

# We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

5,000

Open access books available

125,000

International authors and editors

140M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index  
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?  
Contact [book.department@intechopen.com](mailto:book.department@intechopen.com)

Numbers displayed above are based on latest data collected.  
For more information visit [www.intechopen.com](http://www.intechopen.com)



# Public Governance and Cultural Heritage: Exploring the Links between Culture and Social Indicators with the Principal Component Analysis

*Ionela Munteanu Florea, Marioara Mirea and Cosmin Susu*

## Abstract

The cultural heritage encompasses the values and the identity of nations. It represents a vibrant proof of the past and, nevertheless, the core inspiration for the future. Still, culture is preserved and acknowledged with the care of political and economic spheres. In such context, the governance approach and strategies impact the cultural dimension. The understanding and assessment that governance has on the link between economic inputs and cultural heritage are of utmost importance for the actual preserving and acknowledgement of culture merits. The current chapter concentrates on exploring the synergy of governance strategies related to cultural heritage. The focus is set on two conceptual perspectives that governance of culture incurs: vision and knowledge. On the one hand, governance relates to compliance, accountability, and sustainability and shapes its vision according to these. On the other hand, from the perspective of knowledge, the chapter explores the interdependencies between cultural heritage and quantifiable socioeconomic indicators. By modeling statistical data with the principal component analysis (PCA) method, interesting results point to a possible social assessment of tendencies in the cultural heritage dimension.

**Keywords:** economic statistics, cultural heritage, education, occupation, principal components analysis

## 1. An introduction to cultural heritage and vision

Cultural heritage defines the identity of a country. It is not often explicitly defined [1, 2] or sometimes is associated to a process of remembering meant to show ways to understand the present by using the past experience [3]. From an economic perspective, cultural heritage is the property of a collectivity [1]; it raises questions on ownership of origin [1] and opportunity [4] and may represent an important source of economic boon [5]. The preservation and judicious promotion

of culture can greatly influence tourism and can contribute to better social coherence [6] and improvement of education and lifestyle. Moreover, heritage preserves the pride of belonging to a historical and territorial community.

This chapter analyzes cultural heritage as an expression of museums, libraries, cinemas, theaters, archeological sites, and archives of a community. Reminiscent of the past embodies an explorable physical form in museums, a written narrative value [7] transmissible by manuscripts, but also an expression of informative acts and freedom in artistic manifestations.

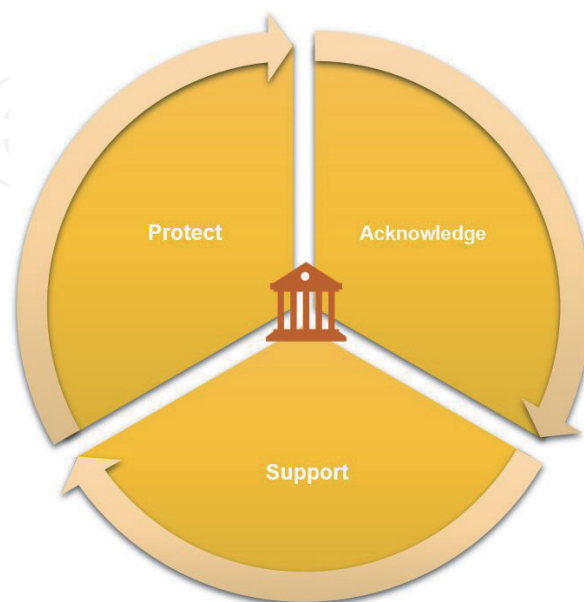
In the context of globalization and a multicultural world, political strategies [8] capture a special importance both globally but especially at national level. Global increase of population mobility, a continuous change of social context, turbulences, and political conflicts can threaten the preservation of individual and historical values of communities. In this context, the government's approach and concern on laws issued in the cultural field becomes of special importance [9].

In such a context, the governance vision has to address three major requirements: acknowledgement, support, and protection of cultural heritage (**Figure 1**).

As a general remark, the core scope of culture policies should reside in preserving national heritage. Worldwide, regulations regarding the three core elements are set, but it is in the power of every nation to decide on their own specific regulations. As Simmons states, "justice cares about insuring to all persons (access to) their fair share of goods and resources; it cares far less about the manner in which persons use these goods to advance their life plans and particular projects" [10].

Nevertheless, the European nations have agreed on a set of common regulations in order to set the grounds for uniformization and analogy between states' indicators. Still, there are several limitations in acquiring comparable data regarding culture from the member states, because of the use of different approaches in collecting data or reporting. But still, the importance of working and improvement in this field is of utmost importance.

The main limitations in correlating information in the culture sphere between states worldwide reside in the differences in collecting and reporting of statistical data. Comparison between states in this regard is not conclusive.



**Figure 1.**  
*Synergetic requirements of governance vision.*

## 1.1 A snapshot of heritage acknowledgment

The national acknowledgment of cultural identity represents an expression of the raised awareness of the present under the light of the past [11, 12]. The Ming dynasty is a singular expression of the Chinese lands; the temples of the ancient Gods embody the Greek identity; the Roman baths are reminiscent of the historical presence of the Roman Empire; the Mayan pyramids still praise the ancestors of the Mexican land. The traces of the past invigorated in museums, archeological sites, and cultural establishments are the true ambassadors of wealth and heritage of communities.

