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## Strengthening the Romanian rural household by improving current demographic structures

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# STRENGTHENING THE ROMANIAN RURAL HOUSEHOLD BY IMPROVING CURRENT DEMOGRAPHIC STRUCTURES

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## Abstract

*The main purpose of this research was to establish measures to prevent demographic structural changes, which would positively influence the process of modernization-sustainable development of the rural household and the Romanian rural area. The starting point of the research was the creation of a typology of rural area modernization and socio-economic development from the point of view of the rural household modernization potential. To quantify the links between the investigated phenomena and the demographic indicators, the Pearson correlation was used, which highlighted the type of connection (direct, indirect or without influence). Based on this information, the research was completed by developing three scenarios - the optimistic, realistic and pessimistic scenarios - of consolidating the rural household by improving demographic structures. The demographic indicators taken into consideration registered a significant decline in the analysed period, except for the group of counties with net prospects for modernization-development, which emphasizes the need for demographic policies to prevent existing structural problems.*

**Keywords:** rural area, rural household, sustainable development

**JEL Classification:** R20, Q 01, O2

## INTRODUCTION

The demographic dimension is an essential element in determining the viability of rural areas (Alexandri, 2017), and the rural household represents the driver of rural area, the very existence of the Romanian village being linked to the existence of this entity. At present, the rural household has to face the same challenges that the rural area is facing (Chițea L., Dona I., 2017).

The downward trend of demographic indicators (rural population volume, demographic aging, etc.) (Ghețău, 2015) also has a direct impact on the evolution of the rural household. In the period 2007-2018, this evolution had two divergent directions in rural Romania: in the peri-urban areas, there is a favourable demographic evolution, while in the remote/isolated areas we can notice a demographic decline, with undesired effects (abandonment of household, depopulation of rural areas). This situation highlights the need for specific measures depending on the modernization-development level that has been reached.

## MATERIALS AND METHODS

The present research study aims to highlight the importance of the demographic dimension in the rural modernization and development processes present in the Romanian countryside, as well as in the modernization of rural households.

In order to measure the modernization and development phenomena of the rural area, the construction of composite indices was used. This involved the following steps: 1. Defining the theoretical matrix specific to each phenomenon investigated. This stage involved the establishment of the dimensions of each index, the selection of primary indicators for each dimension respectively. 2. Normalization of indicators that involved converting the indicators to a common scale, with an average (0) and standard deviation (1). 3. The construction of composite indicators was achieved by giving equal weights to all indicators, to all dimensions of indices respectively. Thus, the theoretical matrix of rural modernization and development indices and the theoretical matrix of rural household modernization index were obtained.

In order to achieve a typology according to the prospects for modernization and socio-economic development of rural area and for rural household modernization, both the value of

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composite indices (Rural Development Index-RDI, Rural Modernization Index-RMI, Rural Household Modernization Index-RHMI) and the trend of these indices in the investigated period were considered. In order to reveal the place of demographic dimension in the case of investigated phenomena, the structural analysis, the factor analysis as well as the Pearson analysis were used.

The main data source was the National Institute of Statistics – tempo online and the Farm Structure Survey. The indicators were introduced in Excel and SPSS for aggregation, data analysis and presentation of results. Indices were calculated at national, macro-region, development region and county level, and the analysed period was the post-accession period (2007-2018).

## **RESULTS AND DISSCUSION**

The typology that resulted after summing up the scores of indices (RDI, RMI, RGMI) by each county and the growth rate scores was structured into five equal intervals, namely:

E) counties with net perspectives of modernization – socio-economic development of the rural area and rural household modernization (Bistrița-Năsăud, Sibiu, Brașov, Cluj, Ilfov, Timiș) – 14.63%;

D) counties with a slight perspective of modernization – socio-economic development of the rural area and rural household modernization (Alba, Constanța, Harghita, Maramureș, Mureș) – 12.21%;

C) counties at a standstill with regard to the modernization – socio-economic development of the rural area and rural household modernization (Bihor, Brăila, Caraș-Severin, Prahova, Hunedoara, Ialomița, Iași, Arad, Argeș, Covasna, Sălaj, Satu Mare, Suceava) – 31.70%;

B) counties with low perspectives of modernization – socio-economic development of the rural area and rural household modernization (Gorj, Neamț, Călărași, Dâmbovița, Tulcea, Vâlcea, Vrancea, Dolj, Galați, Teleorman) – 24.39%;

A) counties with no perspectives of modernization – socio-economic development of the rural area and rural household modernization (Buzău, Bacău, Giurgiu, Botoșani, Mehedinți, Olt, Vaslui) – 17.07%.

