



How Do Cultural Vitality and Socio-economic Factors Influence Urban Tourism? Evidence from Romanian Cities

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Abstract

The cultural vitality has an increasingly important role in urban development and revitalization strategies because it improves the community image and enhances the quality of life, providing opportunities for sustainable tourism development. Using data provided by The National Institute for Research and Training and methodology established by The Urban Institute of Washington (2006), our paper aims to analyze the relationship between cultural vitality and urban tourism development and to identify the cities with favorable conditions for successful cultural and tourist activities. We analyzed 41 Romanian cities (residences of counties) situated at 30 years distance from the major political-economic events that followed the communist regime fall in Central and Eastern Europe, being, thus, in a defining identity process (including from cultural and tourist perspective). On the one hand, we used five categories of indicators that helped us to obtain a cultural vitality index (cultural infrastructure, cultural participation, specialized human resources, creative industries, budgetary expenditure for culture), and on the other hand, we used tourism activity indicators and other economic, socio-demographic and accessibility indicators. Data were processed using multivariate statistics in order to highlight certain typologies of the analyzed cities and, more important, if the cultural cities are also attractive tourist destinations. The results indicated cities with intense economic dynamics that are growth poles of creative economy and top tourist destinations. We were surprised by smaller cities where cultural vitality exceeds economic development dynamic, fact reflected by high values of tourist flows. Some of the

cities suffer for decades from the lack of interest towards creative economy (unattractive for the entrepreneurs), culture and tourism being secondary chapters of urban development strategies. Conclusions revealed strong correlations between cultural vitality index and urban tourism development and some permanent disparities between cities due to unequal adaptation to new economic, social and community context.

Keywords

Cultural vitality • Tourism sustainability • Communism heritage • Tourism rejuvenation • Urban development

1 Introduction

In the strategies of urban space organization and urban development, the cultural activities have been reconsidered in the last years, being recognized their important role in attracting new investments and qualified human resources. The major changes from the last decades led to a new type of society: the creative one, which highlights new forms of expression and urban manifestation such as rejuvenation and gentrification, forms connected by the creative-cultural phenomenon amplification (Fanea-Ivanovici, 2013). The cultural-creative activities have become increasingly important in the majority of the world developed economies and generate positive effects (easily remarked), but also negative ones (growth of inequalities for example), that fact that denies in a certain measure the potential of growth and development promoted by the creative economy (Howkins, 2013).

The cities have been, long before the creation of states, real hubs of creativity and innovation defined by the power of creating and introducing something new, essential qualities of the urban life (Păcurar et al., 2017). Also, the urban settlements have always had a privileged role as economic

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and cultural activity centers, and since their beginning, they have shown an extraordinary capacity of producing culture through ideas, arts and life styles and of inducing high standards of economic innovation and growth, although not always at the same time. Nowadays, in the twenty-first century, we observe an important convergence between economic and cultural development, the latter being, in general, one of the particular qualities of the urbanization process.

The last 20 years registered a growing interest for culture as an important resource in the urban development, a confirmation of this tendency being the increasing number of publications on this topic and the interest shown by several international organizations: United Nations, OECD or European Commission. For example, the program Creative Europe finances one of the most successful EU projects: European Capitals of Culture (created to highlight the cultural life of the cities). We mention also other projects: Culture for Cities and Regions, European Network of Creative Centers or Creative Lenses/Trans Europe Halles. The catalyst role of culture is recognized in various EU documents: Communication for promoting the cultural and creative sectors for economic growth and jobs creation in EU (2012), Communication for the cultural potential (2014) or Resolution of the European Parliament regarding a coherent EU policy for the creative and cultural industries (2016).¹

The objective of our study is to develop an analysis that will help us to identify the connection between urban tourism, cultural vitality and socio-economic development and to investigate the urban dimension of the cultural and creative industry by highlighting the most important (including from an administrative perspective) 41 Romanian municipalities (residences of counties). The results indicated cities with intense economic dynamics that are growth poles of creative economy and top tourist destinations and the conclusions revealed strong correlations between cultural vitality index and urban tourism development and some permanent disparities between cities due to unequal adaptation to new economic, social and community context.

Our article is organized as follows. After the examination of the complex relation between city, culture and tourism, the next chapter reveals the methodology, data used and the indicators selected to test the theoretical models detailed in the previous paragraphs in the Romanian cities context. The third chapter includes a set of descriptive statistics and an ascending hierarchical classification of the selected Romanian cities (starting from numerous specific indicators) and shows an econometric analysis in order to estimate the

relation between cultural vitality, socio-economic and environment factors and urban tourism. The study ends with retrospective and prospective observations.

2 Theoretical Background

2.1 The Role of Culture in Urban Regeneration

The cultural activities undertaken in urban areas can lead to new forms of architecture and technology, to new ways of sustainable growth and business models and to advanced competitive opportunities and innovations, being the reason why numerous studies consider culture the forth politic dimension of sustainability (a component of the economic, social and environmental dimensions for a sustainable growth).

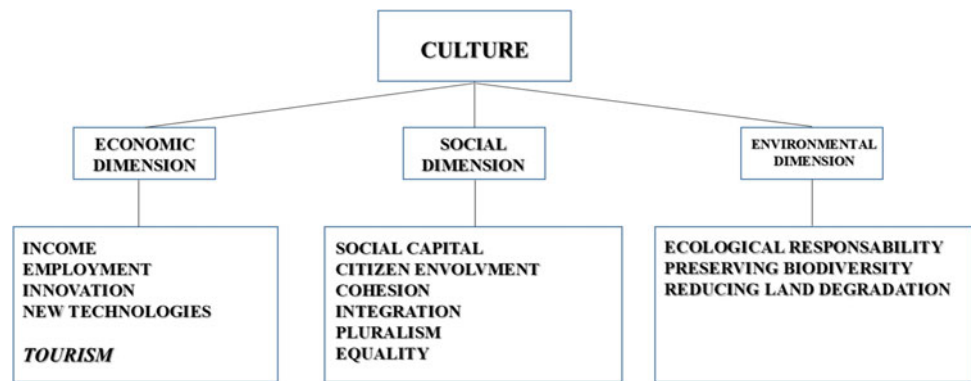
The role of culture in urban development is undeniable, being identified at least three major directions where culture contributes to urban functions amplification (Grams & Warr, 2003). Therefore, cultural activities contribute to the urban economic development, the creation of social relations using the creative capacity of the inhabitants (by building a strong spirit of belonging) and to the growth of civilization level in the entire area (Fig. 1). Culture is a key element in the concept of sustainable development because it frames people's relationships and attitudes towards the built and natural environment. The scientific literature shows a strong link between the gentrification process and urban tourism (Cocola-Gant, 2018). However, in Romania, this connection registers an emerging development and favors the cities with rich architectural heritage and the urban settlements that invested in their rehabilitation (especially from Transylvania region).

