
BIDIMENSIONAL ANALYSIS OF THE POSITION OF VRANCEA COUNTY WITHIN THE SOUTH-EAST REGION

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Abstract

Vrancea is a county located in the historical regions of Moldova and Muntenia, more precisely in the South-East region of Romania. The surface of the county is 4,863 km², and the residence is represented by the municipality of Focșani. From the point of view of natural resources, Vrancea County has a fertile agricultural land suitable for the cultivation of fruit trees, vegetables and vines. Therefore, Vrancea is proud of Panciu Vineyard, Odobesti Vineyard and Cotești Vineyard. The population of Vrancea County, in 2019, was 320,723 people. Thus, the degree of urbanization in 2019 is 36.29%. Regarding the population structure, 48.8% of the population are men and 51.2% women. Until 1989, companies in the field of fine mechanics, metallurgy, plastics processing, furniture industry, chemical industry, but also enterprises dealing with transport and construction were active in Vrancea County. After the Revolution, these fields disappeared almost completely, not only in Vrancea, but also in the other counties of the country.

Keywords: *VOSViewer; bidimensional analysis, economic structure, Vrancea, rural and regional development*

Introduction

In the first part of the paper, a bibliometric analysis for the field of regional development was performed. Bibliometric analysis is a type of quantitative analysis that allows the identification of scientific interest in the studied field. Thus, the collaboration relations between the authors, organizations and keywords used by the authors in their works were analyzed. In the second part of the paper, a statistical analysis of the indicators was realised, with the help of which the radiography of Vrancea County could be done.

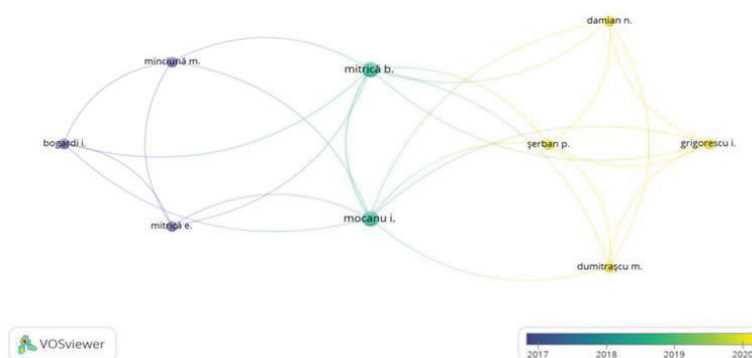
1. Review of scientific literature

Quantitative analysis of scientific documents found in the Scopus database - Bibliometric analysis performed in VOSviewer

The analysis of the collaborations between the Romanian authors shows the similarity between the works made at national level. The result of the analysis is determined based on the number of documents the authors worked on together.

Co-authorship analysis

Fig.1

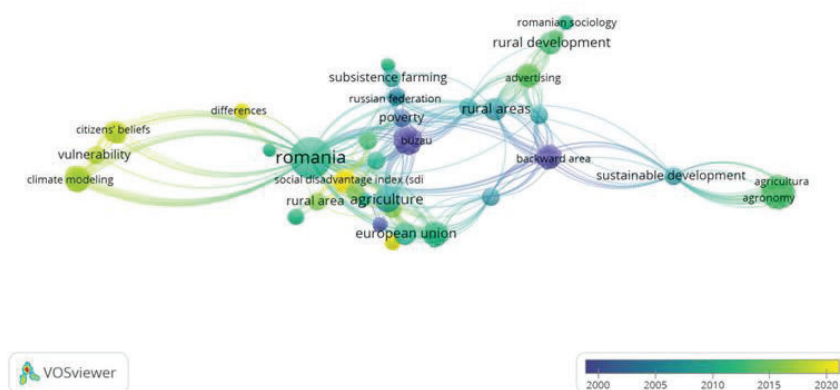


Source own conceptualization based on Scopus database

The analysis was performed in Romania. According to the chart above, Mocanu I. and Mitrică B. are the authors who collaborated the most with other people for realizing the scientific works. They have 8 links, which means the number of collaborations and 2 documents developed. The following authors with the most collaborations are Dumitraşcu M., Grigorescu I., Şerban P. and Damian N. with 5 links and 1 document. Authors Bogardi I., Mitrică E. and Minciună M. Collaborated with 4 other authors to make 1 document. The appearance of the most frequently used keywords in the 22 research papers analyzed, shows the similarity between terms determined by the number of documents in which these words appear together.

