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EFFECT OF THE EDUCATION AND HEALTHCARE SYSTEMS ON THE SOCIAL SECURITY LEVEL IN THE CONTEXT OF GLOBAL GOALS OF SUSTAINABLE DEVELOPMENT

Abstract

The effect of the healthcare and education systems on the level of social orientation of economic development has been studied. It has been identified that low level of social orientation of the countries indicates the existence of national security threats in both economic and social spheres; that requires development of an efficient economic policy taking into consideration the goals of national sustainable development. Social factors have been classified into the following groups: demographic factors; indicators of the education system development; indicators of the labour market conditions; indicators of the healthcare system development; indicators of the system of private income distribution and socio-economic inequality. Two main components of social security have been speci-

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fied based on the sustainable development goals and security factors: education system development and healthcare system development that are characterized by the corresponding groups of indicators. The indicators have been systematized taking into account dynamics of their boundary values and potential trends of changes; the indicators have been applied as the criteria to identify possible critical threats or risks to the security; they also make it possible to timely consider and support the sustainability and security of social development. According to the results of integral estimation, certain countries have been determined to belong either to a group with optimally high security level or to the one with the lowest level. The research results prove the importance of the healthcare and education sectors in the context of both reaching the sustainable development goals and providing high level of social security.

Key words:

Security, social security, sustainable development, education, health care.

JEL: I15, I25, H55, Q01.

Security and sustainable development

Currently, each country of the world is facing a problem of coordinating the issues concerning both implementation of social development goals and search for resources and financial opportunities of reaching them. Social direction of the development of different countries worldwide is limited by the available economic resources as well as the national priorities for their use. However, weight of a social component in the sustainable development, activating economic activity, increasing living standards of the population, and forming high level of human capital, is constantly rising, especially in terms of unstable economic development and sharpening recessional phenomena in the economic progress.

Scientific searches and empiric studies of the formation and provision of economic security have been continuing for a long time. As B. McSweeney (1999) justly notes, security is a human value overlapping with such categories as freedom, order, and solidarity, which should be provided by a state. Scientific developments concerning security estimates are connected with the analysis of

resource allocation and use of economic power (Renner, 2002; Ackroyd, 2006), social conflicts (Maull, 1984), provision of democratic basis of the social development, guaranteeing and implementation of the human rights (Møller, 2008), non-traditional security (Hameiri, 2015; Maier-Knapp, 2015; Caballero-Anthony, 2016), interdependence between the level of human capital development and social security system (Zhang, 2019).

Modern risks of the development of national economic systems are related not only to military conflicts. Conflicts between countries may be caused by non-traditional threats as well; correspondingly, both the state and a citizen are responsible for the security protection. Threats of non-military nature characterized by the transnational scale require non-military measures (Caballero-Anthony, 2016). In terms of intensifying threats for national security, modern states are rather active in implementing a policy of economic nationalism (Reznikova, 2018) to provide economic security and protect own interest as well as the interest of their citizens.

Social security is meant as a set of conditions for the development in terms of which it is possible to reach high level of social interest protection both for each person and for the whole society; moreover, social security involves capability of a government to prevent social challenges, risks, dangers, and threats (Novikova, 2018). In this context, it should be emphasized that social security, as a weighty component of economic security, is under the effect of all other spheres of national security, which risks and threats no doubt stipulate and change the social security factors.

The world countries are characterized by different level of social orientation of their economic development, i.e. it is clear that this level correlates immediately with the achieved level of social development and its stability. Low level of social orientation of the countries demonstrates the available threats to national security in economic and social spheres with the corresponding need in the elaboration of more weighted and efficient economic policy, especially with the consideration of the sustainable development goals (Sustainable Development Goals).

Development of the education system as an indicator of social security

To consider and evaluate the effect of a social component on the support of international economic security of the countries, the research involves systematization of the social factors in terms of the following groups: demographic factors, indicators of the education system development; indicators of the labour market conditions; indicators of the healthcare system development; indicators of the personal income distribution system and socioeconomic inequality.

Table 1 represents evaluation of the parameters of the *education system development* as the social security indicators with the determination of possible threats in terms of possible risks of their changes. In general, education is one of the development drivers, i. e. one of the most effective tools to reduce poverty and improve heath, gender equality, peace, and stability. Education provides considerable and successive returns from the viewpoint of income; it is a factor, which provides equal possibilities for everyone. In terms of a certain personality, education favours his/her employment, high income, improved life quality; as for society, employment promotes long-term economic growth, activation of innovations, reinforcement of institutions, and social cohesion. World practice shows that each additional year of learning provides 9% increase in the hourly wage (The World Bank). Generally, efficient investments in education are of critical importance in the development of human capital and poverty reduction. The developing countries have obtained considerable results in the development of education; however, about 20 million children in the world have no opportunity to attend primary and secondary schools, 53% of all children in the low-income and middle-income countries are not able to read and understand the previously read material.

