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IDENTIFYING POVERTY TRIGGERS IN RUSSIAN REGIONS

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Abstract

The authors propose the approach for identification of the differences between Russian regions in the poverty profile by evaluating household well-being and identifying poverty's primary triggers. The stratification of the households may outline new sub-groups of low-income people. These sub-groups do not receive state support because they are not considered poor according to the official poverty line. We made the households' ranking on three stratification scales according to the equivalent income, the living space, and the property. The results of the three rankings are used to create an integral ranking of household well-being. An integral ranking shows groups of regions with different poverty profiles and a significant cross-regional inequality of households in the Russian Federation. All low-income households are divided into three groups: low-income households according to equivalent income and integral ranking, low-income households according to integral ranking, and low-income households according to equivalent income. Analysis of these groups allowed identifying such poverty triggers as lack of land ownership and, as a result, the inability to engage in farming, limited mobility due to the lack of a car, and one or more children in the family leading to the risk of poverty.

Keywords: Equivalence scale, region, relative poverty, Russia, trigger

1. Introduction

Market reforms of the 1990s in Russia hit the most vulnerable groups of the population and contributed to property stratification. During these years in Russia, there were millions of people living on less than $1.9 and $3.2 per day. In the first decade of the 21st century, against the backdrop of rising world prices for oil and gas, Russia had some success in the fight against poverty. Even after the 2008-2009 crisis, the incomes of most citizens recovered fairly quickly. By 2018, the number of people living on less than $1.9 and $3.2 a day had dropped to near zero. In 2017, the share of the Russian population living on less than $3.2 a day was below 0.1%, while about 1% of Russians lived on less than $5.5 a day, and less than $10 - 6.2%.

The official poverty level in Russia is calculated by the proportion of people living below the subsistence level. The latter value changes every quarter. So, in 2017, 13% of Russians lived on income below the subsistence level for that year (10 thousand roubles or about 150 US dollars per month). In absolute numbers, it is over 19 million people. For comparison, the smallest share of low-income people in modern Russian history was recorded in 2012, when it was 10.8 percent or 15.5 million people.

The Russian government has an ambitious plan to fight poverty within the framework of Sustainable Development Goals - 2030. By 2030, poverty in Russia should be halved compared to the 2017 indicator. Adjusted for the population change (demography forecasts do not expect noticeable population growth) by 2030, there should be less than 10 million officially low-income people in the country.

However, since 2014, because of the war of sanctions and a sharp fall in the Russian currency (rouble), the real collapse of household incomes began. The COVID-19 pandemic in 2020 has led to an even greater drop in income of Russians who have become poorer for five years in a row. According to the Federal State Statistics Service, in the second quarter of 2020, because of quarantine restrictions in the fight against COVID-19, the real disposable income of Russians fell by 8%. This is a record quarterly drop since the turn of the century.

The scale of real poverty in Russia is likely to exceed official data. Various think tanks provide data on poverty rates at twice the official estimate. Poverty is distributed unevenly throughout Russia because of big differentiation in the cost of living and income per capita in its regions. The difference in the level of median and average income between regions with a high and low proportion of the low-income people is about three to four times. The share of Russians living below the official poverty line in 11 regions of the country exceeded 20%. In 17 regions, the share of the low-income people is less than 10%. In these conditions, search for triggers of real poverty in Russian regions becomes an important task.

