

# “Analysis of the human security in Ukraine in a regional perspective”

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Galyna Nazarova (Ukraine), Alina Demianenko (Ukraine)

# ANALYSIS OF THE HUMAN SECURITY IN UKRAINE IN A REGIONAL PERSPECTIVE

## Abstract

The article investigates the theoretical aspects, features and the main directions of development of human security concept. On the basis of systematization of scientific sources; and summarizing the experience of scientists, whose works are devoted to the problems of analysis and assessment the level of human security, the author improved the system of indicators that underlies the classification regions of Ukraine. According to the results of cluster analysis, the regions are grouped into six clusters. The article analyzes the dynamics of quantitative distribution regions of Ukraine according to the selected clusters. In the research process, we defined the cores with a constant composition of regions and presented the characteristics of each cluster. It is interesting to note that the appearance of the last (sixth) cluster has been observed since 2014, according to a number of objective reasons. The results of the study indicate a rather pronounced unevenness in the state of human security in the regions of Ukraine.

## Keywords

security, human security, human development, regions of Ukraine, cluster analysis, k-means

## JEL Classification

O15, F52, C13

Г.В. Назарова (Україна), А.А. Дем'яненко (Україна)

# АНАЛІЗ СТАНУ ЛЮДСЬКОЇ БЕЗПЕКИ В УКРАЇНІ У РЕГІОНАЛЬНОМУ РОЗРІЗІ

## Анотація

У статті досліджено теоретичні аспекти формування концепції людської безпеки, її особливості, основні напрями розвитку та аспекти. На основі систематизації наукових джерел; і узагальнюючи досвід вчених, присвячений проблемам аналізу та оцінки рівня людської безпеки, автором удосконалено систему показників, яку покладено в основу класифікації регіонів України. За результатами кластерного аналізу регіони згруповані у шість кластерів. У статті проаналізована динаміка кількісних розподілених регіонів України за отриманими кластерами. Регіони України згруповано у шість кластерів, у яких ідентифіковано ядра з постійним складом регіонів та наведені характеристики для кожного кластера. Результати дослідження свідчать про досить виражену нерівномірність стану людської безпеки регіонів України.

## Ключові слова

безпека, людська безпека, людський розвиток, регіони України, кластерний аналіз, метод k-середніх

## Класифікація JEL

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## Introduction

In the conditions of the modern society development, providing a high level of human security at the state and regional levels is one of the most important tasks because a person is the foundation of State activity. Without human beings political, military, social, economic or any other security just does not make sense and cannot exist. The solution of this problem should be based on a quantitative assessment of human security, which involves the development and application of

economic and mathematical methods and models complex. One of the directions of such a regional assessment is the identification and analysis of possible differences between the regions of Ukraine on the level of material provision of the population, availability of basic food products, the possibility of living in an unpolluted environment, protection from violence, etc.

## 1. LITERATURE REVIEW

The basic elements of the modern concept of human security has been laid down by the specialists of UNDP: Sen and ul Haq and were further developed in the works of foreign scholars scientists: Buzan, Biktimirova, Vaughan-Williams, Nef, Paris and by domestic scientists: Vorotnyuk, Ivashchenko, Kuzomka, Stezhko, Sukhomlyn, Shevchenko and others. It is worth noting the significant scientific and methodological contributions of scientist Hastings, the experts of the United Nations Economic and Social Commission for Asia and the Pacific, as well as participants of the International Conference on GeoInformatics for Spatial-Infrastructure Development in Earth and Allied Sciences. However, despite the significant scientific and methodological and practical developments in the field of human security, the issue of analytical assessment of the human security situation in the regions of Ukraine was not thoroughly investigated. However, despite the significant scientific and methodological and practical developments in the field of human security, the issue of analytical assessment of the human security in the regions of Ukraine was not thoroughly investigated.

The object of research is a process of formation and development of human security concept.

The subject of the article is theoretical, methodological and practical aspects of the concept of human security.

## 2. AIMS

To analyze the statistical indicators of the state of human security in Ukraine in a regional perspective, to identify the imbalances of human security.

## 3. RESULTS

The first international document, which focuses on human security and substantiates its significance, is the UN Human Development Report 1994. The theory formulated by UNDP specialists – Sen and ul Haq are the basis for the formation of the concept of human security. It should be noted that human security is formed as part of a holistic paradigm of human development, in this regard human security requires attention to the causes of individual security and obstacles to the realization of human potential. The Human Development Report 1994 reflects these issues in the context of a demilitarized world and focuses on reducing military spending. UNDP specialists note that human security can be presented in two directions: firstly, it is security against humanitarian threats such as hunger, disease, demographic situation, etc.; and secondly – military threats (UNDP, 1994).

