

STRUCTURAL ANALYSIS OF CREATIVE ECONOMIES IN THE CENTER DEVELOPMENT REGION

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ABSTRACT

Creative economies are an important indicator of sustainable regional development. The study follows the spatial dynamics of creative economies in the Center Development Region - one of the most important development regions of Romania.

The quantification of the spatial dynamics of the creative sector at the level of the region was made starting from an economic database, at the level of the territorial administrative unit, for the economic indicator relevant to this study - turnover. The analysis was carried out at the National Classification for the Economic Activities (NACE) level, for the period 2000-2016. The establishment of creative activities was made after the Government Decision no. 859 of 2014, which indicates, for this economic sector, a number of 66 codes, grouped into 7 main areas. Graphic models were developed and also a series of cartographic models using the open-source QGIS platform.

The results of the study highlight a series of local specificities determined by the concentration of the main areas of the creative sector within polarizing urban centers, which support the development of creative activities in the region. Also, there is an increasing share of creative economies in emerging spaces.

Keywords: urban development, creative economies, spatial distribution

INTRODUCTION

The role and importance of creative economy is being studied more and more lately. The creative economy is considered to be a tool for urban and regional revitalization and regeneration and also, this type of economy is economy creates jobs and well-being [1]. Creativity becomes an economic activity only when an idea becomes a business [2].

It is considered that two types of capital are the basis of the growth of cities and regions, creative and social capital. The concept of creative capital was popularized by Florida [3]. According to him, the creative class - which includes professionals such as doctors, lawyers, scientists, engineers, university professors, but also artists, musicians and sculptors who own creative capital. This group produces ideas, information and technology and these are increasingly important for the growth of cities and regions [4]. The spatial patterns of the creative professions have led to a better understanding of the importance of place in modelling the local accumulation of the creative process [5], [6], [7], [8].

Recent studies consider the creative economy as a strategy for sustainable development and promoting regional development [9], as well as the fact that it can develop public policies aimed at preserving the quality of the city, increasing community prosperity, but also its historical development [10], [11].

The creative economy draws attention by the role that innovation activities plays at the level of companies in the creative sector [12], [13], [14], [15], [16] but also because of their connection with other economic sectors [17], [18]. It also contributes to innovation in other branches of the economy with the help of various creative contributions but also of human capital, which are the main vehicles for spreading innovation in other sectors [19], [20].

METHODOLOGY

Area of study

The study analyzes the spatial distribution and the dynamics of the creative economy at the level of the Center Development Region on the basis of an economic indicator – turnover. The Center Development Region is located within the Romanian Carpathian arc, being saturated by the meridian 25° East longitude and 46° North latitude parallel, having radial links with 6 of the 7 development regions (Fig. 1).

