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Socio-economic inequalities: Romanian rural area typologies¹

Abstract: *The economic and social inequalities take multiple forms. Their complexity and effect upon individual and overall human development are increasingly deep as several inequality risk sources are cumulated. There is a well-known mutual driving effect that the economic inequality causes have upon social inequality, the reciprocal being also valid. The present study attempts to identify the main inequality sources in the Romanian rural area: the demographic disequilibria in the first place, followed by the territory technical infrastructure, economic development of the area that provides occupational opportunities, social infrastructure and appetite for investments. We propose a theoretical methodology for the aggregation of rural inequality indicators, which enables grouping the communes from Romania into three clusters, depending on the cumulated intensity of the manifestation of factors that describe and/or condition the socio-economic inequalities.*

Keywords: *socio-economic inequality, rural area, Romania*

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The complexity and dimension of the inter-individual inequalities, the existing interdependence between the different aspects governing people's lives, and their impact upon human development in general, represented one of the most controversial aspects of the economic and social rhetoric in the last year, both at global level and at the level of European and national academic and political circles. Most often, the sources of inequalities between individuals are not prioritarily determined by their own efforts and the exploitation of individual abilities and talents, but rather depend on pre-determined circumstances such as the community-regional development of the residence area, demo-social models of the community that impose the framework in which the people can evolve, accessibility of social infrastructure and the technical endowment of the territory on which the people live, or upon the general perception upon a territory that can or cannot be appreciated as attractive for investments. All these elements are not under the individual's direct control and do not depend only on them, but they structure the differences in opportunities (or constraints) that the context in which people's lives evolve provide for them to be used in order to reach individual welfare.

All these contexts influence the health condition, educational level, dwelling quality, access to better paid jobs, life quality, and opportunity to efficiently economically set the individual skills and abilities and to put into application the private entrepreneurial initiatives.

Materials and methods

The analysis of the rural socio-economic inequalities was based on a set of dimensions and indicators describing the condition and extent of rural inequality. Each dimension comprises a number of indicators calculated at the commune level, based on available statistical data for 2008. The presence or absence of indicators was subject to both their characterization power of a phenomenon and the existence of statistical records.

The selected dimensions for the typology of rural areas were the following:

MATRIX OF SOCIO-ECONOMIC INEQUALITY DIMENSIONS AND INDICATORS

Dimension 1: TERRITORY TECHNICAL INFRASTRUCTURE – provides information on the on-dwelling comfort; rural technical infrastructure as support to rural development – to business environment included. Selected indicators: Living floor/inhabitant; Quantity of drinking water supplied to consumers for domestic use; Simple length of the drinking water supply network; Simple length of the sewerage network; Length of natural gas supply pipelines

*Dimension 2: **DEMO-ECONOMIC DIMENSION** – provides information on the local demographic perspectives, on the disintegration of family values, living attractiveness of the zone and the economic-social opportunities that the respective area is presumed to provide, etc. Selected indicators: Natural increase/1000 inhabitants; Divorces/1000 inhabitants; Balance of change of domicile /1000 inhabitants; Balance of change of residence /inhabitants; External migration balance/1000 inhabitants.*

*Dimension 3: **SOCIAL INFRASTRUCTURE** – provides information on the educational and health infrastructure and its adjustment to the community needs; potential access to ICT, etc. Selected indicators: Enrolled pupils /teacher; Number of inhabitants / physician; PC/1000 inhabitants.*

*Dimension 4: **ECONOMIC DIMENSION** – provides information on paid job access opportunities and the rural population's dependence on the social transfers and agriculture, agricultural land operation intensification, development of economic activities complementary to agriculture, the abilities to promote rural services complementary to agriculture, etc. Selected indicators: Number of employees/1000 inhabitants; share of arable land in total agricultural land; share of area under vineyards and orchards in total agricultural*

*The theoretical model aggregating the rural inequality indicators that is used in the present study is based on **cluster analysis** as this method makes it possible to classify the objects into homogenous clusters, according to a given set of variables. As the cluster analysis permits the identification of a set of homogenous groups by grouping the elements so that to minimize variation within the group and to maximize variation among groups, it was considered as the most adequate method for the aggregation of inequality indicators.*

The cluster analysis of the secondary statistical data available in the commune fiches provided by NIS for the year 2008 enabled a *typology of the Romanian rural area by rural inequality level*.

Results and discussions

The results of the cluster analysis and of the data series regarding the rural economic-social inequality led to the classification of the communes from Romania into three clusters, with the following territorial profile.

