

# SEVERAL ASPECTS OF THE STUDY OF THE HUMAN ECONOMIC SECURITY

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**Abstract**— In the paper proposed some aspects of the study of the human economic security and was calculated the indicator of life expectancy, the indicator of the level of development of education in the country, the per capita gross national income (GNI) indicator, the index of housing provision, the population savings index and the crime rate index is determined using the number of crimes per hundred thousand people.

**Index Terms**— economics security, human economics security, GDP, personal security.

## 1 INTRODUCTION

IN a market economy, everyone hopes for a better future, a better life, a higher standard of living and a safer life. The security of human needs from those factors that negatively affect his interests and impede their implementation, is called personal security. Human security includes protection from attacks on his life, health, freedom, personal integrity, honor and dignity, as well as property.

One of the most important components of human security is its economic security. Economic security of a person is a state of ensuring such human rights and opportunities as free labor, entrepreneurial activity, ownership, consumption of necessary goods (services), quality education and healthcare, and strong social protection by the state.

## 2 LITERATURE REVIEW

Theoretical and practical aspects of economics security were studied by several scientists as well as Abulkasimov H.P., M. Abulkosimov M.H. [3;4], Alabicheva M.A. [5], Gaidar A.P. [6], Gubin A. V. [7], Stepicheva O.A., Chernova V.V., Kotelnikova M.A. [8], Jooyeon Suh, Ph.D., Jennifer Clark, Jeff Hayes [9].

Theoretical issues of Applying of artificial intelligence in the textile industry were researched by Ergashxodjaeva, S. J. and et.al. [14], Yuldashev N., Tursunov B. [15] and others.

Methodological principles for the development and improvement of assessment methods were investigated by Ibragimov, I. U., & Tursunov, B. O. [16] and others.

Features of organization of production at light industry enterprises and improving logistics were studied by several scientific works of Tursunov B. [17;18;19;20;21]

Generally speaking, the issue of public debt and its maximum limits has been covered by many foreign research papers. It is possible to apply their scientific and practical conclusions to the policy of public debt of Uzbekistan.

## 3 RESEARCH METHODOLOGY

In recent years, the issue of human economic security has been widely studied by scientists and various international organizations. However, there is no separate aggregate indicator reflecting the provision of a person with necessary goods (services) and other benefits for a normal life. Therefore, in the study of human economic security, it is necessary to use a special indicator to study human security in the country.

The author has developed a special index on the study of human economic security. To understand the methodology for calculating the index, consider it using the example of the Republic of Uzbekistan.

The Human Economic Security Index is based on the Human Development Index (HDI), which is calculated by the United Nations Development Program.

The Human Economic Security Index HESI is calculated based on seven indicators:

1. Life Expectancy (Life Expectancy Index (LEI));
2. The level of development of education (Education Index (EI));
3. Gross national income per capita Gross national income per capita (Income Index (II));
4. Average nominal wage (Average wage index (AWI));
5. Housing provision index (HPI);
6. Savings (Savings index (SI));
7. The level of crime (Crime index (CI)).

Each of the seven indicators is calculated as an index between the numbers 0 and 1. The first three indicators are calculated based on the methodology and the data used to calculate the human development index.

1. The indicator of life expectancy is calculated by the following formula:

$$LEI = I (\text{Life expectancy in the country}) - 20$$

85 – 20

Life expectancy in the Republic of Uzbekistan in 2018

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was 71.4 years. We calculate the above index on examples of the Republic:

$$LEI = \frac{71,4 - 20}{85 - 20} = 0,79$$

According to calculations, the index of life expectancy in Uzbekistan was 0.79.

2. The indicator of the level of development of education in the country is determined by the following formula:

$$EI = \frac{MYSI + EYSI}{2}$$

MYSI is the index of the average period of study in the education system, which is calculated using the following formula:

$$MYSI = \frac{MYS}{15}$$

EYSI - index of the expected average period of study in the education system, calculated by the following formula:

$$EYSI = \frac{EYS}{18}$$

Где:

MYS - the average period of study in the education system (in years).

EYS - the expected average period of study in the education system (in years).

In 2018, the average period of education in Uzbekistan was 11.5 years, the expected average period of education in the education system is 12 years. Using these data, we calculate the index of the level of development of education.

$$MYSI = \frac{11,5}{15} = 0,77$$

$$EYSI = \frac{12}{18} = 0,67$$

$$EI = \frac{MYSI + EYSI}{2} = \frac{0,77 + 0,67}{2} = 0,72$$

The index of educational development in the country in 2018 was 0.72.

