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Investigating Iran's economic development and position in the region from the perspective of human capital

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ABSTRACT
Improving the dimensions of development is one of the most important goals of governments. In the meantime, the role of human development is very important. The most important factor in the human development of any society is the people of that society. Because humans are both the goal and the tool of development. This great importance has led countries and international organizations to pay special attention to human development and identify the factors influencing it. Human capital has an important role in this as one of the most important dimensions and existing capacities. The purpose of this study is to look at the concepts of human development indicators on economic growth. To compare the level of development of countries, they consider indicators. Some of these indicators are purely economic. Our attention is focused on quantitative indicators. The main quantitative indicators of development are: living standard, life expectancy rate, literacy rate and national per capita income rate. This research is theoretical, so that a suitable model is introduced using the proposed theoretical foundations, and the data are estimated in two cross-sections and time series and using econometric technique (data panel). After estimation, to test the hypotheses and statistical inferences and also to model the econometric method, Stata software will be used in the model. Also, in the research, a descriptive-analytical method has been used to examine the indicators of human development using valid documents and UN human development reports, and the results of the research show that the per capita income and life expectancy rate have a positive and significant effect on economic growth among Islamic countries. It has also been shown that education rates have a positive effect on economic growth among countries. Finally, it can be said that human development indicators have a positive effect on economic growth. This study is based on the Human Development Report of the United Nations Program from 2002-2017.
Keywords: human development, economic growth, index, development, data panel, econometrics.

Introduction

Crossing the boundaries of measurement and achieving a goal beyond just measuring the ideal is the foundation of the Human Development Index (HDI). This index relies on the powerful notion that development is more than just earning money, and has sparked creative thinking about progress. The Human Development Index offers new scales for assessing progress in reducing poverty. The Human Development Reporting Organization provides analytical tools for policy selection. These tools are the most important components of the report and provide methods for analyzing human development at the national and international levels, as well as a means for assessing procedures and gaps in human development. Introduced analytical tools help policymakers set priorities and formulate policies

related to human development. Economic growth is one of the goals that every economy pursues, and the reason for this is to achieve the many benefits that are gained in the process of growth. The emergence of a knowledge-based economy as a result of the emphasis on human development in developed and developing countries has created a broad contribution to achieving higher economic growth. Today, human capacities in the form of society's intellectual elites are considered as one of the main factors of international competitiveness. The change in physical investment is an obvious human investment and the source of many changes. Witnesses to this claim are countries with higher human capital accumulation who have stepped up new knowledge-based products with higher added value and accelerated their economic growth. Also, the experience of developed countries and various studies in the field of economic growth of countries over time show that explaining the rate of economic growth only through conventional factors such as capital and labor gives accurate results and human capital as a key variable must enter the growth model. This human capital is one of the most important dimensions and capacities in the economic growth and development of each country, which has been confirmed in most domestic and foreign studies that have been done in this field. Therefore, human development as a dynamic phenomenon is the process of improving the quality of human life. Today, health and education, which are the main components of human development, are in the spotlight as the software sector of growth and development. Therefore, it can be said that human capital is a very important variable. As in most studies in this field, the positive and significant effect between human capital and economic growth is emphasized.

Statement of the issue

One of the most important issues in economics is the issue of economic growth. Because economic growth is the foundation of development. The increase in the national income of each country must be realized so that this increase in income leads to the improvement of development indicators (health, education, etc.). Therefore, it can be said that the main idea of human capital is based on the fact that investing in human resources increases the productive capacity of individuals and ultimately improves economic growth, although historically, investing in human resources leads to increased growth. Smith, and neoclassical economists also emphasize the importance of investing in labor skills and expertise .Thus, economic growth occurs based on a set of internal mechanisms of the economy such as human capital development, productivity promotion, research and development. Increasing human capital is the best way to increase the level of production. The most important factor determining the difference between income levels in countries is capital. Therefore, more and faster accumulation of capital can bring a high rate of economic growth. It is on this basis that economists have recommended that in order to achieve favorable and high economic growth, countries should adjust their economic policies to increase the stock of physical and human capital. Given that human capital as one of the most important factors in economic growth can play a significant role in development, the purpose of this study was to investigate the relationship between human capitals and economic growth in selected Islamic countries (Bahrein, Iran, Iraq, Lebanon, Kuwait, Morocco, Oman, Qatar, Saudi Arabia, Arab Emirates, Yemen) quantitatively. Therefore, the present study seeks to answer the question of whether human development indicators affect economic growth among selected countries or not?