The structure of counties by rural area modernization trend and by rural household modernization trend implicitly reveals a concentration of counties included in the medium interval (31.70%) and lower interval (41.46%). The counties with net and slight modernization-development perspectives are the only counties with increases of RDI and RMI indices. In the case of RHMI index, all categories experience a decline, the lowest decrease being found in the case of counties with net modernization and development perspectives.

The demographic indicators experienced significant decline in the investigated period, except for the group of counties with net modernization-development perspectives, which reveals the need for demographic policies that prevent the existing structural problems. Even though punctually certain indicators, such as the dependency rate, have had a positive evolution, in recent years a decrease was noticed, from 56.82% to 50.82% (throughout the national rural area). If only the evolution of this indicator is to be taken into account, the situation would be encouraging, but if we look at the evolution by age groups, this situation generates a series of problems, among which the decrease in the share of young dependent persons – under 15 years old (from 17.91% in 2007 to 15.89% in 2018); over time, the elderly population will disappear and will be replaced by a numerous population coming from the present group of 15-64 years, while the group 15-64 years will benefit from a low contribution of young population, which will lead to a high demographic dependency rate. If the decreasing rate of young population is maintained, and there is no intervention through demographic, economic and social policies to encourage births and stop rural-urban and external migration, the situation will continue to generate major imbalances in the age structure of the population.

**Figure 1. Typology of counties by the tendency of modernization – socio-economic development of the Romanian rural area and rural household modernization, 2018**



*Source: author's calculations based on NIS, Tempo online and FSS*

Among the demographic indicators taken into consideration in the calculation of composite indices, which have a direct connection with the typology of counties by the modernization-development perspectives, we must mention the natural balance (+0.763\*\*) and the migration balance (+0.419\*\*); among the demographic indicators that are inversely related, we have the degree of aging (-0.426\*\*) and the degree of dependency (-0.362\*).

The demographic evolution, the demographic decline in the case of rural population, is influenced by two processes, namely natural movement (declining population renewal capacity) and migratory movement, mainly in the case of young population.

**Table 1. The main demographic indicators by the typology of counties according to the perspectives of modernization-development of rural area and rural household, 2018**

	A*	B*	C*	D*	E*	Total
Average population per rural community (persons/commune)	3.289	3.451	3.215	3.193	3.976	3.394
Degree of population aging (%)	129.29	136.96	116.70	101.61	89.01	117.90
Natural increase in 1000 inhabitants	-8.31	-6.94	-4.91	-2.84	0.07	-5.00
Rural population renewal index (%)	80.45	89.99	90.99	91.69	92.06	89.19
Balance of changes of residence by residence areas (number of persons)	-180	-51	701	101	1886	467
Dependency rate (%)	53.36	51.63	50.82	48.86	48.16	50.82
Number of agricultural household farms (no.)	106,094	90,802	81,856	71,129	54,164	82,816
Average number of persons who work in the agricultural household farm (no. pers/household)	1.69	1.80	1.73	1.74	1.76	1.74

*Source: author's calculations based on NIS, Tempo online and FSS data*

*\* A) counties with no perspectives; B) counties with low perspectives; C) counties at a standstill; D) counties with slight perspectives; E) counties with net perspectives*

The values of the natural increase of the population indicate a demographic crisis of the rural area, which is severe in the case of the categories A (-8.31) and B (-6.94) and acute - in the case of

categories C (-4.91) and D (-2.84). In the category E, the indicator has positive values, but not in all counties.

Migration balance was favourable in the period 2007-2018, yet on the decrease, from a plus of 927 persons in 2007 for the rural area to a plus of 467 persons in 2018, except for the category E where the number of persons who came to the rural area increased (balance of plus 1240 persons in 2007 to plus 1886 persons in 2018). It should be noted that the positive migratory balance in the rural area is found only in adults and elderly people, while in the case of young people the balance is negative (Bădescu, I., Cucu-Oancea, Ozana, Şişeştean, G., 2011).