3. The per capita gross national income (GNI) indicator is determined in US dollars at purchasing power parity:

$$II = \frac{\ln(\text{GNI per capita}) - \ln(100)}{\ln(75000) - \ln(100)}$$

The highest per capita GNI is \$ 75,000 and the minimum is \$ 100. According to the UN, GNI per capita in Uzbekistan at purchasing power parity was \$ 6,500.

$$II = \frac{\ln(6470) - \ln(100)}{\ln(75000) - \ln(100)} = 0,65$$

4. The weighted average nominal wage is calculated in US dollars at purchasing power parity.

#### 4. ANALYSIS AND RESULTS

To calculate the index by the average nominal wage, you need to determine the lower and upper limits. The poverty line used by the World Bank, US \$ 1.9 per day, can be used to determine the lower limit. If we take into account that a person works on average 25 days a month, the lower limit of nominal wages will be \$ 47.5 per month. The average salary in the United States is used as the upper limit for two important reasons:

1. The United States has achieved great results in ensuring the economic security of the individual. It occupies the ninth place in the world in terms of average monthly salary and is in high places for other parameters that reflect the standard of living of the population;[10]

2. The accrued nominal wage is calculated in US dollars at the parity of wage purchases.

Therefore, the average monthly salary in the United States, \$ 2,835 in 2018, is used as the upper limit for calculating the index.

Consider the indicators of the average monthly nominal wage on the example of the Republic of Uzbekistan. The average nominal wage in 2018 amounted to 1822.2 thousand soums. The average annual rate of the US dollar against the Uzbek sum was 8069.09 soums per one US dollar. The average nominal wage in the country amounted to 226 (1822.2 / 8069.09) US dollars.[11]

To calculate the nominal wage for purchasing power, you need to calculate a special index that determines the difference in price levels in different countries of the world. To calculate the special index, we calculate the difference between the indicators of Uzbekistan for 2018 GDP at face value and GDP according to purchasing power according to the International Monetary Fund:[12]

$$\text{Purchasing Power Index} = \frac{\text{purchasing power parity}}{\text{GDP nominal}} = \frac{470,8}{93,2} = 5,49$$

Multiply the calculated index by the average monthly wage in the country:

$$5,49 * 249 = 1240,74 \text{ USD}$$

In Uzbekistan, the average monthly purchasing power salary is \$ 1,240.74. The lower limit of the average wage is also calculated at purchasing power parity:

$$47,5 * 5,49 = 260,7 \text{ USD}$$

Using threshold indicators, you can calculate the index of the average nominal value of wages according to the formula:

$$AWI = \frac{\text{average nominal wage} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

maximum value - minimum value

here:

AWI - average wage index

Using the formula, we determine the index of the average nominal salary which is 0.38:

$$AWI = \frac{1490,14 - 200,1}{3399,999} = 0,38$$

5. The index of housing provision is calculated by determining the arithmetic mean value of two indicators. According to the first indicator, we calculate the area of the housing stock per person. In the second indicator, we determine the units of housing per household:

$$HPI = \frac{HPPP + HPPH}{2}$$

here:

HPI - housing provision index

HPPP - housing provision per person (sq.m)

HPPH - housing provision per household

here:

$$HPPP = \frac{\text{housing for one person in sq.m.} - 10}{30 - 10}$$

$$HPPH = \frac{\text{housing stock} * 1000}{\text{Population} * \text{average household size}}$$

size

When determining the first indicator, we determine the area of housing in sq.m. for one person. Here, as a maximum indicator, we set 30 sq.m (in accordance with UN criteria) and a lower indicator - 10 sq.m (based on regulatory legal acts). According to the Committee on Statistics of the Republic of Uzbekistan, 15.8 square meters per person. meters of living space:

$$HPPP = \frac{15,8 - 10}{30 - 10} = 0,29$$

When calculating the second indicator, you need to pay attention to the average number of people in one household (5 people in Uzbekistan):

$$HPPH = \frac{6074552 * 1000}{32656660 * 5} = 0,93$$

We calculate the index of housing provision:

$$HPI = \frac{0,29 + 0,93}{2} = 0,61$$

Consequently, the affordability of housing in the country as an index is 0,61.

6. The population savings index is calculated using two indicators:

1. Per capita income for one month, thousand soums
2. Per capita expenditures for one month, thousand soums;

According to the Committee of Statistics of Uzbekistan, in 2018, total per capita expenses per month amounted to 677.4 thousand soums, total income of 722.1 thousand soums. Define the ratio of total expenses and income per capita (in%):

$$677,4 / 722,1 = 93,8 \%$$

Consequently, an average of 6.2% (100-93.8) of the population's income in the country is aimed at saving. Many experts believe that everyone should direct at least 10% of their monthly income on savings. Consequently, within one year, your savings will be equal to 120 percent of wages. In ten years, this figure will be 12 times the monthly salary. We use the same 10% threshold as the upper limit for calculating the population savings index; the savings index is 0.62.[13]

$$SI(\text{Savings index}) = 6,2 / 10 = 0,62$$

7. The crime rate index is determined using the number of crimes per hundred thousand people:

$\frac{\text{amount of crime} * 100000}{\text{population}}$  = amount of crime for 100 thousand units.