According to the UN (Sustainable Development Goal 4), irrespective of the significant progress in the access to education over the recent years, 262 million children and youngsters aged from 6 to 17 did not go to educational establishments, and more than a half of them did not have even minimal skills in reading and mathematics in 2017. About 750 million adults (two thirds of them were women) remained illiterate in 2016. Half of the illiterate population lives in South Asia, quarter of them lives in Africa southwards from the Sahara. Majority of the developing countries still lacks basic infrastructure and facilities to provide effective educational environment (access to electric power, Internet, computers, drinking water etc.).

According to the dynamics of the education development indicators within the period of 2000–2018 and variation in terms of the sampling countries under analysis, their boundary values as the security indicators were calculated (Table 2).

Thus, within the analysed period, worldwide government expenditures for education in the GDP structure were rising within the period of 2000-2012 (increase by 8.9% over that period, 0.7% of the average annual increase) but decreasing within the period of 2012–2018. Lower critical boundary of that parameter was 1.49% in 2018 (1.44% in 2000); upper critical boundary was 8.45% in 2018 (7.79% in 2000). In general, there were no considerable dynamic changes over the period under consideration. It should be also noted that among the countries under analysis, countries of European region were characterized by the highest expenditures, i.e. Norway (7.98%), Sweden (7.67%), and Denmark (7.63%); while Bahrain (2.5%), the Philippines (2.65%), and Singapore (2.9%) demonstrated the lowest ones.

Table 1

Indicators of the education development level in the social security system

Indicator/ character of the effect	Characteristics from the viewpoint of the danger level determination	Compliance with the sustainable development goals
Government expenditures for education system, % GDP / Incentive (Exp_{ed})	An indicator characterizing the level and intensity of public funding of the education system. It reflects the priority degree of education development at all state policy levels; the priority increases in terms of the indicator growth	SDG4. Provision of comprehensive and high-quality education and promotion of life-long learning 4.1 By 2030, provide the access to free, equal, and high-quality primary and secondary education 4.4 By 2030, increase the number of young people and adults who have professional knowledge and skills necessary for the labour market to get decent job and salary 4.6 By 2030, provide the conditions to improve population literacy at any age
School enrolment, tertiary, % gross / Incentive (Enr_t)	An indicator representing the ratio of total amount of the higher educational institution entrants, irrespective of their age, to the population of the age group, which corresponds officially to the education level. That is one of the possible indicators of the level of education system development as well as the level of the population education	
Education index (as a component of Human development index) / Incentive (EI)	An integral parameter taking into consideration average duration (years) of studying at school (for adults) and expected duration of school years (for children). The higher the indicator is, the higher the level of population education and accessibility to the educational services is.	

Source: systemised by the authors (Sustainable Development Goal 4)

As for the parameter characterizing a share of school enrolment (tertiary) relative to the number of citizens-potential enrolee, average world index was 38.04% in 2018, being almost twice more than the level recorded in 2000 (19.08%); generally, it demonstrated the upward trend. Considerable variation of the index level in the sampling countries, stipulating the absence of lower boundary values (taking into account high standard deviations, they took on negative values) should be emphasized as well. Upper critical limit of the parameter was 88.69% in 2018 (62.66% in 2000, increment was 41.53%). In terms of the countries under analysis, Australia (113.14%), Korea (94.35%), and Turkey (96%) had the highest level while Angola (9.34%), Nigeria (10.17%), and Yemen (10.15%) demonstrated the lowest one.

Table 2

Dynamics of boundary values of the education development indicators in the security system of the world countries within the period of 2000–2018

Indicator	Boundary values*	Years						Relative change 2018 / 2000, %
		2000	2004	2008	2012	2016	2018	
Government expenditures for education system, %	WA	4.61	4.65	4.63	5.02	4.98	4.97	7.75
	LC	1.44	1.44	1.10	1.56	1.55	1.49	3.82
	LT	3.03	3.05	2.87	3.30	3.27	3.24	6.82
	UT	6.20	6.26	6.39	6.74	6.69	6.70	8.20
	BK	7.79	7.87	8.17	8.48	8.41	8.45	8.47
School enrolment, tertiary, %	WA	19.08	23.68	27.06	32.72	37.39	38.04	99.39
	LC	0	0	0	0	0	0	-
	LT	0	0	0.53	7,74	11.72	12.80	-
	UT	40.80	47.89	53.59	57.70	63.07	63.28	55.10
	BK	62.66	72.26	80.30	82.85	88.92	88.69	41.53
Education index	WA	0.52	0.55	0.58	0.61	0.63	0.63	22.67
	LC	0.19	0.23	0.27	0.31	0.35	0.36	89.89
	LT	0.35	0.39	0,43	0.46	0.49	0.50	40.54
	UT	0.68	0.70	0.73	0.75	0.77	0.77	13.40
	UC	0.84	0.86	0.89	0.90	0.91	0.91	7.69

Source: created by the authors.