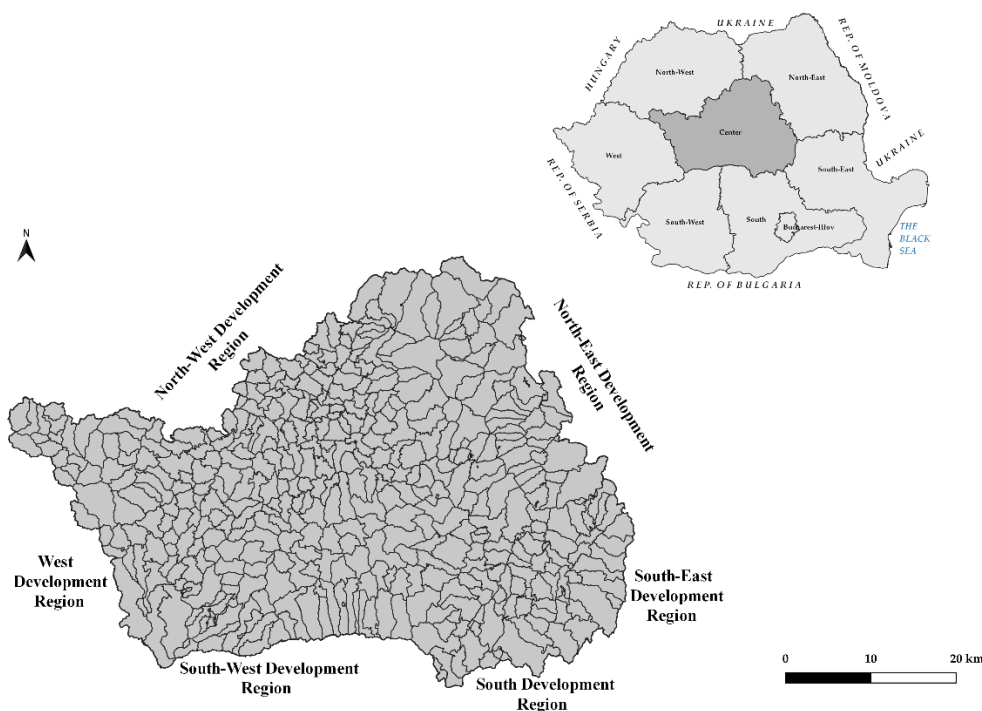


Figure 1. Location of the Center Development Region

Data analysis

The analysis period of the study is between 2000 and 2016. An economic database has been created at the level of administrative-territorial unit, highlighting an economic indicator relevant to the analysis of creative economies (turnover) according to the Classification of National Economy Activities (NACE). The NACE codes belonging to the creative economies were chosen accordingly to the Government Decision no. 859 of 2014, regarding the approval of the "Government Strategy for the development of the

Table 1. Creative areas classification

CLASS	NACE CODES	CREATIVE ACTIVITIES
Publishing	5811	Book publishing
	5812	Publishing of directories and mailing lists
	5813	Publishing of newspapers
	5814	Publishing of journals and periodicals
	5819	Other publishing activities
	5821	Publishing of computer games
Media and cinema	5829	Other software publishing
	5911	Motion picture, video and television programme production activities
	5912	Motion picture, video and television programme post-production activities
	5913	Motion picture, video and television programme distribution activities
	5914	Motion picture projection activities
	5920	Sound recording and music publishing activities
	6391	News agency activities
	7311	Advertising agencies
	7312	Media representation
	7320	Market research and public opinion polling
	7410	Specialised design activities
	7420	Photographic activities
	7430	Translation and interpretation activities
	7490	Other professional, scientific and technical activities n.e.c.
IT	6202	Computer consultancy activities
	6203	Computer facilities management activities
	6209	Other information technology and computer service activities
	6311	Data processing, hosting and related activities
	6312	Web portals
	6399	Other information service activities n.e.c.
Architecture and engineering	7111	Architectural activities
	7112	Engineering activities and related technical consultancy
	7120	Technical testing and analysis
Education and research	7211	Research and experimental development on biotechnology
	7219	Other research and experimental development on natural sciences and engineering
	7220	Research and experimental development on social sciences and humanities
	8510	Pre-primary education
	8520	Primary education
	8531	General secondary education
	8532	Technical and vocational secondary education
	8541	Post-secondary non-tertiary education
	8542	Tertiary education
	8551	Sports and recreation education
	8552	Cultural education
	8553	Driving school activities
	8559	Other education n.e.c.
	8560	Educational support activities
Health	8610	Hospital activities
	8621	General medical practice activities
	8622	Specialist medical practice activities
	8623	Dental practice activities
	8690	Other human health activities
	8710	Residential nursing care activities
	8720	Residential care activities for mental retardation, mental health and substance abuse
	8730	Residential care activities for the elderly and disabled
	8790	Other residential care activities
Culture and recreation	9001	Performing arts
	9002	Support activities to performing arts
	9003	Artistic creation
	9004	Operation of arts facilities
	9101	Library and archives activities
	9102	Museums activities
	9103	Operation of historical sites and buildings and similar visitor attractions
	9104	Botanical and zoological gardens and nature reserves activities
	9311	Operation of sports facilities
	9312	Activities of sports clubs
	9313	Fitness facilities
	9319	Other sports activities
	9321	Activities of amusement parks and theme parks
	9329	Other amusement and recreation activities

sector of small and medium-sized enterprises and the improvement of the business environment in Romania Horizon 2020". Based on the classifications made by Howkins [21], Florida [22] and The New England Council [23], was made a creative areas classification of the 66 NACE codes of the creative sector for Romania (Table 1.)

