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Socio-economic implications of rural population migration

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Abstract: Considering the debates regarding population migration from rural areas, the purpose of this study is to analyze socio-economic indicators to identify the main challenges of rural areas in Romania as well as to identify solutions to ensure the development of the Romanian rural environment. Our research aims to present the socioeconomic consequences of the rural population's migration by analyzing indicators such as the population by domicile by residence, the average age of the population by domicile, the flow of internal urban and rural migration, the population activity rate, the employed population per economic activities, and the total average monthly income obtained by a rural person. In addition, at the end of the study, a Pearson correlation was made with the help of the SPSS software, which identified the link between income from agriculture and the number of people working in agriculture. The results obtained indicated that while the number of people employed in agriculture, forestry, and fishing is decreasing, the average total income from agriculture is increasing. On the other hand, the migration of the population from the rural area to the urban area is on average about 82 thousand people and the rural population is in a continuous decrease, while the average age registered in the rural area is higher compared to the average age registered in urban areas.

Keywords: economic implications, rural development, Romania.

JEL: A14, R5, J1

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Introduction

There are various definitions to differentiate between rural and urban areas, which often leads to inappropriate and unnecessary confusion. Over the years, numerous definitions have been created at the level of each state regarding the rural area, but according to the European Commission, rural areas are those areas where more than 50% of the existing population lives in those areas that are not identified to be urban centers or urban clusters (European Commission, Statistics Explained).
Considering rural development, in the study entitled "Analysis of the Romanian Rural Area", the authors mention that rural areas represent an important element in the general evolution of the economy in Romania, but there are three resources that highlight the features and functions of the rural environment: the agricultural area, the rural population, and the surface of rural areas (Dumitru et al., 2021). In the continuation of the study, several strengths and weaknesses of the rural areas in Romania were mentioned, among which the emphasis is placed on the existence of valuable biodiversity, the existence of a high number of people living in the countryside, the maintenance of traditions and customs, etc (Profiroiu et al., 2020; Iancu et al., 2022). From the other point of view, the authors specify that the weak points of rural areas in Romania refer to the migration of young people from the countryside, the low level of education, and the high degree of poverty (Cristina et al., 2015; Micu et al., 2022). The problem of poverty in these areas was debated in the paper entitled "The problem of poverty in urban and rural communities in Romania", the author claims that rural poverty is a key problem in Romania. Also in this study, it is mentioned that the evolution of poverty in Romania had an inversely proportional trend with the general trend of the economy (Paraschiv, 2008). Combating poverty and social exclusion requires an integrated local approach based on local needs from the bottom (Burlacu et al., 2020; Micu et al., 2022).
The problems of rural areas in Romania are presented and debated in many studies, for example in the study "Rural space and rural development in Romania", the authors mention that the rural areas of Romania face a multitude of problems, such as the fragility of the social and economic environment, the lack of activity of local institutions, the lack of cooperation programs, the aging of the population, the high percentage of subsistence agriculture, the lack of non-agricultural activities and their limited diversification, the low degree of involvement of civil society, etc., which influence their viability (Rusu and Florian, 2003). However, the rural development models of Romania, until now, have not been able to clearly explain the reasons why development stagnates in certain regions (Friederike et al., 2015; Tudor et al., 2022; Shpak et al., 2022). Rural financing issues are a key issue facing governments and regional authorities. The development of the areas is linked in particular to the effectiveness of the financing and allocation of financial resources for these areas (Androniceanu et al., 2021). Pîrvu R., in the work "The Impact of RDP Measures on the Rural Development: The Case of Romania," argues that to have a high yield and efficient, financing of these rural areas to achieve the EU objectives, financial resources must be allocated through new economic concepts such as "smart village",

"innovative potential", etc., through which real problems specific to each region can be identified (Pîrvu et al, 2022).
The general objective of the study consists in analyzing socio-economic indicators such as the population of Romania by domicile, the average age of the population, the migration flow of the population, the activity rate as well as the average total income of the population. In this sense, the paper aims to identify the main challenges of rural areas in Romania as well as to identify solutions to ensure rural development, taking into account the interconnections of the previously presented indicators.