2. Problem Statement

Official poverty estimation in Russian regions has several limitations. At first, economies of scale in estimating household income or consumption are not taken into account. Second, the official poverty line is constructed using the absolute concept of poverty based on subsistence minimum. Using the concept of relative poverty, equivalence scales for estimating income per capita, and additional household

well-being triggers can help avoid these limitations. The authors have already used such an approach in measuring equivalent income (Sadyrtdinov et al., 2017) and chronic poor in Russia (Sadyrtdinov et al., 2019)

There is a set of papers studying poverty on a regional level in developing countries and countries in transition. Based on census data at the county level from 2000 to 2010 in China, Li et al. (2019) use principal component analysis to establish an integrated multidimensional poverty index (IMPI) for geographical identification of poverty-stricken counties using indicators system guided by sustainable livelihoods framework. The results show that many poverty-stricken and developed counties are exposed to poor air quality. The accurate identification of geographical and spatiotemporal patterns of poverty in China can lead to implementing anti-poverty strategies. This paper also offers new insights into poverty measurement for other developing countries. (Li et al., 2019)

Pan & Hu (2018) applied an interesting approach based on a new remote-sensing data (NPP-VIIRS) to locate poverty-stricken areas based on night-time light, taking 2852 Chinese counties as a sample. By improving the accuracy of targeting, we could use this method of identifying multidimensional poverty areas as a reference for countries or regions that seek to target poor areas that suffer multi-dimensional deprivation.

Micro-econometric models are applied for investigating determinants of household welfare in Central Highland, Vietnam, using recent data from the Vietnam Household Living Standard Survey in 2016. The results on determinants include the substantial contribution of nonfarm self-employment and education to household income and poverty eradication, the positive association of wage employment, and only some types of land with poverty reduction. (Nguyen & Nguyen, 2019)

The dynamics of spatial inequality and poverty from 1993 to 2014, notably for the bottom 40 percent of the population in Vietnam, is verified in another paper. The urban-rural expenditure gap is mainly explained by years of education, job sector, and ethnic minority status of household head, and remittances over the duration. For determinants of poverty of bottom 40 percent of the population, years of education, service sector job, and remittances, among others, largely and positively explained the dynamics based on quantile regression estimation results. (Takahiro, 2018)

Another research exploits comprehensive data set of 86 up-to-date official extreme and total urban poverty lines across eighteen countries in Latin America and recently updated values of national purchasing power parity conversion factors from the 2011 International Comparison Program and a set of harmonized household surveys. Using US\$3.00 and US\$6.00 per person a day at 2011 PPP as extreme and total poverty lines, respectively, for Latin America, this paper illustrates the sensitivity of poverty rates to changes of values of poverty lines because of the recent update of PPP values, the period of reference, and relative cost of living across countries in the region. (Castañeda et al., 2018)

Vacaflores (2018) in his research uses a new dataset for 18 Latin America countries covering the 2000-2013 period to examine the effectiveness of international remittances in reducing poverty and inequality. Dynamic panel data results using several measures for remittances show that increases in remittances have a negative and statistically significant impact on overall poverty and inequality in the region, even if it exacerbates moderate poverty.

Bautista (2018) constructed a multidimensional poverty index for the Philippines using the Alkire-Foster method and data from a 2011 annual poverty indicator survey. A study of household poverty using mixed logit analysis at the province level finds a positive relation between poverty risk and household size. A substantial reduction of risk is observed for households with heads who were able to matriculate high school. The household head's health status has a negative impact on the household's risk of being poor.

Therefore, the scientific problem to be solved in this paper is finding the major differences between Russian regions in poverty profile by constructing stratification scales and identifying the main triggers of poverty. According to the stratification scales, distribution of households may outline new sub-groups of poor which are not taken into account by official statistics and do not receive support from social programs targeting the most vulnerable groups of society.

3. Research Questions

In the research, the authors study the stratification of households in Russian regions and identify poverty triggers and major differences between these regions in poverty profile. Research questions to be answered are:

- Do all Russian regions have the same poverty triggers?
- Are all income-poor households at the same time poor in multidimensional deprivation? Are there households that are income-poor but not multidimensional poor and vice versa?