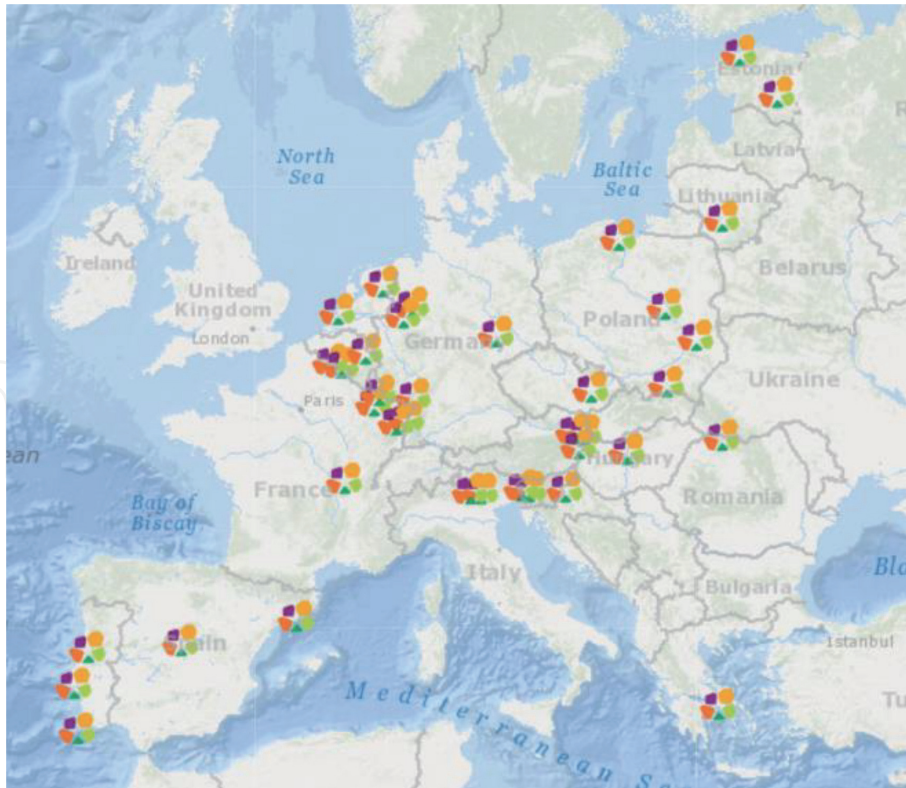
In Europe, one of the measures agreed by the member states for the preservation and acknowledgment of community identity [13] was the creation of a system of certification by the EU for buildings, museums, documents, archives, or events, which played a special role in the history of the continent from the perspective of past actions that competed in its current reality. The selection process started in 2013, and by the year 2018, only 38 sites with symbolic cultural value were recognized by the EU by granting “the European Heritage Label” (Figure 2).

In Romania, a single objective was awarded the European Heritage Label, which is the Memorial of the Victims of Communism and of the Resistance, from Sighet. The Memorial was created to commemorate the victory against communism in 1989, and it represents “a means to resuscitate the collective memory” [14] on one milestone of Romania’s and Europe’s history (Figure 3).

Also, the UNESCO created the List of World Heritage Sites with the core goal to protect the selected properties under the terms of the 1972 UNESCO Convention concerning the protection of heritage. Regarding Romania, eight such objectives were inserted in the UNESCO list, out of which six are of cultural importance and two of natural value [15] (Figure 4).

- The eight monasteries of Moldavia (Voronet, Humor, Moldovita, Sucevita, Arbore, Patrauti, Suceava, Probota Monastery) with exterior very well-preserved mural painting, dating from the first half of the sixteenth century
- The Dacian Fortresses of the Orastie Mountains (Sarmizegetusa Regia, Costesti Cetatuie, Costesti Blidaru, Capalna, Lunca-Piatra Rosie, Banita)
- The Historic Centre of Sighisoara
- The Monastery of Horezu
- The villages with fortified churches in Transylvania (Calnic, Valea Viilor, Biertan, Saschiz, Viscri, Darjiu, Prejmer)
- The wooden churches of Maramures (Rogoz, Plopi Surdesti, Desesti, Budesti, Barsana, Ieud-Deal, Poienile Izei)
- The Ancient and Primeval Beech Forests of the Carpathian and other regions of Europe
- The Danube Delta

When it comes to the preservation of the written format of cultural heritage, Europeana [16] was created, an EU digital platform able to reunite works from all



**Figure 2.**  
*The map of awarded European heritage labels. Source: European Commission.*



**Figure 3.**  
*Sarmizegetusa Regia, the pagan Dacian temple, in Hunedoara, Romania.*

over Europe and share it with libraries, archives and museums. The contribution of such initiative is of uttermost importance for education, research and recreative activities [3].

### 1.2 A glance on cultural funding

The power of cultural heritage in enhancing social cohesion, unification and promotion of national identity is undeniable, as well as it is the force to strengthen



**Figure 4.**  
*Sucevița monastery, in Romania.*

the population's trust towards national identity. However, it is interesting to take a glance in time on the governments' measures [12] to support the cultural sector [8] and use its potential in the social sphere (Figure 5).

The financing of the cultural sector has been achieved over time from different sources, while the government's input was more or less significant. Alongside public funding, the cult of sponsorship and donations/maecenates represents an active source of income with old origins for sustaining culture heritage.

The concept of Maecenas, known today as sponsorship, derives from the name of Gaius Cilnius Maecenas, a former Roman statesman who lived in the first century before Christ and whose name remained immortal in history for his merits of protector of arts, literature, and science [17]. Thus, although the maecenate/sponsorship has its origins in sustaining culture, nowadays the meaning and destinations of sponsorship have become much wider, so we can say that the cultural sector "competes" for these sources of financing with other sectors of the economy.



**Figure 5.**  
*The National Village Museum "Dimitrie Gusti," in Bucharest, Romania.*

Private funding/sponsorship has known different dimensions over time, so some states encourage and hold complex legal leverage in this direction compared to others. The succession of political regimes and the degree of economic development seem to have deep roots in this regard.