Concerning the education index being a component of the UNO human development index (United Nations Development Programme), one can observe an upward trend of the education level in the world, i.e. average world value of that index increased by 22.67% from 0.52 in 2000 up to 0.63 in 2018. Lower critical boundary of the index was 0.36 in 2018 (0.19 in 2000); upper critical boundary was 0.91 in 2018 (0.84 in 2000). Among the countries under consideration, Germany (0.946), Great Britain (0.916) and Norway (0.919) showed the highest index value; the lowest one was demonstrated by Yemen (0.347), Nigeria (0.486), and Angola (0.498).

Table 3 represents the results of the countries' being in different security zones in terms of indicators of education development within the period of retrospective analysis (years of 2000 and 2018).

Table 3

Evaluation of risks and threats to the national security in terms of the education development indicators

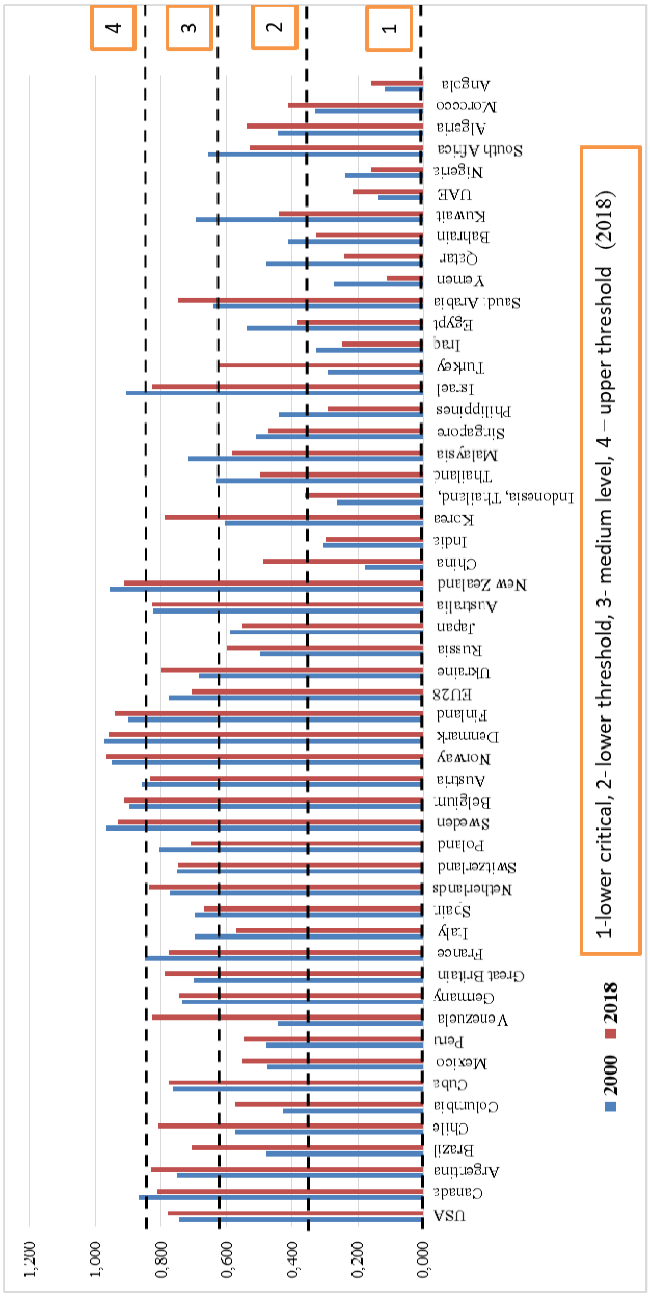
Indicators	2000		2018	
	Zone of relative danger (risks) UT–UC, LC–LT	Zone of critical danger (<LC, >UC)	Zone of relative danger (risks) UT–UC, LC–LT	Zone of critical danger (<LC, >UC)
Government expenditures for education system, % ($GExp_{ed}$)	*6 countries (11.3%)* LC-LT: Russia, China, Indonesia, Turkey, Bahrain, Angola	*1 country (1.9%)* < LC: UAE	*5 countries (9.4%)* LC-LT: Singapore, Qatar, the Philippines, UAE, Bahrain	-
School enrolment, tertiary, % (SE_{tert})	–	–	*3 countries (5.7%)* LC-LT: Angola, Yemen, Nigeria	–
Education index (EI)	*3 countries (5.7%)* LC-LT: Angola, Yemen, Morocco	–	*2 countries (3.8%)* LC-LT: Angola, Nigeria	*1 country (1.9%)* < LC: Yemen

Source: created by the authors based on data of UNCTAD.

Thus, according to the analysed education indicators, only one country per year was in the critical security zones: UAE (2000, in terms of the educational expenditures, and Yemen (2018, in terms of the education index). Zone of danger or relative danger also covered just several countries (as of 2018 – up to 9.4% of the totality) – those are the least developed countries of African region (Yemen, Angola, and Nigeria) and some Asian countries (the Philippines and Singapore in 2018). Fig.1 shows the calculation results of a social security subcomponent in terms of the analysed sampling of the countries within the period of 2000–2018.

