



DOI 10.2478/sbe-2023-0029

SBE no. 18(2) 2023

ESTIMATING CULTURAL TOURISM FLOWS IN ROMANIA: EMPIRICAL APPROACHES BASED ON EXISTING DATA AT MUNICIPALITY LEVEL

FREŢŢ Cristi

National Institute of Research Development in Tourism, Bucharest, Romania

NICULESCU Alina

National Institute of Research Development in Tourism, Bucharest, Romania

Abstract:

The purpose of this paper is to present two empirical approaches of estimating/approximating the size of cultural tourism in Romania based on existing data at municipality level. These approaches have been labelled 'the potential supply approach' (based on municipalities with man-made tourism resources as dominant resource) and 'the demand approach' (based on municipalities that register visitors in museums). Number of tourists (arrivals) in accommodation establishments was considered the benchmark statistical indicator. The analysis of Pearson correlation between number of tourists and number of visitors in museums was also included, and municipalities where this correlation is positive and statistically significant were grouped in eight clusters. The results revealed a strong concentration of tourism in big cities that are both cultural and tourism destinations as well as a correlation between tourism and culture data for 67 municipalities (out of 284). However, the precise size of cultural tourism is difficult to be quantified in the lack of any specific demand-side survey regarding travel purposes and/or activities undertaken during tourism trips and within such purposes/activities, cultural tourism to be separately identified. But, in these circumstances, the two approaches presented in this paper can outline only a maximum size of cultural tourism in the country.

Key words: cultural tourism, tourists in accommodation establishments, visitors in museums, municipality, Romania

1. Introduction

Culture and tourism have always had a mutual beneficial relationship in order to increase the attractiveness and competitiveness of a locality (municipality), of a region and even of a country. In the fullness of time, culture has become an extremely important component for tourism products (representing a major factor in the attractiveness of most of the destinations) while tourism has been a catalyst for culture. In other words, tourism is based on cultural heritage and cultural heritage is capitalized by tourism visits. More, cultural tourism has emerged as a distinct form of tourism becoming a popular tourism product.

In this context, it is important to define cultural tourism. At the thirty-second session of the General Assembly of the World Tourism Organization (UNWTO) the

following definition has been adopted that can be considered a basic reference: 'Cultural tourism is a type of tourism activity in which the visitor's essential motivation is to learn, discover, experience and consume the tangible and intangible cultural attractions/products in a tourism destination' (UNWTO, 2018, p. 11). According to Stăncioiu (1999), in the Dictionary of tourism terminology, cultural tourism represents a form of tourism practiced for the purpose of spiritual needs, of the completion of cultural formation by those persons who seek artistic and cultural inspiration (p. 205). Richards (2003) considered that cultural tourism can be seen 'as covering both 'heritage tourism' (related to artefacts of the past) and 'arts tourism' (related to contemporary cultural production)' (p. 6). In other words, cultural tourism refers not only to the cultural products of the past, but also to contemporary cultural products.

In studying the concept of cultural tourism, Bauman, quoted in Mousavi *et al.* (2016), specified that, because it is a social practice, 'cultural tourism reconstructs or constructs identities and will eventually contribute to globalization and framing a globalized world' (p. 4). For Niculescu (2010) cultural tourism is 'form of economic development based on cultural resources' (p. 1) considering that this form of tourism can be also a mean of intellectual and spiritual enrichment in addition to the economic benefits. Also, Jafari (2003 cited Drăgulănescu *et al.* 2014) considered that cultural tourism is based on 'satisfying the need of tourists eager to get to know the people in their authentic environment' referring to the tradition of peoples that may be culturally attractive (arts, crafts, music, gastronomy, crafts, rituals, etc.) (p. 943).

At the same time, coming back to the tourism and culture, UNWTO (2020) considered that the lack of information / data is one of the main obstacles in understanding the relationship between tourism and culture. Also, the statistics for cultural tourism are based on the participation of several factors, which require more efforts to collect, exchange and create data, involving both the tourism sector and the culture sector (p. 6). In this context it is important to mention that in November 2015, an online survey was sent to all UNWTO members, in order to review the current relationship between tourism and culture globally. In this survey, the countries were asked to indicate the measures they use to estimate the size of their cultural tourism market and the results were as follows: 32% of them answered that they are using cultural participation data than cultural motivations (30%), while 25% used some other measurement; about 35% of respondents mentioned that they do not measure cultural tourism at all. At the same time, it is important to mention that the European Commission (2022) estimates that cultural tourism accounts for 40% of all European tourism and 4 out of 10 tourists choose their destination based on its cultural offering.

One can add also some data and estimates at the country level. According to Arts Hub Australia (2018), a research made by Australia Tourism Statistics showed that 'of all international visitors to Australia in 2017, 43% participated in a cultural activity and 33.9% in a heritage activity'. The same research demonstrated that the cultural tourism activities have been growing at 7.5% and 11.2% respectively over the past four years. For comparison, we present another example given by Richards (1996) in Denmark: this author showed that the foreign tourists made almost 3.5 million visits, or 35% of the total number of visits to Danish museums in 1992. A positive trend in visiting museums has also been recorded in Poland (an increase by 6.8 pp in 2019 compared with 2014) according to Statistics Poland (2021), which conducted a research based of the results of the modular household survey on the participation of population in culture in 2019. Also in Spain, the number of mainly cultural trips made by international tourists grew reaching to nearly 12.8 million in 2017, according to Lopez (2022).

Cellini and Cuccia (2009) developed a case study for Italy, analyzing the monthly data over the period January 1996 to December 2007, in order to evaluate the directions of causality between tourism flows, on the one side, and museum and monument attendance, on the other side. The conclusion of this research was that the museums cannot be

requested to play a role as major tourism attractors. However, remaining on Italian territory, Borowiecki and Castiglione (2014) used data for Italian provinces, finding what they called 'a particularly strong and positive relationship between tourism flows and participation in cultural events' and showing that 'tourist arrivals correspond with a significantly higher number of visits to museums, theatre and concerts, as well as to exhibitions and shows' (p. 257); in line with this finding is also the paper of Guccio *et al.* (2017) which analyzes the impact of cultural participation on the performance of a tourism destination.

Other authors applied different models to assess cultural tourism. For instance, Panzera *et al.* (2021) applied a Bayesian multilevel gravity model to highlight the material cultural heritage and its potential positive impact on European tourist flows. Their results showed that only UNESCO cultural World Heritage Sites have an impact on the size of international tourist flows. In order to understand the economic effects and to explore the connections between cultural participation and tourism organization and models, Noonan and Rizzo (2017) analyzed together this phenomenon. The studies they chose for this analysis used several methodologies, including 'regression analyses of tourist expenditures, dynamic panel data analysis, conditional efficiency frontier estimation and structural equation models of motivations and loyalty' (p. 102).

Now strictly regarding Romania, according to Arsene and Mihăilescu (2019) statistics in our country cannot provide accurate information on cultural tourism or its sub-types. On the other hand, the National Institute of Statistics, INS (2019) publishes every year the number of tourists participating in domestic tourism actions, by tourist areas (out of which cultural tourism is separately identified), data produced in a survey on travel agencies. But using the services of travel agencies located in Romania does not cover the entire market of cultural tourism in Romania (i.e. excluding travelling on own account).