According to the mentioned directions of development of human security two leading scientific schools have been formed. These scientific schools reflect the main ideas of the concept of human security – «Freedom from Fear» and «Freedom from Want» that have found their practical implementation in the politics of two governments: Canada and Japan (UNDP, 1994).

In addition to UNDP, specialists from the UN Commission on Human Security research the human security and its practical implementation. The final Human Security Report proposes to highlight the following key features of the concept of human security:

1. concentration on human security, protection of the individual, empowerment of people. The concept of human security departs from the traditional, state-oriented concepts of security, that directed, first of all, to the

- security of states from military aggression;
2. consideration of many factors that threaten the safe of human life and at the same time emphasizing the relationship between security, development and human rights;
  3. formation of a new integrated, coordinated and people-centered approach in order to spread the ideas of peace, security and development within and between countries (Commission on human security, 2003).

Consequently, the concept of human security is human-centered, has a comprehensive coverage and, at the same time, a specific focus on security (focused on prevention rather than on countering threats). That is, the concept of human security places a person in the «focus of attention», examines a wide range of conditions that create threats to survival, lack of livelihoods, violations of the right to respect for human dignity, defines the threshold below of which human life is in danger and puts the task of preventing or minimizing the impact of human threats, its activities and development (UNDP, 1994).

In order to realize the potential of the human security approach fully, the UN Commission on Human Security is requested to organize a system of human security, financing measures and promoting the concept on a global scale. Because problems such as poverty, high unemployment, deterioration of the environment, the spread of terrorism, armed conflict are easier to prevent in advance than to solve it later.

Despite the thorough scientific and theoretical developments of the concept of human security, key issues that are directly related to the process of assessing human security remain unresolved and debatable. The acuteness of human problems requires the search for effective tools for their detection, measurement of the level and timely elimination, and the concerted actions of the authorities. In this regard, it is advisable to formulate scientific and practical recommendations for the assessment of human security (Nazarova, Nazarov, & Demianenko, 2018).

Moreover, the development of practical measures and recommendations for the assessment of human security requires the formation of appropriate information and analytical support. So, first and foremost, the measurement of human security is complicated by the lack of a single commonly defined system of indicators.

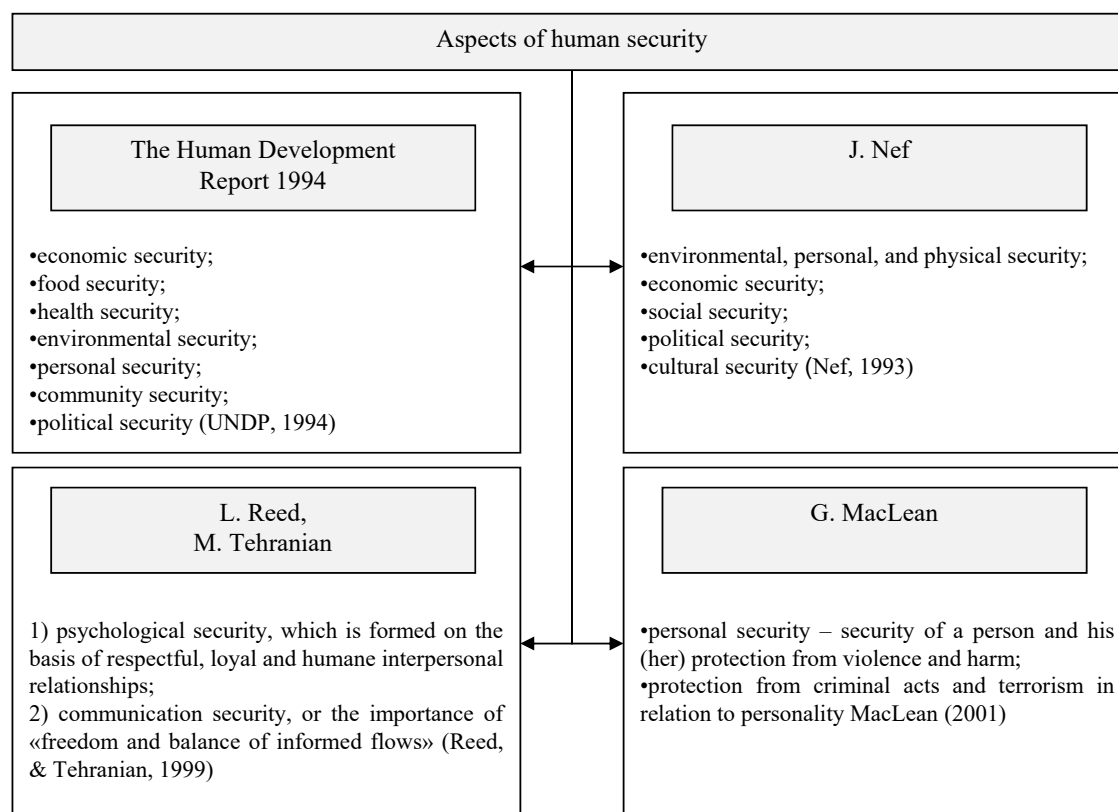
However, it should be recalled that in the Human Development Report, UNDP specialists distinguish seven fundamental aspects of human security for a clearer understanding of the essence of the concept of human security. This list has become the most popular and, at the same time, because of the incredible coverage, has become the most controversial issue of this way of disclosing the contents of human security. Therefore, some scholars have focused on reviewing and clarifying of aspects of human security. The views of scientists are consolidated by the author and presented in Figure 1.