1. Literature review

There is both a theoretical and an empirical look at migration. Uses the latest research methods and considers recent changes in the field (Artal-Tur et al., 2014). Fakiolas noted in 1999 that Greece's 500,000 undocumented economic immigrants (UEI), who made up the bulk of the country's immigration, obtained jobs because of the country's high wages, flexible work schedules, and rigid labor market. Immigration increased the number of available jobs and reduced inflationary pressures, according to the researcher. Fakiolas argues that immigration has few negative effects on unemployment, real wages, or income distribution. Other tangible and intangible socioeconomic costs are likely. UEI helps the underground economy grow. The study concludes that Greece benefits from its labor without giving them a chance to integrate economically and socially (Androniceanu et al., 2022a). Even though there is evidence that people and organized gangs came to Greece to commit crimes, usually with locals' help, many Greeks blame the UEI. The researcher acknowledges that the UEI may have slowed real wage growth, making it harder to stimulate capital investment and restructure the economy (Androniceanu et al., 2022b; Fakiolas, 1999; Tamulevičienė and Androniceanu, 2020).
Roman and Voicu considered in 2010 that the future of Romanian migration would be unclear. Western economies needed foreign labor. Some Western countries were experiencing a natural decline in population and immigration was covering the natural decline, so the population was not falling. However, in other Western countries, the population will decrease in the coming years. To avoid population decline, the two researchers believed that Western countries would increase immigration, with Romania as a reservoir (and not the South, as during the post-war economic boom). These moves would have economic ramifications. Young people would have emigrated for economic reasons in recent years, so they analyzed the demographic consequences. The study concludes that the volume of remittances in 2007 was approximately 7 billion euros, which would have had important financial and quality-of-life consequences for Romanians. The social impact includes migrant families. The temporary abandonment of minors by their migrant working parents would have forced the authorities to monitor the situation. It was emphasized that future Romanian external migration will be influenced by the country's economic

growth; this growth will raise the standard of living and the immigration policy of western countries (Roman and Voicu, 2010).

2. Research methodology

The work is based on statistical data provided by the National Institute of Statistics, regarding socio-economic indicators such as population by domicile by residence, average age of the population by domicile, structure of internal urban and rural migration flows, population activity rate, population employed by economic activities as well as total average monthly incomes by income category, for the time horizon 2000-2021.
The research method used in carrying out the study consisted of the quantitative and qualitative analysis of the data, to highlight the evolution trend of the analyzed statistical indicators. At the end of the study, SPSS software was used to perform a Pearson correlation, which measures the strength of the link between the variable "income from agriculture" and the variable "number of people in agriculture". The Pearson correlation coefficient is defined by the mathematical formula (1):

$$r = \frac{(N\sum x_i y_i - \sum x_i \sum y_i)}{\sqrt{Nx_i^2 - (\sum x_i)^2}\sqrt{Ny_i^2 - (\sum y_i)^2}} \quad (1)$$

The value of r is in the interval [−1, 1]. The sign of the correlation describes the direction of the relationship. A positive sign (+) indicates that as one variable increases, the other tends to increase, and a negative sign (-) indicates that as one variable increases, the other tends to decrease.

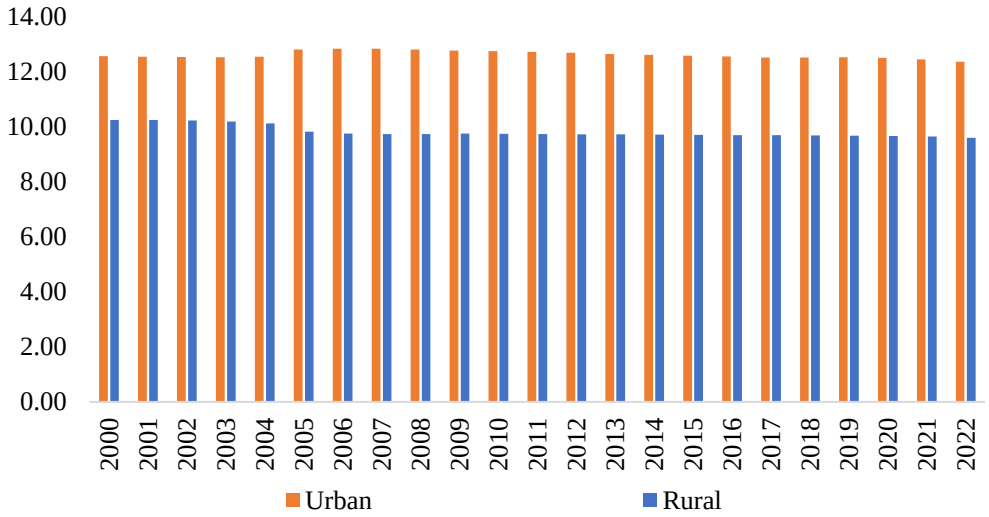
- When r (Pearson coefficient) = 1, X and Y are completely positively correlated.
- When r = −1, X and Y are completely negatively correlated.
- When r = 0, there is no relationship between the two variables X and Y.