In these circumstances, the question is how the size of cultural tourism in Romania can be measured taking into account that nowadays there are no specific surveys addressing to this type of tourism. More, from the tourism destination perspective it is difficult to distinguish separately cultural tourism due to complementarity and complexity of tourism forms that can be practiced. In this context, this paper proposes two empirical approaches to estimate/approximate cultural tourism in Romania, named 'the potential supply approach' and the 'demand approach'. Both of them are based on existing data at municipality level in Romania together with some basic assumptions.

2. Methodology

The potential supply approach is based on the classification of municipalities in Romania from National Plan for Territorial Planning (rom. PATN), Section VIII – areas with tourism resources. In Romania, PATN Section VIII – areas with tourism resources (in accordance with Emergency Governmental Ordinance 142/2008) is a normative act in the field of strategic planning of the national territory that defines exhaustively areas with tourism potential in the country. According with the methodology pertaining to this official act, the tourism potential of the territory is the result of the existence of tourism resources within a territory while tourism resources are defined in two categories namely natural resources and man-made resources.

PATN defines man-made tourism resources as being the following: archaeological monuments, archaeological sites, monuments, archaeological ensembles and reservations, monuments and memorial ensembles, technical and art monuments, museums, folklore and folk art. The reasonable assumption is all these components are a core part of cultural tourism since in most cases these are also tourist attractions.

All municipalities in Romania that have a so called 'very high concentration' and 'high concentration' of natural and man-made resources are identified exhaustively. Almost 1,200 municipalities are included in PATN, these representing little over 37% of total

municipalities in Romaniaⁱⁱ. Most of the municipalities identified in PATN belong to the category 'High concentration of tourism resources' (989) while almost 200 municipalities are within the category 'Very high concentration of tourism resources'. The distinction between two categories (very high concentration and high concentration) is given by the scores obtained, respectively over 25 points from maximum 50 points for municipalities with very high concentration and between 14 and 24.99 points for municipalities with high concentration according to the methodology for analysing tourism potential of the territory approved by Order no 549/518/2016 of vice-prime-minister, minister of regional development and public administration and vice-prime-minister, minister of economy, commerce and relations with business environment. So, this categorization is strictly based on the tourism potential of a territory as a result of the existence of tourism resources. Also, each municipality is categorized upon the dominant tourism resource: natural resources, man-made resources and mixed resources (both natural resources and man-made resources).

Municipalities that have man-made resources as dominant resources are assumed to be entirely allocated to cultural tourism. Therefore, number of tourists from these municipalities is presumably considered to belong to cultural tourism. The basic assumption is there is a high probability for tourists from these municipalities to be involved in at least one activity relating to a visit to the cultural attraction/(s) as long as the municipality where tourists are staying owns such cultural attraction/(s). Therefore, this will be named the potential supply approach. It has to be mentioned that the term <potential supply> considers tourism resources upon which a municipality is classified (more precisely, in this case the dominant man-made resources) as a constituent component of the tourism supply.

Instead, from another perspective, by addressing demand only municipalities that register visitors in museumsⁱⁱⁱ are considered. More precisely, by reconciliation data from municipalities that register visitors in museums with data from municipalities where tourists are accommodated, one can establish the number of tourists in municipalities where visitors in museums are registered. Also in this case it is assumed that these tourists can be assimilated to cultural tourism as long as there is a certified demand for a cultural product in the respective municipality (which is certified by number of visitors in museums). Here the usage of term demand is justified as long as we are dealing with a cultural consumption (demand) by visiting museums and this consumption is assumed to come mainly from tourists that stay in accommodation establishments.

Within the demand approach we included also the analysis of correlation between two indicators respectively number of visitors in museums and number of tourists in accommodation establishments by using Pearson correlation coefficient^{iv} and calculating its statistical significance by applying t test according to Anghelache *et al.* (2005):

$$t = \frac{r}{\sqrt{1-r^2}} * \sqrt{n-2} \quad (1)$$

where,

r – simple linear correlation coefficient^v;

n – number of observations

n-2 – number of degrees of freedom;

The value of t calculated in accordance with formula (1) has been compared with the theoretic value from the Student table, for a significance level α (usually $\alpha = 0.05$) and n-2 degrees of freedom (Anghelache *et al.*, p. 150); r is statistical significant if the calculated value of t is higher than the theoretic value from the Student table.

Further on, for the municipalities where there is a significant statistical correlation (a positive correlation), a clustering of municipalities has been created considering the value of these two indicators (and taking 2019 as reference year) namely the size of

tourists flows and number of visitors in museums. The basic premise is that these clusters will provide some basic insights in terms of locating the main cultural tourism attractions of the country.

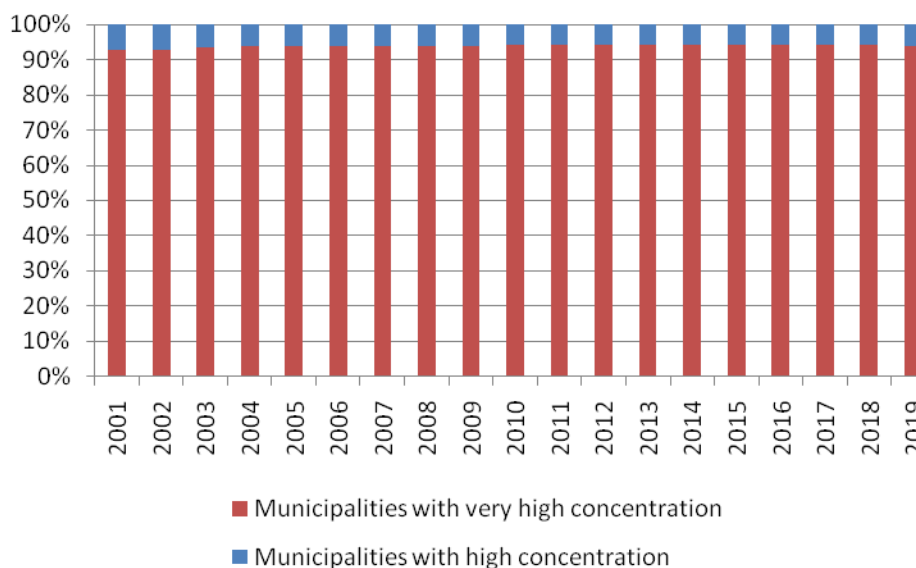
In our endeavour we used data from National Institute of Statistics, INS regarding number of tourists in accommodation establishments in the period 2001-2019, data from Tempo database (INS, 2021). However, data regarding number of visitors in museums are available for the period 2005-2019 since 2005 was the first year with available data. It should be mentioned that due to comparability reasons with previous years, the years 2020 and 2021 will not be taken into account, given the atypical evolution due to the pandemic that strongly affected the Romanian tourism sector.

3. Results

3.1. Potential supply approach

As mentioned previously, the potential supply approach is based on the classification of municipalities from PATN. If one looks strictly at quantifying the number of municipalities in PATN with man-made resources that are included in INS data, there is a balanced distribution between municipalities with high concentration and municipalities with very high concentration of tourism resources (136 versus 117), but if we look strictly at the number of tourists accommodated, one can see a quasi-majority of tourism flows registered in municipalities with very high concentration of tourism resources (see figure 1).