Migration is based on changing the perspective on life in the community, with sustainable social and economic effects, based on "*a perspective of sustainable relationship between the goals assumed and the means*" (Sandu, D., Voineagu, V., F. Panduru, 2009).

Migration has consequences on the rural household, by changing its demographic structure, social needs and economic competitiveness. Unfortunately, the rural household has become again a means of survival for the population, of ensuring its subsistence. At present, the urban area is losing population in favour of the rural area, but the phenomenon is not based on sound principles in economic terms, as the rural area does not provide sufficient security or welfare to the population, the village representing a refuge from the inability to cope with the challenges of the urban area.

The rate of population aging – in the investigated period – increased from 106.75% in 2007 to 111.90% in 2018, which reveals a marked aging process, an exception being the counties from category E, which have experienced a reverse process, i.e. a decline of the aging rate, in the conditions in which this has the lowest value anyway. The aging of the rural population will generate financial pressures on pensions and healthcare, which will increase in the next period, a situation that is mainly caused by the prolongation of life expectancy (Dona, I., 2015).

Starting from the typology of counties by the Romanian rural area modernization-development perspectives and rural household modernization perspectives, three scenarios have been developed – the optimistic, realistic and pessimistic scenarios – for the counties with net perspectives, for the counties with no perspectives and for the counties at a standstill, which will be useful in highlighting the different needs for intervention.

According to the factor analysis, the determining factors of the modernization and socio-economic development of the Romanian rural area are the demographic and social dimensions, these explaining the trend in proportion of 64.02% in the case of RDI and 66.70% in the case of RMI. The general trends, for the entire sample of counties, are no longer valid for each category of counties.

#### *Scenarios for the category of counties with no modernization-development perspectives in the rural area*

The demographic dimension has experienced a significant depreciation in the case of all investigated phenomena (by 38.66% in RMI, 35.45% in RHMI and 20.82% RDI), leading to the inability to maintain diversified and viable economic activities in the rural area.

Among the counties with no modernization – development perspectives of the rural area (Buzău, Bacău, Giurgiu, Botoşani, Mehedinţi, Olt, Vaslui – accounting for 17.07%), the county Vaslui was selected for analysis – with the values of RDI, RMI, RHMI indices closest to the average of this category.

In the pessimistic scenario, the local or county public authorities will not intervene to stimulate the economic development and diversification of local economies, which will have an impact on the demographic dimension: increase of the migration trend in young rural population; depopulation of many rural areas, mainly of the deep rural areas, which will mean the depreciation of demographic dimension. For many rural households, this scenario will only mean their disappearance. The population of working age will leave the household looking for a job in town or abroad, and the elderly people who remained in the countryside will disappear over time, leaving behind some abandoned households, in an advanced stage of degradation due to the lack of material possibilities.

In the realistic scenario, taking into consideration the current demographic trend and the structural disequilibria, the population decline will continue in the rural area of Vaslui county; a

decrease of the average population per commune is expected, from 3,161 persons/commune in the year 2018 to 2,962 persons in 2030, under the background of population aging (to reach an aging rate of 113.23% by the year 2030, from 97.96% in 2018), a sharp negative natural increase of the population (from -6.5‰ in 2018 to -11.5‰ in 2030) and a negative migration balance, even though this will slightly improve (from -1,444 persons in 2018 to -2,285 persons in 2030). For the rural households, this scenario will mean a poor motivation for the young population to remain in the countryside, which will mean a continuation of rural-urban migration increase (from -1,444 migration balance in 2018 to -2,285 migration balance in 2030). Thus, the young people will leave the countryside to look for a job that can ensure them a decent living, in town or abroad.

In the optimistic scenario, the current depreciation trend will decrease. The repair processes in the Vaslui rural area will imply a lot of effort and a good vision in the elaboration and implementation of complex and complementary modernization and socio-economic development policies, while a viable household will be needed, adapted to the new requirements.

#### *Scenarios for the category of counties at a standstill in terms of modernization-development of the Romanian rural area*

From the category of counties at a standstill in terms of rural area modernization-development perspectives (Arad, Argeş, Bihor, Brăila, Caraş-Severin, Covasna, Hunedoara, Ialomiţa, Iaşi, Prahova, Sălaj, Satu Mare, Suceava – 31.71%), we selected the county Arad, which has the values of indices closest to the average of this category.

