
Regional Features of the Modernization State of Human Development in the Context of Productive Forces Modernization

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Abstract: The article analyzes the level of modernization state of human development on the basis of analysis of its components, such as the level of reproduction of the population, the level of education of the population, the level of scientific activity of the population, the level of material security of the population and the level of comfort of life of the population. Grouping of regions of Ukraine was conducted and a cartographic analysis of regional features of the modernization state of human development was presented.

Keywords: Modernization, Productive Forces, Innovation, Region, Globalization, Human Development

1. Introduction

In today's competitive environment, issues of the modernization of productive forces are becoming increasingly important. Among the dominant priorities of modernization, it should be noted increase of the level of economic development, activation of innovation and investment activity, rational use of nature-resource potential and ecologization of all spheres of public life, attraction and effective use of intellectual potential and development of high-tech industries. The methodology for assessing the level of modernization state of human development requires analysis of the level of reproduction of the population, the level of education of the population, the level of scientific activity of the population, the level of material security of the population and the level of comfort of life of the population.

The purpose of the article is to monitor the level of modernization of human development and ranking of the regions of Ukraine on the basis of developed guideline, which will facilitate the creation of scientific support for the adoption of management decisions aimed at improving the modernization of human development.

The analysis of the results of scientific works [1, 2, 4, 8] shows the relevance of modernization processes, but, despite

numerous studies, the question of monitoring of the modernization state of human development in the context of productive forces modernization is at the level of discussions and needs further research.

2. Determination of the Modernization Level of Human Development (MLHD)

Determination of the modernization level of human development (MLHD) requires analysis of the current state of its components, such as the level of population reproduction (L_{PR}), the level of employment of the population (L_{EP}), the level of education of the population (L_{EDP}), the level of scientific activity of the population (L_{SA}), the level of material security of population (L_{MS}) and level of comfort of life of the population (L_{CL}) (Table 1) [6, 7].

According to the results of the rating assessment of the level of modernization of human development in 2015, we identify four groups of regions: regions with high MLHD, regions with MLHD above the average, regions with average and low MLHD (Table 2, Figure 1).

Table 1. Dynamic of the components of modernization state level of human development (MLHD) in regions of Ukraine.

Region	L _{PR}						L _{EP}						L _{EDP}					
	2010		2014		2015		2010		2014		2015		2010		2014		2015	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
AR Krym	224	1	-	-	-	-	115	3	-	-	-	-	136	2				
Vynnytska	115	8	103	5	102	8	96	16	95	15	89	22	74	22	102	6	101	7
Volynska	106	10	105	3	106	1	92	19	94	18	102	7	81	19	96	19	99	13
Dnipropetrovska	51	21	96	18	95	19	111	6	109	3	108	1	123	4	103	3	103	3
Donetska	40	24	-	-	-	-	113	5	-	-	-	-	89	16	-	-	-	-
Zhytomyrska	78	16	98	15	98	13	100	11	94	19	95	18	104	11	99	16	98	15
Zakarpatska	47	23	100	9	97	18	117	2	114	1	102	8	86	17	91	21	96	19
Zaporizka	86	14	102	6	98	14	97	14	103	8	105	5	119	6	103	4	103	4
Ivano-Frankivska	142	5	107	2	106	2	90	20	96	13	100	12	67	25	91	22	97	18
Kyivska	202	2	108	1	103	5	99	12	106	4	102	9	154	1	102	7	104	1
Kirovohradska	32	25	94	22	95	20	108	8	95	16	98	13	94	13	100	12	101	8
Luhanska	61	20	-	-	-	-	97	15	-	-	-	-	71	24	-	-	-	-
Lvivska	138	6	102	7	103	6	90	21	101	9	102	10	83	18	102	8	101	9
Mykolaiivska	64	19	96	19	100	10	107	9	104	7	104	6	94	14	105	2	100	12
Odeska	88	13	100	10	98	15	114	4	110	2	108	2	121	5	103	5	101	10
Poltavska	103	11	97	16	104	3	90	22	98	10	98	14	112	8	102	9	101	11
Rivnenska	80	15	102	8	103	7	94	17	93	21	94	19	94	15	94	20	95	22
Sumska	69	18	100	11	98	16	110	7	95	17	97	15	75	21	102	10	103	5
Ternopil'ska	149	4	104	4	104	4	79	24	92	22	91	21	72	23	97	18	96	20
Kharkivska	113	9	95	21	94	21	121	1	106	5	107	3	131	3	106	1	104	2
Khersonska	47	22	97	17	98	17	93	18	98	11	107	4	110	9	100	13	98	16
Khmelnitska	136	7	99	13	100	11	105	10	98	12	101	11	108	10	100	14	96	21
Cherkaska	92	12	96	20	100	12	82	23	94	20	92	20	103	12	100	15	103	6
Chernivetska	162	3	100	12	102	9	79	25	105	6	97	16	81	20	101	11	98	17
Chernihivska	74	17	99	14	94	22	99	13	96	14	97	17	113	7	99	17	99	14