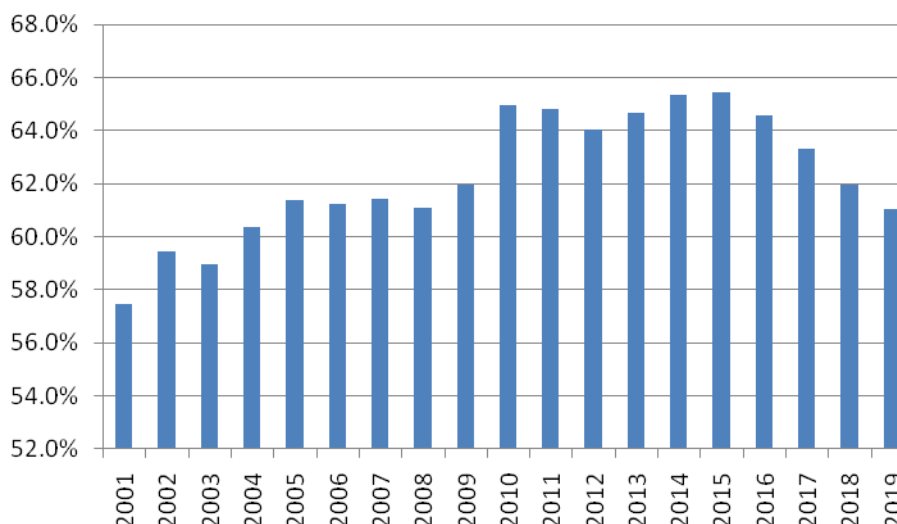
Figure 1: Distribution of tourists in municipalities with man-made resources as dominant resource, by types of municipalities according to PATN, 2001-2019



Source: own calculations based on INS (2021) data and PATN section VIII – areas with tourism resources

In average, in the period 2010-2019, a little over 62% of the number of tourists in accommodation establishments in Romania was in municipalities listed in PATN with man-made resources as dominant resource – what can be in a certain way similar with cultural tourism. The range of this share fluctuates between just over 57% in 2001 and 65% in 2015. Overall, the trend is an oscillating one but in the last years after 2016, a constant decline of this share is noted reaching to 61% in 2019 (see figure 2).

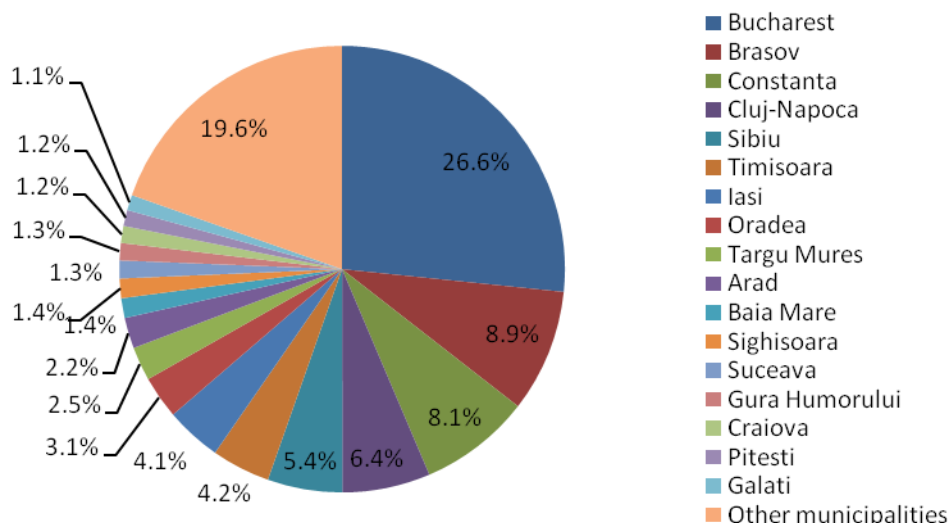
Figure 2: Importance for Romania of tourism in municipalities listed in PATN with man-made resources as dominant resource (assimilated with cultural tourism), 2001-2019



Source: own calculations based on INS (2021) data and PATN section VIII – areas with tourism resources

Of course, from the importance of tourism flows point of view, municipalities with very high concentration of man-made tourism resources are the ones to be considered in any public policy approach in the field of cultural tourism (as long as over 90% of tourists registered in municipalities with man-made resources are in municipalities with very high concentration of tourism resources). However, as regards these municipalities with very high concentration of tourism resources, one can see a preponderance of tourism in big cities in 2019 (the last year before the pandemics). Thus, over a quarter of tourism flows are in Bucharest which together with Braşov, Constanţa and Cluj-Napoca accounted for a half of total number of tourists registered in 117 municipalities with man-made resources, more precisely municipalities with very high concentration of tourism resources according to PATN. Of course, one have to be aware that at the same time not all tourism in these cities can be considered as cultural tourism since this form of tourism coexists with other forms of tourism (for instance, the most eloquent case is business tourism). However, one should note that 17 municipalities account for 80% of total number of tourists registered in municipalities with very high concentration of tourism resources according to PATN (see figure 3). Each of these 17 municipalities registers at least 80 thousands tourists.

Figure 3: Distribution of tourists in municipalities with man-made resources – very high concentration of tourism resources according with PATN, 2019

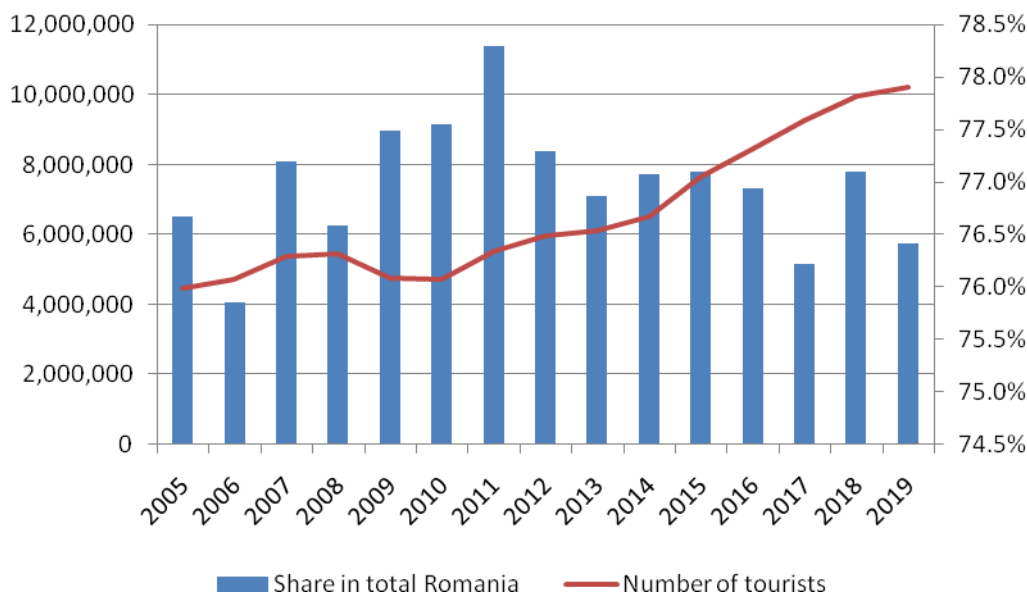


Source: own calculations based on INS (2021) data and PATN section VIII – areas with tourism resources

3.2. Demand approach

In the period 2005-2019 the number of municipalities that registered both visitors in museums and tourists in accommodation establishments fluctuated from 168 in 2005 to 272 in 2019. In absolute terms, the number of tourists in municipalities that register visitors in museums increased from 4.4 million in 2005 to 10.2 million in 2019. This corresponds to an average annual growth rate of 6.1%, a rate which is quite similar with the level registered for the total tourists in accommodation establishments in Romania. One should note that also the share of tourists accommodated in these municipalities has a slight oscillatory trend in the range of 76-78% (see figure 4). Remarkable is also the growth dynamics in the period 2015-2018 for the number of tourists from municipalities that register visitors in museums.