3. Main findings and discussions

Rural areas represent important elements for Romania, being a priority when it comes to funding from the European Union. Due to the high percentage of the population living in rural areas, approximately 46% (World Bank, 2018), but also because the basic food production activity is mainly carried out in the rural environment, it was concluded that this environment must be adapted in a way continuously to survive and cope with change. "*Rural areas are the fabric of our society and the heartbeat of our economy. They are an essential part of our identity and our economic potential. We will value and preserve our rural areas and invest in their future*" (Ursula von der Leyen).

The main challenges faced by rural areas in Romania refer to the aging of the population (Figure 1), the migration of the population to urban areas, the high risk of poverty as well as the lack of access to basic facilities.

Figure 1. Population by domicile by residential area (mil. people)



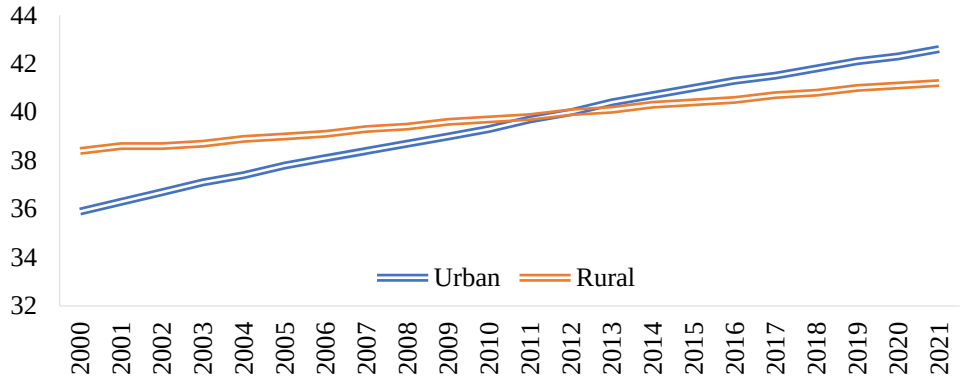
(*Source*: Our computation based on the National Institute of Statistics database, 2022)

The number of people living in the rural area of Romania in 2022 was 9.61 million people, decreasing compared to the previous period, while approximately 12.37 million people lived in the urban environment. The trend of the total population in Romania is decreasing, by 3.7% compared to the year 2000, when the total population of Romania was 22.83 million inhabitants (Figure 1). Age represents the main criterion in the orientation and choice of some fields of activity for certain segments of the population, so the average age registered in the rural areas of Romania is higher compared to the average age registered in the urban areas, and according to the CE, this will start to decrease in the next decade (EC, 2021). According to the data provided by the National Institute of Statistics, in the period 2000-2021 the average age of the population increased continuously, reaching 2021 an average age of 41.2 years in the rural area and 42.6 years in the urban area (Figure 2). Rural areas, lacking a developed infrastructure, jobs, and limited access to various services, are less attractive to live and survive.

However, there is an upward trend in population migration from rural to urban areas and vice versa (Figure 3). The main reason why the vast majority of the population migrates from the urban area to the rural area, in the last period, is caused by behavioral changes driven not only by the presence of the Covid-19 pandemic but

also by the presence of pollution in large cities and the sharp increase in the price of utilities, implicitly making it harder to live in an urban area (Dumitru et al., 2010).

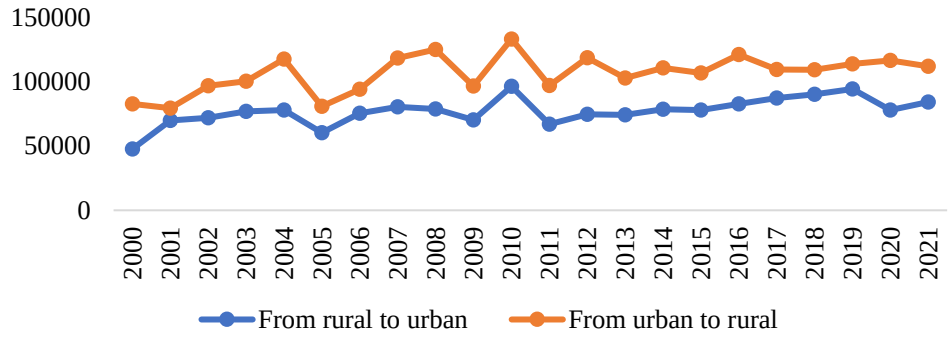
Figure 2. The average age of the population by residence (years)



(*Source*: Our computation based on the National Institute of Statistics database, 2021)

Conversely, the increase in the population migrating from the rural to the urban environment, in the early 2000s, was representative of the population's desire for a better life, but starting in 2011, this trend began to diminish against the backdrop of massive migration to the West. At the beginning of the 2000s, according to the National Institute of Statistics, there were approximately 47.6 thousand people who migrated to the urban area, reaching a maximum of 96.2 thousand people in 2010, following that in the period 2011-2021 this will decrease with 12.51% (Fig 3).