During communism, the interest of the government for culture has known both favorable and foul times. The public identity was shaped according to the interests of the parties in power, and the works of art were preserved or destroyed [1] according to the personal acceptance of rulers. On the one hand, appreciated works of art considered valuable for the party were preserved and exposed in museums and in personal collections. On the other hand, the period produced losses and destruction of those cultural elements considered dangerous by the party.

After 1989, after the communist period ended, many central and eastern European governments reformed the budgetary allocations by diminishing the funds for culture to the favor of other destinations. The governance interest focused predominantly on supporting other budgetary segments, leaving the financial support for cultural heritage mostly in the care of the private sector. Public/private partnerships have begun to develop with the aim to sustain the cultural sphere. Countries like Romania, Bulgaria, Hungary, and Slovenia have adopted regulations granting tax facilities to promote the private support of the cultural sector.

In the Western European side, the cult of donations/maecenas and sponsorship to support culture is much more developed. In Britain, for example, most of the museums are constituted as Charities (a legal form suitable for encouraging donations) [18]. Also, in countries like Denmark, Italy, France, and Spain, government initiatives aim to foster the development of a tradition in sponsorship; thus, the banks became an active sponsor of regional cultural spending.

### 1.3 Shortlist of heritage protection programs

The EU nations have developed a system of identification of potential threats that may harm the EU heritage, and, in accordance, appropriate policies and recommendations have been undertaken in order to mitigate the identified risks. Such potential risks are flood hazards, wars, earthquakes, pollution, uncontrolled urbanization, and unreported tourists.

The initiative is called Europa Nostra, it was launched in 2013, and it is funded by the European Investment Bank Institute and the Council of Europe Development Bank [19].

Romania also appears on the Europa Nostra list, with three objectives:

- The Constanta Casino—the identified problems are concerned with corrosion and rusting, salty moisture that heavily affects wooden elements, mold, freezing, and temperature that constantly affects the building's structure. Overall, the state is mainly held responsible for the situation because of lack of interest, failure in and prolonged public procurements, and abandonment.
- The wooden churches in Southern Transylvania and Northern Oltenia—approximately 60 such churches are being followed as to be restored from decay.
- Rosia Montana Mining Landscape in Transylvania—the site houses Roman edifices and roads along with small towns and villages, nestled in the mountains. The threat comes from a large-scale mining project which would have a major serious impact on both the natural and cultural heritages of the place (**Figure 6**).



**Figure 6.**  
*Rosia Montana mining landscape, in Transylvania, Romania.*

## 2. Knowledge and cultural heritage

Cultural heritage represents a particular dimension in the life of a community. It sums up the wisdom of the past [11], gives confidence and recognition of history, and shapes the minds of future generations (**Figure 7**).

Research in cultural statistics has proved to be a real challenge. Limitations like the scarce number of statistical data and the usage of different reference points for reporting create serious difficulties in analyzing similar data between countries over a longer period of time. Heritage conservation projects are instrumented differently according to the governments' perception [20], so the reported indicators are not calculated on the basis of the same defining principles.

For many, culture is associated with arts and entertainment. The potential that culture has to support the economy, primarily because of the boost it may incur on



**Figure 7.**  
*Old Neolithic statues “the Thinker of Hamangia” and “the Sitting Woman,” in the Museum of National History and Archeological of Constanta.*



tourism, is not always acknowledged and appreciated. Culture is often perceived as belonging to a secondary plan of economic growth, thus being considered more an expense for budget than as an investment for regional benefits. The situation is somewhat applicable to Romania, taking into account the limited funds allocated to culture related to the annual budget of less than 1% of GDP.

Based on these considerations, this chapter focuses mainly on the analysis of cultural indicators in Romania. We are thus trying to obtain a trustworthy comparable statistical reference, which would allow to draw conclusions on the influences of cultural heritage on people.

This study is intended to be an attempt to capture and quantify the influences and interdependencies between cultural heritage and the Romanian people stratified on several categories of occupation and activity. The analysis is customized with the scope of investigating the correlation between heritage and various categories of citizens, relevant to the analysis being the level of education, work capacity, unemployment, and the retired persons.

### 3. Research methodology

The complexity of data defining the cultural field, as well as their impact on people, may present difficulties in calculating the links and causalities. Also, analyzed data can present strong correlations that would diminish the significance of the results. The solution in this situation is represented by the econometric modeling.

The PCA method is a tool to explore the correlation and interdependence of statistical data, as well as to create predictive models.

In this chapter, the principal component analysis (PCA) allows the transformation of the initial space of data into a new space of reduced size while maximizing the amount of information retained from the original space. In the new space created (called factor space), the initial variables can be designed, and the factor axes are determined by extracting the main components [21]. The main components are linear combinations of the initial variables, capable to condense the information of the original variables and to transpose it into a mathematical formula:

$$x_j = \alpha_1^j * y_1 + \alpha_2^j * y_2 + \dots + \alpha_n^j * y_n = \sum_{i=1}^n \alpha_i^j * y_i$$

where

- $x_j$  is the principal component  $j$
- $\alpha^j$  are the vectors that define the standardized linear combinations
- $y_i$  are the original variables, where  $i = 1, 2, \dots, n$

### 4. Results and discussions

The indicators analyzed in order to assess the impact of cultural heritage on the Romanian people, based on available statistical data during 1994–2018, are:

- Number of visitors to museums and public collections—calculated nationally based on the number of sold tickets. This indicator includes also the number of

participants at the night of museums, which is an event meant to raise the general interest towards arts and culture (MUSEUM\_V\_No).