In 2018, 49,011 crimes were registered in the Republic of Uzbekistan. Using the above formula, we determine the number of crimes per 100,000 people:

$$\frac{49011 * 100000}{32656660} = 150,0 \text{ units}$$

So, in the country there are 150 crimes per 100,000 people. To convert this indicator into an index, we determine its highest limit, ten thousand crimes (average indicator of countries with a high crime rate) per hundred thousand people:

$$CI = 1 - \frac{\text{amount of crime}}{10000}$$

CI - crime index In the Republic of Uzbekistan in 2018, the crime rate in the form of an index amounted to 0,98:

$$1 - \frac{150}{10000} = 0,98$$

An indicator is formed between the numbers 0 and 1. The highest indicator is one (the highest level of security), and the lowest is zero (people's property, life and property are constantly at risk).

The economic security index of an individual is determined by the geometric mean of the above seven indicators:

$$HESI = \sqrt[7]{EI * EI * II * SI * HPI * AWI * CI} = \sqrt[7]{0,79 * 0,72 * 0,65 * 0,62 * 0,61 * 0,38 * 0,98} = 0,66$$

The index reflecting the economic security of the

individual in the Republic of Uzbekistan is 0.66. According to the classification of the UN Human Development Index, 0.66 is an average indicator:

Table 1

№	Index classification	Performance limits
1.	Very high rate	0,8-1
2.	High rate	0,7-0,79
3.	Average	0,555-0,699
4.	Low rate	0,35-0,559

Studying the dynamics of changes in the index, we can analyze the effectiveness of ongoing reforms to ensure the economic security of the individual in the country. Over the past five years, in Uzbekistan, the index grew by 0.09 points, to 0.66 in 2018. [10;11]. The highest result of the country was the low crime rate. In general, as the main direction in ensuring the economic security of the individual in the country, it is necessary to determine an increase in the income level of the population, an increase in the average nominal wage, the construction of new residential buildings and the development of the production of goods and services.

Table 2

**The dynamics of the index of economic security of personality (HESI) in Uzbekistan**

№	Indicator	2014	2015	2016	2017	2018
1	personal economic security index	0,57	0,51	0,58	0,63	0,66
1	Life Expectancy Index (LEI)	0.74	0.78	0.79	0.79	0.79
2	Education Index (EI)	0.68	0.70	0.71	0.72	0.72
3	Gross national income per capita (Income Index (II))	0,61	0,61	0,62	0,62	0,65
4	Housing provision index (HPI)	0.60	0.60	0.61	0.61	0.61
5	Average wage index(AWI)	0,32	0,29	0,30	0,32	0,38
6	Savings index(SI)	0,34	0,17	0,36	0,58	0,62
7	(Crime index(CI))	0.97	0.97	0.97	0.98	0.98

For a more complete analysis of the HESI index, it is necessary to draw up a comparative table with the participation of other countries. To analyze the HESI index in the comparative table, you need to use data from developed countries of the world (USA and Germany) and CIS countries (Russia and Kazakhstan). The results of the analysis show that in the developed countries of the world all indicators except the crime rate are high, but it must be taken into account that there is a difference in the registration procedure and the recognition of crimes in different countries. For example, in Germany, violation of the procedure for temporary residence in the country is also recognized as a crime.

Table 3

**Comparative table of the HESI index of Uzbekistan and other countries of the world**

Indicators	Uzbekistan	USA	Germany	Russia	Kazakhstan
personal economic security index	0.66	0.92	0.82	0.80	0.66
Life Expectancy Index (LEI)	0.79	0.91	0.94	0.81	0.82
Education Index (EI)	0.72	0.90	0.90	0.83	0.82
Gross national income per capita (Income Index (II))	0.65	0.96	0.93	0.83	0.82
Housing provision index (HPI)	0.43	1	0.98	0.47	0.39
Average wage index(AWI)	0.61	0.95	1	0.89	0.70
Savings index(SI)	0.61	1	1	1	0.44
Crime index(CI)	0.98	0.74	0.33	0.89	0.84

**5.CONCLUSIONS**

It should be noted that the human economic security index is a conditional indicator that is unique to all states. In particular, it is quite natural for developed countries that the calculated index will be higher than that of other countries. Therefore, when studying the index, it is necessary to take into account the characteristics of the country.

By constantly calculating the HESI index, you can study the economic security of a person in different countries of the world. In addition, the analysis of the index

makes it possible to determine the main directions of reforms in the field of economic security of the country's population.

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