GIS analysis

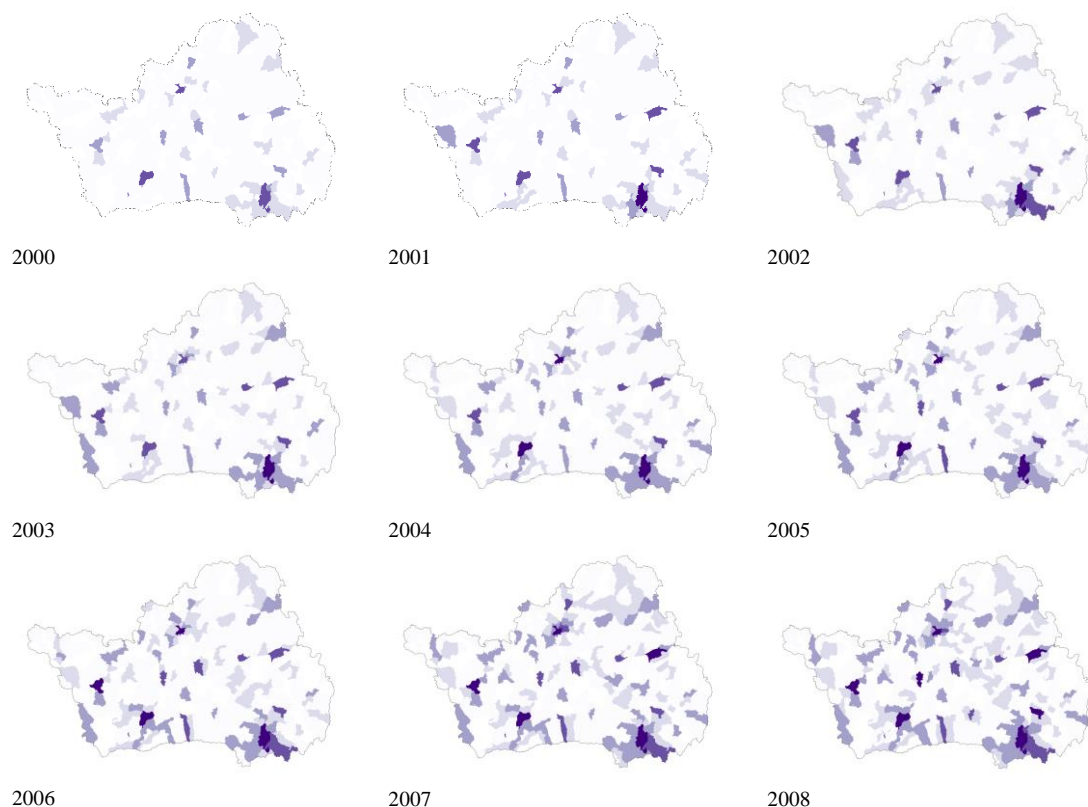
An open-source software - QGIS 3.4 was used for to make maps for each year, for the period 2000-2016, for the value of turnover, in a sequential color scheme, at the level of territorial administrative unit.

Graphical models

The graphical models show the evolution of the values of turnover for the time span 2000-2016. The graphs show the evolution of the 7 classes (Publishing, Media and cinema, IT, Architecture and engineering, Education and research, Health and Culture and recreation) at national and regional level and also show the evolutions of the NACE codes that belong to the respective classes.

The values for turnover, for a better analysis, are expressed in the national currency (Lei), thus that at the course of the National Bank of Romania 1 euro represents 4.75 LEI.

