text{ x (Enrollment)} \tag{5}$$

Regarding the GDP per capita under income dimension, we used the data set published by TÜİK for the years 2009 and 2014. As TÜİK only published the data of years 2004-2014 since today regarding the GDP per capita at provincial level, we obtained the data for year 1997 from the study of UNDP (1997b) as in the sub indices of education dimension. As it will be recalled, UNDP had made a change in the income dimension in its 2010 Human Development Report. Until 2010, UNDP was using the GDP per capita while calculating the income dimension in HDI. But as from 2010, it has started to use GNP instead of GDP. As there is no GNP value as per provinces, we will make the HDI calculation again as per GDP.

Results and Convergence Tests

Beta Convergence

Pursuant to decreasing return principle of capital, the underdeveloped countries with low capital stock will catch a faster growth trend than the growth performance of developed countries due to the marginal efficiency of capital. For this reason, a negative relation will be in subject in between the initial income levels of the countries and their growth rates. Accordingly, negative value of Beta coefficient refers to

convergence. In the literature of economics, this relation is being called the Beta convergence. And the positive value of Beta coefficient indicates the presence of divergence (Islam, 2003, 313-314).

We use the following regression equation while calculating the β convergence which is being used for income in literature, and that we will adapt to development (Sala-i Martin, 1996, 1020):

$$(1/T) \log (yi, t+T \: / \: yi, t) = a \: + \: \beta \log (yi, t) \: + \: \epsilon i \qquad (6)$$

In the equation: t indicates the beginning of period; t+T indicates the termination date of the period; log (yi,t) indicates the logarithmic index value per person by the beginning of the period; β coefficient indicates the rate of convergence; and ϵi indicates the stohastic error term.

Sigma Convergence

Sigma (σ) convergence indicates what kind of a distribution the income follows in time. In Sigma convergence, the decrease in time of distribution of income per capita among the areas being subjected to comparison is the basis (Sala-i Martin, 1996, 1021-1022). According to Sala-i Martin (1996); β convergence is necessary condition for σ convergence, but it is not sufficient condition for the same.

$$(\sigma_{t+T} < \sigma_t) \qquad (7)$$

As in the β convergence, if we deem t as the beginning of period, and t+T as the termination date of the period: In the above equation, σ will indicate us the standard deviation of logarithm of development level per capita among the provinces at the moment of t.

Beta Convergence Results of the Areas

Table 1: Beta Convergence Results of the Areas

	Index 1	Index 2	Index 3
Whole Sample 1997-2014	-0.0078 **	-0.0053 **	-0.0079 **
Whole Sample 1997-2009	-0.0049 **	-0.0037**	-0.0043 **
Whole Sample 2009-2014	-0.0081 **	-0.0032**	-0.0102 **
Mediterranean	-0.0068	-0.0047	-0.0070
Eastern Anatolia	-0.0083 **	-0.0065 **	-0.0084 **
Aegean	-0.0082 **	-0.0068	-0.0084 **
Southeastern Anatolia	-0.0108 **	-0.0090	-0.0107 **
Central Anatolia	-0.0084 **	-0.0064	-0.0085 **
Black Sea	-0.0074 **	-0.0074 **	-0.0073 **
Marmara	-0.0100	-0.0004	-0.0100

The mark ** specifies a significance at the level of 5%.

When the period of 1997-2014 is considered, the value of 0.0078 of Index 1 is indicating us that there is a convergence of 128 years (1000/7.8). The value of Index 3 was found as 0.0079 as similar to Index 1, in other words the formula with square root had not changed the state much. But when Index 2, in which logarithmic transformation had not been made, is considered, the coefficient had been found as 0.0053. The convergence being 128 years in Index 1 had increased to 189 years in Index 2. This result is a condition that is making the convergence difficult among the provinces. When the period of 1997-2009 is considered, the convergence being 204 years in Index 1 had increased to 233 years in Index 3 with a slight difference. And in Index 2 the convergence had extended to 270 years. And in years 2009-2014, while Index 1 is

converging within 123 years, the convergence had decreased to 98 years in Index 3 as becoming stronger. And in Index 2, the convergence had extended to 313 years, and it had clearly weakened the assertion of convergence.

When we compare the periods of 1997-2009 and 2009-2014, the high level of convergence in the original formula, namely in Index 1 is indicating that the provinces of Turkey had started to converge faster to each other following the global crisis. The convergence, being 204 years in the period of 1997-2009, had increased to 123 years in the period of 2009-2014. The convergence in between the two periods had increased by about 2 times.

When we compare the regions, it is drawing attention that convergence is high by coefficient 0.0100 in Marmara Region, and by coefficient 0.0108 in Southeast Anatolia Region. A convergence of 100 years is in subject in Marmara, and a convergence of 93 years is in subject in Southeast Anatolia Region. As Marmara Region consists of provinces having high income groups, and as Southeast Anatolia Region consists of provinces having low income groups, we can specify that their convergence is easier among themselves. As the provinces being in good and bad state in terms of development are together in the Mediterranean and Black Sea Regions, which are not homogenous as much as Marmara and Southeast Regions, the convergence had been lower.

