ATLANTIS
PRESS

Advances in Social Science, Education and Humanities Research, volume 364

International Conference on Sustainable Development of Cross-Border Regions: Economic, Social and Security Challenges (ICSDCBR 2019)

Social risks in cross-border regions: The case of the Siberian Federal District

E Morozova[1], N Egorova[1*] and O Miller[1]

[1] Kemerovo State University, 6 Krasnaya str., Kemerovo 650000 Russia

E-mail: gukkkk@nextmail.ru

Abstract. The life of people is associated with a variety of risks, the most common among which are social influences on almost all aspects of social functioning and development. It is proposed to measure the level of social risks in the regions using a number of statistical indicators, while comparing them with the national values. The authors' methodology has been applied to analyze the social risks of "internal" and cross-border regions of the Siberian Federal District. This methodology has revealed a markedly greater scale of social vulnerability of the population in cross-border areas, especially in the following indicators: infant mortality, unemployment rate, poverty scale, migration rate.

Keywords: risk, social risks, Siberian Federal District, cross-border regions

1. Introduction

As of today, more than twenty constituent entities of the Russian Federation are territories whose development and existence is closely related to cross-border factors. Consequently, they cause certain risks. The Siberian Federal District (SFD) is not an exception, as it borders with three states. Currently, the composition of the SFD includes ten regions. But until November 2018, the district included two more (Republic of Buryatia and Trans-Baikal Region). Five of these twelve subjects of the federation are "internal" (Republic of Khakassia, Krasnoyarsk Region, Irkutsk Region, Kemerovo Region, Tomsk Region), and seven of them are cross-border (Omsk and Novosibirsk Regions, Altai Region and Republic of Altai border Kazakhstan; Altai Republic, Tyva Republic, Buryatia Republic, and Trans-Baikal Region have a border with Mongolia; Altai Republic and Trans-Baikal Region border China).

Speaking about the risk component, it is important for us to note the lack of knowledge about the risks of cross-border areas, which, first of all, is related to the specificity of the object under study. Studying the risks of cross-border regions and their correct management is an important prerequisite for ensuring favorable living conditions for the population and reducing potential economic losses [10].

The purpose of this work is to identify and describe the risks of cross-border territories, conduct an analysis of social risks of the regions of the Siberian Federal District, which are differentiated according to their cross-border nature and in the basis of the authors' methodology.

2. Materials and Methods

Classical and contemporary risk studies have become the methodological basis of the study. Traditionally, risk is understood as a possible danger of loss arising from the specifics of certain phenomena of nature and the activities of human society [1, p. 21]. Risks are classified for various reasons into different types depending on the level, type of danger, objects at risk, the events causing a threat, etc. But the "human factor" is present in most of the risks: either certain human activities determine this risk, or social actors are endangered, or both at the same time, which speaks of the "sociality" of these risks.

Many classic works and the latest developments of foreign and domestic scientists are devoted to the study of social risks. A point of view expressed by V. I. Sharin is closer to the authors of the study, which defines social risks as "the risks to which most of the members of society are exposed, characterized by the probability of universal losses affecting the elements of the quality of life of people and minimized under the condition of social responsibility of all members of society" [2 p. 119]. This position demonstrates that social risks are a complex result of various actions of a variety of social actors and affect the life of society, its institutions in various areas of operation.

Analysis and synthesis of various definitions of social risk makes it possible to distinguish the following features: (a) universality (spreading to a large part of society); (b) inevitability (impossibility of complete elimination); (c) impact on people's quality of life; (d) crisis susceptibility (source of economic, political and other crises).

Social risks, like risks in general, are quite difficult to measure. The authors of this study to determine the overall level of social risks within the region proceeded from a number of indicators that clearly demonstrate various components of the level and living conditions, based on the following logic: the higher the material and social well-being of the population, the lower the likelihood of social risks (see Tables 1 and 2). The technique involves comparing the corresponding statistical data in the context of regions with the all-Russian indicators by the formula [for details see 3, p. 50-51]:

$$Oi = Pi - F \ / \ |F| \ * 100, \tag{1}$$

where Oi is the deviation of the i-th region; Pi is a value of the regional indicator; F is a value of the federal indicator.

The obtained deviations show how much a regional indicator is "better" or "worse" than the average Russian one. If it is "better", it has a positive sign. A negative sign demonstrates "worse" performance. It was taken into account that a number of indicators have a direct relationship with the level of social risks (the higher they are, the higher the risk level), and a number is reversed.

An aggregate level of social risks was determined as the arithmetic average value of deviations for 11 indicators. All indicators (both private and aggregate) for two types of regions (cross-border and "internal" ones) were calculated separately. The developed methodology was applied to analyze a risk level of the territories of the Siberian Federal District using official statistics for 2017, when 12 regions were included in the number of Siberian Federal District.