RESULTS



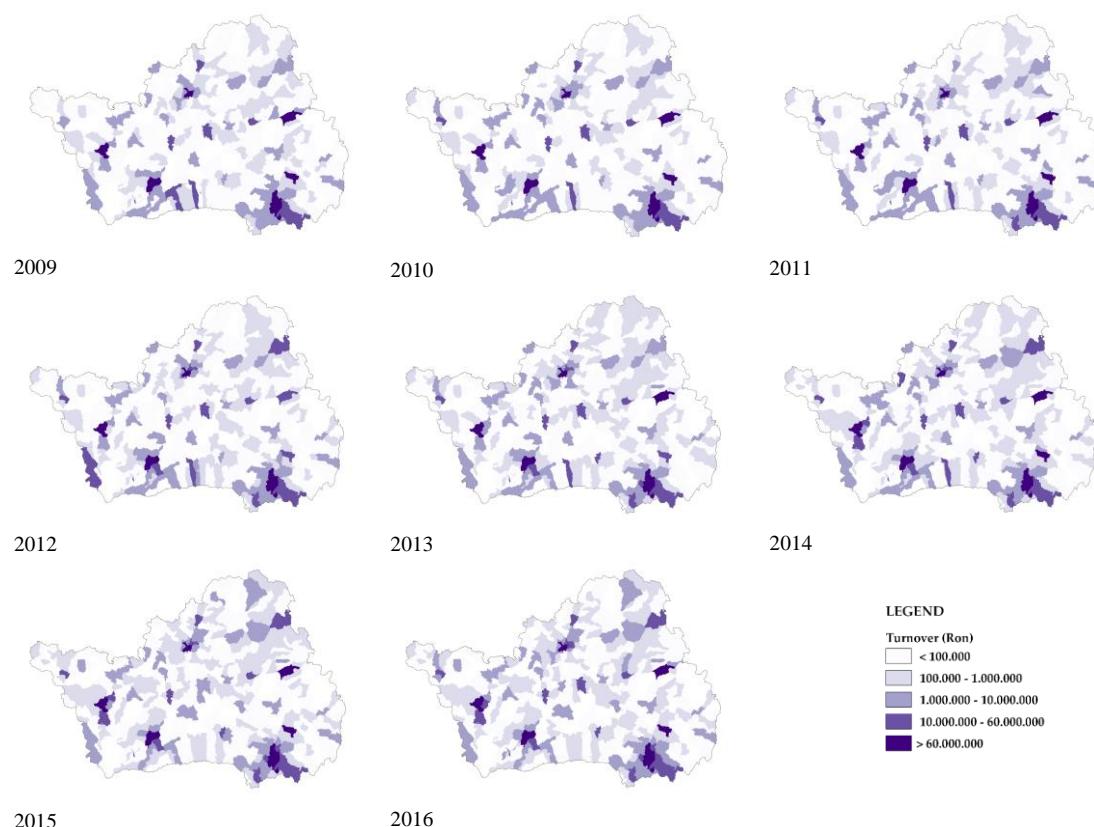


Figure 2. Spatial distribution of turnover in the creative sector for the Center Development Region
Source: UB/1423

The spatial evolution of the turnover in the Center Development Region (Fig. 2) shows an upward evolution of values, with increases throughout the analyzed period. At regional level the main 3 cities with the highest turnover in the creative sector for the first reference year, 2000, are Braşov (with 2,325,471,420 lei), Târgu Mureş (with 1,433,429,392 lei) and Sibiu with a value of 1,068,526,023 lei. For the period 2008 (the installation of the economic crisis) - 2009 (when its effects are observed) the situation for the Development Region 7 remains unchanged (Braşov, Sibiu and Târgu Mureş having the most significant values). In 2009 there were slight decreases in values. In the last reference year, 2016, the values increase, reaching 26,946,369,348 lei (for Braşov), 16,526,785,839 lei (for Târgu Mureş) and 13,045,021,702 lei for Sibiu.