The three clusters into which the rural communities from Romania were distributed can be interpreted as categories that classify the communes with regard to *the cumulated intensity of factors that describe and/or condition the socio-economic inequalities (Map 1)*. Thus, we differentiate:

- rural communities characterized by a low level of rural socio-economic inequality (cluster I) – 20.5% of investigated communes;
- rural communities characterized by a medium level of rural socio-economic inequality (cluster II) – 40.7% of communes;

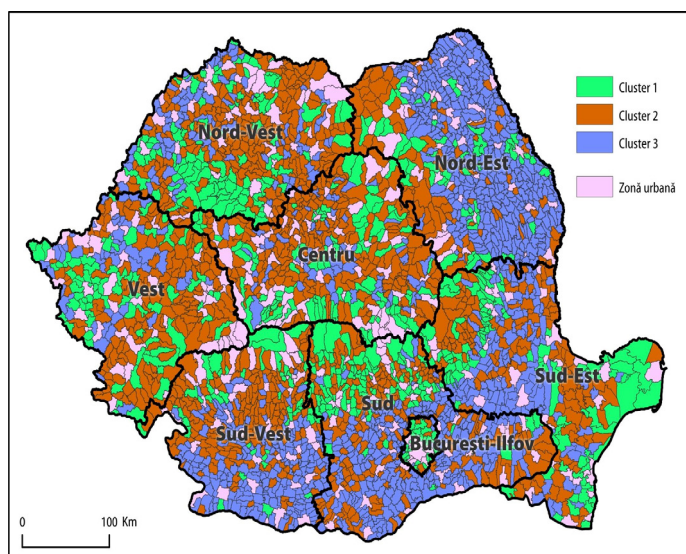
- rural communities characterized by a higher level of rural socio-economic inequality (cluster III) - 38.8 % of communes.

Table 1. Average value of rural inequality matrix indicators by clusters

Criteria	Indicators	Cluster			Total rural
		I	II	III	
TERRITORY TECHNICAL INFRASTRUCTURE	Living area/inhabitant (square meters/inhabitant)	17.4	16.5	14.4	15.9
	Drinking water quantity supplied to domestic consumers (m³/inhabitant)	33.5	14.6	5.1	14.8
	Simple length of drinking water distribution network – km	19.8	11.5	4.9	10.6
	Simple length of sewerage system – km	2.8	0.3	0.2	0.8
	Simple length of natural gas supply pipelines - km.	9.7	5.3	0.8	4.4
DEMO-SOCIAL DIMENSION	Natural population increase/1000 inhabitants	-3.91	-6.83	-4.59	-5.36
	Divorces/1000 inhabitants	1.14	1.10	1.05	1.09
	Balance of change of domicile/1000 inhabitants	11.1	3.1	2.5	4.5
	Balance of change of residence /1000 inhabitants	-1.15	-3.68	-3.17	-2.96
	External migration balance /1000 inhabitants	-0.034	-0.002	-0.034	-0.019
SOCIAL INFRASTRUCTURE	Enrolled pupils/teacher	9.8	8.7	10.6	9.7
	Inhabitants / physician	1779	1763	2228	1947
	PC/1000 inhabitants	8.3	8.4	7.2	7.9
ECONOMIC DIMENSION	Number of employees/1000 inhabitants	129.4	62.3	49.0	70.9
	% arable land in agricultural area	49.7	50.4	76.9	60.5
	% area under vineyards and orchards in total agricultural area	6.9	2.6	2.5	3.4
	Average number of beds / accommodation unit	20.8	1.4	0.8	5.1
	Number of nights spent on accommodation units in 2008 / accommodation bed	34.1	1.5	0.8	7.9
INVESTMENTS	Dwellings finished in 2008 / 1000 existing dwellings	15.9	3.6	4.9	6.6

Source: authors' processing of data from the Commune Fiche, NIS, 2008

The rural communities characterized by a medium and low level of rural socio-economic inequality from the point of view of territorial distribution are mainly found in the mountain and plateau area; these communes have a wide range of resources that provide them with occupational diversification opportunities.



Map 1. Rural area typology by socio-economic inequality

(Source: authors' processing of data from the Commune Fiche, NIS, 2008)

The rural areas that cumulate the most economic and social vulnerability sources form relatively compact areas. They are generally located into the plain areas, whose local economies strongly depend on agriculture and provide relatively few ascending occupational mobility opportunities also because the proximal areas are less attractive for investors. In these rural areas urgent corrective interventions are needed in order to fight against the causes of inequalities so as to reach the target of equity and equal opportunities for all citizens. In the absence of well-targeted corrective interventions there is a risk of increasing the negative social and economic effects of community inequalities in opportunities, materialized into the absence of available resources and lack of access to resources that should support an acceptable human development for the 21st century.

It is necessary to mention that the parameters under which this classification was made are characteristic for the Romanian rural area, the distribution by clusters being made by taking into consideration the variation range of indicators on Romania's territory.

The importance of each of the five criteria selected in explaining the community socio-economic inequality level is different, the **factor analysis** (was performed by SPSS software and was applied to each development regions of Romania. The extraction method used was: *Principal component analysis* with which was determined, for each development region and at national level, the percent of total variance accounted by each factor) revealing the contribution of each selected community characteristic to the total variation of cumulated inequality.