In order to have a relatively good understanding of economic development, it is necessary to first provide a definition of economic growth. Economic growth is a quantitive increase in the production of goods and services over time. The measure of that change is the changes in gross national product. Although economic growth is a necessary condition for economic development, it is a sufficient condition that dynamic and necessary changes and transformations occur between all elements and constituents of the economic system that have led to economic growth. In general, development can be said that the development is not a one-dimensional flow of production growth, but the development of a multidimensional flow in which the set of economic system is harmonized and tailored to the various basic human needs, resulting in new capacities in society. Factors affecting the economic development of a country can be divided into three groups: economic factors, political factors and social and cultural factors, which in fact depict the economic system governing a society and country. Therefore, it can be said that the most profitable policies and investments are those that give people the most opportunity to use their capabilities, resources and opportunities (Asgharpour: 2016: 35).

Theoretical foundations

To achieve the level of development and sustainable economic growth, investments must be made commensurate with this goal. Investment means all costs that maintain or increase production capacity as well as generate revenue. These costs include more than just material investment in facilities, equipment, inventory, and natural resource development. But also includes human investments, research and development, research and innovation, education, health, which leads to an increase in the level of human development (Asari Arani and Afzali 123: 2016). Therefore, it can be said that the ultimate goal of development is to improve human capabilities and expand human choices and opportunities based on the principle of people's development for the people. In this process, human beings want to

have knowledge and have a decent life. The Human Development Index is a composite index consisting of three main indicators: life expectancy, education level and income. In the human development approach, development is not limited to per capita income growth and leads to improvement in other needs of human society such as health, minimum living and education. Development as a human ideal and goal indicates a situation in which efforts are made to improve the situation and make a positive change based on existing potentials and capacities or creating favorable conditions (Nosrati 12:2015). The Human Development Index has been criticized by economic experts from various angles. Morris introduced the combined Index of physical quality of life. Age has emphasized the factor of human capability and ability in improving the standard of living. Mahboob alhaq considers the simplicity of this index as a suitable criterion in measuring the human development index. Later, the adjusted income distribution index and gender inequality were added to this index. First calculation of the human development indicators was the difference between the minimum and maximum of each variable ranked as the deprivation of each country in the range of 1-100. For example, the deprivation of the country index j was defined according to the attribute i of this case.

(1-2) Iij = (MaxXi − Xij) /(MaxXi –MinXij)

Where Xij is the value of the variable i in country j, MaxXi is the maximum value in the data, MinXij is the minimum value of the data. Iij represents the index value of variable I in country j. Preparing the index in this way led to misleading results because in one country the capacity of the life expectancy index might improve with the level of access to education, but because the human development rankings of other countries need to have better growth, the country's performance in related areas is ignored. In order to eliminate this shortcoming in the calculation of human development, changes were made that follow (Samati et al. 2016: 34). MaxFi and MinFi show the maximum and minimum constant value of the variable.

(2-2) HDI = (1/3) [(Σ Xij –Min Fi) / (MaxFi Min Fi)]

According to the United Nations, the different values of the index are as follows.

Table1: Minimum and maximum values of human development index

Index	minimum	maximum
Life expectancy	25 years	85 years
Literacy rate	Zero percent	100 percent
Years of education	Zero	15 years
Annual income	200$ (PPP)	400000 (PPP)

This method improved the calculation of the human development index in an unprecedented way. But the values of minimum and maximum variables have significant changes.