Figure 4: Number of tourists from municipalities that register visitors in museums, 2005-2019

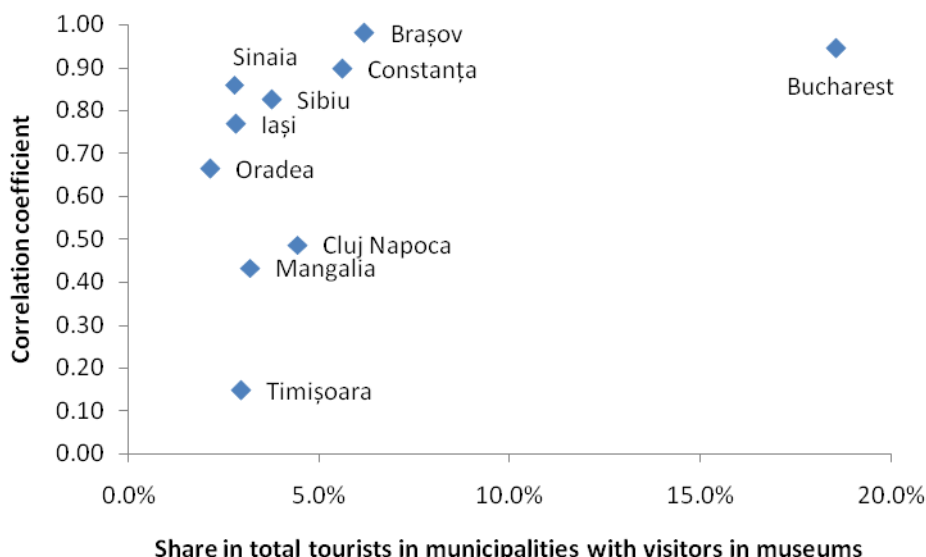


Source: own calculations based on INS (2021)

3.2.1. The correlation number of visitors in museums versus number of tourists in accommodation establishments

Due to the fact that there is high concentration of tourism activities and museum activities, the top 10 municipalities that register tourists and visitors in museums has been illustrated as well as their market share in 2019 and the Person correlation coefficient between number of tourists and number of visitors in museums (using data series 2005-2019 – see figure 5). By far, Bucharest ranks first with the highest share (18.5%) and having a correlation coefficient of 0.94. However, only Braşov has a higher correlation coefficient (0.98) which is superior to Bucharest showing its indisputable tourist city profile. Constanta, Sinaia and Sibiu have a correlation coefficient over 0.8 certifying a strong connection between flows of tourists and flows of visitors in museums in these municipalities. At the opposite is Timisoara where the connection between number of tourists and number of visitors in museums is very weak (only 0.15). An intermediary position is occupied by Cluj-Napoca and Oradea. Mangalia is a special case due to its profile based on seaside tourism. Another special case is the mountain resort of Sinaia where there is very high correlation between flows of tourists and of visitors in museums (0.86) which is given by the existence of Peleş royal palace, the former summer residence of Romanian kings, one of the most visited tourist attraction in the country. It should be mentioned that all these 10 municipalities cumulate over a half of the number of tourists registered in municipalities that have visitors in museums.

Figure 5: Top 10 municipalities that register tourists and correlation with number of visitors in museums



Sursa: own calculations based on INS (2021)

Note: for Timişoara, Cluj-Napoca and Mangalia the correlation coefficient (r) is not statistically significant

Of course, the correlation between number of visitors in museums and number of tourists in accommodation establishments was also applied for the rest of municipalities. Therefore, out of 284 municipalities in Romania that have data for at least 3 consecutive years in the period 2005-2019 both for number of tourists in accommodation establishments and for number of visitors in museums, Pearson correlation coefficient (r) is statistically significant (following t test) only for 67 municipalities in Romania. For these municipalities there is a direct correlation (linear connection) between these two indicators (a positive value of the correlation coefficient). Therefore, an increase in number of visitors in museums is followed by the same trend in the case of number of tourists in accommodation establishments. It is important to mention that these 67 municipalities account for 61.1% of the total number of tourists in municipalities that register visitors in museums and 46.7% of the total number of tourists in accommodation establishments in Romania. The situation of these municipalities is presented in table 1 by grouping them upon the positive value of the correlation coefficient.

One can note that for 30 municipalities there is a very strong correlation between these two indicators while for 31 municipalities there is a strong correlation. Also for 6 municipalities the correlation is rather moderate. Of course, only the 67 municipalities were considered where the correlation is statistically significant.

Table 1: Distribution of municipalities by type of correlation^{vi} between number of tourists in accommodation establishments and number of visitors in museums

Type of (positive) correlation	The range of the correlation coefficient (r)	Total number of municipalities	Name of municipality
Very strong correlation	0.8-1	30	Alba Iulia, Gârda de Sus, Piteşti, Comăneşti, Braşov,

Type of (positive) correlation	The range of the correlation coefficient (r)	Total number of municipalities	Name of municipality
			Făgăraș, Bran, Bunești, Fundata, Prejmer, Tisău, Oravița, Dej, Constanța, Târgoviște, Moroeni, Toplița, Hunedoara, Orăștioara de Sus, Sighetu Marmăției, Săcălășeni, Bușteni, Sinaia, Urlați, Bucov, Sibiu, Turnu Roșu, Vatra Moldoviței, Nicolae Bălcescu, Bucharest
Strong correlation	0.6-0.8	31	Ștefănești, Brăduleț, Dâmbovicioara, Bacău, Oradea, Săcele, Rupea, Târlungeni, Buzău, Reșița, Târgu Secuiesc, Tecuci, Baia de Fier, Peștișani, Iași, Brănești, Baia Mare, Vișeu de Sus, Moisei, Săpânța, Târgu Mureș, Sighișoara, Târgu Neamț, Jibou, Suceava, Fălticeni, Ciocănești, Tulcea, Drăgășani, Horezu, Măreșești
Moderate correlation	0.4-0.6	6	Sebeș, Săliște, Costești, Focșani, Sucevița, Tinca