Analysis of authors' keywords

Fig.2

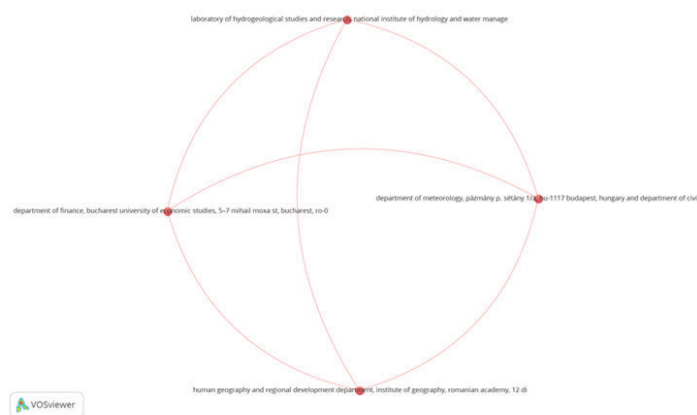


Source own conceptualization based on Scopus database

It is noted that the most common words in the scientific documents analyzed are Romania, agriculture, rural areas, subsistence agriculture, poverty, rural development, sustainable development, vulnerability, etc. In Romania, subsistence farming is mainly practiced, given the fact that many families suffer from poverty and are vulnerable. However, Romania has a huge potential for development of both the agricultural sector and rural areas. It is essential to implement sustainable development strategies for a sustainable evolution of Romanian society. The collaborative relationships between authors who are part of different organizations is an interesting aspect to analyze, as it can be seen which are the most interested institutions in the field of scientific research. Also, through the collaboration between the institutions, a much more complex and well-formulated result is obtained, given the different experience of the members who are part of the project.

Co-autorship of organizations

Fig.3



Source own conceptualization based on Scopus database

It is noted that the Finance Department of the Bucharest University of Economic Studies collaborated with the Laboratory of Hydrogeological Studies in Hungary, the Department of Meteorology in Hungary and the Department of Regional Development within the Romanian Academy to develop several scientific papers. It is to be appreciated that team of researchers united for a common purpose, namely the development of the society and the analysis of phenomena with a global trend.

Research methodology

The present paper wants to document the interest regarding the position of Vrancea County within the South-East region, from the point of view of socio-economic and environmental factors. In the first part of the paper, a bibliometric analysis was performed, using VOSviewer software. It was realised an inventory of publications in the field of rural and regional development, found in the Scopus database and among the documents in the Scopus database, 22 documents were referring to this field. The query of the Scopus database was made on the 5th of December 2020 and all the scientific papers were taken into account, regardless of the date or place of publication. Analyzing this database, it was observed that the interest in the field of rural and regional development in Romania is not developed, although there exists

potential. In the second part of the paper, it was analyzed a set of indicators which reflect the sectorial economic structure of Vrancea County in the period 1990-2019.