4. Purpose of the Study

While making research on the problem of regional poverty, different authors study determinants, level of poverty, and methods of its measurement. Alkire, Roche & Vaz use the Alkire Foster Adjusted Headcount Ratio and its consistent sub-indices to identify inter-temporal changes in multidimensional poverty on the global Multidimensional Poverty Index (MPI) in 34 countries and 338 sub-national regions. This extensive empirical analysis illustrates how to assess the extent and patterns of reduction of multidimensional poverty, and whether it is inclusive or whether some people or groups are left behind. (Alkire et al., 2017)

Pasha (2017) analyses the consequences of alternative weighting schemes for the Multi-dimensional Poverty Index (MPI), using a data-driven approach, as opposed to the currently used equal weighting scheme. Given the high correlation between all indicators used within the MPI, a large overlap is found in the information, implying that there might not be so much multidimensionality within the MPI dimensions.

Another interesting research investigates measuring the proportion of the population affected by the phenomenon of poverty in Spain based on the relationship between severe material deprivation rate and the at-risk-of-poverty rate by regions. The results could serve as the base for future studies to provide more detailed information about the breakdown of relative poverty within each country and to meet relevant information requests, at the national and international level, to support the implementation of public policies in this area. (Salcedo & Izquierdo, 2017)

Ravallion and Lokshin (2002) study determinants of peoples' perceptions of their economic welfare. While income is a highly significant predictor, subjective economic welfare is influenced by many other factors including health, education, employment, assets, relative income in residence, and expectations about future welfare. Insights are obtained into how objective data should be weighted in assessing economic welfare.

Buckley and Gurenko (1997) show that housing allocation had a progressive effect on the distribution of income in Russia. Also, when the imputed value of housing is added to household income, an increase in income inequality that occurred in recent years is significantly reduced. The analysis concludes with a discussion of how housing policy could address poverty concerns, art important aspects of the transition process.

Malkina (2016) got estimations of the social well-being of Russian regions for 11 years based on simple and advanced functions by Sen and Atkinson. She identified a logit-shaped type of inter-regional differences in the level of welfare per capita: coexistence of excessive poverty and excessive richness with stable middle. The study also revealed that the degree of inter-regional inequality and its rate for welfare functions is lower than for real income per capita.

That is why within the framework of the problem outlined above, this paper aims to find the major differences of Russian regions in poverty profile by constructing stratification scales and identifying main triggers of poverty. We will make an estimation of relative poverty in Russian regions using equivalent income and other important determinants of household welfare. We will get the results with the prospect of its practical application in the further development of anti-poverty strategies and programs in Russian regions.

5. Research Methods

Ranking of households is carried out by distributing households on scales that include five intervals. To create an integral ranking of household well-being, three scales are first constructed. The first scale allows distribution households according to their equivalent income, the second scale - according to the living space, the third scale - according to the property.

In this paper, we measure poverty using the relative concept. The relative poverty line on the first scale is defined as 50% of the median income. The Organization for Economic Cooperation and Development (OECD) gives such a definition. Therefore, the border of the first and second intervals is set at 50% of the median income (MI) for every region. The median income is considered as the middle of the third interval, and all other scale borders except the first border are set relative to it with the same step of 40%. There is no maximum limit for the last fifth interval. As a result, the scale is divided into five intervals with four scale borders:

1. 0.5 * MI - border of the first and second intervals;
2. 0.8 * MI - border of the second and third intervals;
3. 1.2 * MI - border of the third and fourth intervals;
4. 1.6 * MI - border of the fourth and fifth intervals.

We estimate the equivalent income per capita for all households in a sample. It is calculated as the ratio of total household income to the equivalence scale. To calculate equivalence scales, the Engel law

(Engel, 1895) is used. According to it, if different households spend on food equal share per capita expenditures, their level of well-being is the same. The most optimal explaining of this law is the common shape of the Woking-Leser form (Leser, 1963).