The cultural vitality is the main component of the urban vitality, the latter being defined as the synergy that comes from the variety and (possible) from the uniqueness of commercial opportunities or from leisure in a diversified social context and in an urban tissue only for pedestrians (Maas, 1984). Therefore, the cultural vitality of the cities highlights the cultural potential of the local communities, the cultural development of the cities (Voicu & Dragomir, 2016) and gathers all the evidences of creation, dissemination, validation and support of arts and culture as a dimension of everyday urban life (Jackson et al., 2006).

The cultural vitality is placed in the center of urban restoration and improves the quality of life and the image of the community, offering new development opportunities; the cultural vitality represents the access to cultural goods, the possibilities of artistic creation, the degree of entrepreneurial capitalization of products from artistic activities, all these leading to urban tourism development. Among authors who studied the concept of cultural vitality and related subjects

¹ Cultural and Creative Cities Monitor (2017, July 6). European Commission. <https://ec.europa.eu/commission/presscorner>.

Fig. 1 The contribution of culture to urban development.
Data source After Robert Palmer (2018)



(creative cities, creative industries, urban culture, resilience through culture or cultural disparities) are Landry (2000), Glaeser, Kolko and Saiz (2001), Clark and Lloyd (2001), Balzonella (2016), Neculăesei and Tătărușanu (2008) or Scott (2010).

2.2 How is Cultural Vitality Measured?

In the mid-1990s, The Urban Institute of Washington established through ACIP (Arts and Culture Indicators Project) a methodological model that included three areas of cultural vitality (Jackson et al., 2006): presence (of opportunities for cultural participation), participation (cultural participation itself) and support (for cultural participation), in the end creating a complete frame of the cultural vitality of a community. ACIP identified seven comparable measures of cultural vitality at national level, including significant opportunities of cultural participation (cultural institutions, the share of the cultural workforce, holidays, festivals, fairs) and the support domain (nonprofit art expenses per capita or nonprofit arts contributions per capita). Two editions of The Cultural and Creative Cities Monitor (2017, 2019) were published in the European Union (Montalvo et al., 2019a), works that support the European Commission's efforts to place culture in the center of its political agenda and to promote the social and economic development of the cities. Therefore, 29 indicators were selected and organized into 9 dimensions, 3 sub-indices and 1 overall index, the C3 (Index of Cultural and Creative Cities). Therefore, 40% represent Cultural Vibrancy (measures the existence and the attractiveness of cultural facilities and venues), 40% belong to Creative Economy (capacity of culture to produce innovation and jobs) and the last 20% represent Enabling Environment (conditions that allow creative and cultural processes to grow).

In 2007, starting from the methodological model established by the Urban Institute of Washington, the Research

and Consulting Center in the Field of Culture in Romania (www.culturadata.ro) led the study of cultural vitality for 46 Romanian cities (without the city of Bucharest because of the economic development differences; Bucharest, with 1.9 million inhabitants, is approximately 6 times more populated than the following cities in the national hierarchy). Subsequent editions (2010–2016) had the same objective: to identify the cities with the most favorable conditions for successful development of cultural activities. However, there are still many barriers that prevent the full quantification of cultural vitality of various communities. The absence in these areas of suitable monitoring tools revolves around two major arguments: the difficulty of delimiting and defining cultural activities (due to the complexity of cultural production, consumption and the diversity of the actors involved) and the absence of appropriate and comparable data from one country to another.

2.3 Culture and Tourism

Cities and communities have important social and cultural dimensions because they create new dialogue spaces, they allow new ways of thinking and contribute to the transformation in time of individuals and communities (Duxbury & Jeannotte, 2011). The urban culture, defined as the culture of towns and cities, refers to a culture placed and rooted in an urban space, a space from where the culture comes and spreads in a manner strictly related to the spatial characteristics of the specific urban context (Balzonella, 2016).

The urban tourism takes place in two directions: centripetal, as a result of the cultural-artistic heritage attraction and centrifugal, as a result of the local population needs to relax or to escape to other tourist places; the cultural vitality of a city is, therefore, closely related to the natural and anthropic heritage wealth from its area of influence (Muntele, 2006). The national culture has an important influence because its components are deeply rooted in the cognitive

functions of every person and evolve very slowly, the changes could be observed only after many generations. Furthermore, the regional cultures represent the diversity of cultures from one country but also the similarities between geographical regions that legally belong to several countries.

2.4 Cities and the Creative Industry

Until recently, the scientific literature concerned by urban growth and development was focused on the enterprises' role in the city and on how the economic agents choose their location in order to have the advantages from congestion economy. Nowadays the diversity and creativity are considered the main factors of urban and regional growth. The creative economy (a dimension of the cultural vitality) represents the features of the new economy built on intellectual work and knowledge and registers important standards that describe the cultural and creative industries activity. Furthermore, the authors Charles Landry and Richard Florida connect the birth of the creative industries and economy with the transformation process of urban functions, as they were recently explained.

Florida (2003a, 2003b) develops the idea of the creative capitalism of the twenty-first century and brings to the public attention the 3T (Technology, Talent and Tolerance), each factor being necessary and insufficient on its own in the process of urban development. The human creativity (or the talent), considered the "creative capital", has become the main moving force of economic growth or even "its last source", and the competitiveness of the cities, regions and countries has become increasingly dependent on the capacity to attract, keep and maintain talented individuals. In this reasoning, "the creativity—the ability to create new significant forms—is now the decisive source of the competitive advantage" and the artists—together with scientists, engineers, educators, designers, architects, writers—have an important position in the "super-creative core" or are the creative class elite (Florida, 2002).