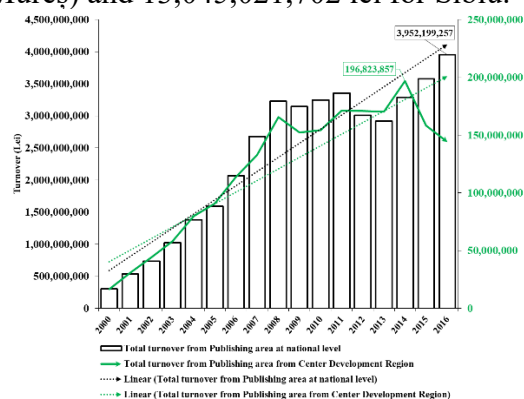


Figure 3. Evolution of the total turnover for Publishing area

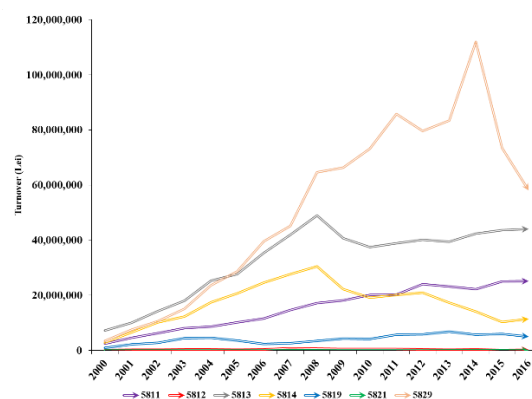


Figure 4. Evolution of the total turnover for NACE codes belonging Publishing area
Source: UB/1423

The evolution of the total turnover for the Publishing class (Fig. 3) presents for the year 2000 values of 303,101,956 lei (at national level), and at regional level a value of 16,878,740 lei for the Center Development Region. The values show an upward trend, with increases until 2008 (3,229,859,940 lei at national level and 3,143,227,458 lei at regional level), with a stagnation and decrease after 2011. In 2018, the maximum national value of 3,952,199,257 lei is registered, and at the level of the region there is a turnover of 143,978,588 lei.

The evolution of the turnover for NACE codes belonging to Publishing area (Fig. 4) shows 3 codes with important values 5811 - Book publishing (2,473,365 lei in 2000 and 25,168,890 lei in 2016), 5813 - Publishing of newspapers (7,223,256 in 2000 and 44,034.487 lei in 2016) and 5829 - Other software publishing (in 2000 3,378,401 lei and 58,037,383 lei in 2016).

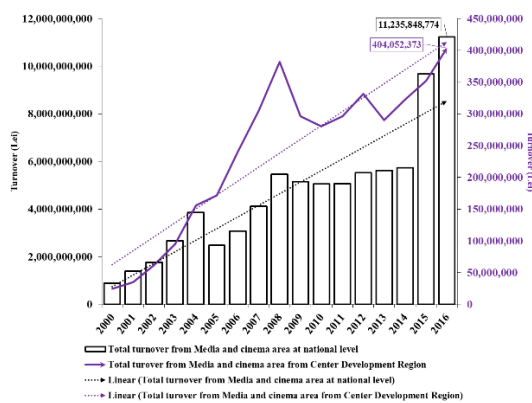


Figure 5. Evolution of the total turnover for Media and cinema area

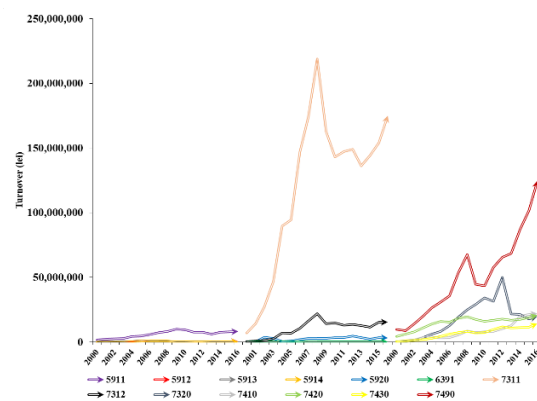


Figure 6. Evolution of the total turnover for NACE codes belonging Media and cinema area
Source: UB/1423

The evolution of the total turnover for the Media and cinema class (Fig. 5) presents for the year 2000 values of 892,365,430 lei (at national level), and at the regional level a value of 24,597,321 lei for the Center Development Region. The values show an upward trend, with increases until 2008 and with fluctuations after 2008. In 2018, the national value of 11,235,848,774 lei is registered and at the regional level a maximum of 404,052,373 lei.

