

SYSTEM OF INDICATORS ON INTERNATIONAL COMPARABILITY OF HUMAN RESOURCES AND LABOUR RESOURCES

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Abstract. *Essential factor of any country in economic and social development is represented by available **human resources (human potential)**, these resources being the whole population of respective country at a given moment. This potential should be first regarded as a collective consumer, this being identified with **total population** and as a collective producer, this being identified with **labour resources**, namely with number, experience and their training degree.*

Keywords: economic density of human resources; dependence of social tasks; economic potential of human resources, human intensity of economic activities; marginal indicators of human resources.

1. The modern world lives a phase when it realizes the importance of General structure of proposed indicators system

Size, structure and use of human potential represent basic guiding marks of national economy capacity to progress on the coordinates of an efficient economic growth.

Size of this process cannot be estimated to be big or small, only if we succeed to compare, from this viewpoint, with other countries of the world. Real possibility of this comparison appears only when we have at disposal an adequate system of indicators, reflecting both *human potential* and its efficient use, for our country and for those we compare with.

It results that necessity to conceive a *system of indicators of international comparison regarding human resources*, which we divided into several groups:

- Indicators of human resources economic density
- Indicators of human resources employment
- Indicators of social tasks dependence
- Indicators of human resources economic potential
- Marginal indicators of human resources
- Indicators of economic activity human intensity
- Indicators of human resources use economic efficiency
- Indicators of time national fund economic efficiency

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2. Indicators of human resources economic density

Usually, economic analysis of human resources uses the density of these resources per sq.km, providing only a general image over **human resources – area ratio**. This ratio cannot reflect the real demographic density, national areal, because it depends on the country relief structure, existing areas with a easy density besides areas with suffocating density, but in average everything is seemingly o.k.

Calculating the **indicators of human resources economic density**, we can reflect and compare with other countries several ratios between these resources and their primary existence base, namely gross domestic product, gross national product or national income, agricultural production, industrial production or non-industrial production. Such indicators can be also determined as ratio between human resources and production of any branch (food, construction, transport, telecommunications etc.), or even by subbranches of these branches.

Main indicators of economic density and their calculation methodology are presented in table 1, this table can be filled in by researcher according to economic analysis necessities.

Table 1.

Main indicators of human resources economic density	
1.1. General economic density of human resources	<i>total population/ GDP (gross domestic product) or GNP (gross national product) or NI (national income)</i>
1.2. Agricultural density of human resources	<i>total population / value of agricultural production</i>
1.3. Industrial density of human resources	<i>total population/ value of industrial production</i>
1.4. Nonagricultural density of human resources	<i>total population/ value of nonagricultural branches production</i>

3. Indicators of labour resources employment

This group of indicators is meant to provide first of all the possibility for international comparability of relations between **able to work resources or available active labour resources** and human resources available in that country. Secondly, they reflect the relations between employed population at national level or by activity field and able to work population (active available) available in the countries which are compared. Certainly such indicators reflect both the ratio of **disequilibria on the labour market** as a result of a certain ratio between supply and demand of work, and the ratio of **disequilibria on the market of goods** created by the existence of nonexistence of capital necessary to create the jobs according to available active population. Here more detailed calculations can be done, at level of activity sectors, branches and subbranches.

We present in table 2. the main *indicators of human resources employment* enumerated above.

Table 2.

Main indicators of labour resources employment{PRIVATE }	
1	2
2.1. General demoeconomic potential of the nation	<i>able to work population / total population</i>
2.2. General activity index	<i>available active population / total population</i>
2.3. General employment index of human resources	<i>employed population / able to work population or available active population</i>
2.4. Specific employment index of human resources	<i>employed population in the field x / able to work population or available active population</i>

4. Indicators of social tasks dependence

It is very interesting to notice and compare with other countries the dependence degree of various categories of population, that category of population which provide their existence, namely employed population. This can be done both for non-economically active population, generally, and for young population or elderly population.

Thus, we could notice how many young persons, elderly or generally non-economically active revert per one or 100 employed persons, namely to see *social task of every individual who works*, on this task depends, on one side, the work volume to be done and, on the other side, income ratio at his disposal after covering this task. Certainly that size of these indicators can reflect aspects regarding a certain structure of demographic pyramid in that country, aspects which can be both positive, in case of a normal pyramid, and negative, in case of a disproportional pyramid.