- Number of visitor to cinemas—the indicator is also calculated on the basis of the number of tickets sold for access to movies in cinemas (CINEMA\_V\_No).
- Number of readers in libraries—represents the number of people who borrowed at least one book during the year, for personal reading (LIBR\_R\_No).
- The number of cinematic shows—calculated as sum of projections of films in cinemas during 1 year (CINEMA\_Show).
- Number of persons graduated from high schools/vocational schools—includes graduates of secondary schools with or without a diploma, as well as young graduates of a postsecondary school, masters schools, or special postsecondary schools (HS\_No).
- Number of people with university studies—includes the number of people graduating from long-term higher education, inclusive with a master's or postgraduate diploma (UNIV\_No).
- The active population—represents the number of working people (ACTIVE\_No).
- Number of unemployed people—represents people who are capable to work, are looking for a job, and who do not have a current job (UNEMP\_No).
- Number of retired persons—is the number of beneficiaries of social pensions in the public system (RETR\_No).

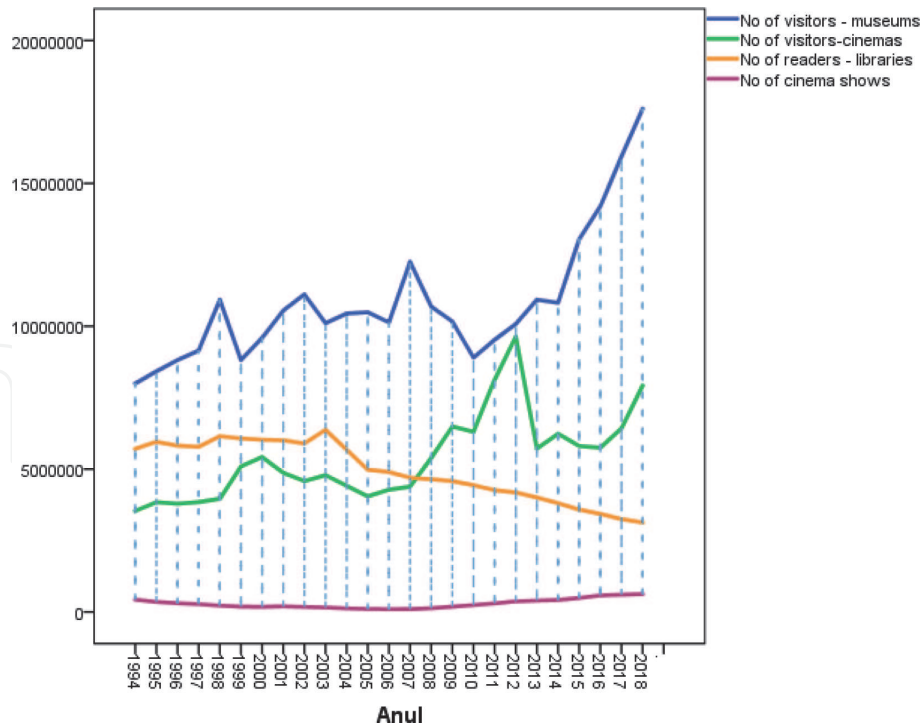
The dynamics of interest in cultural heritage during that time can be observed based on the evolution of the number of visitors in museums and cinemas or readers in libraries.

Available data is concentrated on the quantitative number of visitors but not on the quantified value of the tickets sold. Information on the value of ticket sales is significant for the own budgets of the cultural institutions but it is not available for public knowledge or research.

The absence of centralized data on the amount of value brought by visitors to culture institutions reveals a first limitation in study analysis. Information on the amount of receipts could, for example, provide an indication of the efficiency of governance as for the measures taken by the management to attract a greater number of visitors in terms of increasing the institutional own budget. Thus, the absence of data strengthens the idea that the culture sector is not regarded by the governance as a significant point in the economic perspective.

The dynamic analysis of the chosen indicators according to **Table 1** indicates certain trends in terms of “consumption of cultural products” in Romania.

The number of visitors to museums shows the evolution over time of the visitor's interest towards the exhibits presented in the museums in Romania. Although until 2010 the number of visitors in museums has an oscillating evolution, starting with the year 2011, an increase of interest for this sector can be observed. An explanation for the ascending trend of interest in museums may be the input of the event “the Night of Museums,” which is held in May every year and when visitors have free access to museum exhibits. Also, school programs like “a different week,” when students in schools are encouraged to organize group visits in museums, increase the annual visitor number in museums.



Source: INSSE.

**Table 1.**  
Cultural heritage indicators in Romania.

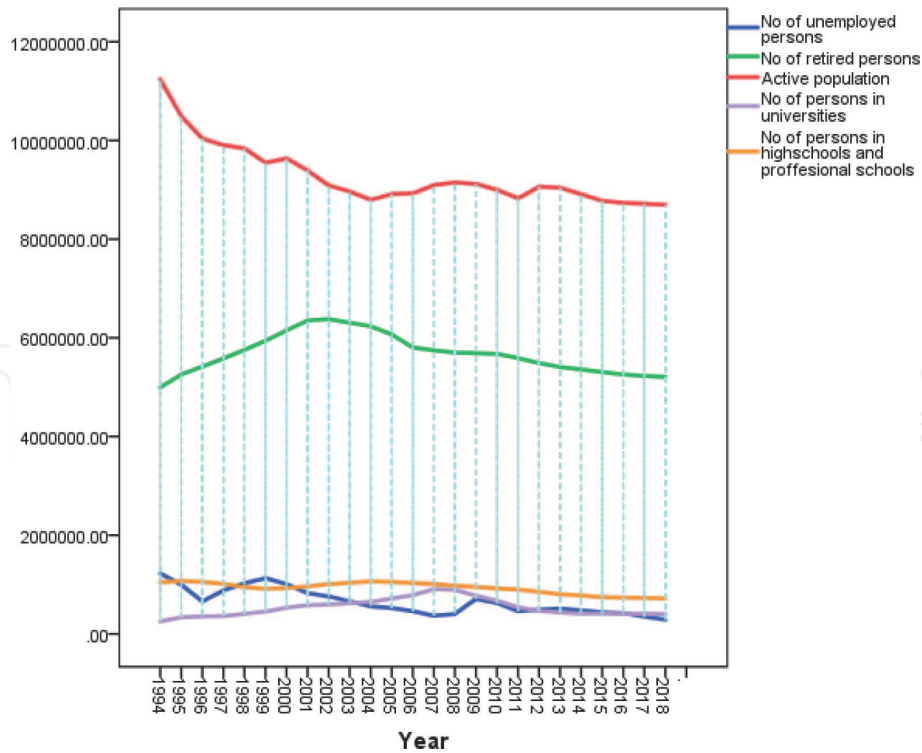
An interesting trajectory is revealed also for the number of readers in bookstores comparative with the number of visitors in cinemas. By the year 2008, in Romania the number of people who borrowed books from libraries was superior to the number of visitors in cinemas. The data analyzed indicate the year 2008 as the period when the two indicators were equalized and presented the moment of decline of interest in the libraries and also the increase of the number of cinephiles.