Moreover, Landry (an author interested mostly in the research of creative cities) highlighted the importance of the creative industries in the urban and economic growth. In his book published in 2000, *The Creative City: A Toolkit for Urban Innovators*, Landry shows that the creative industries from the USA cover over 10% of the employed population, while in Europe, this percentage is only 5%. Also, starting with the 1980s, the music industry in UK registered higher exports than the engineering domain. In the end, the author highlights that the creative industries have the ability of attracting new investors and businesses and increasingly tourist flows, in this way having indirect economic advantages.

2.5 The Tourism and Post-communist Cities

In the last years, we have been witness to the growing capitalization of the urban and communist industrial heritage for tourist purposes and to the growth of its popularity and interest from foreign tourists. The official and non-official representations successfully coexist and are part of the communism heritage and revolution product (Sima, 2017). Despite of these aspects, the reconciliation of the ex-communist countries with an "undesired" past is far from easy due to difficulties encountered in the transition period towards a capitalist economy, due to the process of European Union integration, to the economic crisis from 2008/2009 or due to other numerous crisis and social and politic challenges characteristic to many Central and Eastern European countries. Often the Eastern European cities don't have a proper tourist infrastructure or tourist attractions and products consumed on a large scale, being in a process of defining their identity from a tourist point of view. This is a situation specific to spaces that know the tension between present transformations and past memories management, which had critical changes that required a new understanding of how they project their identity inside and outside borders (Ortega-Nuere & Bayón, 2015).

One matter is certain: the communist heritage is an original cultural resource but the preservation and development of this cultural capital become a major challenge for urban development strategies and policies from the perspective of conservation and income generation. According to Mihalic (2017), the redraw process of tourism from Central and Eastern European countries (CEE) was complex: resizing and Europeanization, launching new products and services (diversification or rejuvenation), marketing, evolution and transition from tourism undertaken in the communist regime to international tourist activities. Also, the author introduces the concept of tourist redesign that defines the transformations registered in the development, tourist and policies management of CEE countries. This trend takes tourism to a new level where the creators of the tourist offer are no longer the public ones but private ones such as organizations of students or citizens, ONGs and various individual projects.

3 Data and Methodology

3.1 Data

The Cultural Vitality Index (Table 1) taken from www.culturadata.com has in its structure five sub-indicators so that both the static perspective (number of cultural units or budgetary expenditure for culture) and the dynamic one

Table 1 Cultural vitality index

Index	Data needed	Period	Data source	Primary calculation	Standardization	Calculation method
Cultural vitality index	Cultural infrastructure	2010–2016	National Institute for Cultural Research and Training (NICRT)	Not necessary	According NICRT	According NICRT
	Cultural participation					
	Specialized human resources					
	Creative industries					
	Budgetary expenditure for culture					

Table 2 Demographic potential index

Index	Data needed	Period	Data source	Primary calculation	Standardization	Calculation method
Demographic potential index	Population by domicile (a)	2010–2018	National Institute of Statistics (NIS), Tempo Online	General balance (%)	Max. = 1 Min. = 0	(a + b + c + d)/4
	Natural balance of population (b)	2010–2018	NIS, Tempo Online	Annual average (‰)	Max. = 1 Min. = 0	
	Migration balance of the population (c)	2010–2018	NIS, Tempo Online	Annual average (‰)	Max. = 1 Min. = 0	
	Aging index (elderly/young) (d)	2010 and 2018	Census, 2011, NIS, Tempo Online	2018/2010 ratio	Max. = 1 Min. = 0	

(number of participants in cultural activities or specialized human resources) are covered. The calculation method of each index is based on the arithmetic average of the specific sub-indicators.

Demographic Potential Index (Table 2) was created because population is a fundamental element for the production and consumption of cultural products and can influence the productivity and the entrepreneurship. The population flow influences the cultural vitality through the interaction effect with the social infrastructure. Along with growth population, it will improve the positive effects of educational financial expenditures on urban vitality (Lan et al., 2020). Also, between population and creative industries is a strong correlation with the tendency of concentrating in urban areas in order to benefit of the agglomeration economies advantage. Migration balance of the population and aging index was used to create the demographic index because Romania is a country with a strong tendency of emigration that mainly affects cities (not all to the same extent) and also because demographic aging can limit creativity.

Economic Support Capacity Index (Table 3). In the post-industrial transition process, culture is considered a

genuine economic sector with a great influence on labor market, financial capital creation, innovation and also on the local competitiveness. The cities must search for solutions to overcome the challenges of this vicious circle: the lack of limited resources blocks the development of creative sectors and this means limited resources for growth (Cojanu et al., 2016). The presence of universities and population with higher education is also an important factor of economic support of the community (Benneworth et al., 2010). In the absence of other more explicit indicators, the unemployment rate was preferred because it is more relevant for the economic performance in the specific Romanian case, cities with low unemployment being (in general) those with massive foreign direct investment and attracting young population.