Fig. 1

Distribution of the countries in terms of the integral level of an education component of social security



Source: created by the authors based on data of UNCTAD.

Thus, such countries as Norway (0.966), Denmark (0.958), Finland (0.94), Sweden (0.93), Belgium (0.91), and New Zealand (0.91), i. e. highly developed European countries (except New Zealand), demonstrated the highest integral estimates in term of education level in the social security structure. Values of security indices for those countries were beyond the level of the upper threshold value (0.853 in 2018) making it possible to include them in a group with the optimally high security level as for the education indicators.

Indonesia (0.362), Bahrain (0.324), India (0.297), the Philippines (0.292), Iraq (0.245), Qatar (0.240), UAE (0.214), Nigeria (0.158), Angola (0.157), and Yemen (0.111) being the developing (mostly, African) countries got the lowest integral security estimates in that component. Security index values in those countries were beyond the lower threshold value (0.381 in 2018) making it possible to include them into a group of relative danger.

Concerning the regularities of the dynamics of integral sub-index of the national development level, we have the following: *first group of countries* characterized by the downward trend in the security sub-index level (the index reduction in 2018 comparing to 2000) – 20 countries of the sampling (37.7%) among which the developing countries showed the fastest decrease in that index, i. e. Yemen (–59.4%), Qatar (–49.6%), and Kuwait (–36.3); in terms of the developed countries, there were Italy (18.1%), Poland (11.7%), and Canada (–6.3%). *Second group of countries* characterized by the upward trend in the security level – 33 countries of the sampling (62.3%) among which China (2.8 times), Turkey (2.2 times), and Venezuela (86.8%) showed the highest rates of the index increase.

Table 4 demonstrates the results of classification of the sampling countries in terms of the level of education development as a social security component taking into consideration the calculated boundary values.

Table 4

Groups of countries in terms of the integral level of education as a social security component

Variation range of the security indices	Security level	Value (of the estimate 2018)	Countries
LC-LT (range of values between the lower critical and lower threshold ones)	Dangerous level	<0.381	*10 countries (18,9%)* Indonesia, Bahrain, India, the Philippines, Iraq, Qatar, UAE, Nigeria, Angola, Yemen *Average 0.240*

Variation range of the security indices	Security level	Value (of the estimate 2018)	Countries
LT-WA (range of values between the lower threshold and average worldwide ones)	Unsatisfactory level	0.381–0.617	*15 countries (28.3%)* Russia, Malaysia, Columbia, Italy, Japan, Mexico, Peru, Algeria, RSA, Thailand, China, Singapore, Kuwait, Morocco, Egypt *Average 0.506*
WA-UT (range of values between the average worldwide and upper threshold ones)	Satisfactory level	0.617–0.853	*22 countries (41.5%)* the Netherlands, Austria, Argentina, Venezuela, Israel, Australia, Canada, Chile, Ukraine, Korea, Great Britain, he USA, France, Cuba, Saudi Arabia, Switzerland, Germany, Poland, Brazil, UN28, Spain, Turkey *Average 0.770*
UT-UC (range of values between the upper threshold and upper critical ones)	Safe level	> 0.853	*6 countries (11.3%)* Norway, Denmark, Finland, Sweden, Belgium, New Zealand *Average 0.936*

Source: created by the authors.

Thus, 52.8% of the countries are relatively safe (groups 3, 4), the rest is within the risk zone that affects negatively the social security level.

Indicators of the healthcare development in the system of social security

Next component of social security is represented by a group of indicators characterizing *healthcare system development*; their characteristics from the viewpoint of the sustainable development goals and security factors are represented in Table 5.

Table 5

Indicators of the healthcare development in the system of social security

Indicator/ character of the effect	Characteristics from the viewpoint of the danger level determination	Compliance with the sustainable development goals
Government expenditures for healthcare, % GDP / Incentive ($GExp_h$)	An indicator characterizing the intensity of healthcare public financing. It represents the priority of that sphere development in the state policy, level of orientation to the public health support. If the indicator grows, there arises the possibilities to improve healthcare system resulting in positive influence on the social security level	SDG 3. Support healthy lifestyle and welfare at any age 3.8 Provide overall coverage with the healthcare services, including financial risks protection, access to high-quality basic medical and sanitary services, and overall access to safe, efficient, high-quality, and inexpensive basic pharmaceutical products and vaccines 3.c Raise considerably healthcare financing as well as enrollment, development, professional training, and retaining of medical staff in the developing countries, especially in the least developed ones
Physicians per 1,000 people / Incentive (Ph)	An indicator of the healthcare system development. Its decrease or its minor value may be considered as the social security threat	
Incidence of tuberculosis (registered cases per 100,000 people) / Disincentive (Inc_{tub})	Indicators demonstrating the disease incidence rate in population in terms of the most dangerous categories of the infectious diseases being under close attention in terms of the sustainable development support (goal 3). Decrease in the indicator level shows the increasing efficiency of the healthcare system, efficiency of the preventive measures and treatment methods resulting in the improved overall level of the national welfare and identifying the growing security level	3.3 By 2030, eliminate epidemics of AIDS, tuberculosis, malaria, and tropical diseases, which were not paid proper attention to, and provide control of hepatitis, water-borne diseases, and other infectious diseases 3.d Increment the potential of all countries, especially, of the developing ones, in the sphere of early prevention, risk reduction, and control of national and global health risks
Incidence of HIV (registered cases per 1,000 people at the age of 15–49) / Disincentive (Inc_{HIV})		
Incidence of malaria (registered cases per 1,000 people within the risk zone) / Disincentive (Inc_{mal})		