Although the year 2008 marks the global economic crisis, when it comes to culture, the evolution of indicators that can quantify the interest for books or for movies indicates an interesting phenomenon. The audience went more towards cinemas, and the interest for libraries started a sustained decline trajectory. A possible explanation in this regard is that digitalization and computer-wide access to information sources decreased public interest for libraries, while the increasingly varied cinematographic productions and the construction of malls with included cinemas contributed to raise the interest for cinematographic productions.

The analysis was also concerned with the number of cinematographic performances broadcast. The interest was whether the visitor number could be determined by significant variations in the number of performances visited. The data indicate that the number of performances was relatively linear over time, so that it did not represent a factor of influence on the number of visitors in cinemas.

The assessment of cultural interest on Romanian population is based on the indicators of population categorized by education (people that graduated high school or some form of professional school and persons with university studies) and occupation (active population, unemployed, and retired persons).

**Table 2** reflects numerically and in evolution the indicators chosen for analysis. The graphical representation reveals an interesting evolution of the number of active persons with a general decline trend, which can be explained mostly by migrating labor force abroad. The number of retired persons occupies a significant



Source: INSSE.

**Table 2.**  
 Romanian citizens categorized by education and occupation.

level of the number of people analyzed, while the number of people with university studies occupies a small number of the population's total number analyzed.

In order to analyze the interest of citizens for cultural heritage in Romania, we used an econometric model based on principal component model. For the first stage, the average and the standard deviation for each variable was calculated (Table 3).

The high results obtained for standard deviation show that the variables taken for analysis are spread out and far from the mean or average. In other words, the initial indicators are very different from each other; they form a space with widely spread data points around the mean, where the calculation of causal dependencies would be very complex and very difficult to determine.

|             | Mean        | Std. Deviation |
|-------------|-------------|----------------|
| MUSEUM_V_No | 10829214.00 | 2278168.062    |
| CINEMA_V_No | 5385778.92  | 1518761.996    |
| LIBR_R_No   | 4933429.24  | 1033987.182    |
| CINEMA_Show | 289554.48   | 162522.019     |
| HS_No       | 930147.72   | 117689.344     |
| UNIV_No     | 534974.80   | 178519.195     |
| ACTIVE_No   | 9276260.00  | 619501.210     |
| UNEMP_No    | 650368.00   | 264544.151     |
| RETR_No     | 5675760.00  | 397809.448     |

**Table 3.**  
 The mean and standard deviation calculated for each variable.

| Correlation | MUSEUM_V_No   | CINEMA_V_No   | LIBR_R_No    | CINEMA_Show   | HS_No        | UNIV_No       | ACTIVE_No     | UNEMP_No     | RETR_No |
|-------------|---------------|---------------|--------------|---------------|--------------|---------------|---------------|--------------|---------|
| MUSEUM_V_No | 1.000         |               |              |               |              |               |               |              |         |
| CINEMA_V_No | <b>0.375</b>  | 1.000         |              |               |              |               |               |              |         |
| LIBR_R_No   | -0.696        | -0.665        | 1.000        |               |              |               |               |              |         |
| CINEMA_Show | 0.594         | <b>0.426</b>  | -0.661       | 1.000         |              |               |               |              |         |
| HS_No       | -0.713        | -0.670        | 0.816        | -0.776        | 1.000        |               |               |              |         |
| UNIV_No     | <b>-0.043</b> | <b>-0.022</b> | <b>0.021</b> | -0.714        | <b>0.335</b> | 1.000         |               |              |         |
| ACTIVE_No   | -0.588        | -0.539        | 0.607        | <b>-0.050</b> | 0.509        | <b>-0.452</b> | 1.000         |              |         |
| UNEMP_No    | -0.643        | <b>-0.497</b> | 0.781        | <b>-0.250</b> | <b>0.474</b> | <b>-0.370</b> | 0.820         | 1.000        |         |
| RETR_No     | -0.265        | -0.250        | 0.597        | -0.788        | <b>0.486</b> | 0.550         | <b>-0.227</b> | <b>0.173</b> | 1.000   |

**Table 4.**  
The correlation matrix.

Interdependencies between the analyzed variables can be seen with the correlation matrix. Bold values are considered insignificant and are not taken into analysis (**Table 4**).

According to the correlation matrix, the strong negative relationship between the visitor number in museums and the number of high school graduates and vocational schools ( $-0.713$ ) indicates that an increase in the number of high school graduates and schools determines a decrease in number of visitors to museums. Professionalization can cause a decrease in the number of visitors in museums. The situation can be explained by the fact that many visitors in museums are students, who have not yet completed their studies. So, the assumption that a great number of the visitors in museums are pupils, and their visits are determined by programs School, seems to be certified by current results. The termination of secondary or vocational education indicates a decrease in interest in cinema time ( $-0.670$ ), perhaps for more time needed for job search or for more careful spending behaviors.