The relationship between economic growth and human development

The purpose of this section is to examine the relationship between economic growth and human development. To this end, economic growth and human development are briefly defined. Economic growth is a process in which the productive capacity of an economy increases over time, in which case the level of income and production increases. In fact, economic growth refers to the increase in the value of goods and services produced in an economy which is usually measured as a percentage increase in gross national product or gross national income (Basu 12: 2007). In general, studies on economic growth include three general trends that are historically and methodologically different. The first current is the classical current, the pioneers of which are David Hume and Adam Smith. It originated in the eighteenth century and ended with John Stuart Mill and Carl Marx in the mid-nineteenth century. The second current: neoclassical, which deals with the realization of growth with new statistical data provided after World War II. Neoclassical views consider the advancement of technology as an exogenous factor and the accumulation of capital as an endogenous factor of production growth. Influential works are done by Robert Solo, Simon Kuznets, Moozz Abramutz, Cholis and Edward Dennison. The third current: the newest current is the endogenous current, which rejects neoclassical and classical assumptions about ideal markets and the declining returns of factors, especially capital. Endogenous growth distinguishes itself from neoclassical growth by emphasizing that economic growth is a consequence of the economic system and not the result of external forces. They consider business-oriented innovation-based activities and response to economic stimuli as the driving force behind technology and economic growth. The main figures of this movement are Kent Arow, Lucas R.E, Jane Grossen and Elham Hellman (Pazhuyan and Faqih Nasiri 103: 2016). In general, endogenous growth models are mainly divided into two main categories: 1- R&D models, which emphasize on research and development of knowledge and its effect on commodity production, and their origin can be expressed by Richard Roemer. 2- Human

Capital models (which emphasizes the role of manpower quality and related indicators in production). These models are attributed to Lucas (Alfati and Babaei 172: 2002).

Objectives and indicators of economic development

There are many development goals, just as the 2000 World Summit at the United Nations called the Millennium Summit set goals for the development of nations. At this meeting, a statement was adopted on the basis of which countries should propose and implement programs that accelerate the movement of developing them on the path of development and achieve the Millennium Development Goals. These goals are: eradicating absolute poverty and hunger, achieving basic education in the world, empowering the women, reducing infant mortality, improving maternal health, fighting against AIDS and other diseases, environmental sustainability and creating a global partnership for development. Economic development is a multidimensional process that occurs as a result of fundamental changes in the economic, social, cultural and political structures of society. Economic development is a phenomenon that encompasses both the objective and material aspects and the mental aspect of people's lives and provides a better life for individuals through the combination of various economic and social processes. In fact, economic development is growth along with increasing production capacity, including human physical capacity. This process can be considered as expanding the capabilities of individuals (Abbaspour et al. 2016: 23). Education, increasing skills and capabilities are the requirements of a country's economic development (Agrawal 78: 2009).

Human resource development and productivity

Today, human resource development and its relationship with productivity is one of the debates in human resource management. Human resource development pays a lot of attention to education and is based on the following assumptions: 1- Human resources are the most valuable resources of the organization. 2- Human resource development is a long-term activity and the role of education is very important in this regard. 3- Productivity is the best way to use all resources to get maximum added value from them. 4- Human resource development means storage in terms of skills, organization and learning experience means achieving business goals. Hence, it leads to the growth of individuals through the promotion of skills, knowledge, competence, learning power and continuous organizational growth. The United Nations identifies four decades as decades of development, and finally in the fourth decade, which began in 1990, identifies his human focus and quality of life as a key factor in development. World economic theorists introduce man as the source of development, and new theories of growth emphasize this point. This means that investing in the physical and mental dimensions of human beings is the most valid condition for moving towards optimal economic development. Communities that have emphasized the formation of human development have performed better in terms of economic, social growth, employment and equitable distribution of income. (Khatibi 27: 2011).

The concept of human resource development

Manpower today is a valuable and growing asset that has the power to reproduce. In fact, the quality of manpower in all developed and developing countries is a comprehensive and dynamic system of equipping and improving manpower and maintaining it. Walton considers human resources as a set of organizational activities that take place over a period of time and are designed to bring about behavioral changes in individuals (Saebi 136: 2015). Therefore, the most important strategic resource of any organization or society is its human resources. In the long run, societies will be successful if they can develop and nurture their human resources properly and in principle, and along with strengthening the necessary knowledge and technical skills, build hard-working, believing and faithful people (Mir Sepasi 2015: 47). The university is the center of gathering and cultivating human capital, the agent of modernization of social relations and technology transfer, the thinking brain of the society and in a word, the university is the cradle of social modernization and development in general. the most basic factor in establishing a systematic relationship between higher education and society is to train and prepare efficient, competent and skilled human resources in order to meet the real needs of society in various fields. Therefore, the concept of human resource development is a general and comprehensive concept that puts people at the center of all aspects of the development process.

