

THE DYNAMICS OF SOCIAL MUTATIONS IN RURAL AREAS OF TULCEA COUNTY, ROMANIA

Rodica CHETROIU

Research Institute for Agriculture Economy and Rural Development, 61 Marasti Boulevard, District 1, 011464, Bucharest, Romania, Phone: +40213136087, Tel/Fax:+40213136096, Mobile:+40730094630, Email: rodica.chetroui@iceadr.ro

Corresponding author: rodica.chetroui@iceadr.ro

Abstract

The aim of the paper is to analyse the dynamics of social mutations that took place in the rural area of the Danube Delta, in Tulcea County, which is part of the interest area of the project. Statistical indicators have been determined using the functions from Excel Program, such as: average, standard deviation, coefficient of variability, annual growth rate. Population in rural area of Tulcea County had a decreasing trend during the period 2012-2018 and reached in 2018 at 53.5% of population of the county. The coefficient of correlation between emigrants and population in rural areas of the county of Tulcea indicate a very good association between the two variables and determination coefficient R^2 shows that 86.32% of the variation of resident rural population can be explained by linear relationship with the number of temporary emigrants. The population employed in agriculture, as the main activities of the rural area, decreased in the period 2008-2017 by almost 26%. Although the population occupied in agriculture is 10 times higher than in tourism, the upward dynamics of the tourism sector creates the premises for economic growth.

Key words: population, rural, tourism, emigrants

INTRODUCTION

Tulcea County belongs to the Romanian South-East Development Region and on its surface there is one of the best preserved of the European Deltas - the Danube River Delta.

Due to the physic-geographic conditions and the high water sprawl, the population is concentrated in rural settlements, located along the Danube, and the predominant activities are those related to fishing and agriculture [9].

The available statistical data indicate, overall, an unfavourable evolution of the social mutations in the rural area, at Tulcea county level. As we will see, these changes were based on both negative indicators on the natural increase of the population, which had only negative values during the studied period, but also the emigration of persons.

MATERIALS AND METHODS

Following statistical data from National Institute of Statistics and other sources mentioned in the study, various statistical indicators were calculated using the functions available in the Excel Program, such as: *average, standard deviation, coefficient of variability, Pearson correlation coefficient, coefficient of determination, annual growth rate.*

The results obtained were illustrated graphically using the applications in Excel Program.

RESULTS AND DISCUSSIONS

According to sources of statistical information, the total resident population of Tulcea County decreased by 6.7% between 2012 and 2018, reaching 197,754 persons. Population in rural areas of Tulcea County represented 53.3% of county's population in 2012, and 53.5% in 2018, meaning that rural areas are prevailing in the county.

This followed the same downward trend (-6.3%) between 2012 and 2018, reaching 105,848 persons (Fig. 1).

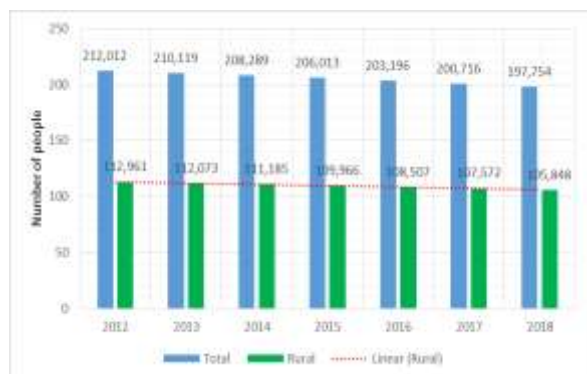


Fig. 1. Resident population in Tulcea
Source: National Institute of Statistics (NIS) [6]

Statistical indicators determined indicate the same variability of the population, both in county and in the rural parts of the county (Table 1).

Table 1. Statistical indicators of resident population in Tulcea County

Specification	Average	Standard deviation	Coefficient of variability %
Total	205,442.7	4,780.3	2.3
Rural	109,730.3	2,560.1	2.3

Source: Own calculations.

From a local perspective, the knowledge of the resident population is important in planning and implementing policies for resource allocation, infrastructure development, strategic investment, building social units [7].



Fig. 2. Natural growth of population in Tulcea County
Source: NIS [6].