The second scale comprises five intervals and is constructed using the indicator of living space per capita. For the border of the first and second intervals, we use the value of the minimum standard established in the Russian Federation. After changes in the housing legislation, this indicator is currently set at the level of local authorities. Therefore, to ensure the comparability of regions, the authors use a unified value of 12 square meters per capita for all regions, which was set in the Housing Code of the Russian Federation previously. This indicator was used to identify citizens who need to improve their living conditions. We estimate all other borders of the second scale the same as for the first scale. The median value of total living space per capita is considered as the middle of the third interval and all other boundaries except the first border are set relative to it with the same step of 40%.

The third scale is based on the presence/absence of property that significantly characterizes the inequality of households. One of the key indicators of prosperity in modern Russia is real estate ownership. Investments in real estate, such as buying an apartment or house and land, are means to preserve and increase household welfare. Another success marker is car owned. Thus, the following assets were selected as significant: main housing (apartment or house) owned by household, additional housing (apartment or house) owned by household, a car owned, and land owned by the household. The absence of all selected property assets corresponds to the first interval, one property asset - to the second interval, two property assets - to the third, three property assets - to the fourth and the ownership of all property assets-to the fifth interval on the scale.

To construct an integral ranking of household well-being, we assign each household point corresponding to the interval number on each scale in which the household fell. For example, if a household falls into the first interval on the scale, then it is awarded one point. Further, these points for each household are summed up, and for every region of the Russian Federation the distribution of households to one of the following groups is determined:

group 1 - in extreme poverty (3 points);

group 2 - needy (4-6 points);

group 3 - middle (7-9 points);

group 4 - well-off above average (10-12 points);

group 5 - wealthy (13 points and more).

Each interval turns into a social stratum, building a hierarchy from household members in extreme poverty at the social bottom (first interval) to wealthy household members at the social top (fifth interval). The most vulnerable group on this integral stratification scale are household members with multidimensional deprivation, based not only on income but also on housing provision and additional property assets. Earlier, a group of households below the relative poverty line on the first scale was identified. The question arises, to what extent these two groups of households correspond to each other and how their poverty profile differs.

We use data from the Budget Survey of Households in Russia for equivalent income estimation. The survey is carried out by state statistics bodies on a regular basis and covers the entire territory of the

Russian Federation. The household sample is regionally representative. For the 2018 year data on 46840 households is taken, because it includes needed for research parameters in the questionnaire.

6. Findings

To construct the first ranking, the equivalent income per capita for every household in a sample was estimated using equivalence scales. Further, for each Russian region, median equivalent income was found. Then borders of intervals were determined, and we distributed all households over these intervals. The results are presented in Table 1.

Table 1. Distribution of household members in Russian regions using relative poverty line, %

Type of region	Name of region	Intervals				
		1	2	3	4	5
Leading regions	Moscow, Moskovskaya oblast, St. Petersburg, Leningradskaya oblast, Kalugskaya oblast, Ivanovskaya oblast, Vladimirskaya oblast, Tverskaya oblast, Tulskaya oblast, Ryazanskaya oblast, Kostromskaya oblast, Orlovskaya oblast, Vologdskaya oblast, Murmanskaya oblast, Chechnya, Ingushetia, Adygea, Chuvashia, North Ossetia, Crimea, Sevastopol, Amurskaya oblast, Rostovskaya oblast, Udmurtia, Samarskaya oblast, Kirovskaya oblast, Volgogradskaya oblast, Chelyabinskaya oblast	2.8-14.5	26.2-41.4	30.1-46.9	9.2-23.7	5.2-10.2
Middle regions	Karelia, Permskiy krai, Arhangelskaya oblast, Yaroslavskaya oblast, Belgorodskaya oblast, Ulyanovskaya oblast, Pskovskaya oblast, Sakha (Yakutia), Khabarovskiy krai, Sverdlovskaya oblast, Kemerovskaya oblast, Tyumenskaya oblast, Kurskaya oblast, Kurganskaya oblast, Zabaykalsky krai, Novgorodskaya oblast, Penzenskaya oblast, Kaliningradskaya oblast, Mordovia, Saratovskaya oblast, Tuva, Krasnodarskiy krai, Altai, Nizhegorodskaya oblast, Tambovskaya oblast, Stavropolskiy krai, Primorsky krai, Lipetskaya oblast, Khakassia, Tomskaya oblast, Karachay-Cherkessia, Buryatia, Mari El, Kamchatskiy krai, Chukotkskiy avtonomny okrug, Orenburgskaya oblast, Kalmykia	14.9-28.5	25.1-35.4	20.6-33.8	8.3-15.7	6.3-16.9
Regions-outsiders	Komi, Novosibirskaya oblast, Tatarstan, Sakhalinskaya oblast, Krasnoyarskiy krai, Omskaya oblast, Astrakhanskaya oblast, Irkutskaya oblast, Evreiskaya avtonomnaya oblast, Dagestan, Altaiskiy krai, Bryanskaya oblast, Magadanskaya oblast, Bashkortostan, Voronezhskaya oblast, Smolenskaya oblast, Kabardino-Balkaria	29.2-93.6	0-29.9	0-24.4	0.4-12.4	6.1-15.3

