

Socio-Economic Vulnerability of Regional Communities: Sociological Interpretation and Assessment



**Yuliya M.
PASOVETS**
Kursk State University
Kursk, Russian Federation
e-mail: yulia_pasovets@mail.ru
ORCID: 0000-0002-3626-7933; ResearcherID: M-4801-2017

Abstract. The relevance of the study of the socio-economic vulnerability of Russian regions is due to the need to reveal their internal characteristics, indicating unresolved and emerging social problems that weaken the possibilities of regions functioning and productive dynamics. The aim of the work is to clarify the concept of socio-economic vulnerability of the regional community; to define the possibilities of its sociological measurement based on a combination of objective and subjective data; to identify significant characteristics of vulnerability of region socio-economic sphere in contemporary conditions by the example of the regions of the Central Chernozem region. The originality of its formulation and solution is associated with the interpretation of the this phenomenon through the prism of key social problems manifested in objective characteristics and subjective assessments of the population, the promotion of a methodic approach to its sociological diagnosis based on rethinking the heuristic capabilities of the methodic tools of the interregional scientific program, the assessment of important parameters of socio-economic vulnerability of the Central Chernozem regions. The empirical object of research is the Central Chernozem regions of Russia – the Voronezh, Kursk and Lipetsk oblasts. The informational basis of research is the data of state statistics (Rosstat); the empirical base is the results of representative survey (N=1200 people) based on the typical program and methodic tools “Socio-cultural portrait of the Russian region”. The paper clarifies the concept of socio-economic vulnerability of regional community, understood as its condition due to the internal characteristics of the socio-economic sphere, concentrating social problems of an objective-subjective nature. It defines the possibilities of its diagnosis based on a

For citation: Pasovets Yu.M. (2023). Socio-economic vulnerability of regional communities: Sociological interpretation and assessment. *Economic and Social Changes: Facts, Trends, Forecast*, 16(4), 236–253. DOI: 10.15838/esc.2023.4.88.13

combination of measuring objective facts and subjective assessments on a number of indicators of the typical methodic. It reveals the key vulnerabilities of the socio-economic sphere of the central chernozem regions in contemporary conditions: the prevalence of poverty and a high degree of socio-economic differentiation of the population in a subjective measurement; the downward short-term dynamics of the material status of a population significant part. The results expand the scientific understanding of the socio-economic vulnerability of regional communities and can be used to define their social problems of objective and subjective nature and to find ways to solve them.

Key words: socio-economic vulnerability, material status, poverty, socio-economic polarization, regional community, Russian society.

Introduction

In modern conditions, Russian society continues facing new challenges to its socio-economic development, the search for an adequate response to which is largely associated with the identification and analysis of its vulnerabilities as “pain points”, indicating unresolved and newly emerging social problems and weakening the ability to withstand threats and risks. In the situation of persisting significant regional differentiation of the Russian society (Belyaeva, 2021; Shabunova et al., 2022; Socio-cultural evolution of Russia..., 2022), the problem of socio-economic vulnerability of the population of separate Russian macroregions and regions is particularly relevant.

In the field of social sciences, the emergence of researchers' interest in studying the vulnerability of social communities and its socio-economic component is largely associated with the emergence of the sustainable development theory. In the process of the latter's development, the categories of sustainability and resilience acquire key importance and are contrasted with vulnerability. According to the American scientist B.L. Turner, the sustainable development theory contributed to the concentration of attention of modern researchers on the study of the system “human–environment” and further development of this theory was associated with the study of this system through the prism of opposing resistance and vulnerability as its two opposite potential states (Turner, 2010).

We should note that so far the scientific community has not developed an unambiguous understanding of the relationship between sustainability and resilience, which is interpreted in different ways: as a concept identical to sustainability (Zeng et al., 2022), as a special characteristic of sustainability – dynamic sustainability of social systems (Smorodinskaya, Katukov, 2021), and as an independent phenomenon – shock resilience (Zhikharevich et al., 2020). Leaving the analysis of this relationship outside the scope of the paper and focusing on the review of recent studies of socio-economic aspects of vulnerability, let us emphasize that, despite the ambiguity of interpretations of stability and resilience, modern socio-economic studies quite clearly state their opposite to vulnerability.

Recently, the contrast between stability and resilience, on the one hand, and vulnerability, on the other hand, as two opposite states or characteristics of the objects under consideration has been applied in the study of various social systems, the functioning and dynamics of which in the modern world are carried out in the context of increasing various risks. Among the latest developments in this subject field are the studies by foreign and Russian authors on corporate sustainability – business vulnerability during the COVID-19 pandemic (Ikram et al., 2020); resilience – vulnerability of regions under

the impact of economic shocks (Bruneckiene et al., 2019); sustainability – vulnerability of rural development in the context of global instability (Vyalshina, 2022) and other aspects.

At the same time, there is an increasing interest in the study of these issues in relation to the socio-territorial dimension of society. Modern foreign and Russian authors pay attention to the identification of problems and resources of sustainable development of macro-regions and regions, provinces and other administrative-territorial formations and socio-territorial communities of macro- and meso-level within the framework of national societies (Vasiliev et al., 2019; Rozhkovskaya, Garkavaya, 2022; Ren et al., 2018). A separate direction in this subject field is studying the development of urban areas: cities, urban areas and agglomerations – through the prism of their sustainability or resilience, on the one hand, and vulnerability, on the other (Spiliotopoulou, Roseland, 2020; Zeng et al., 2022). At the same time, this issue is much less often developed in relation to rural areas (Vyalshina, 2022; Marsden, 2009).

The analysis of recent socio-economic developments on this topic shows that researchers often use this opposition as a starting point in the search for the components of sustainability or resilience of the studied objects and their sustainable development in modern conditions, paying much more attention to this than to the analysis of their vulnerability. As a result, there is a predominance of indices for assessing the sustainability and sustainable development of territories and their resilience, and a lack of tools for assessing their vulnerability. For instance, the works under the auspices of the European Commission and the UN propose more than 20 indices for such assessment, among which the most mentioned are the “resilience index”, “economic resilience index”, “socio-economic resilience index”, “pervasive

vulnerability index”, “resilience cost index” (Bruneckiene et al., 2019).

Researchers strive to make the assessment of sustainability and resilience of territories more capacious, comprehensive and use a set of indicators reflecting different spheres of socio-territorial systems. Hungarian scientists A. Buzási, B.S. Jäger, O. Hortay suggest measuring socio-economic indicators along with environmental indicators to diagnose urban resilience (Buzási et al., 2022). Russian researchers A.A. Shabunova and M.A. Gruzdeva consider it necessary to use four groups of indicators to measure the sustainability of Russian regions: economic, social, environmental and socio-cultural (Shabunova, Gruzdeva, 2016). American authors P. Van Beynen, F.A. Akiwumi and K. Van Beynen to assess the sustainability of the state and development of small island developing states apply about 70 indicators grouped by four parameters of sustainable development of the territory: social, economic, environmental and climatic (Van Beynen et al., 2018). In this way, new developments tend to include social and sociocultural indicators in the assessment of territorial sustainability.