A similar strong relationship exists between the number of visitors in museums and the active population ( $-0.588$ ) or the number of unemployed ( $-0.643$ ), which can be explained on account of the fact that an increase in the number of active persons presents a lower interest or allocate less time to visits to the museum. Also, active people seem to give a lower interest to visits to the cinema ( $-0.539$ ), but instead it is likely to be more interested in culturalization by access to literature and the loan of books from libraries ( $+0.607$ ). On the contrary, an interest in the loan of books in libraries appears to be represented by unemployed people looking for a job ( $+0.781$ ), a situation that can be explained in the practice by the need for information and professionalization.

As for the number of retired persons, their interest seems to be rather oriented to reading ( $+0.597$ ) rather than to visits to museums or cinemas, where statistical analysis does not show any significant correlations.

The number of cinema performances appears to be positively influenced by the visitor number at the museums ( $+0.594$ ) and conversely proportionately by the number of people interested in reading. Thus, the link between the need for entertainment and the creation of leisure alternatives is tested.

The relevance of the sampling and the testing of the independence hypothesis have been verified by the output of Kaiser-Meyer-Olkin and Bartlett's test (**Table 5**). The result of  $KMO = 0.658$  is significant for the application of the model [22]. A larger dataset would likely lead to a better KMO result of the test, but precisely the limited resources of credible information in the sphere of cultural heritage are one of the obstacles to the study. The significance of the model obtained using Bartlett's test of sphericity ( $Sig. = 0.000 < 0.05$ ) indicates a probability of 95% as between the statistical variables analyzed there are significant links.

Values greater than 0.8 in the correlation matrix indicate too high correlations between the analyzed variables, when some data may become redundant and may diminish the significance of the results. Thus, the application of the PCA method eliminates the risk of multicollinearity and also accomplishes the purpose of dimensionality reduction.

|   |                    |         |
|---|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of sampling adequacy |                    | 0.658   |
| Bartlett's test of sphericity                   | Approx. chi-square | 263.413 |
|   | Df                 | 36      |
|   | Sig.               | 0.000   |

**Table 5.**  
*KMO and Bartlett's test.*

The extraction of communalities represents estimates of the variation in each variable contained in the calculated components. The large values of communalities presented in the column “Extraction” indicate that the extracted components represent the information contained in the initial variables well. The situation is due to the fact that there is a connection between the forms of access of cultural heritage (museums, cinemas, bookstores) and the population categorized by education and occupation (**Table 6**).

In the next stage of PCA method, the eigenvalues of the correlation matrix are the variables of the main components. The eigenvalues greater than 1 are the only ones retained in the analysis because they have a higher variance than the original standardized variables.

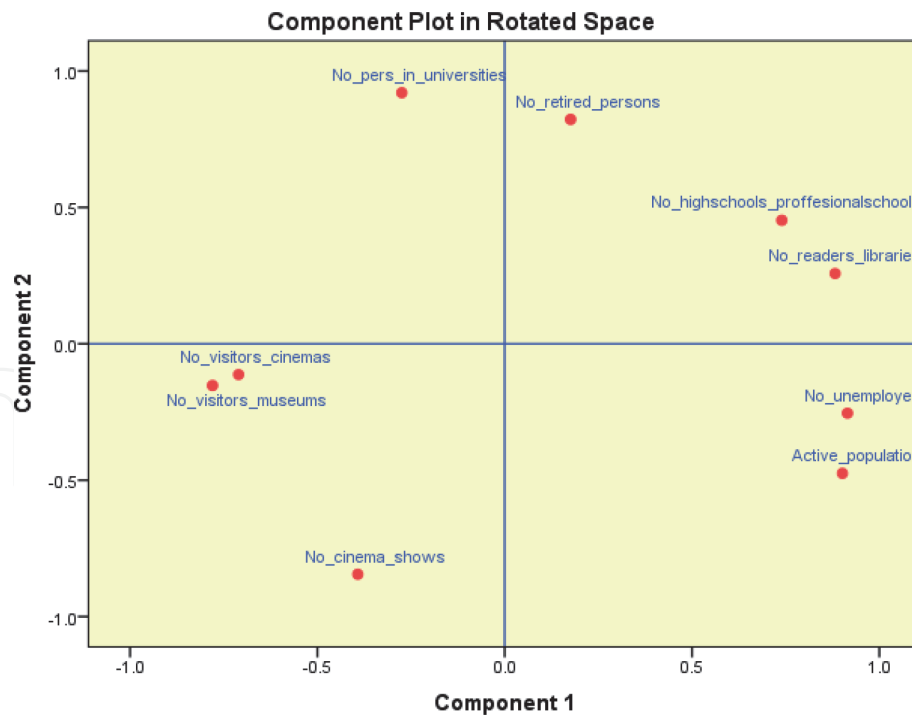
According to **Table 7**, the correlation matrix has only two eigenvalues greater than 1 that correspond to the inertia explained by the factorial axes. Therefore, the first factorial shaft explains 52,968% of the total variation of the variable cloud, and the first two factorial axes explain 80,853% of the total variation. The percentage determined by the first two eigenvalues determines the graphical representation of the factorial axes in connection with the projection of the puncture cloud, as observed in **Figure 8**.

|             | Initial | Extraction |
|-------------|---------|------------|
| MUSEUM_V_No | 1.000   | 0.666      |
| CINEMA_V_No | 1.000   | 0.541      |
| LIBR_R_No   | 1.000   | 0.910      |
| CINEMA_Show | 1.000   | 0.964      |
| HS_No       | 1.000   | 0.849      |
| UNIV_No     | 1.000   | 0.849      |
| ACTIVE_No   | 1.000   | 0.914      |
| UNEMP_No    | 1.000   | 0.834      |
| RETR_No     | 1.000   | 0.750      |