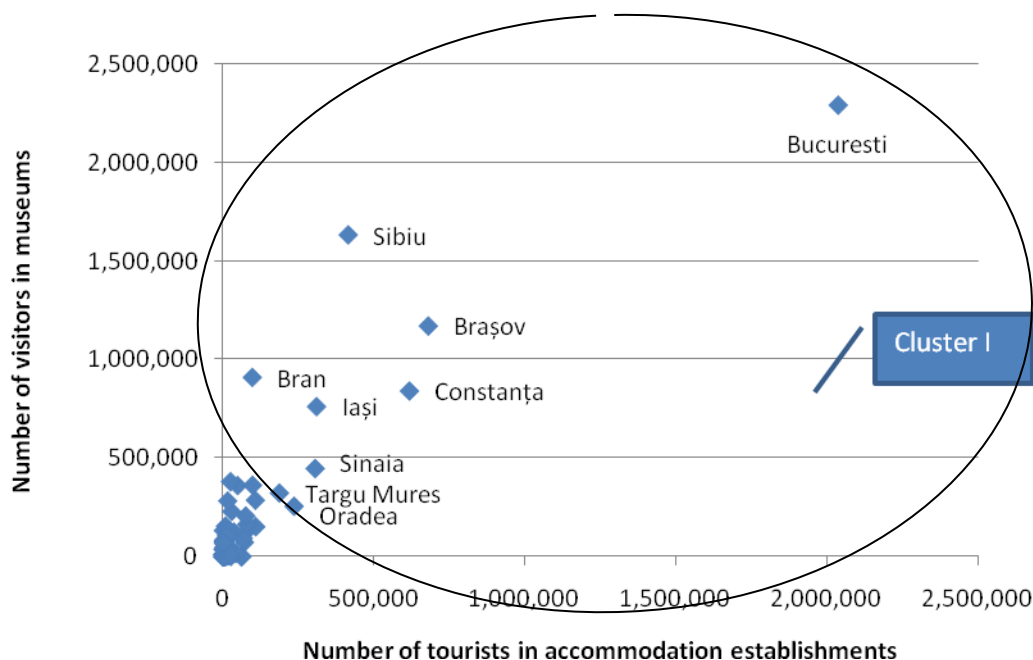
Source: own calculations based on INS (2021)

Leaving aside the cases where the correlation coefficient is calculated for data series under 5 years (the case of two municipalities which are less important from the size of tourist flows and visitors in museums point of view - Săcălășeni și Turnu Roșu), the strongest correlation has been registered for Brasov municipality (as mentioned before), followed by Orăștioara de Sus (the place where the Dacian fortress Sarmisegetuza Regia is located, the capital of the former Dacian state) and Hunedoara municipality (where Corvin castle is located, an important cultural and tourist attraction in the Western Romania). A very strong correlation of these two indicators is also registered in Târgoviște, Bucharest, Sighetu Marmăției, Făgăraș, Constanța, Bușteni, Sinaia, Prejmer, Bran, Sibiu and Alba Iulia. All these municipalities have important cultural and tourist attractions. In the same time, there is also a very strong correlation in municipalities having lower tourist notoriety such as Urlați (Prahova), Oravița (Caraș-Severin), Gârda de Sus (Alba), Moroeni (Dâmbovița), Tisău (Buzău), Nicolae Bălcescu (Vâlcea) sau Bunești (Brașov).

3.2.2. Clustering municipalities

Starting from the existence of a statistically significant correlation, the 67 municipalities can be grouped depending on the value of two indicators, number of tourists and number of visitors in museums (taking 2019 as year with reference data^{vii}). The first representation of municipalities in a chart shows a number of nine municipalities having significant values both in terms of number of tourists and number of visitors in museums (see figure 6a). These municipalities are Bucharest, Sibiu, Brașov, Constanța, Iași, Bran, Sinaia, Târgu Mureș and Oradea. We will consent that all these municipalities are part of cluster I.

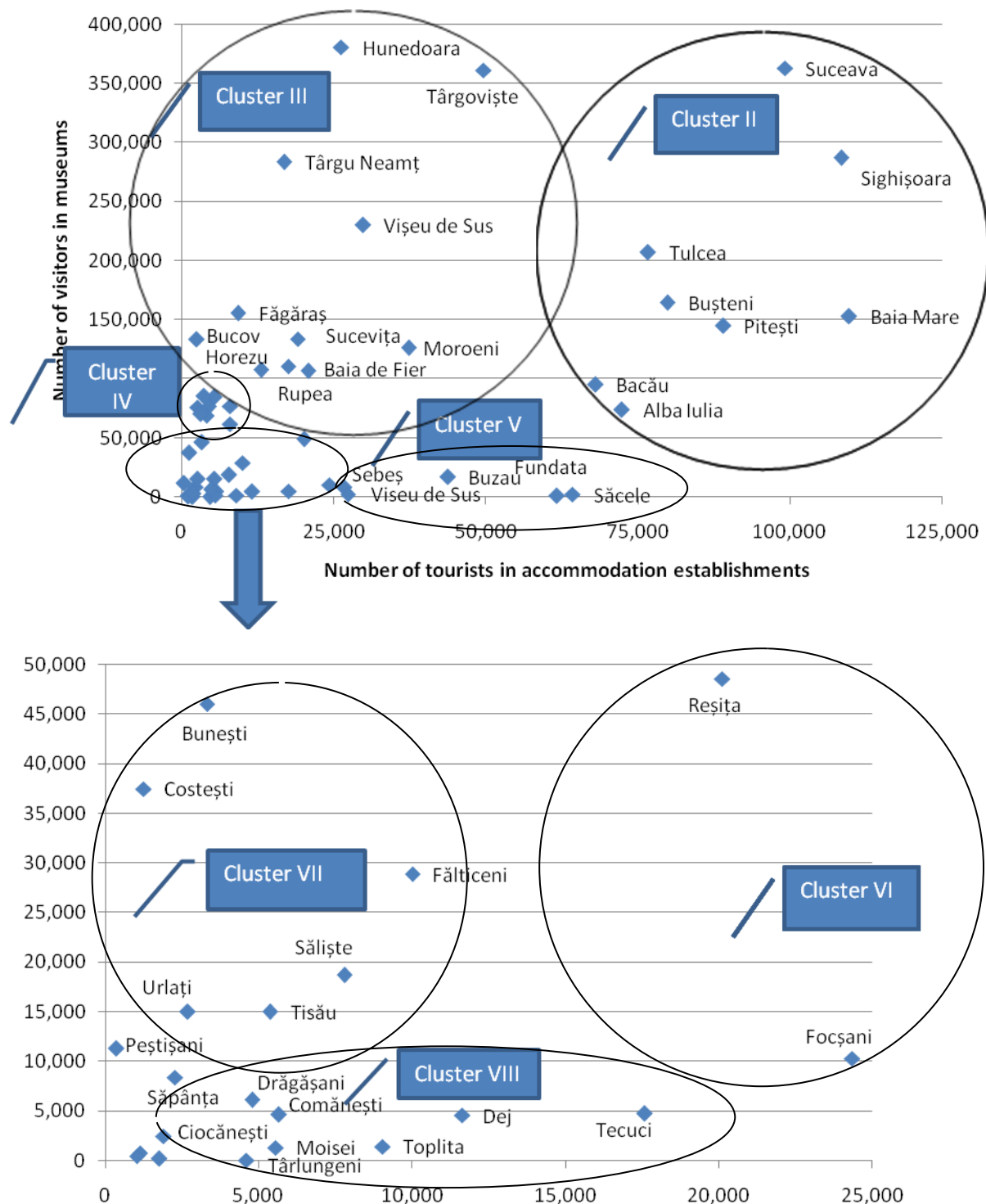
Figure 6a: Number of tourists in accommodation establishments and number of visitors in museums (for municipalities where there is a statistically significant correlation between these two indicators) in 2019



Excepting those nine municipalities presented in the chart above, one can make the following grouping in clusters for the rest of municipalities (see figure 6b)^{viii}:

- Cluster II → 50.000-125.000 tourists in accommodation establishments and 50.000-400.000 visitors in museums: 8 municipalities: Sighişoara, Suceava, Baia Mare, Piteşti, Tulcea, Buşteni, Bacău, Alba Iulia;
- Cluster III → 10.000-50.000 tourists in accommodation establishments and 100.000-400.000 visitors in museums: 11 municipalities: Hunedoara, Târgovişte, Târgu-Neamţ, Vişeu de Sus, Făgăraş, Suceviţa, Moroieni, Baia de Fier, Rupea, Bucov, Horezu;
- Cluster IV → under 10.000 tourists in accommodation establishments and 50.000-100.000 visitors in museums: 8 municipalities: Gârda de Sus, Oraviţa, Dâmbovicioara, Măreşesti, Vatra Moldoviţei, Prejmer, Jibou (Sălaj), Ştefăneşti (Argeş);
- Cluster V → 25.000-75.000 tourists in accommodation establishments and bellow 25 thousands visitors in museums: 5 municipalities: Săcele, Fundata, Buzău, Vişeu de Sus, Sebeş;
- Cluster VI → 10.000-25.000 tourists in accommodation establishments and 10.000-50.000 visitors in museums: 3 municipalities: Reşiţa, Fălticeni (Suceava) and Focşani;
- Cluster VII → bellow 10.000 tourists in accommodation establishments and 10.000-50.000 visitors in museums: 6 municipalities: Buneşti (Braşov), Tisău (Buzău), Peştişani (Gorj), Urlaţi (Prahova), Sălişte (Sibiu), Costeşti (Argeş);
- Cluster VIII → bellow 25.000 tourists in accommodation establishments and bellow 10.000 visitors in museums: 12 municipalities: Brăduleţ (Argeş), Comăneşti (Bacău), Târlungeni (Braşov), Topliţa, Orăştioara de Sus, Moisei, Săpânţa, Turnu Roşu (Sibiu), Ciocăneşti (Suceava), Drăgăşani (Vâlcea), Dej, Tecuci.

Figure 6b: Number of tourists in accommodation establishments and number of visitors in museums (for municipalities where there is a statistically significant correlation between these two indicators) in 2019

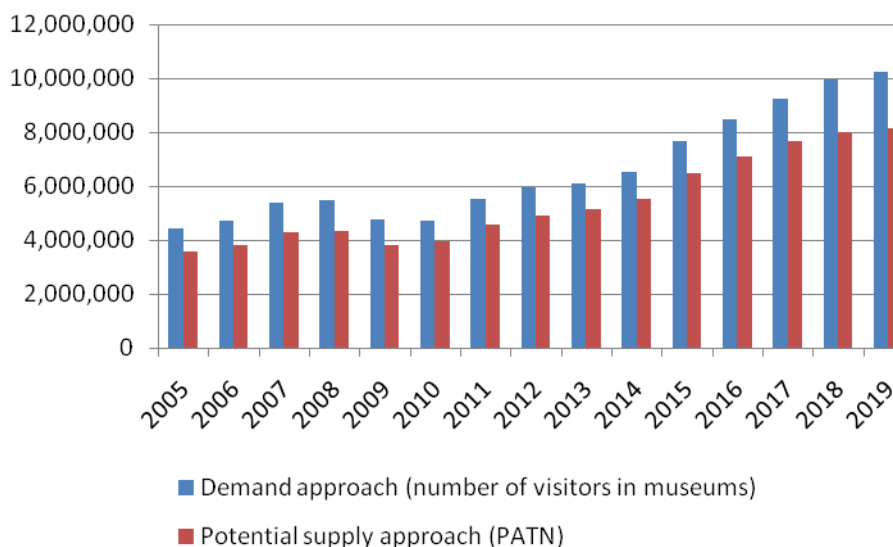


From the cultural tourism point of view municipalities belonging to clusters I, II and III are the most important ones. One can say that for 27 municipalities there is a significant size both from tourism flows and from cultural importance point of view. At the same time, for municipalities belonging to clusters IV and VII, the cultural size is superior to the touristic one while for municipalities from cluster V there is an opposite situation with cultural size inferior to the touristic one. An intermediary situation is found in cluster VI and partly cluster VIII. Not the least, one has to consider that this is rather a static situation at the level of year 2019, not considering the dynamics of tourism and cultural activities in these municipalities.

3.3. Comparison between the two approaches

In order to compare the two approaches (see figure 7), available data series for the period 2005-2019 will be used; this is the period for which data are available both for number of tourists and number of visitors in museums at the municipality level according to INS (2021).

Figure 7: Estimating cultural tourism in Romania: comparison between the demand approach and potential supply approach



Source: own calculations based on INS (2021)

One can notice that the demand approach produces higher estimates of number of tourists compared with the potential supply approach (in fact ranging from 18% to 26% higher). The difference is given by considering only municipalities listed in PAN in the potential supply approach while the demand approach envisages also municipalities that are not part of PATN. Of course, this idea is grounded on the fact that most of municipalities that register visitors in museum are included in PATN (this being certified by the fact that museums are indeed a component of man-made tourism resources).

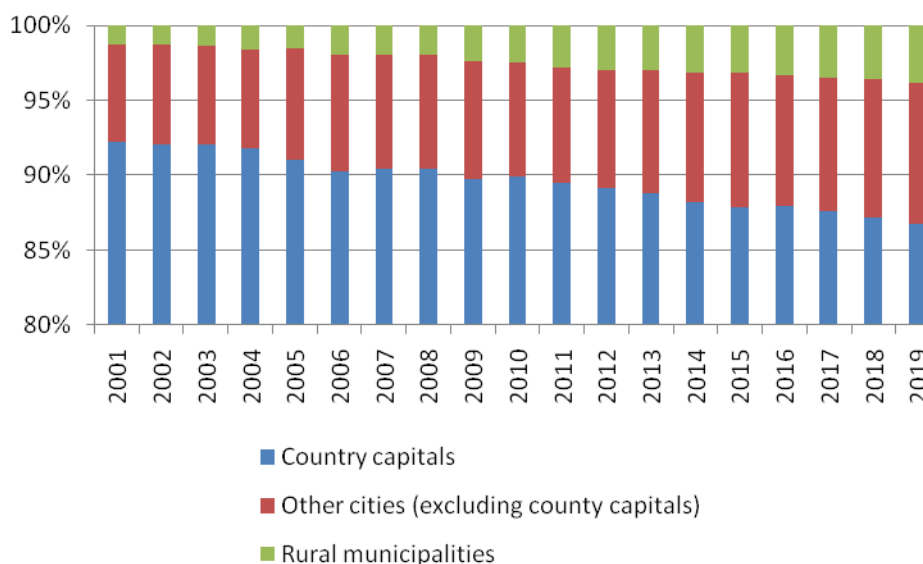
4. Discussion and conclusions

4.1. Limitations

Both approaches for estimating cultural tourism in Romania have as a main limitation the fact that it is considered beforehand that all tourists staying in a municipality are entirely allocated to cultural tourism. But this cannot be true due to, for instance the predominance of business tourism especially in the big cities. Therefore, considering the existing data, it is difficult, if not impossible, to distinguish between different types of tourism in a municipality. In fact, in the official statistics in Romania there is no data breakdown for types of tourism. The highest disaggregation level is that that applies to a municipality, and depending on the profile of these municipalities some basic assumptions have been made.

It is important to see the evolution of distribution of tourism flows (from municipalities listed in PATN with man-made resources as dominant resource) by typology of municipalities, distinguishing between county capitals (rom. orașe reședință de județ), other cities (excluding county capitals) and rural municipalities as a residual category, the latter not being defined as cities within the meaning of INS (see figure 8).