So, during the selection of indicators, we were guided by the content of the above-mentioned aspects of human security proposed by UNDP, 1994, which together reflect the basic needs of human security: economic security, food security, health security, environmental security, personal security, community and political security.

Despite the lack of a widely recognized system of indicators, UNDP specialists propose to analyze human security according to the following indicators: birth registration, number of refugees by country of origin, internally displaced persons, number of homeless people due to natural disaster, number of orphaned children, prison population, homicide rate, suicide rate, violence against women ever experienced and depth of the food deficit (UNDP, 2018).

Analyzing the above-mentioned indicators, the author concluded that human security is considered in the context of only some of its aspects: food, personal and health security, which considerably reduces the possibilities for an effective and objective measurement of the level of human security and contradicts the concept. So, the proposed set of indicators for a comprehensive analysis of human security is not enough. In our opinion, such a system of indicators proposed by UNDP specialists needs to be reviewed, taking into account the significance, informativeness and accessibility of indicators in a regional terms.

Thus, as a result of the synthesis and critical analysis of the existing system of indicators for human security as-



**Figure 1.** The list of human security aspects proposed by different authors

assessment proposed by foreign scientists: Hastings, Biktimirova and UNDP specialists, the author proposes an improved system of indicators, based on well-known aspects of human security (Table 1).

**Table 1.** The system of key indicators of the analysis of the level of human security in the regions of Ukraine

Source: Improved by the author.

Aspects of human security (UNDP, 1994)	Symbols	Measurement units	Indicators	Source / Introduction of a new indicator
1	2	3	4	5
Economic security	x1	UAH	Gross Regional Product (GRP) per capita	Hastings (2007), Hastings (2010)
	x2	per cent	Unemployment rate (according to the ILO methodology)	Byktymyrova (2002)
Food security	x3	kcal per person per day	Nutritive value of foods (on average per day per person)	Proposed by the author
	x4	per cent	Food availability (on average per month per household)	Hastings (2007)
Health security	x5	years	Average life expectancy at birth	Byktymyrova (2002), Hastings (2007), Hastings (2010), UNDP
Environmental security	x6	thousands of tons	Waste management	Proposed by the author
	x7	million m <sup>3</sup>	Discharge of contaminated return water in surface water objects	Proposed by the author
	x8	thousands of tons	Emissions of pollutants into the atmospheric air	Hastings (2007), Hastings (2010)
Personal security	x9	people	Victims of crime	Byktymyrova (2002), UNDP
	x10	people	Number of criminals	Byktymyrova (2002), UNDP
Community security	x11	thousands of people	Migration and population change	Proposed by the author
	x12	–	Terrorism or military conflicts in the region or approximate territories	Proposed by the author

Thus, the system of indicators proposed by the author is expanded and covers the main aspects of human security except the political security because in our opinion, it is extremely difficult to quantify the level of the political component, therefore, besides quantitative research methods, it is necessary to use qualitative – using the survey method. But this process greatly complicates the measurement and practically makes it impossible to determine the level of political security in each region in previous years.