Source: systemised by the authors (Sustainable Development Goal 3).

Analysis of the results of the UNO studies concerning the problems of reaching SDG 3 (Sustainable Development Goal 3) and reports of the World Health Organization (World Health Organization) has helped single out the following features of the healthcare development in the world. A share of healthcare government expenditures is 10.6% (2016) fluctuating within the limits of 2-20% of the national level of development. If income level in a country is low, its average value is 6.6%; high-income countries show the value of more than 14%. Provision with high-skilled medical staff is the indicator of healthcare system development. Level of the latter is also in close correlation with the income level. According to the recent data (2013–2018), it is identified that almost 40% of the world countries have less than 10 physicians per 10,000 people. Moreover, their shortage is observed in 90% of the low-income countries comparing to only 5% of the high-income countries with that problem. According to the WHO, global level of the medical staff deficit will be 10 million by 2030 (first of all, that is about the low- and middle-income countries) (World Health Organization, 2019). Official support of the healthcare sector development from all donors has increased by 61% (10.7 billion USD in 2017), i. e. 2.0 billion USD were spent for malaria control, 1.0 billion USD was spent for tuberculosis control, and 2.3 billion USD were spent for the control of other infectious diseases (Sustainable Development Goal 3).

Level of accessibility to the necessary costly healthcare products at any time and in the required pharmaceutical form is one more indicator of the healthcare system development. The study carried out by the WHO (16 countries of different regions) has identified that only 15.5% of the examined objects are provided with the necessary pharmaceutical products (public institutions demonstrate higher estimates). Healthcare system development depends on the implementation of the research results and development of new medicines and treatment modes. According to the OECD, only 18 of 139 countries (13%), which get external financing, reach the stated goals in the healthcare development. Main indicators used by the UNO to estimate reaching of the sustainable development goals in the sphere of healthcare are as follows: length of life (demonstrates the upward trend globally as it has been mentioned earlier), indices of female reproductive health, newborn health, mother and child health, indices of infectious and noninfectious disease rate, indices of the healthcare system conditions and level of its financing.

As for the length of life, it is by18.1 years lower in the low-income countries (62.7 years) comparing to the ones with high-income level (80.8 years) with the available global difference by 4.4 years between men and women. The WHO highlights the following causes affecting the life shortening in the low-income countries: respiratory infections, intestinal upsets, insults, HIV/AIDS, tuberculosis, ischemic heart diseases, malaria, road accidents, infantile asphyxia and birth injury as well as protein-energetic malnutrition. In terms of high-income countries, untimely death is often connected with the environmental factors or unhealthy lifestyle. As for the group of indicators of female reproductive health, newborn health, mother and child health, there is the considerable improvement in the

low-income countries, i. e.: reducing number of women dying in childbirth (1 woman per each 500 childbirths in 2015), baby delivering by the qualified staff (81% in 2018), decreasing level of under-5 mortality (39 per 1000 in 2017), decreasing neonatal mortality (18 per 1000 in 2017); active immunization of population, increasing rate of vaccination (85% in 2017), widening access to modern contraceptive measures (76% of women of reproductive age in 2018).

Concerning the disease rate of the world population, HIV incidence rate among the adults at the age of 15–49 reduced by 43.7% within the period of 2000–2017 showing 0.4 per 1000 people. High tuberculosis rate was preserved – 134 cases per 100,000 people in 2017, though there was the downward trend (by 22% over 2000–2017). Malaria incidence rate remains high in African countries (90% of the world cases), i. e. in 2017, 219 million cases were registered resulting in 236,000 deaths. According to the dynamics of the indicators of healthcare system development within the period of 2000–2018 and variation in terms of the sampling countries under analysis, their boundary values as the security indicators were calculated (Table 6).

Thus, the period under analysis demonstrates the increase in a share of government expenditures for healthcare in terms of the world GDP by 17.1% being 10.02% (2016). Lower critical boundary is estimated to be 3.53%; upper threshold value is 6.79%. Upper critical value is formed according to the data of 2018; that value is 16.5% being by 23.2% higher than the level of 2000 (13.41%). According to the data of 2016, the USA (17.07%), Switzerland (12.25%), Cuba (12.19%), Brazil (11.71%), France (11.54%), and Germany (11.17) demonstrate the highest value of the healthcare expenditures; that parameter is higher than the average world level in the majority of European countries. That value in Angola (2.88%), Qatar (3.08%), Indonesia (3.12%), and Iraq (3.31%) is the lowest one.