The effect of economic growth on human development

The importance of human development causes countries to have a suitable program to improve this index in order to achieve sustainable development. Economic growth through households, the activities of government and non-governmental organizations affect human development. This means that the level of human development depends in several ways on economic growth.

- Households can spend their income in sectors that increase the level of human development. These include nutrition, healthy water, education and health.

- The government, by improving the health network, drinking water, proper nutrition, reducing pollution and providing appropriate infrastructure and also to increase the quality of education can improve the level of human development.
- Non-governmental organizations are formed for the purpose of public benefit activities. The activities of this organization, including income-generating projects for the poor, the construction of schools and health centers, have a direct impact on human development (Sadeghi: 2013: 24).

Review of theories around the subject of study

New growth theories argue that economic growth and development cannot be achieved without the development of human resources. Increasing skills and capabilities is one of the requirements of a country's economic development, and improving human development increases the performance of economic growth. And every country needs a threshold of human development to move towards economic growth. In fact, human development focuses on the opportunities and freedoms of people to choose the lives they consider valuable (Motavasseli 2021: 28). Hence, world economic theorists introduce man as the source of development.

In his book The Wealth of Nations, Adam Smith emphasized the role of work in creating wealth and the importance of education in intensifying it. According to him, human beings become capital through education, which society can better benefit from their productive capacity, and not only do they earn more income themselves, but society also benefits from investing in them.

As a contemporary economist, Kuznets believes that human capital, like physical capital, should be considered and calculated in economic analysis as part of the total capital of the country. In his view, investing in education is an important source of human capital that will contributes to economic development.

Schultz, one of the most famous contemporary economists nicknamed the father of the theory of human capital, emphasized the importance and necessity of paying attention to human capital in economic analysis and believes that without applying the theory, explaining economic growth rate and how incomes of incomplete people are distributed. According to him, the acquired abilities of human beings are the most important source of productivity growth and economic development in recent years (Sen 20: 2009).

As an economist who applied the theory of human capital even more than Schultz-Webb, Minser sees the primary source of productive power and personal income as the amount of education he received. According to many researchers, paying attention to education and increasing skills and health is one of the requirements of economic development of a country (Agaroal 6: 2009). In fact, improving the level of human resource development increases performance in the development of countries (Dafloo 795: 2010).

Research Background

Among the researches done on the subject of research inside are:

Sultan Vahid (2013), in a study entitled (Human Capital and Economic Growth) examined the relationship between human capital and economic growth in the region using data from the time series of 1978-2007.The standard form is based on Cobb-Douglas production and the research results indicate a long-term and positive relationship between human capital and economic growth in the countries of the region and confirm the previous findings.

Fitras and Turkmani (2013), in their studies, examined the impact of adjusted human development and the stability of economic growth (comparative comparison of developed and developing countries) or the method of the 3SLS system of simultaneous equations. The results show that the human development index has a positive effect on economic growth.

Sari et al. (2013) examined the impact of human development on Iran's economic growth during the period 1976-2000 using the VAR method and the results show that there is a two-way causal relationship between economic growth and human development.

Shahbazi and Hassani (2014) tested the effect of different levels of education (as one of the components of human development index) on economic growth using Johansson-Euselius test and Granger causality and the results show that in the long run the effect of training on economic growth is stronger. Also, with the increase of the literacy rate of the employees, the economic growth will increase.

Asadi and esmaili (2014) examined the impact of the Human Development Index on Iran's economic growth during the period 1971-2012 in the Markov-switching model. The results show that during prosperity, human development has a negative effect and during a recession has a positive effect on economic growth.

Hezar Jaribi et al. (2015) in their research as " justice negotiation in the development programs bills after the Islamic Revolution" concluded that with a constructive negotiation on the political and social space of the country that reflects a concept of social justice that was affected by the political and social atmosphere of the country after the war and the need to rebuild the damage caused by it and move towards economic growth in order to provide the resources needed for construction.

Fazeli et al. (2015) in their research entitled "social development, indicators and Iran's position in the world" presented a report on the current state of social development in the country and the country's ranking with other countries in the world and concluded that the Iran is in a good position, but it needs to think about this and how to improve it.