Current studies pay much less attention to the development of the problems of vulnerability of territories and socio-territorial communities. In rare works, attempts are made to reveal the structure of vulnerability of the territory and the population living in it, separately identifying its socio-economic component. For example, the American authors R.A. Johns, B. Dixon and R. Pontes suggest distinguishing between physical (territorial) and socio-economic vulnerability of the state population under climate change (Johns et al., 2020). At the same time, socio-economic vulnerability of territories and territorial communities is mainly considered in the context of studying the adverse impact of natural disasters: floods (Tanir et al.,

2021), drought (Sun et al., 2022; Ravichandran et al., 2022), cyclonic storms (Mandal, Dey, 2022), climate change (Johns et al., 2020) or environmental degradation leading to environmental stresses (Dutta, Chatterjee, 2022).

The analysis of the current scientific literature revealed the lack of an unambiguous understanding of the essence and content of vulnerability and socio-economic vulnerability in the scientific community (Johns et al., 2020; Mandal, Dey, 2022; Tanir et al., 2021; Sun et al., 2022, etc.). In addition, a number of works continue using a contraposition-based interpretation of vulnerability as a state associated with insufficient or lack of stability or resilience. This interpretation turns out to be inadequate to the current stage of social development, which allows detecting the simultaneous coexistence of both stable and vulnerable characteristics in the state of social systems.

At the same time, so far there is no unambiguous interpretation of the concept of socio-economic vulnerability in relation to regional communities, no system of indicators and targets for its sociological measurement has been proposed. There are no empirical studies on this issue, the results of which allow assessing the state of socio-economic vulnerability of Russian regions as socio-territorial communities in modern conditions, and the possibilities for such diagnostics on the available Russian materials have not been determined.

The need to fill these gaps in socio-economic knowledge determines the relevance of this paper and the scientific and practical significance of its results.

The article aims to clarify the concept of socio-economic vulnerability of the regional community; to determine the possibilities of its sociological measurement based on a combination of objective and subjective data; to identify the significant characteristics of the vulnerability of their socio-

economic sphere in modern conditions in the case of the regions of the Central Black Earth Region. The originality of setting the goal and its achievement is associated with the treatment of socio-economic vulnerability of regional communities through the prism of key social problems manifested in objective characteristics and subjective assessments of the population, with the proposal of a methodological approach to its diagnosis in sociological research on the basis of rethinking the heuristic possibilities of the standard program and methodology “Socio-cultural portrait of the region of Russia”, with the assessment of important parameters of socio-economic vulnerability of the Central Black Earth regions.

Conceptual framework of the research

Defining the conceptual framework of the study, first of all, we note the need to distinguish approaches to the definition of the essence and content of socio-economic vulnerability in relation to territories and socio-territorial communities. The analysis of modern foreign and Russian studies on the subject proves that it is often different territories (regions, districts, municipalities, cities, towns, settlements, villages) that are analyzed through the prism of their vulnerability to certain dangerous phenomena including socio-economic vulnerability. In such works, socio-economic vulnerability is defined through both the parameters of the territory and the characteristics of its population. For example, American authors (S.L. Cutter, L. Barnes, M. Berry, etc.) consider such characteristics of the territory as inequality in economic development, growth rates; availability of resources for the population; characteristics of the built environment and its maintenance; and among the characteristics of the population – income, educational level, ethnicity, employment, housing, health care as the most significant for the vulnerability of states to natural disasters (Cutter et al., 2008). When studying regions and

municipalities of the Russian Arctic, Russian authors consider socio-economic vulnerability of a municipal territory as a combination of its susceptibility to change (understood through social insecurity and dangerous housing conditions), insufficient coping capacities (depending on the health care system and social ties) and adaptive capacities (expressed in the educational level of the population, material resources of households, investments, economic features of the population), as well as a combination of the social and economic vulnerability of a municipal territory (Baburin et al., 2016). In most such studies, empirical assessment of socio-economic vulnerability of different territories is carried out with the help of a set of relevant indicators reflected in the official statistics of countries and their regions.

At the same time, the conceptualization of the problems of socio-economic vulnerability in relation to regional communities makes it advisable to interpret the phenomenon under consideration on the basis of population characteristics. In this regard, the approaches to the identification of indicators and measures developed by previous authors to measure socio-economic vulnerability of the population of a certain territory as a socio-territorial community are of research interest (*Tab. 1*).

It is worth noting that in modern interpretations socio-economic vulnerability of the population or territorial community is often understood as a multidimensional complex phenomenon and is characterized through various indicators of the economic and social situation of the population:

Table 1. Approaches to the definition of indicators and measures of socio-economic vulnerability of territorial community / population of a territory

Authors	Indicators and measures
M.P. Kelly, N.W. Adger (Kelly, Adger, 2000)	<ol style="list-style-type: none"> 1. Poverty associated with marginalization 2. Inequalities that condition the degree of collective responsibility, informal and formal insurance and their underlying social security function 3. Institutional adaptation related to the architecture of social rights, institutions as channels of collective perception of vulnerability, endogenous institutions that limit or enable adaptation
C.T. Emrich (Emrich, 2005)	<ol style="list-style-type: none"> 1. Poverty 2. Rental housing 3. Lack of flood insurance 4. Financial failure to prepare for floods
L. Rygel, D. O'Sullivan, B. Yarnal (Rygel et al., 2006)	<ol style="list-style-type: none"> 1. Poverty as a key characteristic interrelated with its other components 2. Gender (female) 3. Race and ethnicity 4. Age (children and elderly people) 5. Disability
K. Arthurson, S. Baum (Arthurson, Baum, 2015)	<p>Shortage of material and financial resources:</p> <ul style="list-style-type: none"> – inadequate family support, – social isolation, – poor health and disability, – not having a home or living in unsafe or inadequate housing, – low education level, – inability to find work
R.A. Johns, B. Dixon, R. Pontes (Johns et al., 2020)	<ol style="list-style-type: none"> 1. Low per capita income 2. Share of people living below the poverty line 3. Unemployment status 4. Ethnicity (African American, Native American, Asian, and Hispanic) 5. Belonging to the age groups of less than 5 years, 5 to 14 years and over 65 years old 6. Low education level