World level of the population's provision with the pharmaceutical products is 1.59 per 1,000 people (the data of 2018) being 22.6% higher than the level recorded in 2000. Lower threshold value, identifying the threat, is estimated to be 0.02.

Indices of the main infection disease rate, being the disincentives, detect critical danger in terms of the upper critical values. Thus, in 2018, world tuberculosis incidence rate was 132,000 per 100,000 people being by 23.3% less than the level of 2000; in this context, upper critical value was estimated to be 373 cases being by 14.1% lower than the level of 2000 (434 cases). World HIV incidence rate was 0.39 per 1,000 people being by 45.1% lower than the level of 2000; in this context, upper critical level was estimated as 2.8 cases being by 60% lower than the level of 2000 (7 cases). Malaria incidence rate over the world was 59.12 per 1,000 people being by 25% lower than the level of 2000; here, upper critical value was estimated as 147.7 cases being by 25.6% lower than the level of 2000 (198.51 cases). Table 7 shows the results of the presence of different sampling countries in different danger zones in terms of their indicators of healthcare system development within the period of retrospective analysis (years of 2000 and 2018).

Table 6

Dynamics of the boundary values of the indicators of healthcare system development in the world within the period of 2000–2018

Indicator	Boundary values*	Years							Relative change 2018/ 2000, %
		2000	2004	2008	2012	2016	2017	2018	
Government expenditures for healthcare system, % GDP ($GExp_h$)	WA	8.56	9.35	9.06	9.46	10.02	10.02	10.02	17.1
	LC	3.71	4.11	3.30	3.13	3.53	3.53	3.53	–4.9
	LT	6.15	6.74	6.19	6.31	6.79	6.79	6.79	10.4
	UT	10.98	11.96	11.93	12.62	13.26	13.26	13.26	20.8
	UC	13.41	14.58	14.83	15.79	16.51	16.51	16.51	23.2
Physicians per 1,000 people (Ph)	WA	1.29	1.18	1.28	1.37	1.56	1.59	1.59	22.6
	LC	0	0	0	0	0	0	0	–
	LT	0.01	0.01	0.01	0.01	0.01	0.02	0.02	100.0
	UT	2.63	2.53	2.65	2.78	3.11	3.15	3.15	19.7
	UC	3.98	3.88	4.03	4.20	4.67	4.73	4.73	18.8
Incidence of tuberculosis (per 100,000 people) (Inc_{tub})	WA	172	171	162	150	137	134	132	–23.3
	LC	0	0	0	0	0	0	0	–
	LT	41	16	11	14	9	10	12	–70.7
	UT	303	326	325	304	265	258	252	–16.7
	UC	434	483	490	460	395	382	373	–14.1
Incidence of HIV (per 1,000 people) (Inc_{HIV})	WA	0.71	0.58	0.50	0.46	0.41	0.40	0.39	–45.1
	LC	0	0	0	0	0	0	0	–
	LT	0	0	0	0	0	0	0	–
	UT	3.84	3.26	2.80	2.28	1.87	1.73	1.59	–58.6
	UC	7.00	5.96	5.11	4.11	3.33	3.08	2.80	–60.0
Incidence of malaria (per 1,000 people) (Inc_{mal})	WA	78.87	75.30	75.30	65.89	59.29	59.12	59.12	–25.0
	LC	0	0	0	0	0	0	0	–
	LT	19.25	17.42	19.71	12.78	15.34	14.98	14.98	–22.2
	UT	138.49	133.18	130.89	119.00	103.25	103.27	103.27	–25.4
	UC	198.51	191.44	186.85	172.46	147.49	147.70	147.70	–25.6

Source: created by the authors.

Table 7

Estimates of the national security risks and threats in terms of the indicators of healthcare system development