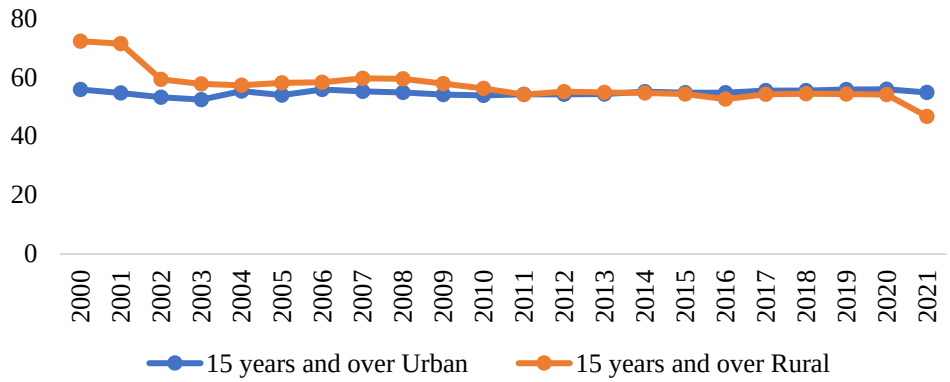
Figure 3. Structure of internal urban and rural migration flows (number of people)



(*Source*: Our computation based on the National Institute of Statistics database, 2021)

Rural areas face population losses, structural changes in agriculture and forestry, aging and erosion of services and infrastructure, declining employment and incomes, and a still significant urban-rural digital divide (EC, 2021).
The different training of the labor force as well as the current changes in the different ways of participation of the population in social-economic activities can be identified and analyzed based on the relative indicators of the activity rates of the labor force (Androniceanu and Georgescu, 2022). The activity rate expresses the percentage of the active population in an age category about the total population in the same age category, in this case, the age category of 15 years and over.
In 2021, the activity rate of the rural population was 46.7%, showing a continuous decrease since 2000, being significantly exceeded by the activity rate of the urban population by 8.1 percentage points (54, 8% in 2021) (Figure 4).

Figure 4. The activity rate of the population aged 15 and over (%)