Figure 8: The distribution of number of tourists (from municipalities listed in PATN having man-made resources as a dominant resource) by types of municipalities, 2001-2019



Source: own calculations based on INS (2021)

One can notice that county capitals prevails overwhelming this distribution but with declining shares from over 90% in the first part of the analysed period to over 86% in 2019. At the same time, one can note the increasing share of small cities that are not county capitals from 6.4% in 2001 to 9.4% in 2019. Also, although they have a very low share (almost insignificant), the rural municipalities are characterized by a positive trend with a 3 percentage points growth in the period 2001-2019 (from 1.3% to 3.9%). However, one can claim that cultural tourism as estimated in this paper is not exclusively the prerogative of big cities, even if this prevails in the structure by typologies of municipalities that have been considered.

In this paper, from the perspective of tourism, tourist arrivals have been chosen as indicator at the expense of overnight indicator (which has a better coverage for tourism activity as long as it includes also the influence of length of stay). The reason is given by the better suitability of this indicator in relation with number of visitors in museums which practically captures a person's visit in a museum. However, at territorial level, from the economic impact of tourism point of view (given by the size of tourist flows), the indicator of number of overnight stays would have been better suited in the analysis of tourism.

On the other hand, from the museums activity point of view, one has to consider that the number of visitors is not automatically equal with the number of tourists as long as local residents can also be part of visitors in museums (for instance, the case of pupils from schools that visit a museum in the same locality of residence with the school). As a general rule, one has to be aware that locals can also be an important segment within visitors in museums although the size of this segment is unknown at present.

Quantifying more accurately cultural tourism as a distinct form of tourism can be made only in the case whether there will be surveys regarding the detailed purpose of travel and/or activities carried out in a trip by tourists (studies from demand-side), and within these purposes/activities, cultural tourism to be separately identified. Unfortunately, such studies lack in this country, and for this reason only some estimates/approximations can be made. However, despite all these limitations, we consider these estimates/approximations might be of some usage in the lack of any other relevant data.

4.2. Conclusions

Estimating cultural tourism in Romania based on data at municipality level revealed that firstly there is a necessity to use the existing data sources while made also some reasonable assumptions if one wants to know the approximate size of cultural tourism as a distinct form of tourism. In such endeavour two empirical approaches have been presented in this paper, one based on listed municipalities in PATN having man-made resources as dominant resource and the other one based on municipalities that register visitors in museums. In both cases, in order to quantify tourism flows, the reference indicator is represented by number of tourists in accommodation establishments.

The basic premise is that the man-made tourism resources of a municipality are somehow identical with cultural tourism attractions. This is applicable in Romania as long as according with PATN, section VIII Areas with tourism resources, man-made tourism resources are defined as the following components: historical monuments of national interest (according with the law 422/2001), museums and public collection, traditional festivals, traditional folk crafts, performing arts, concerts and cultural events repeatable. Also, from a different perspective, the existence of flows of visitors in museums is considered a key milestone in recognizing the existence of cultural tourism as a distinct form of tourism in a municipality.

An important aspect of this research is given by the existence of a strong concentration of tourism flows in the main cities that are both cultural and tourist destinations. Thus, by far, there is Bucharest the capital of the country, together with cities such as Sibiu, Brasov, Constanta, Iasi and Cluj-Napoca. In this context, one have to acknowledge the fact that cultural tourism has a strong connection with urban tourism, especially in the big cities. Therefore, there is strong interference between these two forms of tourism (urban and cultural), an aspect that is less evident in the case of rural municipalities where practising some other forms of tourism (for instance mountain tourism, active tourism) may not have so much to do with cultural tourism.

The size of cultural tourism is difficult to be quantified precisely in the lack of any specific survey in Romania. Nevertheless, in this paper we provided some estimates that support the idea that cultural tourism represents a significant component of Romanian tourism. Thus, it has been calculated that in average in the period 2010-2019 a little over 62% from the total number of tourists in accommodation establishments in Romania are in

municipalities that were listed in PATN as having man-made tourism resources as dominant resource. At the same time, the number of tourists in municipalities that register visitors in museums represent 76-78% of the total number of tourists in accommodation establishments in Romania in the period 2005-2019. Of course, these figures are only indicative and their main role is to outline somehow a maximal size of cultural tourism market in Romania. From this point of view these figures have to be seen with some caution due to limitations described above.

The connection between number of visitors in museums and number of tourists in accommodation establishments has been also highlighted by calculating the Pearson correlation coefficient. But even if, at global (national) level the value of correlation coefficient of these indicators is 0.94 (showing a very strong correlation), an in-depth analysis at each municipality level showed that only for 67 municipalities this correlation is statistically significant (by applying t test). These 67 municipalities have been grouped in 8 clusters according to the size of flows of visitors in museums and number of tourists registered in accommodation establishments. From the cultural tourism point of view, municipalities from clusters I, II, III are of prime importance. Thus, there were 27 municipalities from these three clusters that are both significant from cultural and tourism point of view. However, one must admit that not all the municipalities found in these clusters have tourist notoriety (e.g. Pitești, Bacău, Bucov) but most of them do have important cultural and tourist attractions (Bucharest, Sibiu, Brașov, Iași, Oradea, Constanța, Bran, Sinaia, Sighișoara, Alba Iulia, Bușteni, Hunedoara, Târgoviște, Târgu Neamț, Făgăraș, Sucevița). Identifying these municipalities has provided an important input for any public policies in the field of cultural tourism.

Not the least, one has to say that the analysis in this paper has been based only on official existing data produced by National Institute of Statistics. The fact that a municipality has man-made (cultural) tourism resources but it has no tourists registered in accommodation establishments it does not mean that there is no cultural tourism in that municipality. For instance, a number of 126 municipalities have been identified as being listed in PATN as having man-made resources as dominant resource, but they do not have any data regarding number of tourists in accommodation establishments. In the same manner, a number of 150 municipalities register visitors in museums but they had no data on number of tourists in accommodation establishments in 2019. Theoretically, there is the possibility for a municipality not to have any accommodation establishment while tourists are not staying in that municipality with cultural attractions. Therefore, strictly from the perspective of this municipality there might be day visitors (not captured in accommodation statistics) or visitors that stay in private forms of accommodation (for instance at friends at relatives, own holiday house, rented apartment – all these not being included in the INS data on number of tourists in accommodation establishments). This means that it is possible to exist a cultural tourism in that municipality but this is not found in tourism statistics. However, it is difficult to assess these cases at global level (municipalities that do not have data on number of tourists but have data on number of visitors in museums) in the lack of any other related data. The only feasible solution would be to have an in-depth research at the level of each municipality by carrying out statistical observations and specific surveys.

It is believed that the existence of some specific surveys would allow us at least to make some adjustments of data presented in this paper. It is difficult to assess now the impact of these adjustments but one can anticipate that from the perspective of participating at cultural activities one can further make some other reasonable assumptions that would increase the accuracy of estimates carried out in this paper.