In the pessimistic scenario, the demographic dimension will be marked by the acceleration of depreciation processes, mainly in the less-favoured areas of this county; this depreciation is characterized by a strong decline of rural population that can lead to the partial or total depopulation of certain areas, acceleration of young population migration and increase of the negative natural population growth, increasing aging rate and dependency rate, resulting in the widening of territorial discrepancies across the county.

In the realistic scenario, the rural area in Arad county experienced a slight depreciation of the demographic dimension, and according to this scenario, this trend will be also maintained in the next period. This will mean a slight decrease of the average population per rural community (from 3,006 to 2,998), maintaining a positive, yet decreasing migratory balance (expected to reach 369 persons in 2030, from 792 persons in 2018); even though the natural increase of the population increases, it will remain negative (from -4.5 natural increase in 1000 inhabitants in 2018 to -3.75 in 2030), while the aging rate and the dependency rate will experience slight depreciations.

In the optimistic scenario, there will be an appreciation of the demographic dimension through the increase of rural area attractiveness for the young people who will no longer leave the countryside. The rejuvenation of the countryside in Arad county will have a direct positive impact on the natural population increase, on the increase of the demographic renewal degree and thus, the elderly population pressure on the healthcare and social security system will decrease.

#### *Scenarios for the category of counties with net modernization-development perspectives of the Romanian rural area*

From the category of counties with net perspectives of rural area modernization-development (Timiş, Ilfov, Cluj, Braşov, Sibiu, Bistriţa-Năsăud – 14.63%), the county Sibiu was selected, which has the values of indices closest to the average of this category.

The demographic dimension of the Sibiu rural area is favourable to modernization-development, with a positive trend in the investigated period, yet some changes are expected (for instance, while at present the share of young people is higher than that of elderly people, this process is expected to be reversed in the future, due to the declining birth rate and the shift of a large population of working age to the category of people over 65 years old).

In the pessimistic scenario, the demographic dimension will have an unfavourable evolution characterized by a great decline of the rural population through increased migration, population aging and partial or total depopulation of certain areas, mainly of difficult to reach areas.

The Sibiu rural area was one of the few counties with appreciation of the demographic dimension in the period 2007-2018 and this trend is expected to continue in the future as well (realistic scenario), so that by the year 2030 the population per rural community would slightly increase (from 2,897 to 3,129), the migratory balance will be positive and on the rise (it is expected to increase from 1,495 persons in 2018 to 1,641 persons in 2030), while the natural increase even though decreasing will remain positive (from 1.1 natural increase in 1000 inhabitants in 2018 to 0.81 in 2030), and the aging rate and the dependency rate will slightly depreciate.

In the optimistic scenario, the population will have a positive trend, through the increase of rural area attractiveness, so that young people will no longer leave the countryside and young specialists from other areas and even from urban areas will be attracted.

## CONCLUSIONS

From the typology of counties by modernization-development perspectives of the rural area, it can be noticed as a general tendency that the Romanian rural areas behave differently depending on the proximity to large cities (see counties Timiș, Ilfov, Cluj, Sibiu, Constanța, Brașov), and the rural households in the vicinity of cities have easier access to utilities and to more attractive jobs, accessible for a younger and more educated population.

The counties with net modernization-development perspectives of the rural area stand out by the most favourable demographic situation. Thus, we can find here the most populated communes, with the lowest aging degree, the lowest dependency rate, the highest degree of demographic renewal, the only ones with a positive natural increase of the population and with the highest migration balance.

At the opposite pole we can find counties with no perspectives of modernization-development of rural area and rural household, with a strong demographic decline, continuous degradation of social infrastructure, with no occupational opportunities, etc.

The scenarios elaborated for the 3 categories of counties reveal the different needs for intervention to increase the modernization – socio-economic development level of the Romanian rural area, namely: in the counties lacking perspectives a complex vision and complex and complementary actions are needed that should act on all dimensions (demographic, social, economic, ecological); in the counties at a standstill, measures are necessary that should mainly target the sore points; in the counties with net perspectives, innovative measures are needed to enhance endogenous resources.

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