Shahbazi and Hassani (2016) tested the effect of different levels of education (as one of the components of human development index) on economic growth using the Johansson-Euselius test and Granger causality and the results show that in the long run the effect of education on economic growth. It is stronger. Also, with the increase of the literacy rate of the employees, the economic growth will increase.

11-2-2 Among the researchers conducted on the subject of research abroad are:

Baltagi & Moscone (2012) examined the long-term economic relationship between health expenditure and income in a study using panel data method for 20 OECD member countries during the period 1971-2004. Their research results show that health expenditure is essential for the countries under study.

Hall and jonos 2010 show that in 127 countries, there is a high correlation between per capita production and the level of formal education as an indicator of human capital on the one hand and total productivity and human capital on the other.

In an article, Tatoglu (2012) examines the short-term and long-term relationship between investment in human capital and economic growth in OECD countries during the period 1975-2005. The results of his study showed a positive and significant relationship in the short and long term for the countries under study.

Swift (2021) examine the relationship between health index (life expectancy) and per capita GDP in 13 OECD countries, the trade risk and economic risk of each country using Johansson multivariate co-integration analysis from 1820-2001. The results of his research indicate that in the long run there is a very positive and significant relationship between health index and per capita GDP in most countries.

Jemison and Louat (2012) In a periodic study for 1960-1986 and a statistical study of 58 countries, the role of investment in education in explaining income growth (GDP) is shown to be positive and statistically significant.

In his article entitled The Dynamics of the Human Development Index, Ho and colleagues (2014) suggest different ways to improve the Human Development Index in terms of the net flow of human development in the areas of material welfare, health and education. Measuring human development with the mentioned variables provides better human development performance in terms of health and education than traditional measurements.

In his study, Bandela (2015) examined the relationship between economic growth and human development using multivariate regression models. The results show that there is a strong relationship between economic growth and human development.

In his article entitled "Using Census Data to Examine the Spatial Distribution of Human Development", Permez (2016) points out that the Human Development Index has been criticized because it does not include dispersion issues, and the use of census data to build HDI, which proposes the study and distribution of human development with unique and detailed geographical coverage, it also proposes a new method that allows human development inequality to be analyzed according to the contribution of its components.

Ho et colleagues (2016) in their article entitled Human Development Index Dynamics, proposes different ways to improve index the scope of human development in terms of net human development in the areas of material welfare, health and education and using the comparison of human development index shows that measuring human development with the above variables better human development performance in terms of health and education than size provides traditional drawings.

Comparison of human development indicators in selected Islamic countries 2002-2017

In the human development report, they divide countries into groups of countries with high human development, countries with middle human development, and countries with low human development based on the Human Development Index. The numerical value of the human development index is between zero and one. Therefore, according to the Human Development Index, Islamic countries are classified into three levels in terms of this index:

A) High level of human development: Countries that have a higher level of literacy, life expectancy and purchasing power are in this group. In fact, the numerical value of the human development index of these countries is more than 0.8.

B) middle level of Human Development: According to the human development report, countries whose human development index has a numerical value in the range of 0.5-0.8, are in the middle human development group.

C) Low level of human development: According to the classification of the human development report, countries whose human development index value is less than 0.5 are in the group of low level of human development (Mahmoudi 2015: 84).

Table 2: Human Development Index 2002

Human development index	Economic growth	Literacy rate	PPP	Life expectancy	Country
0.794	299995	86.54874	53160	74.52802	Bahrein
0.666	5.845527		9390	70.1372	Iran
0.607	1.406475	74.0522	9590	69.17932	Iraq
0.786	4.694582		65260	73.32371	Kuwait
	1.344067		10120	74.4371	Lebanon
0.732	3.679213			70.57254	Libya
0.53	1.912873		3480	68.65215	Morocco
0.705	5.401373		33500	72.35937	Oman
0.809				76.52159	Qatar
0.742	5.625416	79.35094	34300	72.56166	Arabia
0.798	10.8527			74.50946	Arab Emirates
0.444	6.181916		2840	60.40444	Yemen

Source: world bank

In this report, Qatar has the highest index with an average of 0.809 human development index. Bahrain, Kuwait, Oman, Libya, Saudi Arabia and the United Arab Emirates are in the middle of the development index. Iran is also at this level of the index with a development index of 0.666. Yemen is at the lowest level.