End of Table 1

Authors	Indicators and measures
P. Kandari, U. Bahuguna, A.K. Salgotra (Kandari et al., 2021)	Low financial accessibility: – lack of bank accounts, – non-use of mobile banking, – credit line undrawn
T. Tanir, S.J. Sumi, A.D.S. Lima, A.G. de Coelho, S. Uzun, F. Cassalho, C.M. Ferreira (Tanir et al., 2021)	A set of social vulnerability indicators (SoVI)* and exposure to danger from 41 variables, of which 23 variables (more than half) reflect the material situation of the population related to the level of income, consumption and differentiation by income level: Low per capita income Share of unemployed Share of population living below the poverty line Share of households below the poverty line Share of households below the poverty line Proportion of dwellings without a vehicle Share of population earning less than 35 thousand dollars in the last 12 months Share of population earning less than 40 thousand dollars in the last 12 months Share of population without earnings Low average household income Low total income Share of population without health insurance Share of population receiving food stamp assistance Vacancy rate of housing Share of mobile (mobile) housing Share of rented housing Low median housing cost Low average cost of housing Median gross rent Average cash rent Percentage ratio of population’s income to poverty level less than 1.0 Gini index Share of population without social insurance income
M.U. Niaz (Niaz, 2022)	The opposite of socio-economic growth: 1. Lack of sustainable livelihoods (increase in per capita income levels; improved housing ownership status, house roofing material, general condition of the house; increased number of children attending school; increased household assets; increased cooking fuel consumption; improved quality of drinking water; increased expenditure on health care and clothing) 2. Lack of improvement of living standards (negative self-assessments of changes in living standards) 3. Preserving multidimensional poverty: – living standards (no electricity in the house, no safe drinking water, poor sanitation, no floor material and cooking fuel used, no TV, telephone, refrigerator or the like, including a car or tractor); – health (child mortality, malnutrition); – education (lack of basic education (6 years of schooling), non-attendance of school-age children) 4. Lack of social development (no self-efficacy to increase perceived social status)
* The concept and the Social Vulnerability Index (SoVI) were developed by The Hazards Vulnerability & Resilience Institute (USA) team to assess the vulnerability of areas to environmental hazards based on 29 socioeconomic variables (32 variables before 2010), grouped in 2019 into 7 significant components: low wealth; race (African Americans) and social status; age dependence (elderly); Hispanic ethnicity; special needs (lack of health insurance); race (Indian population); service employment (Derakhshan et al. , 2022; Blackwood, Cutter, 2023). Source: own compilation based on the analysis of scientific literature.	

low income and poverty, lack of insurance and social benefits, limited material resources of households, shortage of property, poor quality of housing and its rent and similar indicators, as well as certain socio-demographic indicators. Only in single works there is a reduction of socio-economic vulnerability to a certain social phenomenon – lack of access to financial services, interrelated with low financial literacy of people (Kandari et al., 2021).

Most approaches consider low income and associated poverty of people as significant indicators of socio-economic vulnerability, justifying the need to assess their prevalence in the community. In a number of cases, they are supplemented by indicators of unemployment, lack of earnings or social payments, which is important in the context of formation of population's income and, accordingly, its socio-economic status. Some authors note the significant contribution of socio-economic stratification of the community to its socio-economic vulnerability and consider population inequality as one of the significant indicators of such vulnerability, suggest using both the perception and assessment of their social status (Kelly, Adger, 2000; Niaz, 2022) and the Gini index (Tanir et al., 2021) for its diagnosis.

Based on previous experience, we can assume that the content of socio-economic vulnerability of the territorial community is mainly associated with the characteristics of material status (income and consumption levels) and socio-economic differentiation of the population (poverty and inequality), but is not exhausted by them and can be supplemented by other components. At the same time, its measurement and assessment can be carried out both on the basis of several interrelated variables and through an expanded set of them, as well as using statistical data and the results of surveys (subjective assessments). Each study requires the selection and justification of adequate to the studied

community interpretation of socio-economic vulnerability and its indicators, since direct borrowing of previous approaches is not always acceptable due to the socio-cultural specifics of the territory and its population, in particular, to the conditions of Russian society and socio-territorial organization.

In this context, we should pay attention to the importance of the problems of poverty and socio-economic differentiation in Russian society and its regions emphasized in recent works. In modern socio-economic studies, the persistence of poverty and increasing income differentiation of the population are interpreted as key threats to Russia's national or economic security and its stable socio-economic development (Starovoitov, Starovoitov, 2020; Lev, 2021; Ilyin, Morev, 2022). Some of them consider poverty and low income, associated with the deficit or limited material resources, not only as characteristics of social stratification of Russian society and regional communities, but also as indicators of social and socio-economic vulnerability of the population (Alekseenok, Mikhalev, 2020; Gorshkov, 2020; Soboleva, Sobolev, 2021).

In view of the above, we consider it important to clarify the concept of socio-economic vulnerability in relation to regional communities in the framework of our research. In this paper, we propose to understand socio-economic vulnerability as a state of a regional community due to the internal characteristics of its socio-economic sphere, which concentrates social problems that manifest themselves in objective status indicators and their subjective interpretation by people. These problems determine the weaknesses of functioning and dynamics of the socio-territorial community.

At the same time, in sociological discourse, a significant clarification is the belonging of socio-economic vulnerability not to the region as an administrative-territorial unit, but to the regional

community as a socio-territorial community that unites the population living on its territory and is characterized in the socio-economic sphere by the presence of various social structures. The latter are conditioned by material differentiation and social inequality within the community, formed by different criteria, as well as the identification of the population with certain property and social strata.

Recognizing the multidimensionality of socio-economic vulnerability of the regional community, on the basis of rethinking the previous experience of interpreting its content and indicators (see Tab. 1) and the significance of the problems of poverty and inequality of the population for the Russian regions, we consider it possible to identify its three key components, which manifest weak, problematic characteristics of the socio-economic sphere of the region:

- 1) poverty incidence within a socio-territorial community;
- 2) high degree of socio-economic differentiation of regional population;
- 3) downward dynamics of the financial situation of a significant part of the population compared to the previous year.

In modern studies, the assessment of socio-economic vulnerability of territorial communities is carried out on the basis of statistical data on indicators for which systematic statistical accounting is carried out and the processing of which allows the use of the index method of assessment (Bruneckiene et al., 2019; Tanir et al., 2021; Kireyeva et al., 2022). It determines the measurement of only one facet of socio-economic vulnerability, represented by the objective status characteristics of population groups within socio-territorial communities. At the same time, the second facet of the phenomenon under consideration, manifested in subjective assessments by the population of their status position in the socio-economic sphere and structures constructed on the basis of people's

socio-economic self-identification (Pasovets, 2019), often remains outside the attention of researchers and, accordingly, beyond the scope of such an assessment.