Table 1. Continuation.

Region	L _{SA}						L _{MS}						L _{CL}					
	2010		2014		2015		2010		2014		2015		2010		2014		2015	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
AR Krym	86	13	-	-	-	-	111	8	-	-	-	-	167	2	-	-	-	-
Vynnytska	75	18	83	13	77	14	76	22	94	12	101	10	71	21	88	20	90	19
Volynska	63	22	59	19	50	20	90	16	85	18	82	18	73	20	102	7	103	8
Dnipropetrovska	109	7	109	6	111	7	122	4	109	7	112	5	133	3	96	13	93	17
Donetska	97	9	-	-	-	-	147	2	-	-	-	-	67	24	-	-	-	-
Zhytomyrska	70	19	90	9	70	17	64	25	84	19	81	20	63	25	96	14	100	9
Zakarpatska	60	24	56	21	41	21	92	15	99	10	100	11	95	12	137	1	134	1
Zaporizka	110	5	123	5	116	5	115	7	136	1	140	1	112	8	87	21	86	22
Ivano-Frankivska	77	17	69	17	68	19	95	11	86	17	82	19	74	18	97	12	99	10
Kyivska	275	1	270	1	272	1	168	1	106	9	104	8	198	1	107	4	109	3
Kirovohradska	61	23	85	12	83	11	80	20	89	16	93	13	91	14	96	15	97	14
Luhanska	79	15	-	-	-	-	121	6	-	-	-	-	68	22	-	-	-	-
Lvivska	142	4	153	4	154	3	93	14	91	15	89	14	112	7	108	3	107	4
Mykolaiivska	91	12	79	14	78	13	106	9	118	3	120	3	99	11	98	11	98	12
Odeska	153	3	160	3	151	4	104	10	94	13	88	16	119	5	116	2	113	2
Poltavska	93	11	87	11	102	9	124	3	113	5	112	6	104	10	96	16	98	13
Rivnenska	78	16	58	20	70	18	88	18	78	21	80	21	74	19	104	6	104	7
Sumska	99	8	104	8	112	6	94	13	96	11	99	12	89	16	86	22	87	21
Ternopil'ska	86	15	64	18	76	15	68	24	78	22	83	17	108	9	96	17	96	16
Kharkivska	201	2	198	2	192	2	122	5	132	2	127	2	126	4	102	8	99	11
Khersonska	68	21	88	10	87	10	76	23	82	20	80	22	118	6	105	5	105	5
Khmelnitska	96	10	75	15	81	12	77	21	94	14	89	15	90	15	89	19	88	20
Cherkaska	110	6	108	7	109	8	82	19	108	8	102	9	94	13	99	10	97	15
Chernivetska	69	20	72	16	72	16	95	12	118	4	120	4	68	23	102	9	105	6
Chernihivska	54	25	30	22	30	22	89	17	110	6	110	7	85	17	93	18	92	18

Source: calculated by the author according to the State Statistics Committee of Ukraine [3, 5, 9, 10].

