

# Use of the Inductive Approach for Investigation of the Influence of Statistical Indices of Ukraine on the Regional Human Development Index

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**Abstract.** *The goal of this paper is to analyze a relationship between a human development level and different macroeconomic indices characterizing the gross domestic product of Ukraine and its various components in different regions of Ukraine.*

## Keywords

human development level, macroeconomic indices characterizing, inductive modeling, Combinatorial GMDH algorithm

## 1 Introduction

The basic condition for Ukraine to realize its European choice, which means provision of democratic principles, human rights and the market economy development, is first of all to achieve certain standards in both social and economic fields, and the human personality development, that is a human development. The human development is considered to be the most important factor for reforms of countries and societies that aspire to join the world flows of modern technological, infrastructural, institutional, social, humanitarian and other transformations.

Increase of production volumes is very important for provision of resources necessary for the development of society. But the economic development by itself can't solve all social problems of Ukraine. The global experience including Ukrainian shows that the economic growth is accompanied by increasing disproportions in the regional development and increasing disparity of income. Both these problems should be solved by means of an efficient government. Transformation of Ukraine into a state with a democratic system, civil society and a social oriented market economy implies that authorities at all levels, especially at the regional one, consider the human development to be both the final and a key goal.

Thus, it is necessary to study a level of correlation between the human development and different macroeconomic indices characterizing the gross domestic product of Ukraine and its various components especially at the regional level. The human development is described by the Regional Human Development Index (RHDI) for every Ukrainian region during the period of 2004-2012. It is calculated by the procedure of the regional human development measurement built by the Ptoukha Institute for Demography and Social Studies of the National Academy of Sciences of Ukraine. [1]. Since 2001 the State Committee of Statistics of Ukraine publishes results of regional human development calculations every year. The results of these calculations are supposed to use to monitor the state of the human development in different regions of Ukraine, to measure its progress and factors, to substantiate the social and economic policy for all Ukrainian regions. This approach is based on the statistical data provided by the State Committee of Statistics of Ukraine. Thus, it provides the Ukrainian policy makers with comprehensive and relevant information to make efficient decisions in the field of the regional development.

## 2 Problem statement

The data about the volume of the gross regional product (GRP) produced in every Ukrainian region and a gross added value by different activity categories are provided by the State Committee of Statistics of Ukraine too. Statistical duty “The gross regional income in 2012” [2] contains the results of annual calculations of the main macroeconomic indices in the field of the economic development of Ukrainian regions – the gross regional product, the goods and services’ output, and a gross added value. At the regional level the gross regional product is a generalized index that describes the level of development of economy in every region. A gross added value describes an additional value obtained as a result of the production process. It is determined as the difference between the value of produced (output) and the value of completely consumed in the production process goods and services. The indices used to determine the GRP are the output, intermediate consumption, a gross added value, the payments to financial intermediaries for their services, taxes and subsidies for products. The intermediary consumption includes expenses on goods and services used for production purposes (raw materials, fuel, energy, maintenance works, transportation and financial services). Also the intermediary consumption contains expenses on provision of certain conditions of work and vocational training for employees at the expense of enterprises, on purchasing of food stuff and medicines for hospitals, and expenses on defense.

Previously factors affecting a human development level of countries were analyzed by building dependencies with the group method of data handling (GMDH) [3]. The received results were studied from the point of view of economic situation. Besides, it was shown how GMDH can be used for revealing of dependencies in social and economic data and their analysis. Models are developed by Combinatorial GMDH algorithm [4, 5]. The most influential factors for human development in countries with different development levels were examined. A research was made in order to study if income is the main factor for human well being. There were assumptions that people in highly developed countries benefit from reliable social system and comprehensive public health system. Their human development potential lies in the field of nonincome stimulus. While population of developing countries suffers from poverty and often have no resources to satisfy their elementary needs. So the income factor is the most important for them for achieving minimum standards of living.

## 3 Summary

The goal of this paper is to analyze relationships between a human development level, and the gross regional product and gross added value by different activity at the regional level. Use of GMDHA gives possibility to build up an adequate model of dependences of RHDI on macroeconomic indices. Such models may be used by specialists for current economic situation analysis of different regions of the country in order to find possibilities for improvement of the level of human development in Ukraine.

## References

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