Only in isolated studies of socio-economic vulnerability of regional and local communities, subjective assessments of this phenomenon are measured through sociological surveys. In such developments within the framework of combined research methodology survey methods are used in combination with other methods of data collection: observation and analysis of statistical data. As shown by the experience of assessing the vulnerability of neighborhoods within an Indian state, carried out by K. Mandal and P. Dey, the use of questionnaires allows realizing the ranking by respondents of a set of parameters of their socio-economic vulnerability, which complements the index assessment of the studied phenomenon made on the basis of statistical data (Mandal, Dey, 2022). Another study by Indian authors (Balasubramani et al., 2021) proves the necessity of combining the data of official statistics (population and household census) with the results of public opinion polls to finally obtain a more reasonable assessment of socio-economic vulnerability of the population at the micro level of territorial organization (villages, hamlets and districts within the state). In this case, the population survey data allow identifying people's perception of their socio-economic conditions as vulnerable to the impact of natural disasters and build a subjective matrix of the probability of such risk (Balasubramani et al., 2021, p. 606–607).

With this in mind, the methodological approach based on the combination of statistical and survey data on relatively comparable indicators is promising for characterizing the socio-economic vulnerability of regional communities. Within each of the three components of this phenomenon that we have identified, it is advisable to record indicators of different nature: objective indicators derived

from state statistics data and subjective indicators measured through the results of sociological surveys. In this case, it becomes possible to combine data in objective and subjective dimensions for each of the socio-economic vulnerability parameters.

Research methodology and materials

The theoretical basis of the work is formed by the conceptual ideas put forward by N.I. Lapin and developed by his followers in the studies of socio-cultural evolution of Russian regions about the region as a socio-territorial and socio-cultural community, as well as about the representation of the regional community by three spheres: anthropo-cultural, socio-economic, institutional and regulatory¹. When conceptualizing the notion of socio-economic vulnerability of the community, there is an appeal to the idea of the region's socio-economic sphere, its characteristics related to the material situation and socio-economic differentiation of the population, manifesting the weaknesses of the regional community. When determining specific indicators to assess the socio-economic vulnerability of socio-territorial communities, we used the diagnostic capabilities and indicators of the standard program and methodology "Socio-Cultural Portrait of the Russian Region"².

As separate indicators of socio-economic vulnerability of regional communities, this paper proposes to use:

– state statistical indicators:

1) share of population with incomes below the subsistence minimum level (SML), in %;

2) Gini coefficient;

3) real money income, in % to the previous year;

– population survey indicators:

4) share of the subjectively "poor", in %;

5) coefficient of socio-economic polarization of the community;

6) share of those who have become worse off compared to the previous year, in %.

If the indicators of state statistics are unified for the Russian statistical system and their interpretation is given in the methodological recommendations in the relevant statistical publications, then the use of the indicated indicators of the population survey from the standard methodology "Socio-Cultural Portrait of the Russian Region" requires clarification.

In the subjective dimension, the understanding of poverty and socio-economic polarization of the community is built on the basis of the idea of socio-economic identification of the population (Pasovets, 2019), measured in the survey through self-identification of the respondent with a certain socio-economic stratum by the level of their consumption. For this purpose, we use the stratification scale proposed by L.A. Belyaeva to assess the material status of an individual by the level of consumption ("beggars", "poor", "unsecured", "secured", "affluent", "rich") and included as one of the indicators in the standard methodology "Socio-Cultural Portrait of the Russian Region"³.

The share of the subjectively "poor" is measured as a percentage of the total number of respondents and summarizes the shares of the two lowest socio-economic strata – the "beggars" and the "poor". Subjective poverty can be compared with objective poverty, the boundary of which is fixed by official statistics in Russia based on the share of the population with monetary incomes below the Gross Domestic Product (GDP).

We proposed and tested the calculation method adopted for the coefficient of socio-economic polarization of the community in previous works in

¹ Lapin N.I., Belyaeva L.A. (2010). *Program and Standard Tools "Socio-Cultural Portrait of the Russian Region" (Modification – 2010)*. Moscow: INFRA.

² Ibidem. Pp. 17–19.

³ Ibidem. P. 31.

the case of the coefficient of general polarization of public opinion (Pasovets, 2011). In this paper, it is used to identify the nature of the ratio between the total share of the lower strata (“beggars”, “poor”, “unsecured”) and the total share of the middle and higher strata (“secured”, “affluent”, “rich”), interpreted as an indicator opposite to the coefficient of socio-economic homogeneity of the community.

The coefficient of socio-economic homogeneity of the community is calculated as the modulus of the difference between the shares of lower strata, on the one hand, and middle and higher strata, on the other hand, to the total number of respondents:

$$E = |L - US| : 100\% |,$$

where L – total share of the lowest strata (%);

US – total share of middle and upper strata (%),

and has a measurement interval from 0 (maximum opposition) to 1 (maximum unity).

In turn, the coefficient of socio-economic polarization of the community is calculated by the formula:

$$SEP = 1 - E$$

and is measured in the interval from 0 (minimum degree of differentiation) to 1 (maximum degree of differentiation, which is characterized as polarization). With a certain degree of conventionality, such an interval of measurement of this coefficient allows presenting (greater or lesser) the degree of socio-economic differentiation of the community in the subjective dimension, based on the perception, assessment and identification of people with a certain property stratum, while the Gini coefficient gives an idea of the degree of differentiation of the population by income in the objective dimension.

The share of those who have become worse off compared to the previous year is also presented in percentage terms in relation to all respondents. It combines the shares of respondents who noted to a greater or lesser extent the worsening of their

lives compared to the previous year. Despite the limitations of direct comparison of such an assessment with the change in the amount of real money incomes, the combination of these indicators allows assessing the dynamics of the material situation of the population compared to the previous year from different angles – based on objective changes and people’s perception of them.

The research object is the regions of the Central Black Earth Region as one of the macroregions of Russia: Voronezh, Kursk and Lipetsk oblasts.

The information base of the research is formed by the data of state statistics (Rosstat)⁴. The empirical base of the study is represented by the results of a mass survey, conducted by us in September – October 2020 in Voronezh, Kursk and Lipetsk oblasts (N = 1200 people) on the basis of evenly distributed sampling (400 people were interviewed in each of the regions) and the standard program and methodology “Socio-Cultural Portrait of the Russian Region” (modification – 2015)⁵. The sample population of the work is sufficiently representative of the general population for each of the regions under consideration, the sampling error on one controlled characteristic does not exceed 3%. Surveys were conducted among the adult population (18 years and older) of the regions by semi-formalized (semi-standardized) interview method.

We also applied general scientific research methods and a set of analytical procedures, including in the process of analyzing empirical data: methods of descriptive statistics, statistical data analysis, secondary data analysis, comparative analysis.