III. Results and discussions

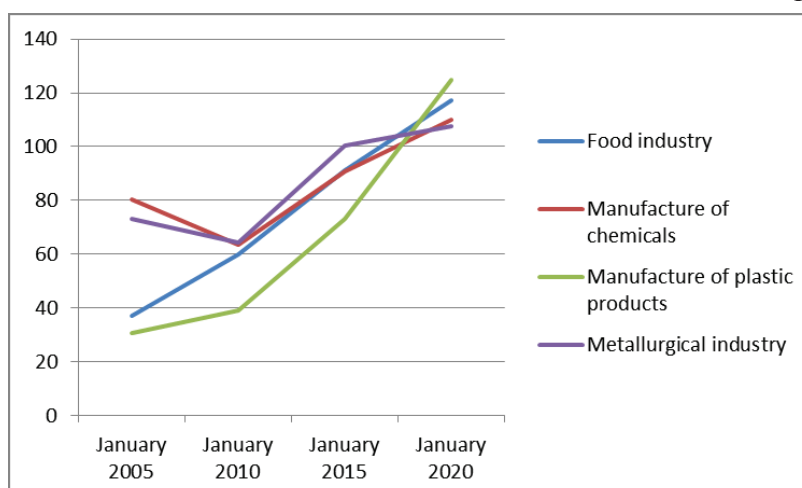
Statistical analysis of the economic structure in sectorial profile of Vrancea county

• Industry

Although industry is not as well developed as in the period before the 1989 Revolution, there is an upward trend in the value indices of turnover in industrial enterprises.

Evolution of the value indices of the turnover from the industrial units 2005-2020

Fig. 4



Source: Tempo Online

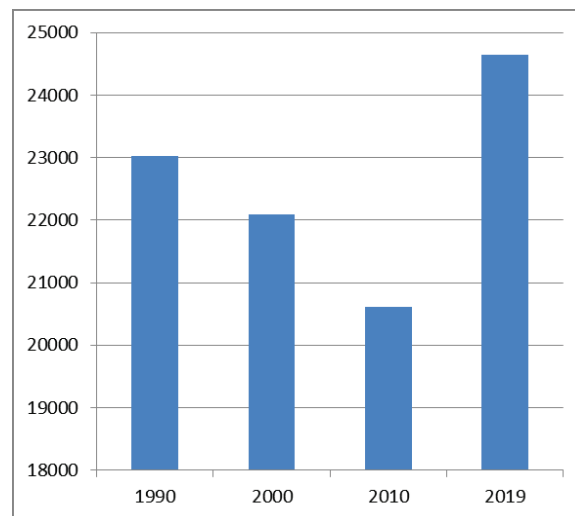
In 2020, compared to 2005, the value indices of the turnover experienced an increase of 248.17%. The highest increase was noticed for the rubber and plastics products industry, respectively 582.3%. The lowest level of growth was registered for the substances and chemicals sector, 37.3%.

- **Agriculture**

According to the data collected from the website of the National Institute of Statistics, it is observed that the area of vineyards for wine grapes increased by 7% during the analyzed period.

Evolution of the area of vineyards for wine grapes in the period 1990-2019

Fig. 5



Source: Tempo Online

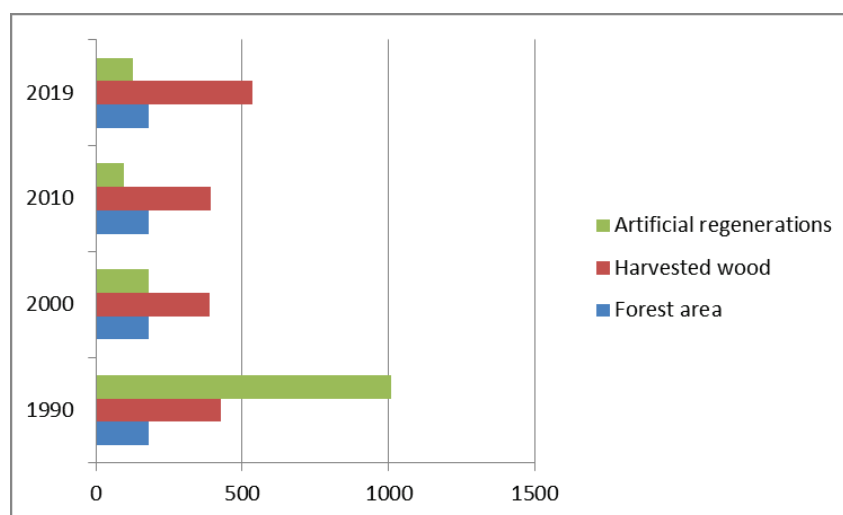
Vrancea is an area suitable for viticulture, as evidenced by the presence of famous wineries, such as Panciu Winery, so there are opportunities for development in this regard. In the graph above, it was wanted to highlight more clearly the statistical data presented previously.