Table 3: Human Development Index in 2015

Human development index	Economic growth	Literacy rate	PPP	Life expectancy	Country
0.82	5.416504		38840	76.58522	Bahrein
0.77	-1.91158	84.6268	16560	75.16541	Iran
0.6	6.57216	43.68328	15540	69.19546	Iraq
0.787	1.149039	95.58582	82500	74.49868	Kuwait
0.763	0.9		14470	79.15032	Lebanon
0.7				71.6591	Libya
0.64	4.535424		7140	76.97015	Morocco
0.796	4.373319		41610	76.66829	Oman
0.854	4.410275	97.47785	12290	78.13973	Qatar
0.841	2.699255	94.42634	52020	74.21822	Arabia
0.832	5.789906		64970	77.175	Arab Emirates
0.5	4.823519		3830	64.27707	Yemen

Source: World Bank

The ranking of most countries in terms of human development index has remained unchanged. The sharpest decrease in this index is related to Libya with an index (0.7), Iraq (0.6) and Yemen (0.5), which have the lowest human development index. In these countries, civil strife has reduced people's incomes. In this report, threats such as financial crises, natural disasters, wars and conflicts have significantly reduced human development.

Table 4: Human Development Index in 2016

Human development index	Economic rate	Literacy rate	PPP	Life expectancy	Country
0.823	4.349842		38810	76.72546	Bahrein
0.774	4.343343	84.70524	17370	75.4782	Iran
0.649	0.7		15410	69.42561	Iraq
0.799	0.50011		81380	74.62349	Kuwait
0.763	1.8		14050	79.32627	Lebanon
0.719				71.71939	Libya
0.645	2.55111		7270	75.25515	Morocco
0.795	2.541561	91.9812	40160	76.89456	Oman
0.855	3.978882	97.74669	121570	78.30351	Qatar
0.845	3.652482		53570	74.39739	Arabia
0.836	3.284926		67660	77.32937	Arab Emirates
0.499	-0.18869		3730	64.50717	Yemen

Source: World Bank

According to the United Nations in 2016, the highest average human development index in the region belongs to Qatar with an average (0.855), Saudi Arabia (0.845), UAE (0.836) and Bahrain (0.823) and the lowest average is related to Yemen (0.499), Iraq (0.649) and Morocco (0.645), respectively. Iran is in the seventh place in the region with an average (0.774), which has climbed to better conditions than the previous year with an average of human development index (0.745).
The study of development indicators has been done from 2003 to 2014, but the text has not been presented to make it less voluminous.

Table 5: Human Development Indicators in 2017

Human development index	Economic growth	Literacy rate	PPP	Life expectancy	Country
0.824	2.861968		44690	76.8652	Bahrein
0.774	-1.5			75.74263	Iran
0.649	4.8		15780	69.63461	Iraq
0.763	1.3		13780	79.49824	Kuwait
0.716				71.83039	Lebanon
0.647	4.50841		7610	75.52015	Libya
0.796	5.652703		41320	75.52015	Morocco
0.856	3.551016	93.03861	124740	77.12183	Oman
0.847	4.106409		55370	78.46271	Qatar
0.844	3.828867		70590	74.57449	Arabia
0.482	-28.0968		2710	77.48424	Arab Emirates
0.482	-28.0968		2710	64.72568	Yemen

Source: World Bank

Human Development Report 2017, the work is named for human development. According to this report, Iran's human development is higher than most countries in the region. Some of these countries, such as Qatar with an average (0.847), Oman with an average (0.856), Saudi Arabia (0.844) and Bahrain (0.824) are ranked 1-4, respectively. Iran ranks eighth in the region after Bahrain, Kuwait and Morocco. After Iran, Yemen and the UAE are on average (0.484).

Human Development Index stages

The Human Development Index is a composite index to measure the success of each country in three basic criteria of human development, including long and healthy life (health), access to knowledge and the appropriate standard of living. These three indicators have different units. However, since the resulting composite index must be able to rank different countries, first each of the three indices is converted to a percentage using a "base index" formula, and then human development is obtained from their weighted average. The only reliable source is the United Nations statistics, after collecting and processing the information and data required by different levels of countries has been calculated using the Human Development Index (HDI) (UNDP2016: 12).