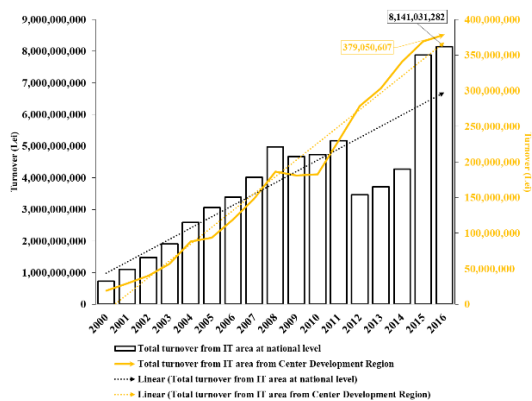


Figure 7. Evolution of the total turnover for IT area

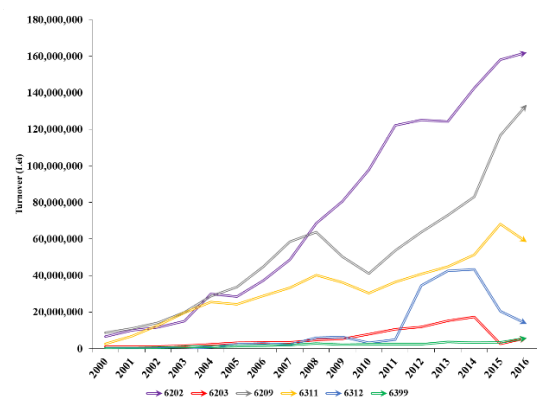


Figure 8. Evolution of the total turnover for NACE codes belonging IT area
Source: UB/1423

The evolution of the turnover for the NACE codes belonging to the Media and cinema area (Fig. 6) shows 2 codes with important values 7311 (7,085,405 lei in 2000 and 174,938,030 lei in 2016) and 7490 (9,683,648 in 2000 and 124,433,350 lei in 2016).

The IT area (Fig. 7) presents an upward evolution of the values of the turnover with values of 728,557,377 lei in 2000 (at national level) and of 19,505,979 lei in the region. There is a slight decrease due to the economic crisis of 2008, followed by increases in values and in 2016 reached 8,141,031,282 lei at national level and a value of 379,050,607 lei at regional level.

This class has 6 NACE codes (6202 - Computer consultancy activities, 6203 - Computer facilities management activities, 6209 - Other information technology and computer service activities, 6311 - Data processing, hosting and related activities, 6312 - Web portals and 6399 - Other information service activities n.e.c.), the most representative being 6202, the code having an ascending value (Fig. 8).

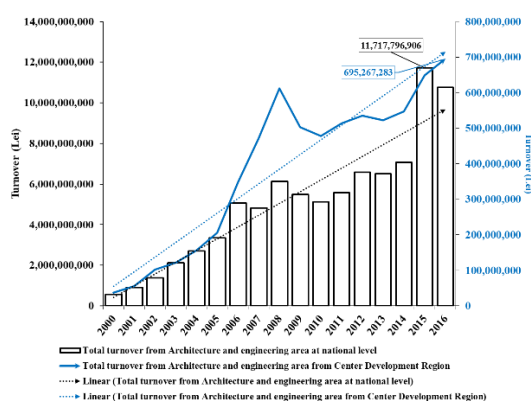


Figure 9. Evolution of the total turnover for Architecture and engineering area

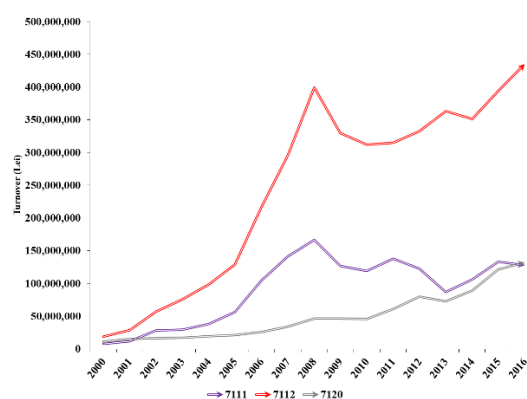


Figure 10. Evolution of the total turnover for NACE codes belonging Architecture and engineering area
Source: UB/1423

The evolution of the turnover for the Architecture and engineering area (Fig. 9) presents values of 572,135,514 lei (at national level) and 37,216,181 lei (at the level of the region) for the year 2000, with increases until 2008 being followed by decreases due to the economic crisis (6,132,702,926 - 2008 and 5,490,497,909 - 2009 at the national level and 612,092,681 lei - 2008 and 502,721,925 lei - 2009 at the region level). After 2014, the values begin to grow significantly.