* Data are given without taking into account the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and part of the zone of the anti-terrorist operation.*

Table 2. Grouping of the regions of Ukraine by the level of modernization of human development (MLHD) in 2015 [1, 4, 5].

Level MLHD	Value range MLHD	Regions
low	<95%	Vinnitska, Volynska, Zhytomyrska, Zakarpatska, Ivano-Frankivska, Kirovohradska, Rivnenska, Ternopilska, Khmelnytska and Chernihivska
Average	≥ 95% < 105%	Dnipropetrovska, Mykolaivska, Poltavska, Sumska, Khersonska, Cherkaska and Chernivetska
Above average	≥105% < 110%	Zaporizka
High	≥ 110%	Kyivska, Lvivska, Odeska and Kharkivska

2.1. Regions with High MLHD

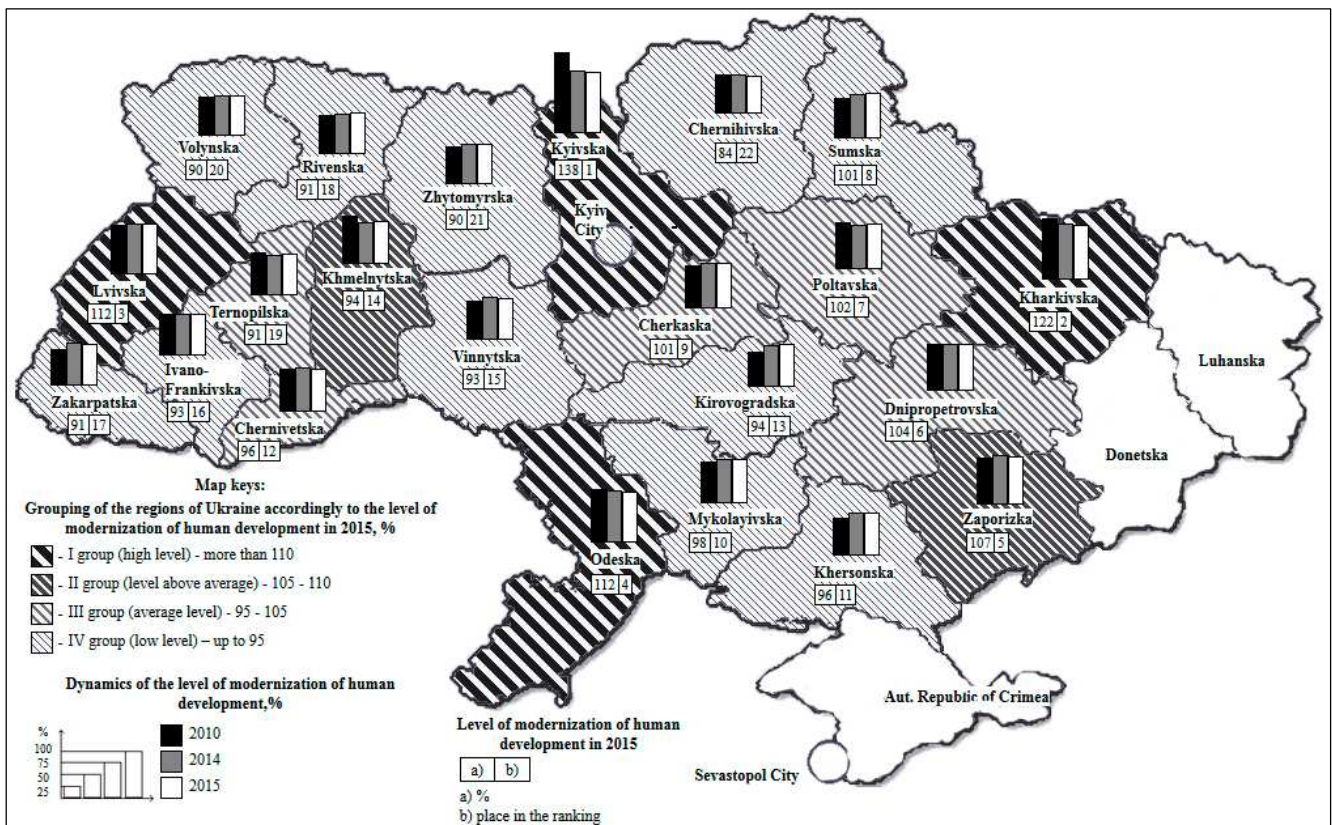
By the level of the modernization status of human development (MLHD), the leading regions are Kyivska (138% - 1st place), Kharkivska (122% - 2nd place), Lvivska and Odeska (112% - 3rd and 4th place respectively) regions.