Indicators	2000		2018	
	Zone of relative danger (risks) UT-UC, LC-LT	Zone of critical danger (<LC, >UC)	Zone of relative danger (risks) UT-UC, LC-LT	Zone of critical danger (<LC, >UC)
Government expenditures for healthcare system, % GGP (GExph)	*16 countries (30.2%)* LC-LT: Yemen, Morocco, Saudi Arabia, Egypt, Turkey, Korea, India, China, Russia, Ukraine, Poland, Great Britain, Peru, Mexico, Venezuela, Columbia	*13 countries (24.5%)* <LC: Angola, Algeria, Nigeria, UAE, Kuwait, Bahrain, Qatar, Iraq, the Philippines, Singapore, Malaysia, Indonesia, Thailand	*20 countries (37.7%)* UT-UC: Yemen, Kuwait, Algeria, Bahrain Morocco, Saudi Arabia, China, Egypt, Turkey, India, Russia, Ukraine, Poland, Peru, Mexico, Columbia, the Philippines, Singapore, Malaysia, Thailand	*6 countries (11.3%)* <LC: Angola, UAE, Qatar, Iraq, Indonesia, Venezuela
Physicians per 1,000 people (Ph)	–	–	–	–
Incidence of tuberculosis (per 100,000 people) (Inctub)	*5 countries (9.4%)* UT-UC: Indonesia >WA: Nigeria, Thailand, India, Peru	*2 countries (3.8%)* >UC: the Philippines, RSA	*5 countries (9.4%)* UT-UC: Angola, Indonesia >WA: Nigeria, Thailand, India	*2 countries (3.8%)* >UC: the Philippines, RSA
Incidence of HIV (per 1,000 people) (IncHIV)	*3 countries (5.7%)* UT-UC: - >WA: Algeria, Thailand, Ukraine	1 *country (1.9%)* >UC: RSA	*7 countries (13.2%)* UT-UC: Angola >WA: Algeria, Nigeria, Russia, Ukraine, Brazil, Chile	1 *country (1.9%)* >UC: RSA
Incidence of malaria (per 1,000 people) (Incmal)	–	*2 countries (3.8%)* >UC: Angola, Nigeria	–	*2 countries (3.8%)* >UC: Angola, Nigeria

Source: created by the authors.

Thus, according to the analysed indicators of the healthcare development, 11.3% (2018) and 24.5% (2000) of the countries entered the critical zones in terms of the level of their healthcare financing (developing countries of Africa and Asia); in this context, 37.7% (2018) and 30.2% of the countries (2000) were in the risk zone (in 2000, such developed countries as Poland and Great Britain were among them).

Concerning the provision with physicians, none of the countries entered critical zones. As for the disease incidence, minority of the countries are in the critical zones (up to 3.8%): the Philippines and RSA (tuberculosis cases), RSA (HIV cases), and Angola and Nigeria (malaria cases). In terms of the disease incidence rate, the countries where incidence rate exceeded the world average values were included in the zone of relative danger. As a result, in 2018, 9.4% of the countries were in the zone of relative danger in terms of tuberculosis cases, 13.2% – in terms of HIV cases.

Fig. 2 shows the calculation results of an integral sub-index of the healthcare development level in social security in terms of the analysed sampling of the countries within the period of 2000–2018.

Thus, such countries as Switzerland (0.801), Cuba (0.790), the USA (0.787), Sweden (0.775), Germany (0.773), Norway (0.764), France (0.759), Austria (0.758), Denmark (0.757), and the Netherlands (0.745) demonstrate the highest integral values in terms of their healthcare development, i.e. except for Cuba, all the countries are developed and mostly European ones. The lowest integral security values are obtained in Thailand (0.280), India (0.254), Indonesia (0.160), he Philippines (0.071), Angola (0.045), Nigeria (0.01), and the Republic of South Africa (0.001) being the developing Asian and African countries.

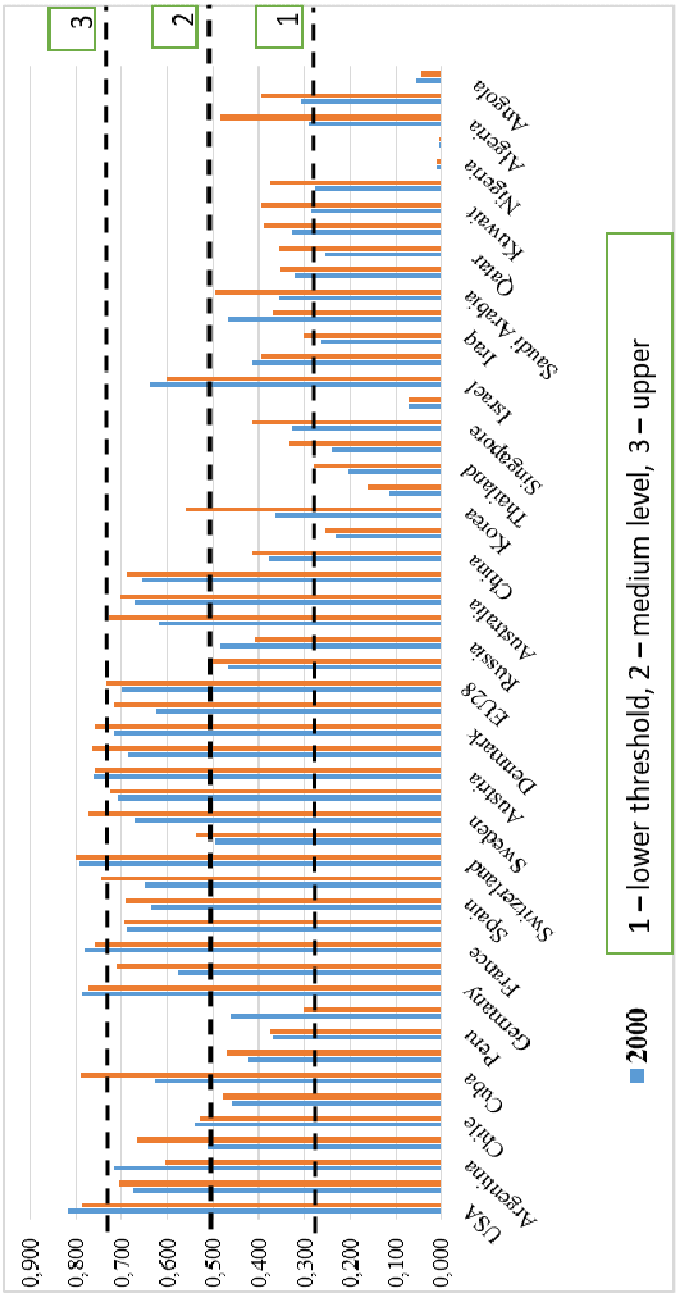
Concerning the regularities of the dynamics of a subindex of healthcare development level, we have the following: *first group of countries* characterized by the tendency of the security subindex decrease – 13 countries of the sampling (24.5%), among which there are such countries as Venezuela (34.4%), Egypt (–21.1%), Argentina (–15.6%), Russia (–15.6%), and Angola (–15,8%) where that value decreased in the most rapid way; those are the countries of the second half of the rating. *Second group of countries* characterized by the tendency of the security subindex increase – 40 countries of the sampling (75.5%), among which such low-income countries as Algeria (65.1%), Indonesia (41.1%), Saudi Arabia (40.7%), and Korea (53.7%) demonstrated the most rapid increase in that index values. Countries with a high index value are characterized by the moderate rate of changes being the result of their sustainable development.