- **Forestry**

As the problem of massive and illegal deforestation in Romanian forests is well-known, this set of indicators aims to reflect a clearer image through statistical data.

Evolution of forest areas, harvested wood and artificial regeneration in Vrancea, during 1990-2019

Fig.6



Source: Tempo Online

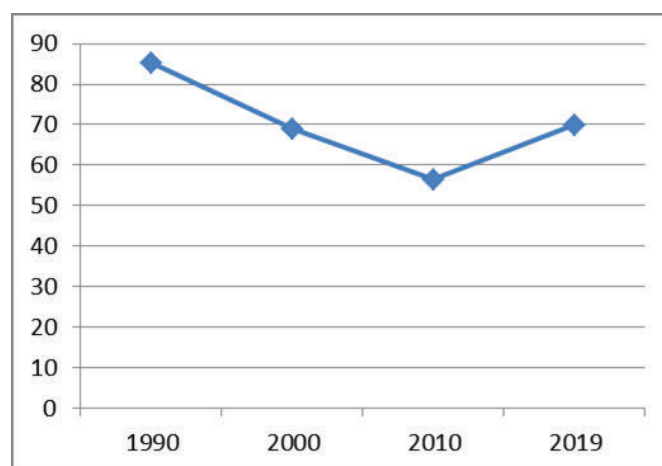
The forest area in Vrancea experienced a slight increase in the period 1990-2010, and in 2019 it decreased to 179 thousand hectares. If one should refer to the harvested wood, there is a 25% increase in the period 1990-2019. Although the volume of deforestation increased, artificial regenerations decreased considerably by 87%. It is not justified that the surface of the forests remained constant, although the deforestation registered an ascending trend, and the regeneration works disappeared almost completely.

• **Human resources and workforce**

The employment rate in Vrancea in the period 1990-2019 decreased by 19%. This may be due to the fact that the drop-out rate has increased, so the less prepared population cannot find a job, and the number of available jobs has also decreased.

The evolution of the employment rate of labor resources in Vrancea during 1990-2019

Fig. 7



Source: Tempo Online

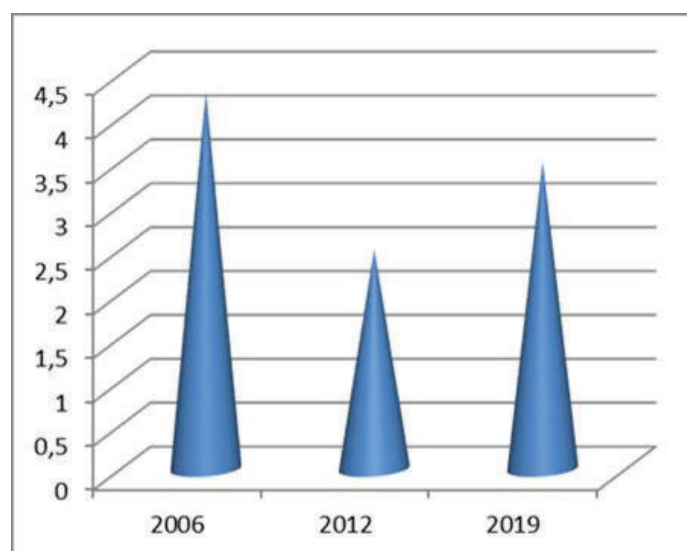
The graph highlights the oscillating trend of the employment rate in Vrancea County. The highest value of this indicator was recorded in 1990, following a period of decline between 1990-2010, then a sharp increase from 2010 to 2019.

• Quality of environmental factors

The number of people connected to the sewerage and wastewater treatment systems in Vrancea County experienced a slight increase, of approximately 3%.