⁴ Regions of Russia. Socio-economic indicators. 2021: Stat. coll. Rosstat. Moscow, 2021; Regions of Russia. Socio-economic indicators. 2021: Stat. coll. Rosstat. Moscow, 2022.

⁵ The sociological survey was conducted within the framework of the RFBR research project no. 18-011-00739.

Analysis of empirical data

The assessment of poverty incidence in the regions of the Central Black Earth Region based on the proportion of the population with incomes below the Gross Domestic Product (GDP) in the overall population structure shows that its scale does not exceed a tenth of regional communities and is somewhat differentiated by specific regions. While in the Kursk Oblast the share of absolute poverty reaches 10%, in the Voronezh and Lipetsk oblasts it is lower – 8.5 and 8.4% respectively. At the same time, the measurement of poverty through the prism of self-identification with socio-economic strata in terms of consumption reveals a significant prevalence of so-called the “subjective poverty” in the Central Black Earth regions, which includes those residents who consider themselves representatives of lower property strata. The scale of the latter is significant: in the Voronezh Oblast the share of the “subjective poor” includes about one fifth of the population, in the Kursk Oblast – one fourth, in the Lipetsk Oblast – one third of the population. The size of the “subjective poverty”

exceeds the size of poverty in absolute terms by 2.3, 2.5 and 3.9 times, respectively (*Tab. 2*).

The assessment of the level of socio-economic stratification of the population of the Central Black Earth regions through the values of the Gini coefficient reveals a low degree of such differentiation in regional communities, if we take into account the range of measurement of the coefficient used from 0 (minimum) to 1 (maximum). In the Kursk and Lipetsk oblasts the differentiation of money incomes turns out to be somewhat lower (0.362 and 0.378) than in the Voronezh Oblast (0.393). Compared to the value of this indicator for Russia as a whole (0.406), its values for the Central Black Earth regions are somewhat lower, although they are within the average level of differentiation, which suggests that the degree of such stratification in these regions is less than in the Russian society as a whole.

The coefficient of socio-economic polarization of the community, proposed as a way to measure the degree of differentiation of regional communities on the basis of subjective assessments, reveals a high

Table 2. Indicators of socio-economic vulnerability of the population in the Central Black Earth regions

Region	Objective indicators	Subjective indicators
	Share of population with incomes below the Gross Domestic Product (GDP), %	Share of the “subjectively poor” (“beggars” and “poor”), %
Voronezh Oblast	8.5	19.8
Kursk Oblast	9.9	25.3
Lipetsk Oblast	8.4	32.5
	Gini coefficient (differentiation of money incomes of the population)	Coefficient of socio-economic polarization of the community
Voronezh Oblast	0.393	0.73
Kursk Oblast	0.362	0.98
Lipetsk Oblast	0.378	0.97
	Real monetary income, % of the previous year	Share of those who have become worse off compared to last year, %
Voronezh Oblast	95.5	27.1
Kursk Oblast	97.8	23.6
Lipetsk Oblast	95.7	34.3

According to: for objective indicators of value for 2020 – Regions of Russia. Socio-economic indicators. 2022: Stat. coll. Rosstat. Moscow, 2022. P. 192, 240; Regions of Russia. Socio-economic indicators. 2021: Stat. coll. Rosstat. Moscow, 2021. P. 232; for subjective indicators values for 2020 – The results of a survey of the Central Black Earth regions using the standard methodology “Socio-cultural Portrait of the Russian Region”.

level of socio-economic stratification in the Central Black Earth regions. While in the Voronezh Oblast the degree of subjective socio-economic polarization of the community is above average (0.73), in the Kursk and Lipetsk oblasts it is close to the maximum (0.98 and 0.97, respectively).

In the Voronezh Oblast, such contrast, less pronounced compared to other oblasts, is caused by a smaller share of the lower property strata (“beggars” 7.0% of all respondents in the region, “poor” 12.8%, “unsecured” 16.8%, in the aggregate amounting to 36.5%) relative to the share of middle and higher strata (“secured” 40.5%, “affluent” 18.3%, “rich” 4.8%, in their aggregate amounting to 63.5%) in the population structure. In the Kursk and Lipetsk oblasts, a higher level of socio-economic differentiation in the subjective dimension is determined by an approximately equal ratio between the lowest strata, on the one hand, and the middle and upper strata, on the other. For instance, in the Kursk Oblast, the share of all lower groups (“beggars” 6.3%, “poor” 19.0%, “unsecured” 24.0%) is 49.2% of the total population, while the total share of middle and upper strata (“secured” 30.0%, “affluent” 16.5%, “rich” 4.3%) is 50.8%. In the Lipetsk Oblast, this ratio is represented by 51.5%, which is the total share of the lower strata (“beggars” 10.5%, “poor” 22.0%, “unsecured” 19.0%), and 48.5%, which includes the middle and upper strata (“secured” 31.0%, “affluent” 13.5%, “rich” 4.0%).

Changes in the material situation of the population of the Central Black Earth regions in comparison with the previous year are characterized by a reduction in real money incomes, the indicator of which is lower than in the previous year – 95.5–97.8% in some regions. At the same time, among the residents of the macro-region’s oblasts there is a significant share of those who, to a greater or lesser extent, note the deterioration of their life, comparing it with the previous year. While in the

Voronezh and Kursk oblasts this category accounts for approximately one fourth of the population (27.1 and 23.6%, respectively), in the Lipetsk Oblast it reaches one third of the population (34.3%).

Discussion of the research results

Due to the multifaceted nature of socio-economic vulnerability of the population, its interpretation and methodological approach to its measurement and assessment, proposed in this paper, leave room for discussion and further research in the interpretation of its content and the definition of empirical indicators. Previous works on similar issues also reflect the attempts of a number of researchers to give such a complex phenomenon an adequate definition and to find approaches and indicators for diagnosis. In our opinion, the complexity of the task and the observed variability of its solutions are largely due to the ambiguity of understanding of vulnerability as a phenomenon and the multiplicity of its manifestation in the socio-economic sphere of the regional community.

On the one hand, vulnerability itself can be understood in different ways: as deficiencies, weaknesses of any system, or its insecurity, inability to withstand negative impact, sensitivity, susceptibility to it, or the degree of losses, damages, or the ability to weaken the system, etc. In our proposed interpretation, socio-economic vulnerability is understood as a weakness of internal characteristics of the regional community, caused by social problems that have an objective-subjective nature (in the relationship between objective status indicators and their subjective interpretation by people), in the socio-economic sphere of the region. This interpretation of socio-economic vulnerability allows considering it as a relatively independent phenomenon from sustainability and resilience. At the same time, understanding this vulnerability through the prism of weak, problematic aspects of the regional community does not deny (and even allows concretizing) the recently developed

approach – overcoming vulnerability as a condition for achieving sustainability (Niaz, 2022; Vyalshina, 2022) and resilience (Smorodinskaya, Katukov, 2021). In this interpretation, the leveling of vulnerability is directly related to the reduction of acuteness and solution of social problems that have arisen on objective grounds and have a subjective assessment.