Table 8 shows the results of classification of the sampling countries in terms of the level of their healthcare development as a social security component taking into consideration the calculated boundary values.

Thus, 41.5% of the countries are relatively safe (groups 3 and 4); the rest is in the risk zone that affects negatively the overall level of social security.

Fig. 2

Distribution of the world countries in terms of their integral level of healthcare development as a social security component



Source: created by the authors based on data of UNCTAD.

Table 8

Groups of countries in terms of their integral level of healthcare development as a social security component

Variation range of the security indices	Security level	Values (estimates 2018)	Countries
LC-LT (range of values between the lower critical and lower threshold ones)	Dangerous level	<0.288	*7 countries (13.2%)* Thailand, India, Indonesia, the Philippines, Angola, Nigeria, the Republic of South Africa *Average 0.117*
LT-WA (range of values between the lower threshold and worldwide average ones)	Unsatisfactory level	0.288–0.512	*20 countries (37.7%)* Ukraine, Saudi Arabia, Algeria, Columbia, Mexico, Singapore, China, Russia, Kuwait, Morocco, Turkey, Bahrain, UAE, Peru, Egypt, Qatar, Yemen, Malaysia, Iraq, Venezuela *Average 0,400*
WA-UT (range of values between the worldwide average and upper threshold ones)	Satisfactory level	0.512–0.735	*16 countries (30.2%)* UN28, Japan, Belgium, Finland, Great Britain, Canada, Australia, Italy, Spain, New Zealand, Brazil, Argentina, Israel, Korea, Poland, Chile *Average 0.662*
UT-UC (range of values between the upper threshold and upper critical ones)	Safe level	> 0.735	*6 countries (11.3%)* Switzerland, Cuba, the USA, Sweden, Germany, Norway, France, Austria, Denmark, the Netherlands *Average 0.771*

Source: created by the authors.

Conclusions

The research results prove the importance of the education and healthcare sectors in the context of both reaching sustainable development goals and providing high social security level. The systematized indicators that take into account dynamics of their boundary values and potential trends of changes may be applied as the criteria to identify possible critical threats or security risks, timely analysis of which helps support stability and security of social development.

The performed calculations have demonstrated that 52.8% of the countries are relatively secure in terms of education; 41.5% of them are relatively secure in terms of their healthcare development. As for some specific healthcare indicators, majority of the analysed countries is in the zones of critical or relative danger, demonstrating considerable degree of negative effect of those factors on the level of social and, consequently, economic security.

According to the results of integral estimation, the countries belonging to a group with optimally high security level as per their education indicators (Norway, Denmark, Finland, Sweden, Belgium, and New Zealand) consider education both as the basis to provide high level of human development and as the driver for innovative development. The countries with lower positions according to their integral estimates on education (Yemen, Angola, Nigeria, UAE, Qatar, Iraq, and the Philippines etc.) should increase their accessibility level and level of population's provision with quality educational services, which will cause an increase in literacy levels and therefore an opportunity to ensure a high level of income and its equal distribution.

As for the integral healthcare estimate, the countries belonging to the dangerous group (Thailand, India, Indonesia, the Philippines, Angola, Nigeria, South Africa, etc.) should focus their attention on providing a much higher level of qualified medical staff and pharmaceutical products, and a better overall accessibility to medical services, which will result in decreased disease incidence rates and increased life expectancy of their population.

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