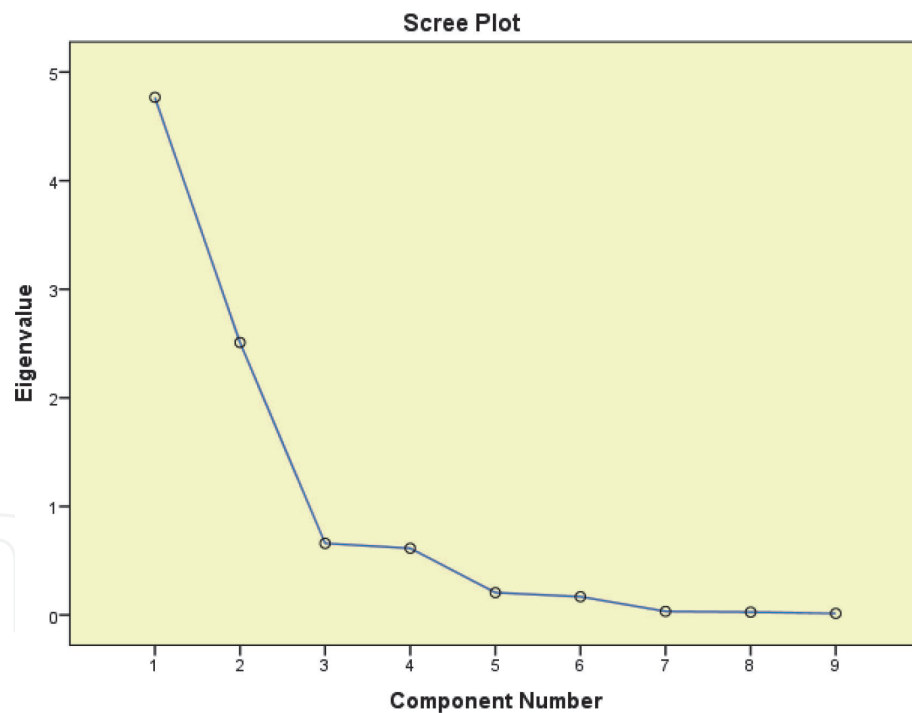
**Table 6.**  
*Table of communalities.*

| Component | Initial eigenvalues |                     |              |
|-----------|---------------------|---------------------|--------------|
|           | Eigenvalue          | Total % of variance | Cumulative % |
| 1         | 4.767               | 52.968              | 52.968       |
| 2         | 2.510               | 27.886              | 80.853       |
| 3         | 0.660               | 7.330               | 88.184       |
| 4         | 0.615               | 6.831               | 95.015       |
| 5         | 0.206               | 2.291               | 97.306       |
| 6         | 0.168               | 1.870               | 99.176       |
| 7         | 0.033               | 0.367               | 99.543       |
| 8         | 0.027               | 0.300               | 99.843       |
| 9         | 0.014               | 0.157               | 100.000      |

**Table 7.**  
*Variance—the eigenvalues greater than 1.*



**Figure 8.**  
 Correlation between the extracted principal components and the initial variables.



**Figure 9.**  
 Scree plot graph—variation of eigenvalues.

**Figure 9** is a graphic representation of eigenvalues in correspondence with the number of components. Starting with the eigenvalue corresponding to component 3, the bonding line becomes almost flat, indicating that starting with component 3, each successive component accounts for less and less in the explanation of variance. Thus, the PCA method redistributes the variance on the first two extracted components.

The component matrix in **Table 8** shows the correlation between variables and the two components extracted with a value greater than 1. The obtained values



|             | Component |        |
|-------------|-----------|--------|
|             | 1         | 2      |
| MUSEUM_V_No | -0.805    | 0.133  |
| CINEMA_V_No | -0.721    | 0.145  |
| LIBR_R_No   | 0.951     | —      |
| CINEMA_Show | -0.770    | -0.608 |
| HS_No       | 0.910     | 0.144  |
| UNIV_No     | 0.180     | 0.904  |
| ACTIVE_No   | 0.621     | -0.727 |
| UNEMP_No    | 0.738     | -0.538 |
| RETR_No     | 0.557     | 0.663  |

**Table 8.**  
*The component matrix.*

indicate that all variables contributed to the formation of the first factorial shaft, while the variable “number of readers in libraries” had an insignificant contribution to the formation of the second factorial axis.

The scree plot in rotated space reiterates graphic values determined in the correlation matrix and places in space the variables chosen against the formed factorial axes.

## 5. Conclusions

From a cultural perspective, better conservation and promotion of cultural heritage are strongly linked to better awareness and assessment of public governance regarding the active contribution that culture can bring to boost the economic results. The development of future studies that may link the domain of cultural heritage to the economic sphere can bring significant benefits to both sides.

The experience of many countries, such as Italy, France, and Germany, shows that the cultural sector can bring about a strong contribution to tourism and to attracting of budgetary funds by increasing the number of tourists. In order to achieve this target, the study shows that in Romania, the interest of the government towards the cultural sector needs raising awareness for the development of statistical quantification of the revenues obtained from the cultural sector.

At the moment, statistical data reveal interesting links between cultural heritage and certain behaviors of people, considered in connection with education and occupation. According to the results of the present analysis, the active contribution of cultural heritage to the socio-human and economic spheres (from the perspective of the labor force impact) requires more careful attention especially with regard to finance.

The results of the current study show an interesting path regarding the interest of the Romanian people to heritage objectives, as explained through visits to museums, cinemas, and libraries. Throughout the whole analyzed period, the indicators show a greater concern of the Romanian public for museums, compared to cinemas and libraries. The statistical data document great enthusiasm for the cultural exhibits in museums compared to the sympathy for cinemas or reading in libraries. Although during 2010–2012 the interest for cinemas grew massively, the total number of moviegoers was lower than visitors to museums. The appetite for

old/new exhibits in museums as an expression of social behavior towards culture reveals the value of heritage as an expression of identity knowledge and vision.