On the other hand, the probability of vulnerability of each of the numerous components of the socio-economic sphere of the regional community determines the limitations for its exhaustive diagnosis within the framework of a particular study and, accordingly, the need to choose a certain set of indicators for its measurement and evaluation.

The multidimensionality of socio-economic vulnerability of the regional community allows identifying its various components in the socio-economic sphere of the region, which can be the subject of further research. However, in our paper the focus of the research was concentrated on the internal characteristics of the region related to the material situation and socio-economic differentiation of the population, as they most clearly manifest the problems through the prism of objective indicators and subjective assessments.

Along with it, for the empirical assessment of socio-economic vulnerability of the Central Black Earth regions, we selected indicators that characterize the problems of both the state of the socio-economic sphere of the regional community (poverty incidence, socio-economic differentiation) and its dynamics (downward dynamics of the financial situation of a significant part of the population compared to the previous year). The inclusion of the latter indicator in the system of indicators, in our opinion, allows using the idea of Hungarian researchers about the relationship between vulnerability and variability (Buzási et al., 2022) and empirically confirm its conclusions using

the example of the considered Central Black Earth regions of Russia.

At the same time, the attempt made here to clarify the essence of socio-economic vulnerability of the regional community, to establish the diagnostic capabilities of the model program and the methodology “Socio-Cultural Portrait of the Russian Region” for its empirical measurement are necessary steps in the process of searching for a conceptual framework for new interpretations of empirical material and rethinking the experience accumulated over many years of research under the interregional scientific program “Problems of socio-cultural evolution of Russia and its regions” (Socio-cultural evolution of Russia..., 2022).

As the results of the studies conducted by us and other authors show, the most significant problems determining the socio-economic vulnerability of the population include a significant prevalence of the “subjective poverty” and high subjective socio-economic polarization of communities. For instance, having analyzed empirical data on the perception of income inequality by Russians, G.V. Belekova notes that the majority of them consider this inequality to be deep, unfair, carrying conflict and social dislike between extreme groups (Belekova, 2023).

At the same time, previous nationwide and regional studies, including those implemented on the basis of the standard program and methodology “Socio-Cultural Portrait of the Russian Region”, reveal the persistence in the assessment of poverty and socio-economic differentiation of the population of a significant gap between the objective status characteristics recorded by state statistics and their subjective assessments by people (Lapin et al., 2009; Slobodenyuk, 2019; Socio-cultural Evolution of Russia..., 2022). The relative stability of such a gap over a long period of time makes us look for its causes not only in the pandemic crisis that began in 2020 and negatively affected the level

of income and financial situation of the population, but also connect it with the mechanism of formation of people's subjective assessment of their socio-economic status and its changes.

The formation of such subjective assessments is carried out through perception, interpretation and identification with a certain status in the socio-economic hierarchy of the community. In this process, one evaluates one's status and available opportunities in comparison with personal ideas about sufficient and desired level of income and consumption, acceptable standard of living, one's own and family material resources, etc. Therefore, the discrepancy between the real and desired socio-economic status can be a key reason for self-identification of people with lower property strata, which leads to a significant gap between the objective and subjective picture of poverty and socio-economic differentiation of the population.

In this regard, it is also necessary to take into account the significant role of non-monetary factors that influence the perception and subjective assessment of one's socio-economic situation both at a certain moment and in the short-term dynamics. As E.D. Slobodenyuk notes on the example of analyzing the causes of deep poverty among Russians, the separation of groups of "objective" and "subjective" poverty is influenced by different factors. If in the first case the key role is played by high dependency burden and employment problems, in the second case – problems with health and accessibility of medical care, difficulties in the family and daily life, low educational level, precarious nature of employment (Slobodenyuk, 2019).

The observed sustainability of such a gap is largely due to the emergence of new living standards and, accordingly, changes in the population's demands, as well as the persistence of socio-economic problems. According to V.D. Milovidov, in modern society, characterized by openness and

increased globalization, new criteria and standards of life are constantly being produced, while at the same time people's opportunities to ensure and improve their lives and meet these standards are limited (Milovidov, 2021, p. 71).

Conclusion

To summarize, we can briefly present the results obtained in the course of the work. First, the concept of socio-economic vulnerability of a regional community, practiced as its state conditioned by internal characteristics of the socio-economic sphere, concentrating social problems, which are manifested in objective status indicators and their subjective interpretation by people, has been clarified. Second, we propose a methodological approach to the sociological diagnosis of one of the key aspects of socio-economic vulnerability of socio-territorial community, related to the material situation and socio-economic differentiation of the population, based on the comparison of statistical and survey data, the definition of a number of indicators of the standard program and methodology "Socio-Cultural Portrait of the Russian Region", the development of the coefficient of socio-economic polarization of the community. Third, the indicators selected to assess the socio-economic vulnerability of regional communities allowed us to identify the key "pain points" of the socio-economic sphere of the Central Black Earth regions in modern conditions:

- significant prevalence of poverty in the subjective dimension, associated with self-identification of residents with lower socio-economic strata, and its marked excess (two or more times in some regions) over the scale of poverty in the objective dimension, given by the share of the population with incomes below the Gross Domestic Product (GDP);
- high degree of socio-economic differentiation in the subjective dimension, due to the contrasting ratio between the lower strata, on the

one hand, and the middle and upper strata, on the other hand, identified on the basis of socio-economic identification of residents, and its greater magnitude (2 or more times) compared to the degree of differentiation of money incomes of the population, assessed by means of the Gini coefficient;

– reduction in real monetary incomes of the population as compared to the previous year and significant prevalence among the population of the opinion about the deterioration of life as compared to the previous year (from one fourth to one third of the population in some regions), which indicates the reflection in public opinion of the downward trend in the short-term dynamics of the material situation of a fairly massive share of the population.

The scientific significance of the obtained results is associated with the development of scientific ideas about socio-economic vulnerability of the regional community as a multidimensional and latent phenomenon, the measurement and assessment of which requires its conceptualization and the construction of a system of empirical indicators. In this regard, the research results

are important for the expansion of knowledge in the field of economic sociology, theory of social structure and stratification, and regional sociology.

The proposed interpretation of socio-economic vulnerability of communities and a set of its diagnostic indicators can be adjusted taking into account the subsequent clarification of the content of the phenomenon under consideration in the context of new challenges and expanding opportunities for its more detailed characterization, which determines the main directions for further study of this topic. They can also be used and developed in subsequent studies of similar problems on the materials of other Russian regions.