3. Results

Table 1 presents the indicators included in calculating the level of social risks [4]. For two indicators (a scale of poverty anda number of registered crimes per 100,000 population), all regions of the Siberian Federal District had higher rates than in Russia as a whole, which means they "worked" to increase social risks. Only in Khakassia, the unemployment rate was lower than the national one. In all other territories of the Siberian Federal District, it was higher than this value, and 3.5 times higher in the Tyva Republic. In three regions (Khakassia, Novosibirsk and Tomsk regions), the infant mortality rate is lower than the federal indicator.

The number of divorces per 1,000 marriages is lower in Buryatia, the Tomsk region, and in Tyva (almost twice), but it is equal to the federal indicator in the Irkutsk region. In five regions – Buryatia, Tuva, Trans-Baikal region, Novosibirsk and Tomsk regions, – an overall incidence rate is lower than

the Russian one. And according to one indicator (a ratio of funds), all territories had lower values than in the Russian Federation as a whole.

Table 1. Indicators characterizing a level of social risks in the Russian Federation and regions of the Siberian Federal District in 2017.

Indicators	Russian Federation	Altai Republic	The Republic of Buryatia	Tyva Republic	The Republic of Khakassia	Altai region	Trans-Baikal region	Krasnoyarsk region	Irkutsk region	Kemerovo region	Novosibirsk region	Omsk region	Tomsk region
Direct indicators													
Scale of poverty, %	13.2	25.8	18.1	40.5	18.0	17.5	21.2	18.5	18.4	15.3	16.5	13.9	17.1
Funds ratio	15.3	10.7	14.0	10.6	10.9	12.2	11.8	13.3	10.6	10.2	10.7	13.4	10.3
Unemployment rate, %	5.2	12.0	9.6	18.3	4.9	6.9	10.7	5.7	8.7	7.1	6.0	7.0	6.3
Morbidity per 1,000 peoples	778.9	930.2	632.5	643.3	921.0	1088	707.7	795.6	980.6	890.5	763.6	823.0	714.5
Infant mortality rate, per 1000 live births	5.6	9.9	6.1	8.6	5.2	7.1	5.7	6.3	7.1	6.9	4.9	6.9	4.3
Crimes per 100,000 peoples (registered)	1402	2129	2399	3645	2144	1699	2509	1776	1913	2112	1593	1448	1741
Divorces per 1,00 marriages	582	583	551	251	620	704	625	611	582	671	614	615	572
Inverse performance													
GRP per capita, thousand rubles	510.2	204.9	204.8	184.6	386.1	215.8	279.4	654.5	495.3	391.6	409.8	331.1	473.8
Life expectancy, years	72.7	71.15	70.69	66.29	70.21	71.10	69.64	70.61	69.19	69.35	71.57	71.49	72.02
Migration gain per 10,000 peoples	14	-13	-35	-33	-1	-34	-74	3	-25	-15	38	-50	-11
Per capita cash income per month, rubles	31422	18411	25040	14048	21209	22165	23267	28047	22412	21849	25313	25223	24457

A study of indicators that are in feedback with the level of social risks showed that for two of them (life expectancy and an average per capita cash income per month), all regions of the Siberian Federal District were in a worse situation compared to Russia as a whole. Only in the Krasnoyarsk region, the GRP per capita is higher than in the Russian Federation, and the migration growth rate is higher only in the Novosibirsk region.

As already noted, to obtain an aggregate indicator of the level of social risk, negative deviations (in %) of all analyzed indicators from the all-Russian level were calculated (both by regions and by its two groups – "internal" and "cross-border"), the average values were determined. As a result, the Republic of Tyva (85.9%) and the Trans-Baikal region (77.2%) turned out to be the most problematic in terms of the level of social risk, and the territory with the minimum level of social risk was the Novosibirsk region. This is the only region in the Siberian Federal District that has a 9.7% lower social risk than in Russia.

Table 2 includes data for the Siberian Federal District and for the two types of regions mentioned, depending on their transboundary nature. An average value of the level of social risk in the SFD was 39.7%. Negative migration, high unemployment, poverty and crime especially increase the likelihood

of social risks. In the Siberian Federal District, only two characteristics (stratification of the population by income level and the strength of marriages) are more positive than in the Russian Federation.

Table 2. A level of social risks (negative deviation from a general level of the Russian Federation), %.

Indicators	SFD	Internal regions	Cross-border regions
Scale of poverty	52.0	32.3	66.1
Funds ratio	-24.5	-27.7	-22.1
Unemployment rate	65.4	25.8	93.7
Morbidity per 1,000 peoples	5.8	10.4	2.5
Infant mortality rate	17.6	6.4	25.5
Number of recorded crimes	49.2	38.2	57.2
Divorces per 1,000 marriages	0.2	5.0	-3.2
Life expectancy	3.3	3.3	3.3
Migration growth rate	248.8	170.0	305.1
Per capita cash income per month	28.0	24.9	30.2
Social risk level	**39.7**	**24.5**	**50.6**

A comparison of the analyzed indicators in the two groups of regions showed that cross-border regions of the federation are experiencing a noticeably more powerful risk load than the "internal" ones, primarily according to criteria such as infant mortality, unemployment, poverty rates, migration outflow of the population. However, in terms of three indicators (coefficient of funds, general morbidity, and the number of divorces), the situation in the cross-border regions is better than in the "internal" ones. In general, the level of social risks in the cross-border territories of the Siberian Federal District is two times higher than in other.