Capitalization tourism index (Table 4). The cultural vitality influences and can be influenced by the urban cultural tourism (OECD, 2009, 2014). The cultures and the creative industries are increasingly used to promote tourist destinations and to improve their competitiveness and attractiveness. Many locations actively develop their tangible and intangible cultural goods in order to develop comparative advantages in a competitive tourism market. The

Table 3 Economic support capacity index

Index	Data needed	Period	Data source	Primary calculation	Standardization	Calculation method
Economic support capacity index	Average salary (a)	2010 and 2018	National Institute of Statistics (NIS), Tempo Online	2018/2010 ratio	Max. = 1 Min. = 0	$(a + b + c)/3$
	Unemployment rate (b)	2010 and 2018	NIS, Tempo Online	2018/2010 ratio	Max. = 1 Min. = 0	
	Share of population with higher education (c)	2010 and 2018	Census, 2011, NIS, Tempo Online	2018/2010 ratio	Max. = 1 Min. = 0	

Table 4 Capitalization tourism index

Index	Data needed	Period	Data source	Primary calculation	Standardization	Calculation method
Capitalization tourism index	Accommodation capacity (a)	2010–2018	NIS, Tempo Online	Accommodation capacity dynamic (a) (2018/2010)	Max. = 1 Min. = 0	$(a + b + c)/3$
	Number of tourist arrivals (b)	2010–2018	NIS, Tempo Online	Tourist arrivals dynamic (b) (2018/2010)	Max. = 1 Min. = 0	
				Tourist use coefficient of the accommodation capacity (tourists/day/year) (c)	Max. = 1 Min. = 0	

tourist expenditures for accommodation, food and various leisure shopping are direct incomes for the regions with tourist activities, having positive effects on work market. Also, the presence of the tourist activities contributes to the unemployment drop by increasing the number of jobs (Nica, 2015).

It was mandatory to introduce the Major Accessibility Index (Table 5) because infrastructure and distance are basic tools for an easy mobility for the people and for an easy access to global markets and knowledge. For tourism is necessary to build and to improve the collective infrastructure, on one hand (roads, water supply), and the cultural and entertainment infrastructure, on the other hand; these facilities along with the ones for leisure contribute to the wealth of tourists and local communities (Nica, 2015).

Geographical-environmental Index (Table 6). Although is hard to perceive/introduce it in the culture-creativity-tourism relation, the environment has a major role because it can create a certain favorable atmosphere for generating ideas. The role of culture in a sustainable environment has become an increasingly important matter because today the society faces numerous challenges such as urban population growth or climate changes; therefore, its future depends on the answer to all these challenges. A sustainably managed environment has numerous positive effects: protects life, health and social and psychological wealth of a community,

supports the local economy and enhances the cultural and aesthetic values of the territory. Therefore, the cultural dimension of sustainability is progressively present in debates and publications regarding sustainable growth.

3.2 Methodology

Our study is based on statistical information provided by NIRCT (National Institute for Cultural Research and Training) and the methodology is established by The Urban Institute of Washington (2006). Regarding the study area, we analyzed 41 Romanian cities (residences of counties) without Bucharest, the national capital city.

1. We used five categories of indicators that helped us to obtain a cultural vitality index (cultural infrastructure, cultural participation, specialized human resources, creative industries and budgetary expenditure for culture).
2. Also, we used tourism activity indicators and other economic, socio-demographic and accessibility indicators. The methodological framework proposed by the NIRCT (Cultural Vitality Index) was extended by adding new sub-indicators considered to be more relevant in highlighting the economic and socio-cultural parameters of the European creative sector and by analyzing

Table 5 Major accessibility index

Index	Data needed	Period	Data source	Primary calculation	Standardization	Calculation method
Major accessibility index	Airport presence (a)	2018	a-h: NIS Tempo online Google maps	(a) presence = 1; absence = 0 (b) 4 categories by traffic (A: over 2 mil. travellers; B: 1–2 mil.; C: 0.3–1 mil. travellers; (d) under 0.2 mil. travellers); A = 1; B = 0.666; C = 0.333; d = 0.167 (c) 0–90 km = 1; 90–180 km = 0.8; 180–270 km = 0.6; 270–360 km = 0.4; 360–450 km = 0.2; over 450 = 0; (d and e) 0–30 km = 1; 30–60 km = 0.8; 60–90 km = 0.6; 90–120 km = 0.4; 120–150 km = 0.2; over 150 km = 0 (f) 0–90 km = 0.5; 90–180 km = 0.4; 180–270 km = 0.3; 270–360 km = 0.2; 360–450 km = 0.1; over 450 = 0; (g) 0–60 km = 1; 60–120 km = 0.8; 120–180 km = 0.6; 180–240 km = 0.5; 240–300 km = 0.4; 300–360 km = 0.3; 360–420 km = 0.2; 420–480 km = 0.1; over 480 km = 0	a-h: as such Were calculated 2 sub-indices: (β) air accessibility (a + b + c + d + e + f)/5 (γ) road accessibility (g + h)/2	$(2\beta + \gamma)/2$
	Airport category, traffic function (b)					
	Otopeni airport distance (c)					
	Distance to the nearest airport (d)					
	Distance to the second nearest airport (e)					
	Distance to the nearest type A airport (without Otopeni) (f)					
	Distance to the European motorway system (g)					
	Distance to the nearest national highway (h)					

Table 6 Geographical-environmental index

Index	Data needed	Period	Data source	Primary calculation	Standardization	Calculation method
Geographical-environmental index	Afforestation degree in an area of 15 km (a)	Average of the years 2010–2018	NIS, Tempo Online	% of the total surface	Max. = 1 Min. = 0	$(a + ((b + c)/2) + d)/3$
	Presence of major running waters (b)	As such	Google Maps, Military Topographic Unit (topographic maps)	Nine categories by flow. 1 = Danube; 0.9 for + 100 cubic meter per second (cms); 0.8 for + 50 cms; 0.7 for + 25 cms; 0.6 for + 10 cms; 0.5 for + 5 cms; 0.4 for + 1 cms; 0.3 for courses with insignificant flow; 0.1 for the absence of any water course; It is reduced by 0.1 if the river does not cross the city and	As such	

(continued)

Table 6 (continued)

Index	Data needed	Period	Data source	Primary calculation	Standardization	Calculation method
				0.1 is added in case of major confluences		
	Share of the aquatic surface (c)	Average of the years 2010–2018	NIS, Tempo Online	% of the total surface	Max. = 1 Min. = 0	
	Geographical localization (d)	As such	Google Maps, Military Topographic Unit (topographic maps)	Four categories: 1 = mountain or coastal area; 0.75 = depression, submontane area; 0.5 = hill/plateau area; 0.25 = plain area	As such	

dynamics between 2010 and 2018. Thus, additional determinants are transformed into relevant indicators to illustrate the creative vitality of an economy.