The practical significance of the results of the conducted research lies in the possibilities of their application to identify social problems of the regions, manifested in the construction of significant socio-economic contrasts in the public consciousness, socio-economic polarization of regional communities in the subjective dimension, and the search for effective solutions to these problems, taking into account their objective-subjective nature.

References

- Alekseenok A.A., Mikhalev I.V. (2020). Socio-economic situation of the poor population in the conditions of transformation of the social structure of modern Russian society. *Srednerusskii vestnik obshchestvennykh nauk=Central Russian Journal of Social Sciences*, 15(4), 29–45. DOI: 10.22394/2071-2367-2020-15-4-29-45 (in Russian).
- Arthurson K., Baum S. (2015). Making space for inclusion in conceptualizing climate change vulnerability. *Local Environment*, 20(1), 1–17. DOI: 10.1080/13549839.2013.818951
- Baburin V.L., Badina S.V., Goryachko M.D. et al. (2016). Vulnerability assessment of socio-economic development of the Russian Arctic territories. *Vestnik Moskovskogo universiteta. Seriya 5: Geografiya*, 6, 71–77 (in Russian).
- Balasubramani K., Sekar L.G., Kanagarajan A. et al. (2021). Revealing the socio-economic vulnerability and multi-hazard risks at micro-administrative units in the coastal plains of Tamil Nadu, India. *Geomatics, Natural Hazards and Risk*, 12(1), 605–630. DOI: 10.1080/19475705.2021.1886183
- Belekhova G.V. (2023). The scale of inequality and the specifics of its perception in modern Russia. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 16(1), 164–185. DOI: 10.15838/esc.2023.1.85.9 (in Russian).
- Belyaeva L.A. (2021). Civilizational heterogeneity of Russia. Property in the field of civilizational development. *Vestnik Instituta sotsiologii*, 12(3), 27–53. DOI: 10.19181/vis.2021.12.3.736 (in Russian).

- Blackwood L., Cutter S.L. (2023). The application of the social vulnerability index (SoVI) for geo-targeting of post-disaster recovery resources. *International Journal of Disaster Risk Reduction*, 92, 103722. DOI: 10.1016/j.ijdr.2023.103722
- Bruneckiene J., Pekarskiene I., Palekiene O., Simanaviciene Z. (2019). An assessment of socio-economic systems' resilience to economic shocks: The case of Lithuanian regions. *Sustainability (Switzerland)*, 11(3), 566. DOI: 10.3390/su11030566
- Buzási A., Jäger B.S., Hortay O. (2022). Mixed approach to assess urban sustainability and resilience – a spatio-temporal perspective. *City and Environment Interactions*, 16, 100088. DOI: 10.1016/j.cacint.2022.100088
- Cutter S.L., Barnes L., Berry M. et al. (2008). A place-based model for understanding community resilience to natural disasters. *Global Environmental Change*, 18(4), 598–606. DOI: 10.1016/j.gloenvcha.2008.07.013
- Derakhshan S., Emrich C.T., Cutter S.L. (2022). Degree and direction of overlap between social vulnerability and community resilience measurements. *PLoS ONE*, 17(10), e0275975. DOI: 10.1371/journal.pone.0275975
- Dutta S., Chatterjee S. (2022). Assessment of socio-economic vulnerability in a forested region: An indicator-based study in Bankura District of West Bengal, India. In: *Geospatial Technology for Environmental Hazards. Advances in Geographic Information Science*. Cham: Springer. DOI: 10.1007/978-3-030-75197-5_21
- Emrich C.T. (2005). *Social Vulnerability in US Metropolitan Areas: Improvements in Hazard Vulnerability Assessment*. University of South Carolina.
- Gorshkov M.K. (2020). Russian society in measurement. *Vestnik Rossiiskoi akademii nauk*, 90(3), 232–242. DOI: 10.31857/S0869587320030068 (in Russian).
- Ikrum M., Zhang Q., Sroufe R., Ferasso M. (2020). The social dimensions of corporate sustainability: An integrative framework including COVID-19 insights. *Sustainability (Switzerland)*, 12(20), 1–29, 8747. DOI: 10.3390/su12208747
- Ilyin V.A., Morev M.V. (2022). Nationwide poverty – “a threat to steady development and our demographic future”. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 15(1), 9–33. DOI: 10.15838/esc.2022.1.79.1 (in Russian).
- Johns R.A., Dixon B., Pontes R. (2020). Tale of two neighbourhoods: Biophysical and socio-economic vulnerability to climate change in Pinellas County, Florida. *Local Environment*, 25(9), 697–724. DOI: 10.1080/13549839.2020.1825356
- Kandari P., Bahuguna U., Salgotra A.K. (2021). Socio-economic and demographic determinants of financial inclusion in underdeveloped regions: A case study in India. *Journal of Asian Finance, Economics and Business*, 8(3), 1045–1052. DOI: 10.13106/jafeb.2021.vol8.no3.1045
- Kelly M.P., Adger N.W. (2000). Theory and practice in assessing vulnerability to climate change and facilitating adaptation. *Climate Change*, 47(4), 325–352.
- Kireyeva A.A., Nurlanova N.K., Kredina A.A. (2022). Assessment of the socio-economic performance of vulnerable and depressed territories in Kazakhstan. *R-Economy*, 8(1), 21–31. DOI: 10.15826/recon.2022.8.1.002
- Lapin N.I., Belyaeva L.A., Kogai E.A. et al. (2009). *Regiony v Rossii: sotsiokul'turnye portrety regionov v obshcherossiiskom kontekste* [Regions in Russia: Socio-Cultural Portraits of Regions in the All-Russian Context]. Moscow: Academia.
- Lapin N.I., Belyaeva L.A., Shabunova A.A. (Eds.). (2022). *Sotsiokul'turnaya evolyutsiya Rossii: 30 let issledovaniy* [Sociocultural Evolution of Russia: 30 Years of Research]. Moscow: Ves' Mir.
- Lev M.Yu. (2021). Poverty and subsistence level of the population in providing social and economic security. *Ekonomicheskaya bezopasnost*, 4(3), 549–570. DOI: 10.18334/ecsec.4.3.112403 (in Russian).
- Mandal K., Dey P. (2022). Coastal vulnerability analysis and RIDIT scoring of socio-economic vulnerability indicators – a case of Jagatsinghpur, Odisha. *International Journal of Disaster Risk Reduction*, 79, 103143. DOI: 10.1016/j.ijdr.2022.103143
- Marsden T. (2009). Mobilities, vulnerabilities and sustainabilities: Exploring pathways from denial to sustainable rural development. *Sociologia Ruralis*, 49(2), 113–131. DOI: 10.1111/j.1467-9523.2009.00479.x