The natural increase of population in Tulcea had only negative values, both overall and rural, and the tendency was generally downward, with the exception of the year 2017, when the decline diminished (Fig. 2).

Natural growth is a dimension of demographic and genealogical power of population [3].

With respect to average yearly growth rate of population at rural areas of Tulcea county level, this indicator is only negative in the period studied, between minus 0.8% and minus 1.6%, showing a continuous decrease of residents (Fig. 3).



Fig. 3. Average annual growth rate of population at rural areas of Tulcea county level
Source: Own calculations

The correlation coefficient of 0.78 between the natural population growth and the total resident population in Tulcea county shows a very good association between the two variables and the coefficient of determination of 0.6057 shows that 60.57% of the gradient of resident population is due to direct relation with the native increase of the population (Fig. 4).

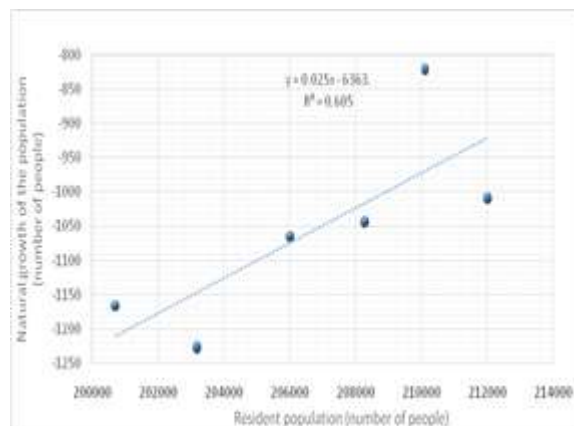


Fig. 4. Relation between natural increase of population and resident population
Source: Own calculations

The Pearson correlation coefficient of 0.77 between the natural population increase in the rural parts and its number indicates a very good association between the two variables and the R^2 determination coefficient of 0.5879 shows that 58.79% of the variation of the resident population in rural parts can be explained by direct relation with its the natural growth.

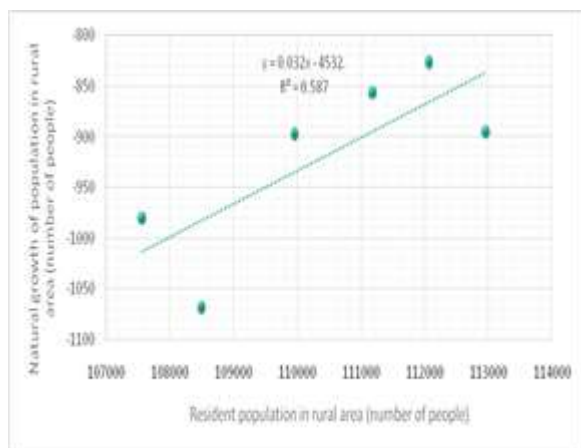


Fig. 5. Relationship between natural growth of rural population and its number
 Source: Own calculations.

Population migrations had a two-way upward trend, emigration being larger than immigration: the migration stream consisted of hundreds of people and immigration - dozens of people (Fig. 6 and Fig. 7).

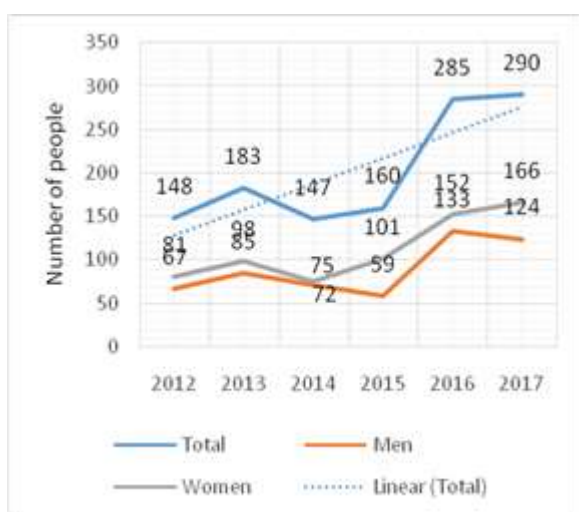


Fig. 6. Permanent emigrants from Tulcea County
 Source: NIS [6].