- Data were processed using multivariate statistics in order to highlight certain typologies of the analyzed cities and, more important, if the cultural cities are also attractive tourist destinations.
- For the AHC (agglomerative hierarchical clustering), we used the Ward aggregation method and the Euclidean distance as criterion of dissimilarity. The aim was to keep the intra-class dispersion and the standard deviation of each variable as reduced as possible. The number of classes also followed the criterion of representativeness, each class grouping at least four statistical units. Therefore, the challenge of this study was to identify those socio-cultural parameters that contribute to the creativity increase and to operationalize them in quantitative terms in order to be included in the creativity index.

According to the methodology, we obtained 6 different classes (Fig. 2). The standard deviation of the indices has values between 0.114 (capitalization tourism index) and 0.145 (geographical-environmental index), excepting the cultural vitality index, with a value of 0.228 (very complex). The class distribution is strongly regionalized in the case of the extreme ones (classes 1 and 6), the dependency on the size of urban centers being relatively low. Only in the case of class 5 we can mention a size effect.

Class 1 is grouping four cities from the center of the country: Cluj-Napoca, Sibiu, Târgu Mureş and Alba Iulia, having advantages related to: accessibility, economic potential and superior tourist capitalization. The European Capital of Culture status owned by Sibiu in 2007, the economic expansion of Cluj, the multiculturalism and regional tourist potential improvement are few of the pro-arguments for this exceptional cultural vitality with values clearly above average. The presence of numerous small and medium towns well included in tourist circuits (Sighişoara, Turda) and of some strongly promoted rural areas (the former German villages from Transylvania or from Apuseni Mountains) guarantee a general favorable environment for cultural activities.

Class 2 has seven cities situated in the west of the country (from Satu Mare to Timişoara) or in the south of Romania, where Craiova capitalizes its quality of being the capital of Oltenia but also Ploieşti or Târgovişte, which have benefits from being close to the capital (Bucharest). The index values are in general superior or closer to the average, only the environment index has a significant negative gap. The capitalization tourism index is more reduced comparing with the first class although certain urban centers had important urban rehabilitation projects (Oradea, Arad, Craiova) or they are preparing to be European Capital of Culture (Timişoara, 2021).

4 Analyses and Discussions

We used two types of analysis as follows: the AHC (agglomerative hierarchical clustering) to observe the existence of certain spatial structures and the PCA (factorial analysis) in order to identify the factors leading to these differences.

4.1 Agglomerative Hierarchical Clustering (AHC)

Regarding the study area, we analyzed 41 Romanian cities (residences of counties) without Bucharest (the national capital city), excluded because is by far an outlier by its size.

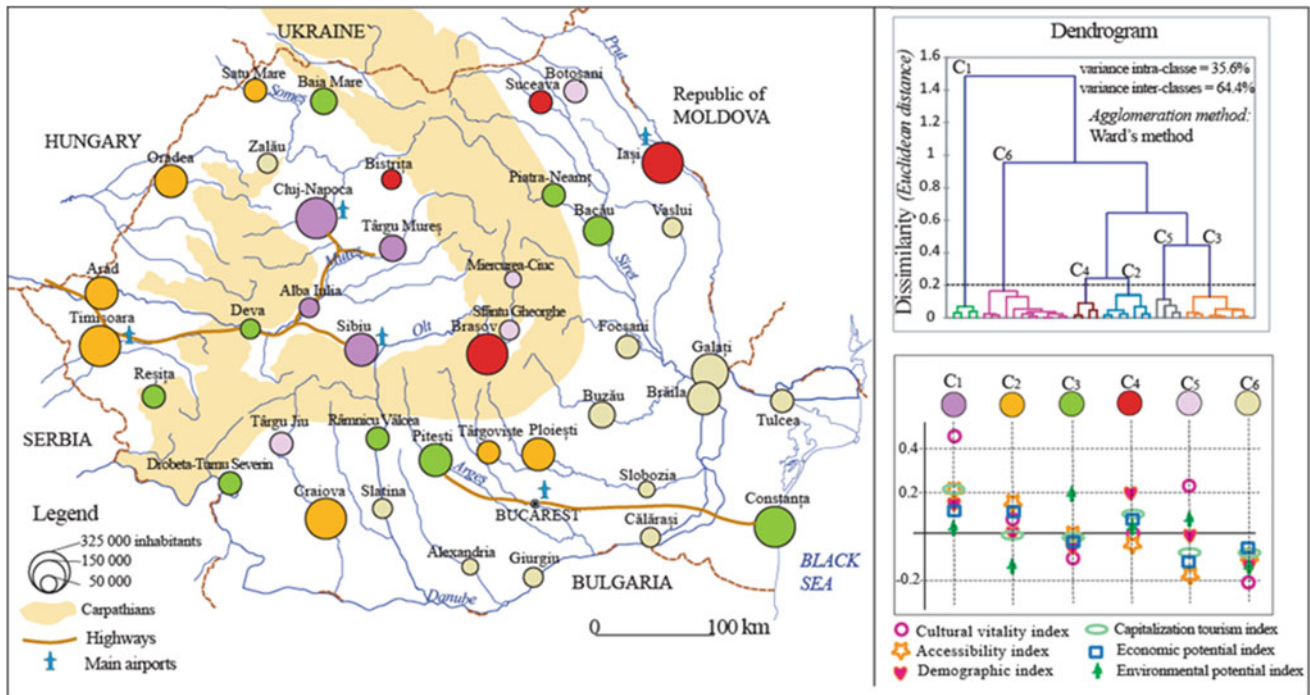


Fig. 2 Agglomerative hierarchic classification

Class 3 is also well represented, the nine county residences being present in all of the Romanian regions. Their main advantage—the air quality—has reduced values, significantly below the average of the cultural vitality index. The other indices have gap values rather negative from the average. Many of these cities, strongly industrialized in the communist period, experienced a strong economic and demographic decline (Bacău, Piatra Neamț, Reșița) and have a precarious accessibility that led to an unfavorable environment for cultural activities development. The case of Pitești is different because the city is keeping its industrial function (Dacia—Renault). Surprising is the presence of Constanța in this category, the city having an advantage—the Black Sea shore. With a significant size and an undeniable cultural tradition, the city has the disadvantage of being very dependent on the tourist and port activities which partially explains the weakness of the cultural life.