Therefore, the choice of indicators is due: first of all, to the fact that, among a number of indicators, the most important are indicators that directly (not indirectly) affect the level of human security. Secondly, there is reliable annual statistical information at the regional level regarding the level of unemployment, the amount of GRP per person, the amount of food expenditure, the average life expectancy at birth, the amount of waste utilization, etc.

So, in the presented work the dynamics of human security was investigated from 2010 to 2017 (State Statistics Service of Ukraine, 2018). It should be noted that for the study the dynamic range was compacted at intervals of two years and we analyzed the data for the last year.

Showing results of cluster analysis (Table 2) at intervals is not accidental, because exactly at that period there were the most significant changes in the number of regions of some clusters and the formation of new ones. So, we used the hierarchical cluster analysis method into the software package Statistica 10 to identify inter-regional differences in the level of human security.

Preliminary analysis of data (using the hierarchical method of cluster analysis) allowed us to conclude that there are six groups of regions of Ukraine that differ in the state of human security. Therefore, using the k-medium method, the regions were divided into six groups for each period. The original data array was normalized. Consequently, the result of the cluster analysis is the breakdown of the regions of Ukraine into six clusters (Table 2), the characteristics of which are given below.

The first and second clusters included regions with a generally low level of GRP per capita and high unemployment rate – as a result a negative balance of population migration was observed. The regions of these clusters are characterized by a high level of environmental and personal security. The second cluster, unlike the first one, is characterized by a high level of life expectancy at birth, but an in-depth level of economic instability.

**Table 2.** Regional positioning by clusters according to the level of human security

Cluster	Years				
	2010	2012	2014	2016	2017
1	2	3	4	5	6
Cluster 1	Vinnitsya, Volyn, Zhytomyr, Zakarpattia, Kirovohrad, Mykolayiv, Poltava, Sumy, Rivne, Kherson, Khmelnytskyi, Cherkasy, Chernihiv	Vinnitsya, Volyn, Zhytomyr, Lviv, Kherson, Khmelnytskyi, Cherkasy, Sevastopol, Zakarpattia, Zaporizhzhya, Kirovohrad, Luhansk, Mykolayiv, Poltava, Sumy, Chernihiv	Vinnitsya, Volyn, Zhytomyr, Kirovohrad, Mykolayiv, Poltava, Kherson, Khmelnytskyi, Cherkasy, Chernihiv	Vinnitsya, Volyn, Zhytomyr, Zakarpattia, Kirovohrad, Mykolayiv, Poltava, Kherson, Khmelnytskyi, Cherkasy, Chernihiv	Vinnitsya, Volyn, Zhytomyr, Kirovohrad, Mykolayiv, Poltava, Kherson, Khmelnytskyi, Cherkasy, Chernihiv
Cluster 2	Ivano-Frankivsk, Ternopil, Chernivtsi	Ivano-Frankivsk, Rivne, Ternopil, Chernivtsi	Zakarpattia, Zaporizhzhya, Ivano-Frankivsk, Lviv, Rivne, Sumy, Ternopil, Chernivtsi	Zaporizhzhya, Ivano-Frankivsk, Rivne, Sumy, Ternopil, Chernivtsi	Zakarpattia, Zaporizhzhya, Ivano-Frankivsk, Rivne, Sumy, Ternopil, Chernivtsi
Cluster 3	Autonomous Republic of Crimea, Zaporizhzhya, Kyiv, Luhansk, Lviv, Odessa, Kharkiv, Sevastopol	Autonomous Republic of Crimea, Kyiv, Odessa, Kharkiv	Kyiv, Odessa, Kharkiv	Kyiv, Lviv, Odessa, Kharkiv	Kyiv, Lviv, Odessa, Kharkiv
Cluster 4	City of Kyiv	City of Kyiv	City of Kyiv	City of Kyiv	City of Kyiv
Cluster 5	Dnipropetrovsk, Donetsk	Dnipropetrovsk, Donetsk	Dnipropetrovsk	Dnipropetrovsk	Dnipropetrovsk
Cluster 6	–	–	Donetsk, Luhansk	Donetsk, Luhansk	Donetsk, Luhansk

Note: \* calculated by data of State Statistics Service of Ukraine (2018), \*\* data exclude the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and a part of temporarily occupied territories in the Donetsk and Luhansk regions.

The third cluster formed regions with averages of all indicators.

For the fourth cluster has the highest values of all indicators (economic, food, public security and health security), with the exception of the average level of personal and environmental security.