Note that Kyivska and Kharkivska regions didn't reduced their positions during 2014-2015 years and occupy first and second places respectively.

It should be noted that in all regions-leaders (except Lvivska region) there is a decrease in the level of population

reproduction in comparison with 2014: Kyivska region - a decrease by 4 positions in the ranking, Odeska - by 5. Kharkivska region in the overall ranking on the level of population reproduction ranks 21st - a decrease of 12 points compared to 2010 Lvivska region - +1 position compared with 2014.

Regarding the level of employment of the population, Kharkivska and Lvivska regions have a slight increase of this indicator - by 2 and 1 position respectively. The decrease in positions in the rating for the indicator is observed in the Kievka region - by 5 positions.



Source: calculated by the author according to the State Statistics Committee of Ukraine [1, 4, 5].

Figure 1. Grouping of the regions of Ukraine by the level of modernization of human development.

Kyivska and Kharkivska regions occupy the first places in the level of education of the population. The positive trend in comparison with 2010 is observed in the Lvivska region - the 18th place in 2010 and the 9th in 2015.

According to the level of scientific activity, Kyivska and Kharkivska regions occupy the first places (1st and 2nd respectively), Lvivska region has risen to one position in the ranking (4th place in 2010 and 2014 to 3rd in 2015), and Odeska declined one position (3rd place in 2010 and 2014 to

4th - in 2015)

There are insignificant fluctuations of indicators in all regions-leaders, within 1-3 points on the level of development of material security and comfort of life of the population.

2.2. Regions with MLHD Above Average

According to the level of modernization of human

development, to this group belongs Zaporizka (107%) region, which in the 2014-2015 period is confidently ranked 5th.

Zaporizhzhya region is confidently stepping forward in terms of employment (taking place in 2010 - 14, in 2014 - 8, in 2015 - 5), education (in 2010 - 6, in 2014-2015 - 4 place), scientific activity (2010-2015 - 5 th place) and material security (in 2010 - 7, 2014-2015, -1 place) of the population.

According to the level of population reproduction, Zaporizhzhya region was on the 14th position in the overall rating in 2015, in 2014 this region was on the 6th position.

The region is characterized by a significant deterioration in the indicator of the comfort of life of the population: the 8th in 2010, the 21st in 2014, and the 22nd in 2015, which is due to a decrease in the housing provision.

2.3. Regions with Average MLHD

This group with an average level of development of human potential include Dnipropetrovska (104%), Mykolaiivska (98%), Poltavska (102%), Sumska (101%), Khersonska (96%), Cherkaska (101%) and Chernivetska (96%) regions.

In terms of scientific activity, Poltavska and Sumska regions have a positive trend of development.

The regions with an average level of MLHD decrease in this index within 1-2 points by the level of material security,

According to the level of comfort of life the population of Khersonska region remains at 5 positions in the ranking, Nikolaiivska and Cherkaska regions decreased in the ranking for 1 and 5 positions, respectively, Poltavska and Sumskaregions occupy 13 and 21 places respectively, with +3 and +1 place in the rating. Chernivetska region added 3 positions in the rating in comparison with 2014, and from Dnepropetrovska region - decreased by 4 positions.

Regarding the level of employment of the population, the change index Mykolaiivska region within 1 point. In the Poltavska region - the deterioration of the situation: the 14th place against the 10th in 2014. Sumska region has worsened its position compared to 2010: the decline from 7th to 17th in 2014, and in 2015 only 15th place. Positive dynamics in the Khersonska region - +7 positions. Dnipropetrovsk region occupies the 1st place by the level of employment of the population.