All regions are grouped into three groups. Comparing the distribution of household members from these groups of regions, it is necessary to note that only in leading regions the stratification is shaped like a lemon, with a few upper and lower classes at either big number of the middle class. In middle regions, the largest stratum is shifted to the second group with incomes below average. And in 17 regions-outsiders shares of household members in the first interval (below the poverty line) is higher than in the third interval (middle income). The second scale was constructed using an indicator of living space per capita. The results are presented in Table 2.

Table 2. Distribution of household members in Russian regions using housing provision line, %

Type of region	Name of region	Intervals				
		1	2	3	4	5
Leading regions	Kalmykia, Voronezhskaya oblast, Dagestan, Tambovskaya oblast, Mordovia, St. Petersburg, Bryanskaya oblast, Smolenskaya oblast, Rostovskaya oblast, Chukotsky avtonomny okryg, Kostromskaya oblast, Adygea, Ulyanovskaya oblast, Khabarovsky krai, Novgorodskaya oblast, Moscow, Vologodskaya oblast, Moscovskaya oblast, Stavropolsky krai, Ingushetia, Kurskaya oblast, Krasnodarsky krai, Tverskaya oblast, Novosibirskaya oblast, Tylskaya oblast, Altaisky krai, Astrakhanskaya oblast, Orlovskaya oblast, Vladimirskaya oblast, Ryazanskaya oblast, Magadanskaya oblast, Irkutskaya oblast, Primorsky krai, Penzenskaya oblast, Kalughskaya oblast, Saratovskaya oblast, Tyumenskay oblast, Sakhalinskaya oblast, Ivanovskaya oblast, Lipetskaya oblast, Chechnya, Udmurtia, Samarskaya oblast, Kabardino-Balkarya, Nizhegorodskaya oblast, North Ossetia, Murmanskaya oblast, Leningradskaya oblast, Chelyabinskaya oblast, Orenburgskaya oblast, Tatarstan, Volgogradskaya oblast, Kaliningradskaya oblast, Pskovskaya oblast	3.5-14.5	36.3-58.8	17.6-35.9	5.7-13	4.5-8.3
Middle regions	Omskaya oblast, Kamchatsky krai, Mari El, Belgorodskaya oblast, Komi, Crimea, Yaroslavskaya oblast, Tomskaya oblast, Amurskaya oblast, Kirovskaya oblast, Khakassia, Sevastopol, Bashkortostan, Karachay-Cherkessia, Chuvashia, Altai, Arhangelskaya oblast, Karelia, Zabaikalsky krai, Kemerovskaya oblast, Sverdlovskaya oblast, Sakha (Yakutia), Krasnoyarsky krai, Kurganskaya oblast, Evreiskaya avtonomnaya oblast, Permsky krai, Buryatia	14.7-24.9	28.5-53	15.1-28.8	5.6-10.4	4.8-8.5
Regions-outsiders	Tyva	34,5	29,2	24,0	5,6	6,6

Table 2 shows that the largest share of household members below the housing line is in the Republic of Tyva (34.5%). The share of households below the housing provision line in leading regions doesn't exceed 15%, in middle regions - within 14.7-24.9%. In leading and middle regions, the largest stratum is shifted to the second group with the living space per capita below average. At other intervals in these two groups of regions, comparable minimum and maximum limits of the share of household members remain.