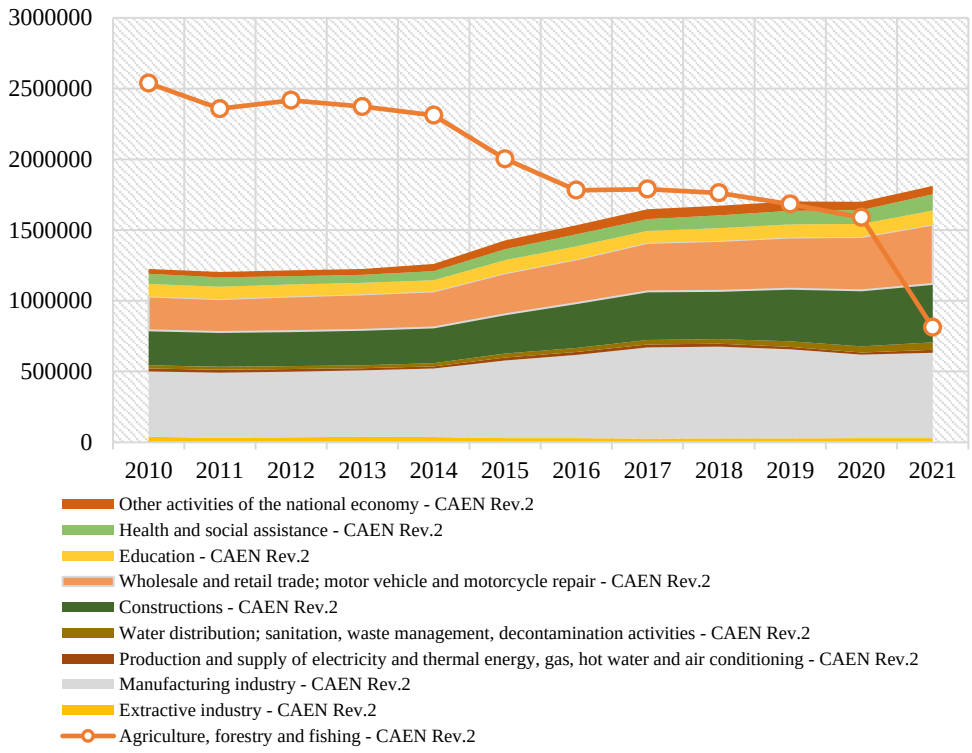


(*Source*: Our computation based on the National Institute of Statistics database, 2021)

On a general level, the two activity rates of the population registered different evolutions, the activity rate in the urban environment registering a slight decrease in the last 20 years, by 0.08%, and the activity rate of the population in the urban environment registering a decrease more pronounced than 2.05%. In the first part of the analyzed period, (2000-2010) the activity rates of the rural population were higher than those in urban areas, following that in the following period, 2010-2021, they will be below the level of activity rates in the urban environment, which means that the active population in the age category of 15 years and over has significantly reduced compared to the total active population in this environment, as a result of the sharp aging of the population in rural areas (Figure 4).
Given the existence of a smaller number of people living in rural areas and with a lower population activity rate than in urban areas, it was concluded that rural areas have a lower activity potential than that recorded in urban areas. In addition to those mentioned, other factors that contributed to the decrease in the activity potential of

the rural environment are the more difficult living conditions, the reduced number of jobs, and the lack of diversification of activities, mainly agricultural ones.
The predominant field of activity in the rural environment is agriculture, forestry, and fishing, in 2021, approximately 26% of all people from the rural environment carried out agricultural activities, while 19% of them carried out activities in the manufacturing industry, and 13% each in the field of construction and the field of retail trade (Figure 5). The general decrease in the rural population correlated with the decrease of the activity rate associated with the non-diversification of activities and the preponderance of agricultural activities led to the substantial reduction of the population in agriculture. Thus, in the period 2010-2021, under the influence of the reduction in the number of people carrying out activities in agriculture, there were increases in the population for the other fields, such as people employed in the activities of the manufacturing industry (+30.68%), the number of employed people in water distribution, sanitation, waste management and decontamination activities (+134.97%), the number of people employed in construction (+67.24%), people employed in education (+12.46%), people employed in health and social assistance (+58.16%), etc.

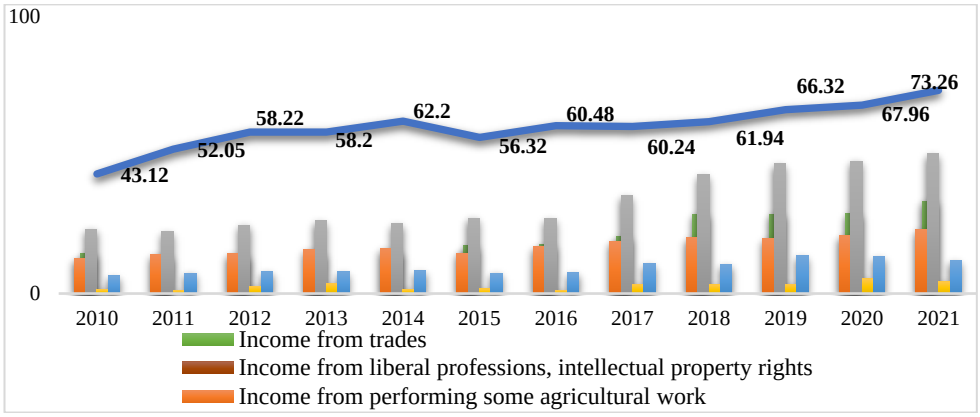
Figure 5. Population employed by economic activities (no. of people)



(*Source*: Our computation based on the National Institute of Statistics database, 2021)

Taking into account the high percentage of the rural population employed in agriculture, forestry, and fish farming, a correlation can be made with the level of income obtained in this residential environment. Thus, the highest average monthly income obtained by a person from the rural environment is represented by income from agriculture. The income from agriculture represents the total cash receipts from various agricultural companies and associations, obtained from the sale of agri-food products, sales of animals, or from the pressing of some agricultural works, made by the members of the respective household.