Regions of the fifth cluster are characterized by the lowest values of all indicators of economic development, which can be explained by the significant industrial complex with a high concentration of heavy industries in the regions. And the high level of concentration of industrial facilities negatively affects the ecological situation in the region and threatens the safe life and health of the population.

Formation of the sixth cluster of can be observed from 2014 as a result of military operations (antiterrorist operation) on the part of Donetsk and Luhansk regions, which greatly aggravated the economic, social, environmental and other problems of the region.

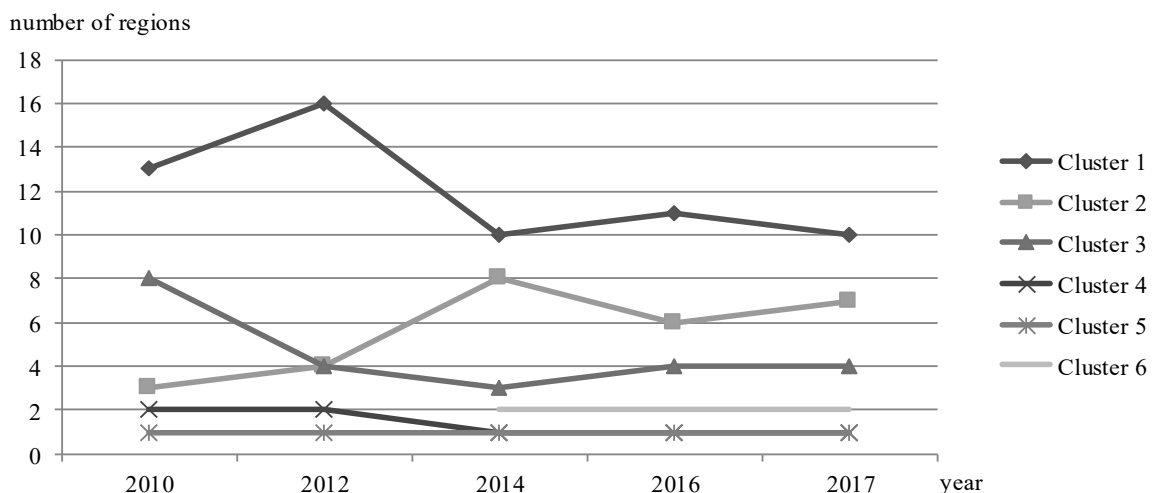
A clear understanding of the division of Ukrainian regions for each group in dynamics is shown in Figure 2. Data analysis shows that the number of regions in clusters varies over the study period. The largest clusters are: the first cluster throughout the study period and the second one from 2014, but the smallest number of regions contains the fifth cluster.

According to the data analysis, some regions of Ukraine remain in one cluster during the investigated period. In fact, there were formed the “cores” with a constant composition of regions in clusters.

So, the core of the first cluster is the largest, it includes: Vinnytsya, Volyn, Zhytomyr, Kirovohrad, Mykolayiv, Poltava, Kherson, Khmelnytskyi, Cherkasy and Chernihiv. The core of the second cluster include: Ivano-Frankivsk, Ternopil, Chernivtsi. The core of the third cluster was formed by: Kyiv, Odessa and Kharkiv regions. The basis of the fourth cluster is the city of Kyiv. The core of the fifth cluster is formed by the Dnipropetrovsk region. The last (sixth) cluster, has been formed since 2014, and now it includes two regions – Donetsk and Luhansk.

## CONCLUSION

Summarizing the above, we note that the existence and emergence of new acute human problems that impede its security development requires an integrated approach to redefining the concept of security and measures to address the major threats to human security. The results of the research indicate a rather



**Figure 2.** Division of regions of Ukraine by each cluster in dynamics

pronounced unevenness in the state of human security in the regions of Ukraine. The determining factors of the state of human security are the level of economic, environmental and social development of the region. According to the results of cluster analysis, it was revealed that the third and fourth clusters of the city of Kyiv; and also Kyiv, Lviv, Odessa and Kharkov regions have the most favorable conditions for a comfortable and safe life. The most unfavorable conditions are characteristic of the Dnipropetrovsk, Donetsk and Luhansk regions, as evidenced by the high negative impact of threats to human security (fifth and sixth clusters). The remaining areas form the first and second clusters, which are characterized by unstable conditions for human security with average values of the corresponding indicators. The results of the cluster analysis make it possible to identify a strong unevenness of human security in its aspects and formulate basic recommendations for eliminating the threats to human security for every cluster and eliminate sharply expressed unevenness.

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