The Human Development Index examines the development of a country in three dimensions.

1- The level of health in life using life expectancy.

2- Identifying adult literacy rates and gross enrollment rates.

3- Appropriate standard of living by calculating domestic crude production for each person (Amiri 12: 2016).

The Human Development Index (HDI) is a summary of human development measures. This index measures the average success achieved in a country in three main dimensions of human development. In fact, it is the normal indicators that measure the success of each dimension. Two steps are required to calculate HDI. Step 1: Determining the dimension indicators: Minimum and maximum values are used to convert the indicator to indicators between 0-1. The maximums are the highest values observed in the time period (2000-2017). The minimum values for life expectancy are 20 years, for study variables are zero years, and for gross national product per capita (PPP) is the dollar. Step 2: Human Development Index is the geometric average of three-dimensional indices, which is calculated as follows.

HDI = $\sqrt[3]{}$ (I Life × I Education × I Income) (3-2)

Table 6: Human Development Index

Dimensions	Standard of living	knowledge	Healthy ling life
Indicators	Annual GNI (PPP)	Education years	Life expectancy from birth
Indicator dimension	GNI indicator	Education indicator	Life expectancy indicator

Human development index

The national income index is obtained using nominal national per capita income values based on purchasing power parity. Purchasing power parity is determined by the International Comparison Organization where prices of similar goods and services are collected in many countries. Therefore, the International Monetary Fund determines the growth rate based on the domestic currencies of countries and fixed prices in order to reduce the impact of the conversion rate into purchasing power parity on the real growth of the economy (Haghighi 2013: 88).

Research Methodology

The standard form for time series and intermittent combination models is as follows.

(2-3) (4-2) $Y_{it}=a_i+Bx_{it}+u_{it}$

In this model, yit is the dependent variable, xit is the vector of the explanatory variable, and uit is also part of the perturbation error, which represents variables that are not entered directly into the pattern. Depending on how much we get a, there are three cases: First = If there is no difference between the sections, then a enters the model as the average of all sections. In this case, ols will provide an efficient estimate and compatibility of a and b. Second = If there is a difference between different sections and the difference between sections is shown in ai, they are assumed to be constant over time. This method is called the fixed effects method. Third = If it is assumed that the difference between the sections is random and is not constant over time, another method is used as a method of random effects to estimate the model (Gujarati 1393: 43). The general model of panel data is as follows.

(5-2)

$Y_{it}= B_{1it}+\sum_{BKitXit}+\varepsilon_{it}$

Where i = 1; 2 …… N represents the cross-sectional units (country), k refers to the number of independent variables and t = 1; 2… .T refers to time. Yit are the dependent variables for the i-th cross-sectional unit in year t and xkit is the k-th non-random independent variable for the i-th cross-sectional unit in year th, and it is an error that is assumed to have a mean zero constant variance δ2 e. BKits are model parameters that are unknown Measures the independent variable K in the i-th section and the t-th time with respect to the K changes. In general, the BKit coefficient is assumed to be different among all time series and intermittent series units. However, in many studies, the variability of these coefficients is limiting for all sections.

(3-1) $\text{Growth E}_{it} = \alpha + \beta_1 \text{ALR}_{it} + \beta_2 \text{LEB}_{it} + \beta_3 \text{GNI}_{it} + \beta_4 \text{HDI}_{it} + \varepsilon_{it}$

where in:

Economic Growth: Growth E_{it}

Adult literacy rate: ALR_{it}

Life expectancy at birth: LEB_{it}

Gross national per capita income: GNI_{it}

Human Capital Index: HDI_{it}

Coefficients of research variables: $\beta_1, \beta_2, \beta_3, \beta_4$

Regression error: ε_{it}

Estimation of research model

$\text{Growth E}_{it} = \alpha + \beta_1 \text{ALR}_{it} + \beta_2 \text{LEB}_{it} + \beta_3 \text{GNI}_{it} + \beta_4 \text{HDI}_{it} + \varepsilon_{it}$						
Method		Combined regression				
Dependent variable		Growth E_{it}				
Independent variable		coefficient	Standard deviation	T statistics	Significance level	Inflation rate variance
Literacy rate in adults	ALR_{it}	-0.13909	0.031399	-4.42976	0.0001	5.045806
Life expectancy in birth	LEB_{it}	0.591361	0.198308	2.982034	0.0049	2.073832
Gross national per capita income	GNI_{it}	0.0000607	0.000023	2.640945	0.0118	2.506314
Human development index	HDI_{it}	-2.77784	8.036462	-0.34565	0.7315	7.093539
Constant value	C	-28.3519	12.2956	-2.30586	0.0265	
F statistics		3.6953				
Significance level		0.0120				
Durbin – Watson statistics		1.55				
Determination coefficient		0.27				
Adjusted coefficient determination		0.20				

Reference: findings of research

Conclusion

Most economists agree that what ultimately determines a country's economic development is its human resources, and that the importance and role of human capital in the process of economic growth and development is no less than physical capital. Therefore, it can be said that economic growth and development is not possible without infrastructures such as strong human capital. The success of a country depends on the extent to which it can use the potential of its members. Therefore, in general, it can be said that increasing per capita income and health not only encourages growth and productivity, but also reduces inequality. However, a country must invest in the people of the society in order to develop the motivation to work hard for creativity and development. Therefore, human capital and its various indicators in Iran and other countries in the region during the years 2002-2017, following various sanctions, have had an upward trend. It has meaning. These indicators, as previously proven, have a positive and significant effect on the GDP growth of the country. A noteworthy point in various studies and comments of economic experts is that the importance of investing in human resources and realizing the potential human capital of individuals in society is no less than investing in other economic projects and incidentally one of the reasons for failure. Investment in a country can stem from ignoring the important role of human resources in the process of economic growth and development. The government should also innovate and serve the country by providing financial support and facilities and creating an atmosphere of encouragement and hope for researchers and by strengthening national affiliations and familiarity with the latest scientific methods in the world. In particular,

universities as a thinking institution and a great scientific and cultural resource of society should rule the scientific as the dominant thinking and try to apply research in the country. This is achieved by establishing a permanent and appropriate relationship between institutions with research and academic centers and creating a culture of science and research among the people.

Suggestions taken from research findings

Increase and improvement of human capital-related indicators such as literacy, health, life expectancy and per capita income, and other related indicators in a country, in addition to providing additional economic resources such as increased productivity and productivity. Basically, also seek the goals of economic development. Therefore, economic development requires giving importance to the discussion of human capital and efforts to improve the indicators related to it. As previously proved, the growth of human capital indicators has a statistically positive and significant effect on the economic growth of countries. Therefore, investment in manpower and improving the quality of labor, affects the economic growth of the country and this issue paves the way for the country to achieve economic development goals (Delavari 2014: 19). In the field of manpower investment, the following are specifically suggested.

A) The government should provide extensive financial and non-financial support in the field of research on basic sciences and university research that has public interests in order to pave the way for economic growth and development of the country by expanding the motivation for research and development in the country in the long run. In addition, a series of educational opportunities should be provided for smart and elite people in the country so that these people can help research, produce science and advance knowledge in the country. their talents and abilities should be used to develop and implement the potential of the country.

B) Household, in general, identifying the economic growth and development of each country depends on identifying the behavior of its main factors. According to modern economic theories, households are considered as the main economic actors and any planning, regardless of the behavior of households, will have an ambiguous or ineffective effect. A specific proposal in this regard is to help families to improve the capabilities and abilities of their children.

C) Education will only lead to greater economic growth if educated people are used where it increases productivity in production. Therefore, trying to apply education, use new knowledge in various scientific fields and employ graduates in their educational specialties, are the conditions for the positive impact of education on economic growth.

To establish economic stability in order to eliminate unemployment and economic poverty along with achieving economic growth.

1- A structure should be created to monitor and evaluate human development indicators and provide feedback on the measures taken in line with this indicator.

2- In order to deal with the existing and forthcoming challenges, in a planned and comprehensive manner, to use successful models and models of human development of the countries of the world that are appropriate to the local conditions of the country.

3- Carrying out economic, political and social reforms.

4- In order to increase the effectiveness of human capital promotion on improving the productivity of all factors, it is necessary for service companies to pay more attention to the issue of creating matching between jobs and labor skills.

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