Figure 6. Total average monthly income obtained by a person from rural areas, by income category (lei)



(*Source*: Our computation based on the National Institute of Statistics database, 2021)

The other income categories are much below the level of income from agriculture, as a result of the high percentage of the population employed in agriculture and the predominant activities in this residential environment (Table 1).

Table 1. Pearson correlation between the variable "Income from agriculture" and "No. of people from agriculture"

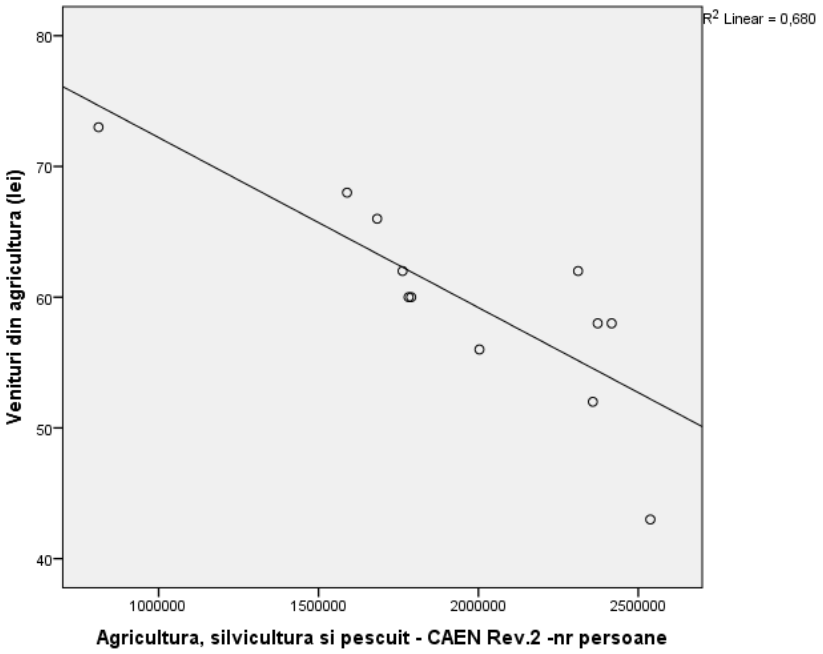
Correlations

		Income from agriculture (lei)	Agriculture, forestry and fishing - CAEN Rev.2 - number of persons
Income from agriculture (lei)	Pearson Correlation	1	-,825**
	Sig. (2-tailed)		,001
	N	12	12
Agriculture, forestry and fishing - CAEN Rev.2 - number of persons	Pearson Correlation	-,825**	1
	Sig. (2-tailed)	,001	
	N	12	12

**. Correlation is significant at the 0.01 level (2-tailed).

Between the two variables, there is a negative, linear relationship (r = -.825) which means that while the number of people employed in agriculture, forestry, and fishing decrease, the average total income from agriculture increases, based on 12 values (N =12) (Table 1).

Figure 7. Correlogram between the income from agriculture variable and the number of people from agriculture



The coefficient of determination R^2 quantitatively measures the explanatory power of the mathematical model, in the present case R^2 = 0.68 which indicates that the variables of the mathematical model explain 68% of the variability present in the sample (Figure 7).

4. Conclusions

In conclusion, analyzing the socio-economic implications of the rural population, it is found that the population is continuously decreasing and the average age recorded in the rural areas of Romania is higher compared to the average age recorded in the urban areas. The main problems faced by the rural areas in Romania are strictly related to the aging of the population, the high risk of poverty as well as the lack of access to certain basic facilities, a fact proven by the migration of the population from the rural area to the urban area, being on average approximately 82 thousand of people every year for the last 10 years.

The rural environment is still unattractive for the employment of people, a fact proven by the activity rate of the rural population by age category. Given the

existence of a smaller number of people living in rural areas and with a lower population activity rate than in urban areas, it was concluded that rural areas have a lower activity potential than that recorded in urban areas. The general decrease in the rural population correlated with the decrease of the activity rate associated with the non-diversification of activities and the preponderance of agricultural activities led to the substantial reduction of the population in agriculture. However, the highest average monthly income obtained by a person from the rural environment is represented by income from agriculture.

The analysis demonstrates that the situation of the rural environment in Romania is critical regarding the trend of the last 20 years, and for its improvement, considerable efforts are needed both by the authorities and the population. These efforts should mainly aim at the modernization and development of rural infrastructure, which is essential for a decent standard of living. In addition, another action that could contribute to the development of rural areas is related to the increase in the capacity to attract investments, with the effect of increasing jobs in these areas.

Conflict of Interest Statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Acknowledgment

Not the case

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