The evolution of the population connected to the sewerage and wastewater treatment systems in the period 2006-2019

Fig. 8



Source: Tempo Online

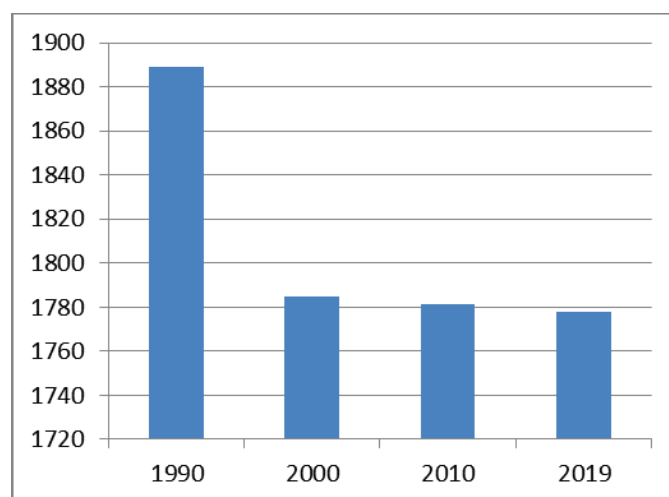
This indicator is important because water resources management is an important step in protecting the environment. Thus, a responsible management of water resources ensures a first step in combating the effects of pollution. The graph above better highlights the oscillating trend of the number of people who are connected to sewerage and wastewater treatment systems.

•Infrastructure

The length of public roads in Vrancea decreased by 6% during the analyzed period. This may be due to road damage and natural phenomena, over time.

The evolution of the length of public roads in Vrancea County during 1990-2019

Fig. 9



Source: Tempo Online

The graph wanted to highlight the downward trend of the length of public roads in Vrancea County in the period 1990-2019. One suspicious thing is the fact that in addition to the fact that no investment was made in the road infrastructure, its length decreased considerably during the analyzed period.

Conclusions

Vrancea County stands out with a favorable geographical position for the development of tourism, being present both the mountain landscape and the hill and plateau areas, dotted with golden and red vine plantations. The rural landscape, although beginning to acquire urban influences, has managed to preserve its beauty and attract through traditionalism. It is an area conducive to the development of tourism because people can visit the main attractions, see the famous wineries in Panciu and Odobești, taste the wine and see the vineyards. Given the fact that more and more people are attracted by the melancholy of the former rural life, tourists can stay in old houses. In this sense, European funds can be accessed on axis 7 Regional Operational Program 2014-2020, respectively Diversification of local economies through sustainable development of tourism. Thus, among the ideas of projects financed from European funds can be found the Tourist Development of Panciu by promoting rural wine traditions, Restoration, consolidation

and modernization of Mărăști and Mărășești mausoleums, Conservation and capitalization of natural and built heritage for tourism development in Putna Waterfall. Also through the Regional Operational Program 2014-2020, funding can be obtained through axis 10 for the Improvement of the educational infrastructure. As it could be observed from the study, the number of school units decreased by 80% from 1990 to 2019, and education is the basic pillar for a harmonious development. Therefore, it is important to invest in the education sector. Another idea that could contribute to the development of Vrancea County would be to obtain non-reimbursable funds through the National Rural Development Program 2014-2020, the European Agricultural Fund for Rural Development to encourage young farmers to stay home and practice agriculture. In this way, agricultural cooperatives can be created for more efficient management of production and distribution, and in this way Vrancea can become an agricultural county, given the area of arable land available, over 50% of the agricultural area. Also within the National Rural Development Program, funding can be obtained for the Development of basic rural infrastructure to attract investment in rural areas and create new jobs and, implicitly, the development of rural areas. In conclusion, Vrancea County has tourist potential primarily, and this can be supported through European funds accessed through various programs and measures. All it takes is the desire to work and the right information to be able to implement this development strategy of the county.

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