5. References

- Anghelache, C., Badea, S. G., Capanu, I., Wagner, P. (2005): *Bazele statisticii teoretice și economice (The fundamentals of theoretic and economic statistics)*, Editura Economică, Bucharest.
- Arsene, A., Mihăilescu, M. V. (2019), *Turismul cultural, între teorie și practica de vizitare (Cultural tourism between theory and visiting practice)*, Institutul Național pentru Cercetare și Formare Culturală, Barometrul de consum cultural - 2019 - Experiența și practicile culturale de timp liber (National Institute for Cultural Research and Training, Cultural consumption barometer - 2019 – Experience and cultural practices of leisure time), available online at <https://www.culturadata.ro/barometrul-de-consum-cultural-2019-experienta-si-practicile-culturale-de-timp-liber/>
- Artshub Australia (2018), *Feeling the impact of cultural tourism beyond the majors*, available online at <https://www.artshub.com.au/news/features/feeling-the-impact-of-cultural-tourism-beyond-the-majors-256541-2360895/>
- Borowiecki, K. J., Castiglione, C. (2014), *Cultural participation and tourism flows: an empirical investigation of Italian provinces*, Tourism Economics, Vol. 20, no. 2, pp. 241-262.
- Cellini, R., Cucia, T. (2009), *Museum and monument attendance and tourism flow: A time series analysis approach*, Applied Economics, Vol 45, no. 24, pp. 3473-3482.
- Drăgulănescu, I.V., Stănciulescu, G.C., Ion, A., Stan T.A. (2014), *Patrimoniul turistic și cultural european: Sighișoara vs. Verona (European cultural and tourist heritage: Sighișoara vs. Verona)*, Amfiteatru Economic, Vol. 16, no. 8, pp. 942-960.
- European Commission (2022), *Cultural tourism*, available online at https://ec.europa.eu/growth/sectors/tourism/offer/cultural_en
- Guccio, C., Lisi, D., Martorana, M., Mignosa, A. (2017), *On the role of cultural participation in tourism destination performance: an assessment using robust conditional efficiency approach*, Journal of Cultural Economics, no. 41, pp. 129–154.
- Institutul Național de Statistică, INS (National Institute of Statistics) (2022), *Metadata – Activitatea muzeelor si colectiilor publice (Metadata – Activity of museums and public collections)*, available online at <http://80.96.186.4:81/metadata/viewStatisticalResearch.htm?locale=ro&researchId=5376>
- Institutul Național de Statistică, INS (National Institute of Statistics) (2021), *Tempo database*, available online at <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>
- Kalvet, T., Olesk, M., Tiis, M., Raun, J. (2020), *Innovative Tools for Tourism and Cultural Tourism Impact Assessment*, Sustainability, Vol. 12, no.18:7470.
- López A.M. (2022), *Inbound trips for cultural purposes to Spain 2015-2020*, available online at <https://www.statista.com/statistics/772607/international-tourists-for-cultural-reasons-in-spain/>
- Ministerul Dezvoltării, Lucrărilor Publice și Administrației, MDLPA (Ministry of Development, Public Works and Administration) (2021), *Numărul și clasificarea Unităților Administrativ Teritoriale și Sectoarelor din România (Number and classification of Territorial Administrative Units and Sectors in Romania)*, available online at http://www.dpfb.mdrap.ro/nr_uat-uri.html
- Mousavi, S.S., Doratli, N., Mousavi, S. N., Moradiahari, F. (2016), *Defining Cultural Tourism*. International Conference on Civil, Architecture and Sustainable Development, (CASD-2016) Dec. 1-2, 2016 London(UK), available online at <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwj16uLCks32AhUZRFEDHW3YCTwQFnoECAMQAQ&url=https%3A%2F%2Fiicb.e.org%2Fupload%2F8607DIR1216411.pdf&usg=AOvVaw1hXVANMeKg-sw45vthVXh5>

- National Institute of Statistics, INS (2019), *Romanian Tourism Statistical Abstract*, available online at <https://insse.ro/cms/ro/content/turismul-rom%C3%A2niei-breviar-statistic-2>
- Niculescu, G. (2010), *Turismul cultural, model de dezvoltare economic (Cultural tourism, model of economic development)*, Analele Universității "Constantin Brâncuși" din Târgu Jiu, Seria Economie, no 2/2010, pp. 57-68, available online at http://www.utgjiu.ro/revista/ec/pdf/2010-02/6_GEORGE_NICULESCU.pdf
- Noonan D.S., Rizzo I. (2017), *Economics of cultural tourism: issues and perspectives*, Journal of Cultural Economics, no 41, pp. 95-107.
- Panzer, E., de Graaff, T., de Groot, H. L. F. (2021), *European cultural heritage and tourism flows: The magnetic role of superstar World Heritage Sites*, Papers in Regional Science, Vol. 100, no 1, pp. 101-122.
- Richards, G. (1996), *Cultural Tourism in Europe*, available online at https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwi9her6xc32AhWTQ_EDHQKbBp0QFnoECAIQAQ&url=http%3A%2F%2Fwww.atlas-euro.org%2Fpages%2Fpdf%2F-cultural%2520tourism%2520in%2520europe.PDF&usg=AOvVaw24KcC5G3LbO2AQEEiXnD0R
- Richards, G. (2003), *What is Cultural Tourism?*, In van Maaren, A. (Ed.) *Erfgoed voor Toerisme. Nationaal Contact Monumenten*, available online at https://www.academia.edu/1869136/What_is_Cultural_Tourism
- Statistics Poland (2021), *Participation in culture in 2019*, available online at <https://stat.gov.pl/en/topics/culture-tourism-sport/culture/participation-in-culture-in-2019,2,2.html>
- Stăncioiu, A., F. (1999): *Dicționar de terminologie turistică (Dictionary of tourism terminology)*, Editura Economică, Bucharest
- World Tourism Organization, UNWTO (2020), *Big data in cultural tourism - Building sustainability and enhancing competitiveness*, UNWTO, Madrid, available online at <https://www.e-unwto.org/doi/10.18111/9789284422937>
- World Tourism Organization, UNWTO (2018), *Tourism and culture synergies*, UNWTO, Madrid.

ⁱ The survey consisted of 10 questions, including questions on the definition and size of the cultural tourism market, cultural tourism policy, the role of cultural tourism in marketing strategies, priorities for future development and the current state of cultural and tourism partnerships. In total, 69 countries responded to the survey by January 2016.

ⁱⁱ At present (according to the last updates at 15 June 2021) in Romania there are 3,181 municipalities defined as territorial administrative entities at local level according to MDLPA (2021).

ⁱⁱⁱ In fact the specific terminology is <visitors in museums and public collections>. The data derives from an annual exhaustive survey covering 600 museums and public collections including sites and reservations (archaeological, historical, ethnographic, architectural, natural parks, botanical gardens and zoos etc.) according to INS (2022).

^{iv} This is a measure of linear correlation between two sets of data.

^v $-1 \leq r \leq 1$ where if r is close to 1 data series are positively correlated and if r is close to -1 then data series are negatively correlated. Also, a value close to 0 indicates that there is no correlation.

^{vi} Exclusively a correlation coefficient which is statistically significant.

^{vii} Out of 67 municipalities, 5 municipalities did not have data for at least one of the two indicators considered. Therefore, the clustering is in fact for 62 municipalities.

^{viii} These were also presented by the authors as an extended abstract of the paper *Culture statistics versus Tourism statistics: Evidence from an analysis at municipality level* presented at MOVE 2021, 6th International Conference on Subnational Measurement and Economic Analysis of Tourism, November 22th-26th 2021, Bogota, Colombia.