As it will be observed from the table, the most dramatic decrease had occurred in Marmara Region while going to Index 2 from Index 1. Not taking the logarithm of income had decreased the rate of convergence by about 2.5 times. This result is also showing us how important the income differences are in calculating the human development index, and it is supporting our argument that we assert regarding not considering ln. Accordingly, the high level of incomes at the provinces of Marmara Region is revealing the fact that considering and not considering ln in the calculation of HDI is making a great difference.

Sigma Convergence Results of the Areas

Table 2: Sigma Convergence Results of the Areas

	Index 1	Index 2	Index 3
Whole Sample 1997	0,038	0,081	0,036
Whole Sample 2009	0,023	0,069	0,041
Whole Sample 2014	0,017	0,055	0,016
Mediterranean 1997	0,048	0,031	0,013
Mediterranean 2014	0,022	0,072	0,011
East Anatolia 1997	0,043	0,076	0,038
East Anatolia 2014	0,018	0,058	0,015
Aegean 1997	0,025	0,043	0,018
Aegean 2014	0,013	0,039	0,008
South East Anatolia 1997	0,037	0,059	0,030
South East Anatolia 2014	0,015	0,048	0,009
Central Anatolia 1997	0,024	0,057	0,024
Central Anatolia 2014	0,014	0,058	0,009
Black Sea 1997	0,039	0,052	0,018
Black Sea 2014	0,014	0,042	0,009
Marmara 1997	0,046	0,016	0,014
Marmara 2014	0,021	0,065	0,007

When years 1997 and 2014 are considered, in the whole sample the value of Index 1 for the year 2014 had decreased to 0.017 while it was 0.038 for the year 1997. In Sigma convergence approach, such a decrease

indicates the increase of convergence. Accordingly, a decrease of about 55% had occurred in the value of Index 1 while progressing to 2015 from 1997. Let's compare this value with our recently suggested two indices. While the value of Index 2 for the year 1997 is 0.081, it is decreasing to 0.055 in year 2015. The decrease in here had been 32%. In other words, the decrease had been less. And this result refers that the convergence is less. And when we consider Index 3, it is drawing attention that the results obtained are nearly the same with Index 1.

When it is considered on the basis of regions, certainly the region drawing the attention the most is Marmara. A decrease of 54% had occurred in the value of Index 1 through its decrease to 0.021 from 0.046. The provinces of Marmara Region had significantly converged to each other in 17 years in between 1997-2014. But when we consider Index 2, the value of Marmara had increased to 0.065 from 0.016, and a regression of about -315% had occurred. In other words, according to the calculation made by Index 2, a clear divergence had occurred in the referred 17 years among the provinces of Marmara. This result is also showing us how important the income differences are in calculating the human development index just like in the Beta convergence, and it is supporting our argument that we assert regarding not considering ln.

The convergence rate in Index 1 representing the original HDI of Mediterranean Region had shown an increase, but a clear divergence had occurred as per the calculation made by Index 2. And the convergence rate of Index 3 had slightly decreased compared to Index 1 even if it had not decreased as much as Index 2. In East Anatolia, the value of Index 1 had showed a decrease, and the rate of convergence had increased by more than half.

Despite the rate of convergence had increased also in Index 2, it had not been as high as Index 1. In Aegean Region, the rate of convergence of Index 2 had been as 10% with a decrease as one fifth of Index 1. In Central Anatolia, the rate of convergence had regressed in Index 2 compared to Index 1, and it had decreased below zero, and a divergence had occurred. And in Southeast Anatolia and Black Sea Regions the rate of convergence in Index 1 had always been high compared to Index 2. And the values of Index 3 had been found close to Index 1 nearly in all the regions.

Policy Suggestions

When the findings of analysis performed for the provinces of Turkey are considered, it is being observed that the provinces at the west of Turkey have better index values compared to provinces at its east, and when it is considered on the basis of geographical regions, that the index values of the provinces within the relevant region are in conformity with the average within the region. It can be said that regional incentives provided in recent years both by the government and political power had contributed to this state. Because it is being observed that all the provinces in the relevant geographical region are in good state in general if the region is in good state.

In our country, significant increase of income per capita compared to 15 years ago had carried us to higher ranks in the ranking of HDI. It is required to make medium-long term plans for the continuation of increase in income per capita, and it is required to influentially engage public policies in order to actualize these plans in a fast manner.

Thus, as the increase in income will increase the economic welfare of the individuals, the people will allocate more resources for their health and education. These resources will give rise to improvements by positively affecting the dimensions of education and health. And these improvements will raise our country to a better state in human development index. Consequently, in order to attain a strong human development level, it is required for all the individuals and institutions constituting the society to believe in the same, and for all the individuals and institutions to do their share as interlocking around that objective.

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