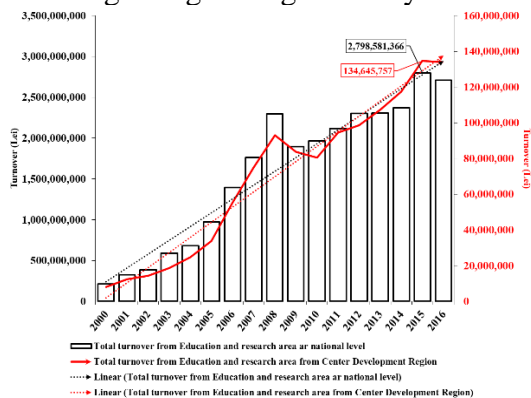


Figure 11. Evolution of the total turnover for Education and research area

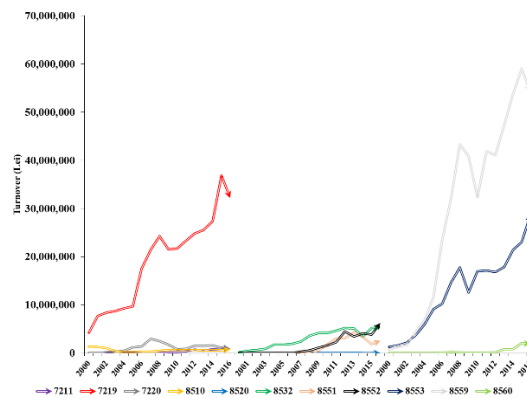


Figure 12. Evolution of the total turnover for NACE codes belonging Education and research area
Source: UB/1423

The most important NACE codes for this class are 7111 - Architectural activities, 7112 - Engineering activities and related technical consultancy and 7120 - Technical testing and analysis) (Fig. 10). The highest values of the turnover are found in the code 7112.

For the evolution of the turnover in the Education and research area (Fig. 11), there is a positive trend of the values with slight decreases after 2008, caused by the economic crisis. The values of the turnover for the year 2000 are 211,045,944 lei at national level and 8,032,828 at the region level. In 2016, values of 2,707,496,912 lei are registered at national level and respectively, 1,338,376.21 lei at regional level.

The code with the most significant contribution of the turnover being 8559 - Other education n.e.c. (Fig. 12) with a value of 54,102,143 in 2018.

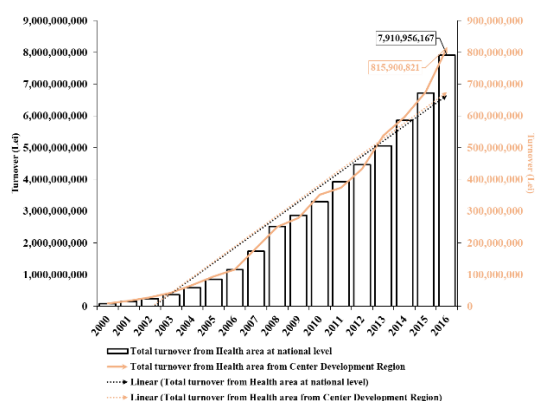


Figure 13. Evolution of the total turnover for Health area

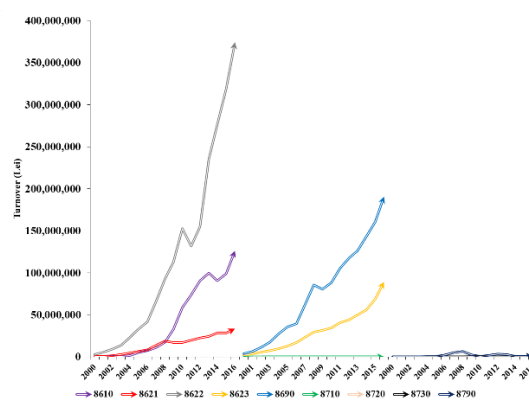


Figure 14. Evolution of the total turnover for NACE codes belonging Health area
Source: UB/1423