Class 4 is poorly represented. The four cities—Iași, Suceava, Brașov and Bistrița—have the advantage of high demographic potential (younger and dynamic population) and a tourist capitalization significantly above average, but both with problems of accessibility that lead to a cultural life far below potential. The fact that the values of the indices are generally close to the average (with a lower dispersion) is an advantage that could raise the level of cultural life at least in the case of tourist flows or demographic potential.

Class 5 is also poorly represented, with a high spreading of index values around the average. Apparently, they have high values of cultural vitality but the other indicators have

rather below average values, the accessibility and the low economic potential being the main disadvantages. Being medium-sized cities with an old cultural tradition (Botoșani), with strong ethnic characteristics (Miercurea-Ciuc and Sfântu Gheorghe) or with important tourist potential (Târgu-Jiu), they managed to have an acceptable level of cultural vitality despite the lower economic level. They can be considered an example of resilience and adaption to the existing conditions.

Class 6 is the best represented, having 12 county residences located mainly in the south-east of the country (from Slatina to Vaslui), the only urban center in the west of the country being Zalău, a city developed especially in the last part of the communist period and, therefore, with a certain delay in terms of cultural development. The relative proximity to Bucharest and the location in plain areas explain the low level of the environmental indicator. However, all the other indicators are below average with an extremely low spreading (a sign of systemic problems), which explains the extreme value of the cultural vitality index that is below the level of the other indices. So, the cultural life in these cities is so below the low level of accessibility or capitalization of the tourist potential so they cannot be indicated as the main cause. In this category are urban centers that experienced a faster development in the last communist decades (Alexandria, Slobozia, Vaslui), but also it is surprising to include in this category large or medium-sized cities with a certain potential and an undeniable cultural tradition (Galați and Brăila—old ports on the Danube).

Finally, this analysis (although mainly descriptive) highlights preliminary conclusions:

1. The cultural vitality of the main Romanian cities has significant differences during the transition period and strong regionalized contrasts.
2. The relative homogenization from the communist period that we can presume from the profile activities standardization (including the financing perspective), has disappeared, the last differentiated class seeming to correspond to that homogeneous model, undifferentiated by size, position or level of development of urban centers.
3. The competitive advantages (access to high-speed transport networks, high level of development) are not always enough to revive cultural activities, in many cases, features from the past (tradition, favorable environment) are subsequent to the community's need for preservation of cultural identity and can be a much stronger impetus.

4.2 Factorial Analysis (PCA)

Having the cultural vitality index as a dependent variable and the other five indices as explanatory variables, the database was submitted to a factorial analysis (PCA) in the

SPSS program. The results showed direct and significant statistical links between five of the six variables studied.

As we expected, given the maximum spreading towards the average values of the classes in the previous analysis, the environmental indicator is an exception, the coefficients in the correlation matrix being insignificant (Table 7). We outline the high value of the correlation coefficient between capitalization tourism index and cultural vitality index. Therefore, is certified the importance of tourism as an activity able to boost the cultural and artistic life, visible in the case of Sibiu (European Capital of Culture in 2007). The strong link between tourism and accessibility, economic potential or demographic potential is also highlighted and explains why some well-positioned centers from this point of view (Timișoara, Brașov and Iași) have a slightly lower cultural vitality. It is also important that the economic potential, although significantly correlated, is still slightly less important than the other indices. It turns out that the level of development is not always crucial in encouraging cultural life.

A separate debate appears regarding the environmental index, apparently insignificantly correlated. In particular cases, there may be a strong correlation between the environmental index and the cultural vitality index, especially for the medium-sized cities located in the mountainous or sub-mountainous area. From the analysis of the coefficients, we can observe the higher value of the correlation with the

Table 7 Correlation matrix

		Cultural vitality index	Accessibility index	Demogr. index	Capitalization tourism index	Economic potential index	Environment potential index
Cultural vitality index	Pearson correlation	1					
	Sig. (two-tailed)						
Accessibility index	Pearson correlation	0.429**	1				
	Sig. (two-tailed)	0.066					
Demographics index	Pearson correlation	0.460**	0.470**	1			
	Sig. (two-tailed)	0.003	0.002				
Capitalization tourism index	Pearson correlation	0.532**	0.539**	0.627**	1		
	Sig. (two-tailed)	0.000	0.000	0.000			
Economic potential index	Pearson correlation	0.391*	0.551**	0.544**	0.609**	1	
	Sig. (two-tailed)	0.013	0.000	0.000	0.000		
Environmental potential index	Pearson correlation	0.131	-0.109	0.009	0.175	-0.114	1
	Sig. (two-tailed)	0.420	0.505	0.955	0.279	0.484	

** Correlation is significant at the 0.01 level (two-tailed). *Correlation is significant at the 0.05 level (two-tailed)

Table 8 The significance of the correlation between variables

KMO and Bartlett's test		
Kaiser–Meyer–Olkin Measure of sampling adequacy		0.806
Bartlett's test of sphericity	Approx. chi-square	74,785
	df	15
	Sig	0.000

capitalization tourism index. However, we can conclude that (indirectly) the environment also has a minimal influence on the cultural life. Testing the significance of the links between the variables was possible using the Chi-Square test associated with the Bartlett test (Table 8).

The very small Sig. value associated with Chi-Square test shows strong links between variables, the analysis being conclusive. The KMO value higher than 0.8 highlights an optimal solution obtained using PCA. Important information can also be collected from the table of total variance, identifying two factorial axes that explain most of the total variance (70%; the first explaining 51.2% and the second 18.7%) (Table 9).

The two factorial axes are unequal, axis 1 (component 1) being determined by the strong correlation between five factors, while axis 2 is determined by only one factor, the environmental quality index. A very good result is given by

the positive and very high values (close to 1) of the variable coordinates related to the first factorial axis. To the same extent, the environmental quality index is strongly correlated with the second factorial axis and, although insignificant, the correlation with the tourist potential capitalization index and cultural vitality index is higher than the other three indices, having positive values (even low).