Table 2. Importance of socio-economic inequality criteria and indicators in explaining the general variation of the inequality level

Criteria	Indicators	% in total variation of cumulated inequality	
		Indicators	Cumulated by criteria
Territory technical infrastructure	Living area/inhabitant (square meters/inhabitant)	1.86	24.76
	Drinking water quantity supplied to domestic consumers (m ³ /inhabitant)	10.65	
	Simple length of drinking water distribution network - km	2.64	
	Simple length of sewerage system – km	3.01	
	Simple length of natural gas supply pipelines - km.	6.59	
Demo-social dimension	Natural population increase/1000 inhabitants	5.67	31.38
	Divorces/1000 inhabitants	3.70	
	Balance of change of domicile/1000 inhabitants	2.64	
	Balance of change of residence /1000 inhabitants	14.00	
	External migration balance /1000 inhabitants	5.37	
Social infrastructure	Enrolled pupils/teacher	5.21	17.12
	Inhabitants / physician	3.81	
	PC/1000 inhabitants	8.10	
Economic dimension	Number of employees/1000 inhabitants	4.80	23.11
	% arable land in agricultural area	4.22	
	% area under vineyards and orchards in total agricultural area	4.36	
	Average number of beds / accommodation unit	6.46	
	Number of nights spent on accommodation units in 2008 / accommodation bed	3.28	
Investments	Dwellings finished in 2008 / 1000 existing dwellings	3.63	3.63

Source: authors' processing of data from the Commune Fiche, NIS, 2008

The factors on which the rural inequality in opportunities largely depends are those regarding the *Demo-social dimension*, the indicators under this criterion explaining 31.4% of the total variation of the inequality level. Under this dimension, the most relevant aspects concern: i) the balance of residence changes /1000 inhabitants, which reflect the demographic desertification risk of the rural communities that are economically and social isolated and are no longer attractive for living; ii) the second relevant demo-social aspect for the socio-economic inequality is the natural population increase that reflects the demographic ageing risk, labor force ageing and the depopulation of rural communities.

The *territory technical infrastructure* of rural communities is the second predictor of rural inequality, accounting for 24.8% of the total variation of the inequality

in opportunities. The most important technical aspect that conditions the socio-economic inequalities refers to the dwelling comfort (expressed by the quantity of drinking water supplied to inhabitants and the living area per inhabitant).

The endowment of the rural territories with technical infrastructure elements (water supply networks, natural gas supply and sewerage systems) in its turn has a significant contribution in explaining the general inequality in opportunities, the indicators that measure the simple length of the gas supply pipelines being most relevant for the general inequality compared to the indicators for the other technical infrastructure networks.

The indicators under the *economic dimension* of the rural communities represent the third step in the order of importance of factors determining the inequality in opportunities. Overall, the economic dimension accounts for 23.1% of the total variation of inequality.

Among the indicators composing this dimension, the most relevant for the differentiation of communes is the average number of beds per accommodation unit due to the poor development of tourism infrastructure and poor tourism potential promotion. The second important economic aspect is the incidence of contractual relations on the labor market (measured by the indicator *number of employees/1000 inhabitants*) which reflects the access opportunity to paid jobs and the diminution of the risk of dependence on own agricultural household farm.

The social infrastructure is on the fourth position in the hierarchy of criteria that condition the distribution of communes on the scale of inequality in opportunities; this criterion explains 17.1% of the total variation of inequality level. The indicators measuring the social infrastructure development level (number of pupils per teacher, number of inhabitants per physician) have a narrow variation range, most of the communes from Romania being characterized by the poor development of these infrastructure elements, which results in their low incidence upon the inequality level of rural communities.

The number of computers in 1000 inhabitants reveals the risk of not having access to the information supplied by electronic resources. This indicator represents the third indicator that explains the total variation of community inequality in opportunities.

The criterion “*Investments*” has a low incidence upon the general inequality level (explaining only 3.6% of the general variation of inequality in opportunities). Only for the communes from cluster 1 – which represent only 1/5 of the rural localities – the number of investments in new dwellings is statistically representative, for the other 80% of communes the share of the new buildings is not significant, which overall makes the criterion *Investments* be also less relevant for structuring the inequalities in economic-social opportunities in the Romanian rural area.

The hierarchy of the main sources of inequality in opportunities at the Romanian rural area level led to the conclusion that the opportunities that largely condition the opportunities of access to a better living of the Romanian rural people are concentrated in the areas of demographic disequilibria. These are followed, as source of inequity in opportunities, by territory technical infrastructure, economic development of the area providing occupational opportunities, social infrastructure and the people's appetite for investments.

Conclusions

The hierarchy of the main inequality sources in Romania's rural area led to the conclusion that the element that mostly conditions the socio-economic inequality in rural Romania is socio demographic dimension. This is followed, as source of socio-economic inequality, by the territory technical infrastructure, the economic development of the area providing job opportunities, social infrastructure and the inhabitants' appetite for investments.

The rural communities that cumulate the most economic and social vulnerability sources are grouped into relatively compact areas. These are in general communes located in the plain areas, whose local economies highly depend on agriculture, providing relatively few opportunities for ascending occupational mobility as the neighboring areas are also less attractive for investors. Urgent corrective interventions are needed in these rural areas in order to remove the causes of social inequalities as there is the risk of increased negative social and economic effects materialized into the absence of available resources and access to resources that should sustain an acceptable human development for the 21st century.

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