Here calculations can be also detailed by certain age group within young, elderly or non-economically population, in keeping with the needs of economic analysis.

The main indicators presented above are given in the table 3:

Table 3

Main indicators of social tasks dependence	
3.1. Dependence degree of non-economically active population of employment	<i>non-economically active population/employment</i>
3.2. Dependence degree of young population of employment	<i>young population/ employment</i>
3.3. Dependence degree of elderly population of employment	<i>elderly population/ employment</i>

5. Indicators of labour resources economic potential

It is interesting to carry out an international comparability of *labour resources economic potential*, potential reflecting the volume of various national resources (total, natural or accumulated) per capita, as well as general technical level or work general technical endowment. The more these indicators will have a higher value, the more economic potential of human resources in that country will be higher. Therefore, size of these indicators reflects, on one side, *development level of that country* measuring total accumulated resources, fixed assets and material stocks per employed person especially and, on the other side, *endowment level of that country with natural resources*.

Table 4.

Main indicators of labour resources economic potential	
4.1. General potential of economic and social development	<i>value of accumulated resources and attracted natural resources/ total population</i>
4.2. Endowment with accumulated resources of human resources	<i>value of accumulated resources / total population</i>
4.3. Endowment with natural resources of human resources	<i>value of attracted natural resources/ total population</i>
4.4. Development general technical level	<i>value of fixed assets/ total population</i>
4.5. Work general technical endowment	<i>value of fixed assets/ able to work population</i>

6. Marginal indicators of human resources

In the last decades, the use of *marginal analysis* amplified in economic research, generally, and in international comparability, especially.

Marginal indicators make possible to compare the evolution of different economic variables based on their relation for certain time period.

In case of human resources, this category of indicators make possible to compare first of all the evolution of total population with the evolution of various categories of resources at disposal of that country (accumulated resources, attracted natural resources, fixed funds etc.).

Secondly, these indicators make possible to compare the evolution of total population with the evolution of gross domestic product, with that of gross domestic product or national income, this evolution having a direct impact over population life. Thus, the analysis can be completed with marginal indicators reflecting the ratio between the evolution of human resources and evolution of dwelling fund, town-household endowment, R&D expenditure, expenditure for education, culture, health care or environment protection etc. Such indicators can be certainly detailed by categories of resources as well as by other categories of expenditure, in keeping with the needs of economic analysis.

The main marginal indicators proposed as well as their calculation methodology are presented in table 5.

Table 5

Main marginal indicators of human resources{PRIVATE }	
5.1. Marginal coefficient of human resources as against accumulated resources	total population index / accumulated resources index
5.2. Marginal coefficient of human resources as against attracted resources	total population index/ attracted natural resources index
5.3. Marginal coefficient of human resources as against technical endowment	total population index/fixed assets index
5.4. Marginal coefficient of human resources as against dwelling fund	total population index/ dwelling fund index
5.5. Marginal coefficient of human resources as against town-household endowments	total population index/ town-household endowment index
5.6. Marginal coefficient of human resources as against GDP or GNP or NI	total population index/ GDP or GNP or NI index
5.7. Marginal coefficient of human resources as against R&D expenditure	total population index/ R&D expenditure index
5.8. Marginal coefficient of human resources as against education expenditure	total population index/ education expenditure index
5.9. Marginal coefficient of human resources as against culture and art expenditure	total population index/ culture and art expenditure index
5.10. Marginal coefficient of human resources as against health care expenditure	total population index/ health care expenditure index
5.11. Marginal coefficient of human resources as against environment protection expenditure	total population index/ environment protection expenditure index

7. Indicators on human intensity of economic activity

Human intensity of economic activity generally reflects number of persons from a certain category (employed, able to work), from a certain field of activity per unit of economic results (gross domestic product, gross national product, national income, volume of activity in a sector, branch or subbranch of activity etc.).

Such indicators can be also determined calculating maximum possible time fund in the economy or in a certain field of activity per unit of result at level of national economy and respectively at level of that activity field.

Human intensity of economic activity can be determined as a general intensity, as a demoeconomic intensity or as a human intensity specific by sectors, branches, subbranches, generally by activity fields.

These indicators make possible to carry out some interesting international comparisons regarding the efficiency of demoeconomic resources use, especially in the countries that are compared.

And here calculations can be detailed until the detail levels meeting the needs of economic analysis.

We present in table 6. the main *indicators on human indicators of economic activity* mentioned above.