This proves once again the existence of a discrete and indirect link between cultural vitality, tourism and environment could be tested by using a more complex analysis model (Table 10).

The visualization of the variable position in the factorial axes system is possible using the graph of the main components (Fig. 3, left). This identifies both direction and intensity of the links between the variables. High correlation means strong projection towards the right side of the graph, in the case of the variables related to component 1. Being positively correlated, all variables are localized in the right part of the graph. The two axes are very clearly highlighted and support the observations mentioned above.

Projecting on the same graph, the analyzed cities reconfirm in a great measure the groups obtained after the AHC. The six classes presented in the previous analysis are relatively found in the distribution of statistical units towards the two axes of the PCA (Fig. 3, right).

Table 9 Distribution of the total variance (Total variance explained)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,072	51,200	51,200	3,072	51,200	51,200
2	1,124	18,727	69,927	1,124	18,727	69,927
3	0.580	9,674	79,601			
4	0.513	8,555	88,156			
5	0.413	6,877	95,033			
6	0.298	4,967	100,000			

Extraction Method: Principal Component Analysis

Table 10 The matrix of the correlations of the components with the factorial axes

Component matrix ^a	Component	
	1	2
Ind_tour_cap	0.856	0.190
Ind_demo	0.797	-0.003
Ind_econ_pot	0.794	-0.239
Ind_Access	0.759	-0.236
Indice_Cult_Vit	0.706	0.245
Ind_environ	0.037	0.956

Extraction Method: Principal Component Analysis

a. Two components extracted

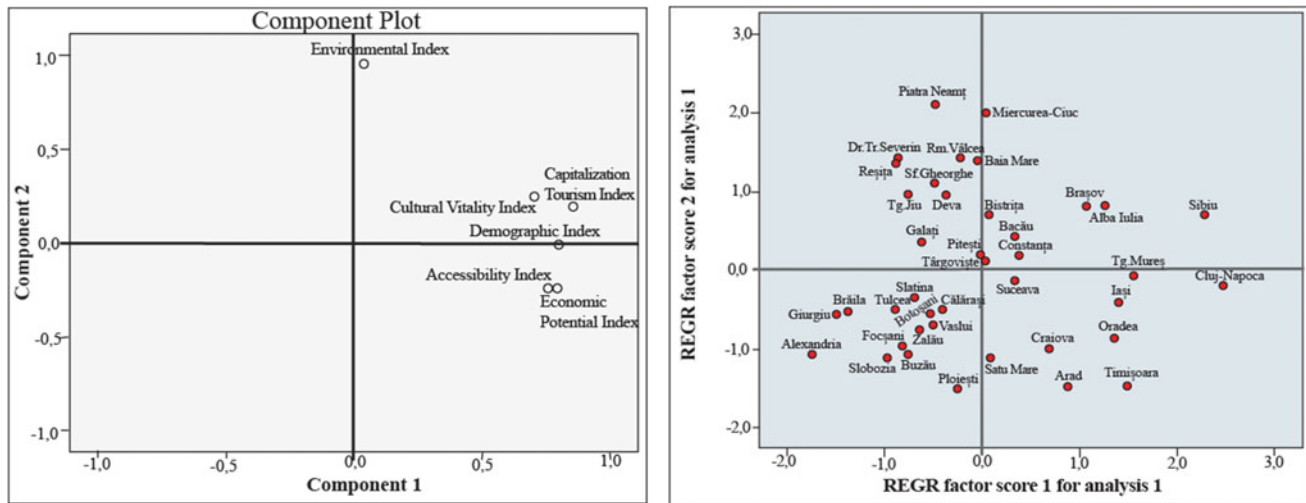


Fig. 3 a Graphic of component plot (left). b Regression factor score (right). Data source obtained in SPSS, adapted in Adobe Illustrator

Cities with opposite coordinates on a factorial axis are projected on that axis in opposite parts, their behavior towards the variables explaining that axis being different; those projected to the right of the graph have high values of the five indicators that form axis 1, mostly corresponding to classes 1, 2 and 4 from AHC; those projected at the bottom left of the graph have opposite reduced values, being found almost entirely in class 6 of the AHC. The cities situated at the top of the graph were decisive in establishing the second factorial axis, having very high values of the environmental quality index (corresponding largely to classes 3 and 5 from AHC). Opposite them (those at the bottom) have low values of the environmental quality index and many of them and other indices, also low. The complementarity of the classification analysis and of the factorial analysis is justified by these similarities but also by some differences that resulted from the statistical model used. Therefore, the PCA highlights a greater dependency on the urban size, the larger cities being less dependent on the quality of the environment but being advantaged by the higher level of the other indices.

Some classes identified in AHC are fragmented in the distribution towards the factorial analysis axes, their position being dependent on the approximation of values induced by the agglomerative model used. When they are related to the relative position of the axes indicated by the PCA, they are grouped according to the specific correlations between the variables used. In this way, the cities of Iași and Brașov seem closer from a factorial perspective to those considered more advanced and with high values for all indicators (Cluj - Napoca, Sibiu, Târgu Mureș and Alba Iulia). Also interesting is the relative position of cities from the vicinity perspective, a possible effect of spatial dependency. Such groups (with identical values) are Reșița and Drobeta-Turnu Severin in the southwest of the country, Buzău and Focșani

in the southeast of the country, Pitești and Târgoviște in the south of the country or Brăila and Giurgiu, both Danube ports.

The last observations led to a multidimensional scaling analysis, which allows the cities to be positioned in a bi-dimensional space by their similarities/differences, starting from the variables used. The distance between cities was calculated by squaring the Euclidean distance. Based on the distances matrix, a perceptual type spatial graphic model was built, the distance between the points being proportional to distances from the input data. The Stress (Kruskal) function was used to measure the degree of mismatch between: distances between points on the SMD graph and distances from the input data matrix. This leads to the following possible values: between 0 and 1, low value of stress, so a good representation of the data; the value ≤ 0.1 indicates an excellent quality of the analysis (Table 11).