To create the third ranking, data on the ownership of housing, car, and land were taken from the sample. The results of the distribution of households using the property line are presented in Table 3.

Table 3. Distribution of household members in Russian regions using property assets line, %

Type of region	Name of region	Intervals				
		1	2	3	4	5
Leading regions	Ingushetia, Kabardino-Balkaria, Voronezhskaya oblast, Kurskaya oblast, Lipetskaya oblast, Mordovia, Chuvashia, Dagestan, Moscow, Kalughskaya oblast, Kalmykia, Penzenskaya oblast, Altaisky krai, Krasnodarsky krai, Bryanskaya oblast, North Ossetia, Astrakhanskaya oblast, Belgorodskaya oblast, Stavropolsky krai, Saratovskaya oblast, Vologodskaya oblast, Mari El, Vladimirskaya oblast, Udmurtia, Nizhegorodskaya oblast, Ryazanskaya oblast, Karachay-Cherkessia, Tambovskaya oblast, Bashkortostan, Volgogradskaya oblast, Tomskaya oblast, Rostovskaya oblast, Primorsky krai, Tulskaya oblast, Altai, Kemerovskaya oblast, Novgorodskaya oblast, Omskaya oblast, St. Petersburg, Adygea, Crimea, Irkutskaya oblast, Ivanovskaya oblast, Amurskaya oblast, Kurganskaya oblast, Novosibirskaya oblast, Chelyabinskaya oblast, Sevastopol, Khakassia, Evreiskaya avtonomnaya oblast, Tyva, Orlovskaya oblast, Permsky krai, Chechnya, Sverdlovskaya oblast, Murmanskaya oblast, Pskovskaya oblast, Buryatia, Samarskaya oblast, Moscovskaya oblast, Kostromskaya oblast, Yaroslavskaya oblast, Tyumenskaya oblast, Orenburgskaya oblast, Zabaikalsky krai, Smolenskaya oblast, Kirovskaya oblast, Tatarstan, Tverskaya oblast, Khabarovsky krai, Krasnoyarsky krai, Komi, Sakha (Yakutia), Karelia, Kaliningradskaya oblast, Ulyanovskaya oblast, Leningradskaya oblast, Sakhalinskaya oblast, Magadanskaya oblast	0-12.5	27.7-75.7	16.1-57.5	0-21.4	0-2.8
Middle regions	Kamchatsky krai, Arhangelskaya oblast	14,8-16,8	31,1-38,1	34,2-40,7	10,4-12,5	0,6-1
Regions-outsiders	Chukotsky avtonomny okryg	47,7	46,3	6,0	0	0

We found the maximum share of households lacking the entire set of property assets in Chukotsky avtonomny okryg (47.7%). In all other regions, the share of households in the first interval is less than the share of households in the second or third interval. It shows that in most regions households own at least one property asset, but no one can significantly increase welfare by owning three or more property assets in total. Further, depending on the interval in which the households fell, they are assigned corresponding points. By summing them up, we make an integral ranking of household well-being. The results are presented in Table 4.