Significant increase in the level of population reproduction is observed in Cherkaska, Mykolaiivska, Poltavska and Chernivetska regions - respectively, at 8, 9, 13 and 3 positions. The deterioration of the situation - in the Sumska region (a decrease of 5 points).

2.4. Regions with Low MLHD

There are outsider regions by the level of modernization of the human development: Vinnytska (93%), Volynska (90%), Zhytomyrska (90%), Zakarpatska (91%), Ivano-Frankivska (93%), Kirovogradska (94%), Rivnenska (91%), Ternopilka (91%), Khmelnytska (94%), Chernihivska (84%) regions.

In terms of population reproduction, the Volynska region ranks 1st place (+2 positions in comparison with 2014 and +9 in 2010).

Improvement of positions in 2015 is typical for the regions: Zhytomyrska (+2 positions in comparison with 2014, +3 from 2010), Kirovogradska (+2 positions in comparison with 2014 and +5 from 2010), Rivnenska (+1 position in comparison with 2014, +8 - from 2010), Khmelnytska (+2 positions in comparison with 2014, but -4 - since 2010). At the same time, positions in the rating of Vinnytska (+3 positions in comparison with 2014), Zakarpatska (-9 positions in comparison with 2014, but +5 in 2010) and Chernihivska (-8 positions in comparison with 2014) worsened. and -5 - from 2010) regions worsened.

According to the level of education of the population in 2015 compared with 2014, Vinnytska (-1 position - 7th place in the rating), Volynska (+5 positions - 13th place), Zhytomyrska (+1 position - 15th place), Zakarpatska (+2 positions - 19th place), Ivano-Frankivska (+4 positions - 18th place), Kirovogradska (+4 positions - 8th place), Rivnenska (2nd position - 22th place), Ternopilka (-1 position - 20th place), Khmelnytska (- 7 positions - 21 place) and Chernihivska (+3 positions - 14 place).

Ternopilka (+3 positions), Rivnenska (+2 positions), Khmelnytska (+2 position) regions had increased the level of scientific activity of the population, while at the same time in Volynska, Zhytomyrska and Ivano-Frankivskaregions had decreased this indicator by 1 position, in Vinnitskaregion- 2.

According to the level of development of material security among these regions the following situation is observed: the increase in the level is Vinnytska (2 positions in comparison with 2014 and 12 compared with 2010), Kirovogradska (3 positions in comparison with 2014 and 7 - as compared to 2010), Ternopilka (5 positions as compared to 2014 and 7 for 2010), Khmelnytska (6 positions compared to 2010, although we have a decrease of 1 position compared with 2014), Chernihivska (10 positions compared to 2010, although we have a decrease of 1 position compared to 2014). At the same time, we see a decrease in the indicator in Ivano-Frankivska (on 2 positions), Zakarpatska and Zhytomyrska (in 1 position) regions.

Improvement of the life comfort level is noted in Vinnytska, Kirovogradska, Ternopilka (1 position), Zhytomyrska (5 positions), Ivano-Frankivska (2 positions), Chernivetska (3 positions) regions. It should be noted that significant fluctuations of this indicator are observed in Volynska (increase by 12 positions), Zhytomyrska (increase by 16 positions), Zakarpatska (increase by 11 positions), Rivnenska (decrease by 12 positions), Ternopilka (decrease by 7) positions) regions.

There are significant difference between the indicators of the employment rate of the population in comparison with 2014 in Volynska (+ 11 positions), Zakarpatska (-7 positions) regions.

3. Conclusions

The monitoring of the modernization state level of the human development of the Ukraine regions made it possible to conduct methodologically correct comparisons of the

modernization state level of the human development on the meso level, and analyze the current state of the individual components: the level of population reproduction, the level of education of the population, the level of scientific activity of the population, the level of material security of the population and comfort level of life of the population. The monitoring will contribute to the creation of scientific support for the adoption of managerial decisions aimed at raising the level of modernization of human development in the context of modern globalization processes.

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