We distinguished two dimensions that represent hidden structures of data based on which the similarities/differences between cities are explained. Unlike mathematical dimensions that are perpendicular (maximum efficiency), the

Table 11 Goodness of fit

Stress and fit measures	
Normalized raw stress	0.04,247
Stress-I	0.20609 ^a
Stress-II	0.37602 ^a
S-Stress	0.08181 ^b
Dispersion Accounted For (D.A.F.)	0.95,753
Tucker's Coefficient of Congruence	0.97,853

PROXSCAL minimizes Normalized Raw Stress

a. Optimal scaling factor = 1,044

b. Optimal scaling factor = 1,097

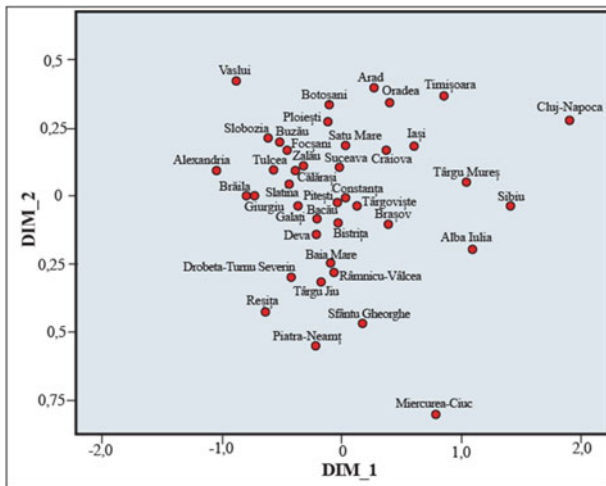


Fig. 4 Multidimensional scaling analysis

identified dimensions can be positioned from left to right, from bottom to top, diagonally or at any angle inside the graph (Fig. 4).

Also, the figure outlines the extremes: positive ones, the city of Cluj-Napoca (very high values of the indices) and Miercurea—Ciuc (the smallest analyzed cities but with a high indicator of cultural vitality) and negative ones, the city of Vaslui, strongly economically disadvantaged and with low tourist frequency. Most of the cities are grouped in a central core and the large ones (Cluj-Napoca, Timișoara, Iași, Craiova, Brașov, Oradea or Sibiu) have the tendency to be grouped in the same way as those disadvantaged by lower levels of indices or by higher environmental quality (at the bottom).

The results extracted from the factorial analysis and the multidimensional analysis confirm the preliminary conclusions mentioned at the end of the AHC presentation. From the relative homogenization of the communist period (expression of specific activities standardization), it was reached (in less than three decades) a complex causality where cultural attractiveness becomes a major component of urban development, depending on the size of cities, position and accessibility. From our analysis, we can conclude that Romanian cities are currently evolving under the action of two competing processes: a strong economic decline and an unfavorable environment for cultural activities development, on the one hand, and high accessibility, economic potential and superior tourist and cultural capitalization, on the other hand. As it happens in the majority of Eastern European countries, the concentration of economic, cultural and creative activities in regional metropolises is becoming the new normality of the twenty-first century.

The results indicated the need for large-scale studies on the dynamics of urban cultural vitality as an essential element of development along with economic, environmental

and social factors (Stanborough, 2011). Future strategies of culture and tourism development should consider the trends resulted from our analysis. The experience of other countries shows that there are no general valid solutions to reduce the tension between today's urban transformations and the management of past memories and to understand and manage the historical processes that transformed the public spaces of cities (Ortega-Nuere & Bayón, 2015), especially in the case of the former communist countries. Reconciliation with an undesirable past is difficult because of the communism legacy and of the transition period difficulties, EU integration, the economic crisis (or numerous other crises) and political and social challenges. The "official" and "unofficial" representations coexist successfully and are part of the communism heritage and revolution product (Mihalic, 2017). Current trends lead tourism to a new level where the creators of the tourist offer are no longer public, but private ones such as organizations of students or citizens, NGOs and various individual projects.

In the end, the limitations of our study were the absence of certain information regarding tourist mobility and specific cultural activities and the absence of longer-term information in order to be able to test the evolution trends. Regarding the opportunities for a future research, our paper can be used as a basis for deepening the concept at a regional level—taking into account small or local cities and analyzing metropolitan/peri-urban areas for example—and to establish measures to stimulate the sustainable development of urban tourism.

5 Conclusions

According to our analysis, we can conclude that Romanian cities are in a phase of reconsidering the elements that ensured their cultural vitality. The latter is usually more advanced in the cities with strong economic and cultural support and only at its start where the efforts of the transition to market economy have permanently hampered the attempts to revive cultural life. The quality and diversity of the profile infrastructure are important, as they prove some cities that (despite a massive economic and demographic decline) managed to preserve in a great measure their cultural traditions. The strong differences that lead to important regional contrasts can be explained in a broader context of adapting to the new context imposed by the transformation of the economic-social and cultural structures specific to the totalitarian regime. The most favorable geographical position explains the visible separation between the central-western regions and the southeastern ones of the country, correlated with the tradition of stronger links with the western states.

The weakness of the special infrastructure and the strong presence of some forms of the cultural life loyal to the

communist ideology explain the reduced adaptability of some cities from the south and east of the country, usually of modest size. The centralized model (undifferentiated by the size, position or level of development specific to the communist period) has produced a certain homogenization unsustainable in the new context. The existence of certain territorial disparities certifies the importance of the cultural vitality as a vector of resilience by stimulating the creative economy and by creating an environment that leads to innovation. The fact that our analysis highlighted a strong spatial dependence indicates the existence of major differences in terms of adaptation to the new socio-economic context.

We expect that the good practices—that ensured a faster adaptation of some privileged urban centers from the perspective of the analyzed factors—to produce a spatial diffusion. Thus, it would be attracted in the cultural revitalization trend not only the traditional centers now on a second place (the great Danube ports, for example) but also the centers without perspective. The essential condition is to stimulate interest for cultural activities and support them in a wider context of projects with the main purpose of adapting to successful models such as resilient cities, green cities or smart cities.

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