Thus, in 1990, the definitive emigrants were 95 and increased to 290 in 2017. By gender, women generally emigrate more than men,

and immigrants comprise more men than women.

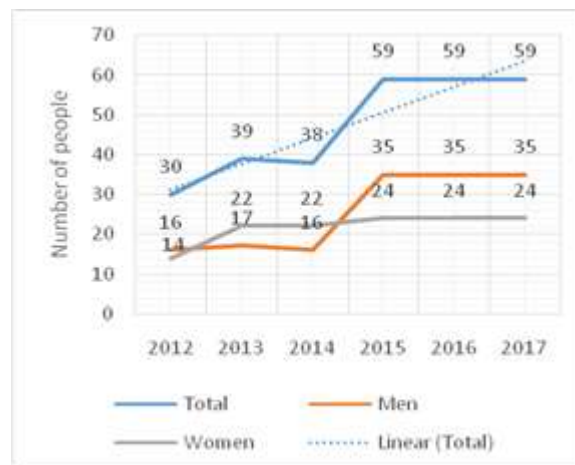


Fig. 7. Permanent immigrants in Tulcea County
 Source: National Institute of Statistics [6].

The map of temporary emigrants in Tulcea illustrates an increase in the studied period, both overall and rural, but more pronounced in rural areas by 15.3% -16.7%.

The rural losses population through migration (Fig. 8).

Emigration is based on the search for life solutions and has as result the supplying of an intermediate European social class, absorbed by large migratory waves in search of a job [3].

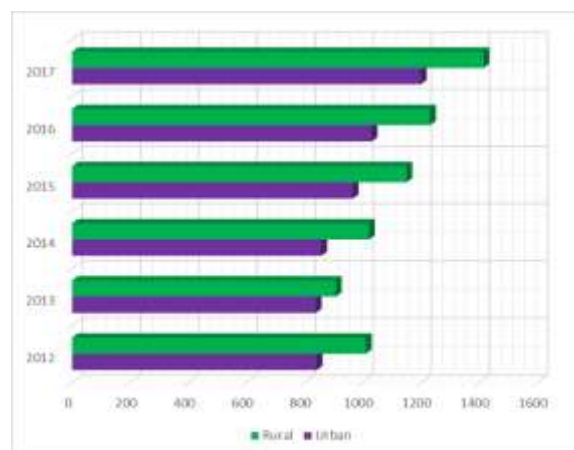


Fig. 8. Temporary emigrants in Tulcea
 Source: NIS [6].

Coefficient of correlation of - 0.93 between emigrants and rural population of Tulcea shows a very good linkage between these two variables and the coefficient of determination of 0.8632 shows that 86.32% of the variation

of rural population is a result of a direct linear relation with the emigrants number (Fig. 9).

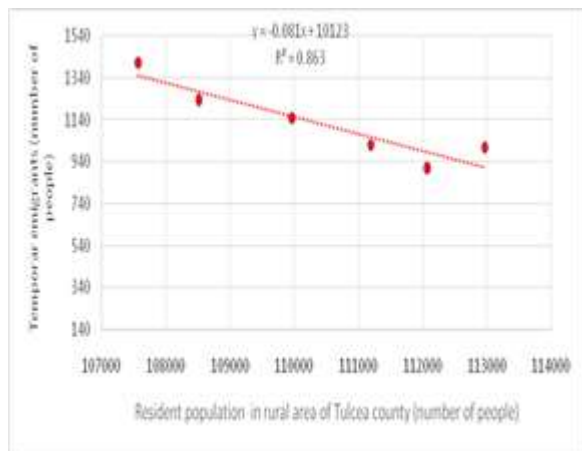


Fig. 9, Relation between temporary emigrants and resident population in rural area of Tulcea County
Source: Own calculations

The population employed in agriculture, forestry and fishing in Tulcea County, as the main activities of the rural area (Fig. 10) decreased in the period 2008-2017 by almost 26%, reaching 22.6 thousand persons, while the population occupied in hotels and restaurants (tourism) (Fig. 11) is steadily increasing, from 1.6 thousand people in 1992 to 2.3 thousand people in 2017 (+ 43.7% between 1992 and 2017).

As we can see in the Table 2 attached to Fig. 10, the average growth rate of the period is negative, -6.3%, and the coefficient of variability calculated is 14.5%.