Table 4. Distribution of household members in Russian regions on integral stratification scale, %

Type of region	Name of region	Intervals				
		1	2	3	4	5
Leading regions	Ryazanskaya oblast, St. Petersburg, Ivanovskaya oblast, Chuvashia, Adygea, Udmurtia, Vologodskaya oblast, Murmanskaya oblast	0-0.4	14.1-19.4	46.2-71.9	15.8-22.8	0-1.7
Upper-middle regions	Ingushetia, Novgorodskaya oblast, Pskovskaya oblast, Chelyabinskaya oblast, Kalughskaya oblast, Leningradskaya oblast, Chechnya, Vladimirskaya oblast, Rostovskaya oblast, Tulskaya oblast, Kostromskaya oblast, Volgogradskaya oblast, Moscow, Orlovskaya oblast, Kirovskaya oblast, Moscovskaya oblast, Samarskaya oblast, Khabarovsky krai, Kurskaya oblast, North Ossetia, Tverskaya oblast, Mordovia, Karelia, Tyumenskaya oblast, Permsky krai, Krasnodarsky krai, Ulyanovskaya oblast, Sverdlovskaya oblast, Belgorodskaya oblast, Altai, Nizhegorodskaya oblast, Stavropolsky krai, Primorsky krai, Amurskaya oblast, Penzenskaya oblast, Tomskaya oblast, Yaroslavskaya oblast	0-2.2	19.8-29.5	29.8-65	14.1-22.3	0-1.4
Lower-middle regions	Kalmykia, Tambovskaya oblast, Kemerovskaya oblast, Karachay-Cherkessia, Khakassia, Novosibirskaya oblast, Sakha (Yakutia), Saratovskaya oblast, Arhangelskaya oblast, Kurganskaya oblast, Kaliningradskaya oblast, Zabaikalsky krai, Krasnoyarsky krai, Crimea, Irkutskaya oblast, Kamchatsky krai, Astrakhanskaya oblast, Lipetskaya oblast, Tatarstan, Orenburgskaya oblast, Sevastopol, Omskaya oblast, Komi	0-1.9	30.1-37.6	41.6-54.3	12.3-21.6	0.2-1.6
Regions-outsiders	Buryatia, Mari El, Evreiskaya avtonomnaya oblast, Altaisky krai, Sakhalinskaya oblast, Dagestan, Tyva, Bashkortostan, Magadanskaya oblast, Bryanskaya oblast, Chukotsky avtonomny okrug, Voronezhskaya oblast, Smolenskaya oblast, Kabardino-Balkaria	0-1.7	39.6-68.6	19.9-43.9	5.3-17.5	0-1.7

The data in Table 4 represent four groups of Russian regions. All groups of regions are like each other in terms of indicators on the first and fifth intervals. Not more than 2.2 percent of household members are in extreme poverty, and not more than 1.7 percent of household members are wealthy. The

first three groups of regions have approximately equal distribution orders of household members in the fourth interval. All groups of regions have significant differences in the second interval where needy households are concentrated.

Comparing the first ranking on income and integral ranking, all poor households can be divided into three groups: low-income households according to equivalent income and integral ranking, low-income households according to integral ranking, and low-income households according to equivalent income. Analysis of the first two groups allowed identifying poverty triggers. So, only 37.9% of low-income households on average live in the countryside and the average value of land ownership for poor households in all regions equal to 4.3%. It means that most low-income households do not grow food or keep livestock to feed themselves and have a source of income. Only 25.4% of households on average in all regions can afford a car, which also can be a source of income. On average, 59.4 % of household members have a job and 62.1% of households have one child or more. Thus, the presence of a child as dependent in the household can trigger poverty, even if both adults work.

7. Conclusion

Using an integral ranking makes it possible to create groups of regions with different poverty profiles. The authors revealed significant inequality of households in regions of the Russian Federation. We can divide all low-income households into three groups: low-income households according to equivalent income and integral ranking, low-income households according to integral ranking, and low-income households according to equivalent income. Analysis of these groups allowed identifying such poverty triggers as lack of land ownership and, as a result, the inability to engage in farming, limited mobility due to the lack of a car, and one or more children in the family leading to the risk of poverty.

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