Corporate governance has to comply with requirements regarding the publicity of financial and nonfinancial statements on cultural heritage and statistical databases concerned with arts transactions, as instruments to prevent frauds and forgeries. The outcomes of greater governance publicity in cultural heritage reside in matters like trust, state legitimacy, social participation, and discouragement of corruption.

The relationship between knowledge and transparency sets the incentives for governance efficiency and cultural heritage protection. With a better understanding of public managerial decisions comes cultural value acknowledgement and the improvement of protection measures.

## Acknowledgements

This chapter was supported by a grant of the Romanian Ministry of Research and Innovation, CCCDI – UEFISCDI, project number PN-III-P1-1.2-PCCDI-2017-0476/51-PCCDI/2018, within PNCDI III, ACRONIM: ARHEOCONS.

## Author details


Ionela Munteanu Florea<sup>1\*</sup>, Marioara Mirea<sup>2</sup> and Cosmin Susu<sup>2</sup>

<sup>1</sup> Bucharest University of Economics Studies, Bucharest, Romania

<sup>2</sup> Ovidius University of Constanta, Romania

\*Address all correspondence to: [consultant.munteanu@gmail.com](mailto:consultant.munteanu@gmail.com)

## IntechOpen

© 2020 The Author(s). Licensee IntechOpen. This chapter is distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. 

## References

- [1] Thompson J. Cultural property, restitution and value. *Journal of Applied Philosophy*. 2003;**20**:251-262. DOI: 10.1046/j.0264-3758.2003.00251.x
- [2] Young JO. Cultures and cultural property. *Journal of Applied Philosophy*. 2007;**24**(2):111-123. DOI: 10.1111/j.1468-5930.2007.00359.x
- [3] Smith L. *The Uses of Heritage*. New York: Routledge; 2006
- [4] Liberto H. Exploitation and the vulnerability clause. *Ethical Theory and Moral Practice*. 2014;**17**:619-629. DOI: 10.1007/s10677-014-9494-z
- [5] Shelby T. Foundations of black solidarity: Collective identity or common oppression? *Ethics*. 2002;**112**: 231-266. DOI: 10.1086/340276
- [6] Lindsay P. Can we own the past? Cultural artifacts as public goods. *Critical Review of International Social and Political Philosophy*. 2012;**15**(1):1-17. DOI: 10.1080/13698230.2011.583533
- [7] Scoville JM. Historical environmental values. *Environmental Ethics*. 2013; **35**(1):7-25. DOI: 10.5840/enviroethics20133513
- [8] Matthes EH. Repatriation and the radical redistribution of art. *Ergo*. 2017; **4**(32):931-953. DOI: 10.3998/ergo.12405314.0004.032
- [9] Mezey N. *The Paradoxes of Cultural Property*. Georgetown Law Faculty Publications and Other Works 899. 2007. Available from: <https://scholarship.law.georgetown.edu/facpub/899>
- [10] Simmons AJ. Historical rights and fair shares. *Law and Philosophy*. 1995;**14**(2): 149-184. DOI: 10.1007/BF01001042
- [11] Högberg A. Rodney Harrison: Heritage. *Critical Approaches*. London: Routledge, 2013. 268 pp. ISBN: 978-0-415-59197-3. Norwegian Archaeological Review. 2016;**49**:1-3. DOI: 10.1080/00293652.2015.1126632
- [12] Weiss L. Heritage-making and political identity. *Journal of Social Archaeology*. 2007;**7**(3):413-431. DOI: 10.1177/1469605307081400 [Accessed: 3 October 2019]
- [13] OECD. Culture and Local Development. Background Document. 2018. Available from: <http://www.oecd.org/cfe/leed/venice-2018-conference-culture/documents/Culture-and-Local-Development-Venice.pdf> [Accessed: 2 October 2019]
- [14] Sighet. The Memorial of the Victims of Communism and of the Resistance. 2005. Available from: <http://www.memorialsighet.ro/memorial-en/> [Accessed: 2 October 2019]
- [15] Properties of Romania inscribed in the World Heritage List. 1992-2019. Available from: <https://whc.unesco.org/en/statesparties/ro> [Accessed: 3 October 2019]
- [16] Europeana Collections. Available from: <https://www.europeana.eu/portal/en>, <https://whc.unesco.org/en/statesparties/ro> [Accessed: 4 October 2019]
- [17] Richer H. *The Life of Maecenas: With Critical, Historical and Geographical Notes*. Corrected and Enlarged by Ralph Schomberg, M.D. Fellow of Society of Antiquaries, London: Printed for A. Miller, in the Strand; 1766
- [18] Sauvanet N. *Cultural Sponsorship in Europe*. Paris: European Committee for Business, Arts and Culture; 1999
- [19] Europa Nostra. 7 Most Endangered Programme. Available from: <http://>

7mostendangered.eu/, <https://whc.unesco.org/en/statesparties/ro>  
[Accessed: 1 October 2019]

[20] Logan W, Longfield M, Nic Craith M. Intersecting concepts and practices. *Cultural Diversity, Heritage and Human Rights: Intersections in Theory and Practice*. 2009;1:3-20. DOI: 10.4324/9780203863015

[21] Armean D, Lache L. Application of the model of principal components analysis on Romanian insurance market. *Theoretical and Applied Economics*. 2008;6(523):11-20

[22] Pintilescu C. *Analiză statistică multivariată [Multivariate Analysis]*. Iasi: Editura Universității Alexandru Ioan Cuza Iași; 2007

IntechOpen