4. Discussion

The analysis of statistical data showed that the majority of the cross-border territories of the Siberian Federal District are experiencing increased stress from social risks. Other researchers and some real-life examples confirm this. At the same time, cross-border risks can be meaningfully differentiated into different groups.

At present, the socio-economic risks of cross-border areas are among the main ones. This is due to the fact that economic reforms lead to a change in the territorial structure of the economy [5]. Suchh factors such as a salary level, a population size, a level of education influence cross-border interaction [6, p. 29]. A special factor in cross-border risks is population migration, which affects not only socio-economic, but also other interstate relations.

Technogenic risks of cross-border areas arise as a result of accidents and disasters at the facilities of the technosphere, environmental degradation during human activity. For example, a serious reduction in river flow was due to the active exploitation of the Ishim River by reservoirs in Kazakhstan. On the territory of Russia, the Ishim River is at risk of low water, which is accompanied by the overgrowing of the river bed. Another fact: China, on the banks of the Argun River, locates large chemical enterprises that do not have highly efficient water treatment plants, which negatively affects the ecological situation in the Trans-Baikal Region [7, 8].

The natural risk of cross-border territories is defined as the onset of the effects of natural phenomena. There was an active surge of harmful insects (for instance, the Siberian silkworm and locust migrated from Mongolia to the territory of the Republic of Tyva in 2011). The expansion of habitats of these insects is due to the fact that in Mongolia, the devastation of human settlements occurs, abandoned plowed areas arise, and the animals remain unattended. Another serious problem on the same cross-border territory is the abundant "zakustarivaniye" in the steppe pastures, which affects their feeding capacity.

There also a number of epidemiological risks. Currently, the volume of interstate movements is increasing, which affects the risk of spreading epidemics of infectious diseases. Thus, the uncontrolled

migration of the population operates in the border areas with Kazakhstan, and on its territory, foci of diseases such as plague, tularemia, rabies, measles, and anthrax periodically occur.

Also, we can highlight the criminological risks associated with crimes committed by migrants in the territory of the Russian Federation. In the first half of 2017, in the Siberian Federal District, the number of grave and especially grave crimes and frauds committed by migrants increased by more than 60%. However, the improvement of measures to combat crimes against migrants and against them is hampered by the following points: existing gaps in the criminal legislation of the Russian Federation, China and Mongolia, the lack of specialized units for combating crime related to migrants in some regions, gaps in crime prevention, insufficient criminological knowledge of migration crimes, poor understanding of Russian legislation by foreign citizens due to its complexity [9, p. 255].

5. Conclusion

Cross-border areas, in addition to traditional social risks, are also influenced by specific ones related to the peculiarities of their political and geographical position. The cross-border regions of the Siberian Federal District, whose social risks were analyzed by the authors using the developed methodology, differ from the "internal" regions by great social tension, especially in such parameters as infant mortality, unemployment, poverty rates, migration outflow of population. In general, the level of social risks in them is twice as high as compared to their "internal" neighbors.

References
[1]   Balabanov I 1996 *Risk management* (Moscow, Russia: Finance and Statistics)
[2]   Sharin V 2013 Social risks as a threat to the social situation and protection from them *News of the Ural State University of Economics* **6** pp 119-124
[3]   Mukhacheva A, and Morozova E 2016 *Quality of life in crisis conditions: regional aspect* (Kemerovo, Russia: Kemerovo State University)
[4]   Rosstat 2018 *Regions of Russia. Socio-economic indicators* (Moscow, Russia: Rosstat)
[5]   Gibadullin M, Nurieva A, and Fazlieva E 2014 Stability of interregional trade and economic relations as the factor of competitiveness of territories *World Applied Sciences Journal* **29**(4) pp 501-505
[6]   Kovacs A 2011 On borders, border regions and cross-border retail-trading scientific *Papers of the University of Pardubice* Series D **28**(3) pp 29-42
[7]   *Some Problems of the Sustainable Use of Natural Recourses in the Transboundary Mountain Territories of the Southern Part of the Russian Far East* 2002 (Seol, South Korea: Seoul National University)
[8]   Zhou Y 2002 *Mountain utilization and conservation: some experiences from China* (Seoul, South Korea: Seoul National University)
[9]   Radnaeva E 2014 Criminological characteristics of crime of citizens of Mongolia in the Siberian Federal district *Vestnik of the Buryat state University* **2** pp 254-257
[10]   Lobova S V, and Bogoviz A V 2018 The subject-object identification of personnel security threats *Espacios* **39**(24)