Table 6.

Main indicators on human intensity of economic activity{PRIVATE }	
6.1. General human intensity of economic activity	<i>employment / GDP or GNP or NI</i>
6.2. Demoeconomic intensity of economic activity	<i>able to work population / GDP or GNP or NI</i>
6.3. Specific human intensity of economic activity	<i>employment in the field x/ volume of activity achieved in the field x;</i>
	<i>maximum possible time fund in the field x/ volume of activity achieved in the field x</i>

8. Indicators on economic efficiency of human resources use

Finality of any analysis in order to achieve some international comparabilities is to notice the degree of *economic efficiency of available resources use*. Because labour resources are the most important in the society, also being regenerable, their use efficiency has special interest for the future of any nation.

Economic efficiency of labour resources use can be regarded both as general efficiency and as specific efficiency. General economic efficiency of human resources use can be estimated by means of GDP gross domestic product volume, of GNP gross national product and of NI national income per capita. We can also put here indicators reflecting volume of macroeconomic results mentioned above per persons able to work or per employed person.

General economic efficiency of human resources use can be appreciated by means of some indicators reflecting the value of nonagricultural production, production of services, production of research etc. per employed person in that field.

Here indicators can be also detailed by narrower fields and sectors of activity in keeping with the analysis needs.

By means of these indicators we can do comparative estimations regarding *social labour productivity* or *labour efficiency by various sectors of activity* in different countries. We present the main indicators proposed in table 7:

Table 7.

Main indicators on economic efficiency of labour resources use	
7.1. General economic efficiency of human resources	<i>GDP or GNP or NI / total population</i>
7.2. Economic efficiency of demoeconomic resources	<i>GDP or GNP or NI / able to work population</i>
7.3. Economic efficiency of employed human resources	<i>GDP or GNP or NI / employment</i>
7.4. Industrial economic efficiency of employed human resources	<i>value of industrial production / employment in industry</i>
7.5. Agricultural economic efficiency of employed human resources	<i>value of agricultural production / employment in agriculture</i>
7.6. Nonagricultural economic efficiency of employed human resources	<i>value of nonagricultural production / employment in nonagricultural sectors</i>
7.7. Economic efficiency of human resources in the field of services	<i>value of services production / employment outside services</i>
7.8. Economic efficiency of human resources in the field of scientific research	<i>value of production research/ employment in the field of scientific research</i>

9. Indicators on economic efficiency of time national fund

Taking into account that human life is limited, *time national fund* occurs as a precious resource to be used more and more efficiently. That is why we estimate that an international comparability of efficient use of this time fund is not interesting.

Efficiency of using the time national fund can be appreciated both as a general efficiency and as a specific one. *General economic efficiency of time national fund* can be estimated by value of gross domestic product, of gross national product or of national income per maximum possible time unit, or as a real economic efficiency, by value of final national production, mentioned above, per effective time unit used in the society.

Specific economic efficiency of time national fund can be also reflected by means of activity volume achieved in a certain activity field per maximum possible time unit in that field or as a real specific efficiency, by activity volume achieved mentioned above, per effective time unit used in that field.

These indicators provide a more realistic possibility to appreciate and compare the level of social labour productivity in various countries and can be detailed in keeping with the needs of economic analysis.

We present in table 8. the main indicators proposed.

Table 8

Main indicators on economic efficiency of time national fund	
8.1. General economic efficiency of time national fund	<i>GDP or GNP or NI / maximum possible time national fund</i>
8.2. Real economic efficiency of time national fund	<i>GDP or GNP or NI / time national fund effectively used</i>
8.3. Specific economic efficiency of time national fund	<i>volume of activities achieved in the field x / time fund in maximum possible field x</i>
8.4. Real specific economic efficiency of time national fund	<i>volume of activity achieved in the field x / time fund in the field x effectively used</i>

We mention that time national fund taken into calculation represents *society work time resource*, which can be yearly or periodically calculated as:

- maximum possible time fund, namely time fund for available active population during the calculation period;
- effective time fund, namely time fund for employed population during the calculation period.

Certainly, besides these indicators, other general or specific indicators can be calculated, according to the needs of macroeconomic analysis, the system of indicators proposed being only the general frame to reflect human resources in order to achieve an international comparability. At the same time, it is necessary that value indicators are expressed in USD, at exchange rate of the analysis moment, to carry out an accurate comparability and to draw pertinent conclusions.

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