- Milovidov V.D. (2021). Inequality pandemic: New dimensions of social disparity under coronacrisis. *Nauchnye trudy Vol'nogo ekonomicheskogo obshchestva Rossii=The VEO of Russia*, 228(2), 59–81. DOI: 10.38197/2072-2060-2021-228-2-59-81 (in Russian).
- Niaz M.U. (2022). Socio-economic development and sustainable development goals: A roadmap from vulnerability to sustainability through financial inclusion. *Economic Research-Ekonomska Istrazivanja*, 35(1), 3243–3275. DOI: 10.1080/1331677X.2021.1989319
- Pasovets Yu.M. (2011). The quality of population's life as an integrated index of function region's efficiency. *Vestnik Nizhegorodskogo universiteta im. N. I. Lobachevskogo: Seriya Sotsial'nye nauki=Vestnik of Lobachevsky State University of Nizhni Novgorod. Series: Social Sciences*, 1(21), 66–73 (in Russian).
- Pasovets Yu.M. (2019). Socio-economic identification of the population as a factor of structurization of urban space (case study of cities of Kursk Oblast). *Primo Aspectu*, 4(40), 7–14. DOI: 10.35211/2500-2635-2019-4-40-7-14 (in Russian).
- Ravichandran V., Kantamaneni K., Periasamy T. et al. (2022). Monitoring of multi-aspect drought severity and socio-economic status in the semi-arid regions of Eastern Tamil Nadu, India. *Water (Switzerland)*, 14(13), 2049. DOI: 10.3390/w14132049
- Ren C., Zhai G., Zhou S. et al. (2018). A comprehensive assessment and spatial analysis of vulnerability of China's provincial economies. *Sustainability (Switzerland)*, 10(4), 1261. DOI: 10.3390/su10041261
- Rozhkovskaya E.A., Garkavaya V.G. (2022). Risks and sources of vulnerability for regions sustainable development. *Ekonomicheskii byulleten' Nauchno-issledovatel'skogo ekonomicheskogo instituta Ministerstva ekonomiki Respubliki Belarus'*, 7(301), 23–34 (in Russian).
- Rygel L., O'Sullivan D., Yarnal B. (2006). A method for constructing a social vulnerability index: An application to hurricane storm surges in a developed country. *Mitigation and Adaptation Strategies for Global Change*, 11(3), 741–764. DOI: 10.1007/s11027-006-0265-6
- Shabunova A.A., Gruzdeva M.A. (2016). Development of the regions of the Russian Federation: Integral technique as an evaluation tool. *Regional'naya ekonomika: teoriya i praktika=Regional Economics: Theory and Practice*, 1(424), 100–112 (in Russian).
- Shabunova A.A., Kalachikova O.N., Leonidova G.V. et al. (2022). *Sotsial'noe razvitie territorii: aktual'nye trendy i novye vyzovy* [Social Development of Territories: Current Trends and New Challenges]. Vologda: Vologda Research Center of RAS.
- Slobodenyuk E.D. (2019). Deep poverty in Russia: The specifics of the objective and subjective poor and their requests for social policy. *Sotsiologicheskaya nauka i sotsial'naya praktika*, 7, 4(28), 26–38. DOI: 10.19181/snsp.2019.7.4.6797 (in Russian).
- Smorodinskaya N.V., Katukov D.D. (2021). Resilience of economic systems in the age of globalization and sudden shocks. *Vestnik Instituta ekonomiki Rossiiskoi akademii nauk=Bulletin of the IE RAS*, 5, 93–115. DOI: 10.52180/2073-6487_2021_5_93_115 (in Russian).
- Soboleva I.V., Sobolev E.N. (2021). Household income in a pandemic: Shifting vulnerable zones and protection mechanisms. *Ekonomicheskaya bezopasnost'*, 4(3), 531–548. DOI: 10.18334/ecsec.4.3.112448 (in Russian).
- Spiliotopoulou M., Roseland M. (2020). Urban sustainability: From theory influences to practical agendas. *Sustainability (Switzerland)*, 12(18), 1–19, 7245. DOI: 10.3390/su12187245
- Starovoitov V.G., Starovoitov N.V. (2020). Modern trends of the dynamics of property inequality, poverty, unemployment as sources of threats to the economic and national security of Russia. *Razvitie i bezopasnost'*, 3(7), 105–114. DOI: 10.46960/2713-2633_2020_3_105 (in Russian).
- Sun Y., Li Y., Ma R. et al. (2022). Mapping urban socio-economic vulnerability related to heat risk: A grid-based assessment framework by combing the geospatial big Data. *Urban Climate*, 43, 101169. DOI: 10.1016/j.uclim.2022.101169
- Tanir T., Sumi S.J., Lima A. D. S. et al. (2021). Multi-scale comparison of urban socio-economic vulnerability in the Washington, DC metropolitan region resulting from compound flooding. *International Journal of Disaster Risk Reduction*, 61, 102362. DOI: 10.1016/j.ijdr.2021.102362

- Turner B.L. (2010). Vulnerability and resilience: Coalescing or paralleling approaches for sustainability science? *Global Environmental Change*, 20(4), 570–576. DOI: 10.1016/j.gloenvcha.2010.07.003
- Van Beynen P., Akiwumi F.A., Van Beynen K. (2018). A sustainability index for small island developing states. *International Journal of Sustainable Development and World Ecology*, 25(2), 99–116. DOI: 10.1080/13504509.2017.1317673
- Vasil'ev Yu.S., Didenko N.I., Cherenkov V.I. (2019). Some items and prospective drivers for sustainable development of the Arctic zone of Russian Federation. *Sever i rynek: formirovanie ekonomicheskogo poryadka*, 1(63), 4–26. DOI: 10.25702/KSC.2220-802X.1.2019.63.4-26 (in Russian).
- Vyal'shina A.A. (2022). Changing priorities of rural development in conditions of increasing global instability. *Regional'nye agrosistemy: ekonomika isotsiologiya=Regional Agrosystems: Economics and Sociology*, 3, 91–99 (in Russian).
- Zeng X., Yu Y., Yang S. et al. (2022). Urban resilience for urban sustainability: Concepts, dimensions, and perspectives. *Sustainability (Switzerland)*, 14(5), 2481. DOI: 10.3390/su14052481
- Zhikharevich B.S., Klimanov V.V., Maracha V.G. (2020). Resilience of the territory: Concept, measurement, governance. *Regional'nye issledovaniya*, 3, 4–15. DOI: 10.5922/1994-5280-2020-3-1 (in Russian).

Information about the Author

Yuliya M. Pasovets – Candidate of Sciences (Sociology), Associate Professor, associate professor of department, Kursk State University (33, Radishchev Street, Kursk, 305000, Russian Federation; e-mail: yulia_pasovets@mail.ru)

Received April 17, 2023.