The evolution of the turnover in the Health field (Fig. 13) shows values of 81,920,271 lei in 2000 at the national level and of 9,621,211 lei in the development region. It presents a positive trend throughout the 17 years analyzed, reaching in 2018 at national values of 7,910,956,167 lei, and at regional level of 815,900,821 lei.

This class has 9 NACE codes (Fig. 14) (8610 - Hospital activities, 8621 - General medical practice activities, 8622 - Specialist medical practice activities, 8623 - Dental practice activities, 8690 - Other human health activities, 8710 - Residential nursing care activities, 8720 - Residential care activities for mental retardation, mental health and substance abuse, 8730 - Residential care activities for the elderly and disabled, 8790 - Other residential care activities, the most important NACE code being 8622, with a value of 374,064,566 lei.

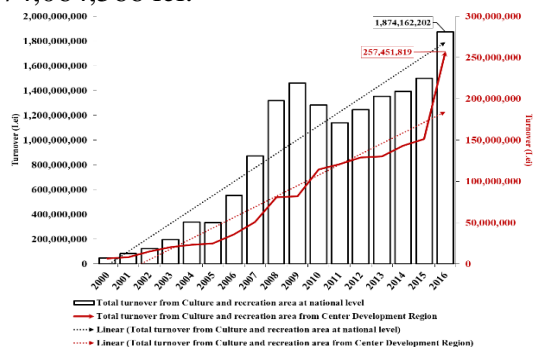


Figure 15. Evolution of the total turnover for Culture and recreation area

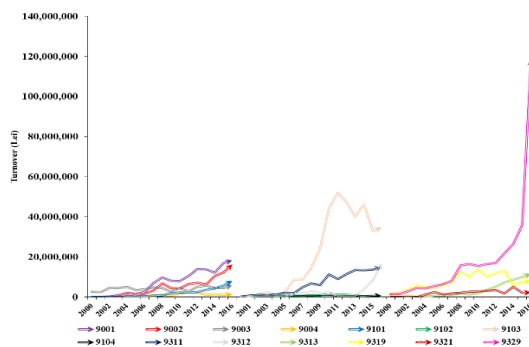


Figure 16. Evolution of the total turnover for NACE codes belonging Culture and recreation area
Source: UB/1423

The evolution of the turnover for the Culture and recreation area (Fig. 15) presents turnover values of 49,432,496 lei at the national level and a value of 6,794,183 lei at the region level. The values follow an upward trend with slight decreases after 2008. The values at national level are 1,318,552,154 lei in 2008 and a slight increase to a value of 1,460,329,051 lei in 2009. The growth is also felt at the level of the region where the turnover is 80,925,577 lei in 2008 and of 82,065,762 lei in 2009. The values peaks at both national and regional levels are registered in 2018 (1,874,162,202 lei and 257,451,819 lei respectively).

Culture and recreation area (Fig. 16) totals 14 NACE codes, the one with the most significant values is 9329 (with 118,390,64 lei in 2016).

Acknowledgement

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CONCLUSION

Approach the spatial dimension of the main creative economic indicators highlights two specificities. First of all, the tendency of concentration of creative economies in the main urban centers and in the emerging space structured around them, significant being the concentration of values in the cities of Braşov, Târgu Mureş and Sibiu, as well as around them. Secondly, we notice the spectacular increases of the analyzed indicators.

Detailed analyzes revealed structural changes in the economic activities of the creative sector, especially in the big urban centers, as well as their movement outside the cities, along the main axes of circulation.

Future research should focus on the detailed analysis of the role of creative economies in local and regional development using modern methodologies, which have resulted in other research on analyzing the relationships between the components of the territorial system [24], [25], [26], [27], [28], [29], [30], [31], [32].

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