According to Eurostat data, Romania occupies the first place in Europe with regard to population occupied in agriculture.



Fig. 10. Population occupied in agriculture in Tulcea
Source: NIS [6]

Table 2. Statistical indicators - population occupied in agriculture in Tulcea

Year	2012	2013	2014	2015	2016	2017
Population occupied in agriculture, th. people	31.6	29.9	29.1	25.6	22.4	22.6
Average annual growth rate		-5.4%	-2.7%	-12.0%	-12.5%	0.9%
Average growth rate of period	-6.3%					
Average population	26.9					
Standard deviation	3.9					
Coefficient of variability, %	14.5					

Source: Own calculations, following NIS data.

The predominant agricultural areas where the human resource is depleted are confronted with a lack of resources, low income per capita, and insufficient labour productivity.

Low productivity negatively affects the progress of agricultural sector and its potentialities to concur to the economic growth of the region [5].

Often the population migrates first from villages to large urban centres, before leaving the region itself [1].

In the Table 3, the medium growth rate of the population occupied in hotels and restaurants domain in Tulcea county, in the period under study, was 12.3%, which suggests an increasing interest for this domain of activity, and also a high variability, of 20.9%, which shows an increased dynamics of the tourism.

Though the population in agriculture is 10 times higher than in tourism, the upward dynamics of the tourism sector create the premises for economic growth.

The existence of real opportunities for the area in this area should take into account the multiple ways of capitalizing domestic and international tourism resources.

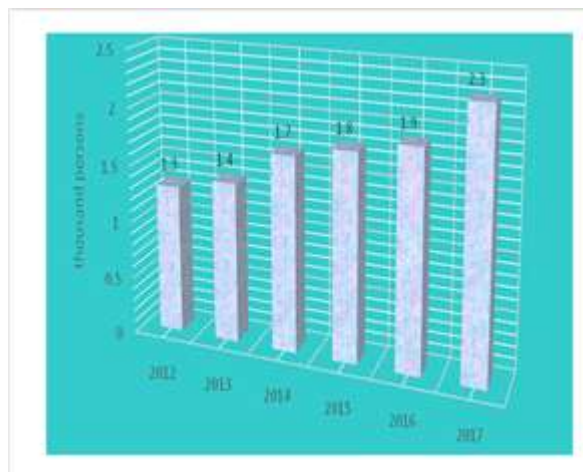


Fig. 11. Population occupied in hotels and restaurants domain – Tulcea County

Source: National Institute of Statistics [6].

Table 3. Statistical indicators - population occupied in hotels and restaurants – Tulcea

Year	2012	2013	2014	2015	2016	2017
Population occupied in agriculture, forestry and fishing, th. people	1.3	1.4	1.7	1.8	1.9	2.3
Average annual growth rate		7.7%	21.4%	5.9%	5.6%	21.1%
Average growth rate of period	12.3%					
Average population	1.7					
Standard deviation	0.4					
Coefficient of variability, %	20.9					

Source: Own calculations, following NIS data.

Tourism in Tulcea County focuses on its natural landscapes and rich history. Crossed by Danube waters, Tulcea County has a sensitive scenario in the Danube Delta, which is the largest European Delta so well preserved.

In order to point out the natural landscapes, there are the rustic villages, where the people live and keep for hundreds of years the traditions [10].

CONCLUSIONS

The human factor is essential for economic and social progress. Thus, three determinants of economic growth are considered: labour

growth, capital stock growth and technical progress.

In addition, there is a trend to expand the number of factors of economic growth, including education or training level, R & D spending, foreign trade, foreign investment volume, etc. [2]

Having in view the decline of population in agriculture of Tulcea and the increase in tourism, the outlook of a regional progress policy aimed at the absorption of the labour force in tourism and agro-tourism development of the county is needed. Mobility in the employment structure reveals for Tulcea County a modest growth of the services sector, namely tourism.

Considering the agricultural potential of the area, the two areas can converge in an optimal direction: agro-tourism that capitalizes the local resources [4].

Attracting investment also implies a quality of workforce through the complexity of technologies. To increase investment in the area, macroeconomic stability, infrastructure and human resources are needed [8].

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