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# Measuring Italian art cities tourism: a proposal of indicators

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**Abstract:** In Italy, art cities have traditionally served as "magnets" for cultural tourism, significantly contributing to the country's economic vitality. Many historic city centers are not simply "boxes" of artworks but are veritable open-air museums. In recent years, the profile of cultural and experiential visitors has increasingly oriented towards experiences that can be enjoyed individually or with family. While the traditional tourism system continues to offer conventional tourist products, it is also evolving to meet the growing demand for unique and unforgettable experiences. This represents new challenges for destination areas that seek to improve services and create attractions that can meet this emerging new audience. The objective of this work is to propose a composite indicator that measures the tourism potential of these art cities, drawing upon existing tourism indexes in the literature and equitable and sustainable well-being (BES) indicators, such as the domains of "landscape and cultural heritage" and "environment". The decision to employ these indicators stems from their considerable relevance in a country like Italy, as well as the specific focus of our study. Additionally, we developed a ranking of Italian art cities, enabling us to determine their relative levels of attractiveness. To achieve this, a panel of Italian provincial capitals was selected, each with at least one museum and a UNESCO site. The composite indicator developed, which also considers social and environmental perspectives, represents an alternative quantitative approach to assessing the attractiveness of art cities. The underlying principle is that, in the ever-evolving scene of cultural tourism, beyond the indispensable role played by artistic and cultural heritage, the impact of scenic landscapes on people's quality of life and its connection to individual well-being plays a crucial role. This indicator could provide territorial planning professionals with statistical tools capable of identifying the strengths and weaknesses of the tourism offer of those cities that set themselves the goal of being a privileged place of artistic tourist attraction. The proposed composite indicator should make it possible to comprehend whether and how to develop paths to enhance the entire artistic heritage, while also considering the well-being of visitors.

***Keywords:*** *Art cities, Cultural tourism, Museums, Composite indicator, BES.*

**JEL Codes:** Z32; C10.

## 1. Introduction and literature Review

Cities of art worldwide represent an extraordinary and universally shared cultural heritage, often considered treasures for all of humanity. These cities act as custodians of a significant portion of human cultural identity, providing tangible evidence to our history, creativity, and collective heritage. The preservation and appreciation of these cities are paramount to the cultural, economic, and social well-being of all humankind, as they play a fundamental role in fostering knowledge, artistic expression, and mutual understanding.

Among its tangible and intangible assets, Italy possesses an extensive cultural heritage that encompasses historical monuments, artistic masterpieces, age-old traditions, language, cuisine, and much more. Despite this remarkable cultural heritage, Italy has not always fully utilized its economic potential, particularly the opportunity to transform this cultural wealth into a substantial source of prosperity and well-being for its national community (Pollice F., Rinaldi C., 2012).

To fully comprehend the significance of nurturing Italian cultural heritage, it is crucial to acknowledge its inherent connection to the country's history, identity, and image. Italy is globally acclaimed for its extraordinary artistic masterpieces, unique archaeological sites, delectable culinary traditions, and captivating cultural tapestry. These elements serve as irresistible lures for international visitors and represent an exceptional opportunity for the tourism industry, forming a cornerstone of the Italian economy. Cultural tourism is a burgeoning sector, drawing an increasing number of travellers seeking authentic and meaningful experiences while exploring a nation. Italy holds the potential to offer distinctive cultural encounters thanks to its unparalleled heritage. These experiences encompass visits to museums and historical landmarks, participation in traditional cooking classes, attending theatrical or musical performances, and engaging in celebrations of traditional festivals. A heightened appreciation of Italy's cultural heritage can lead to a larger influx of tourists, extended stays, and increased on-site expenditures, directly bolstering the Italian economy.

Furthermore, the preservation of cultural heritage is indispensable for enhancing Italy's international standing. The promotion and safeguarding of this heritage can elevate the country's global image, attract foreign investments, and facilitate cultural exchange and the dissemination of Italian cultural influence worldwide.

A nation boasting a robust cultural heritage can revel in enhanced international visibility and a distinguished standing within the global community. Enhancing the value of Italian cultural heritage is a national imperative that cannot be disregarded if the aspiration is to reinvigorate the economy, resuscitate growth, and reclaim competitiveness and global standing. This heritage represents an extraordinary resource capable of directly and indirectly contributing to wealth creation and the well-being of the national community, representing an opportunity Italy cannot afford to let slip away.

The State's financial intricacies, coupled with the unfavorable economic situation, necessitate a thorough examination of cultural heritage valorization policies. It is critical to reevaluate public intervention and allocate responsibilities among the various levels of government, promoting integration and coordination as direct instruments to manage public expenditure and optimize the efficiency of the public sector.

Tourism stands as one of the cornerstone activities for initiating the valorization process of UNESCO World Heritage Sites (WHS). Moreover, tourism in its diverse forms emerges as one of the most impactful anthropic factors, the consequences of which demand meticulous evaluation to implement appropriate strategies for sustainable development.

Throughout history, Italy's cities of art have been the primary attractions for cultural tourism, contributing significantly to the country's economy. Numerous historic city centres serve as open-air museums, making them highly sought-after destinations for global cultural tourism. UNESCO recognizes Italy (with 5 natural and 53 cultural sites, 8 of which are landscapes) as the country with the highest number of sites included in the World Heritage List, encompassing both natural and cultural sites, including eight landscapes. The increasing importance of these cities and the burgeoning demand for cultural tourism in these areas underscore the need to thoroughly examine the impacts of tourism on urban areas and protected heritage.

The evolving profile of cultural and experiential tourists increasingly emphasizes individualized and family-oriented experiences. While the traditional tourism framework persists in offering conventional products, an international shift is underway, driven by a demand for unique and irreplaceable experiences that enhance the allure of destinations.

The transformative impacts induced by tourism often evolve over time in accordance with the growth stage of the destination in question. Identifying the expansion phase of the locality can facilitate the development of effective tourism management strategies by policymakers, enabling them to diversify approaches in line with the practices employed by other urban areas within a comparable lifecycle stage (Berardi S., 2013).

The extent of socio-economic, cultural, and environmental impacts is intrinsically linked to the level of utilization of the tourist destination. The concept of carrying capacity holds immense significance for historic cities, encompassing both the optimal number of tourists a city can accommodate without imposing negative impacts on local communities and the usage threshold beyond which visitor numbers begin to decline due to their perception of adverse external effects, prompting them to seek alternative destinations. In the context of historic cities, carrying capacity serves as a fundamental management instrument for formulating and implementing sustainable tourism policies. Consequently, determining carrying capacity cannot be separated from defining sustainability objectives for the destination, leading to constraints on tourism growth. The complexities associated with accurately and unequivocally establishing an ideal level of resource utilization in a city, and consequently, the threshold beyond which tourism expansion generates detrimental effects for the destination, underscore the notion that carrying capacity should be recognized as a key management concept within a framework of principles designed to promote sustainable area development. Continuously exceeding these limits could damage the city's attractiveness, propelling it towards stagnation and subsequent decline, potentially impacting the universal values that formed the basis of its inclusion in the UNESCO World Heritage List. In these circumstances, it becomes imperative for the city to adopt a continuous monitoring system, enabling the timely identification of potential risk conditions and the implementation of appropriate measures to address adverse trends.

Recent academic research has consistently demonstrated that culture constitutes a fundamental component of local identity and contributes to enhancing the quality of life (Martínez, 2007; Rizzo & Throsby, 2006). Furthermore, the cultural heritage of a locality represents a distinct and competitive sector, influencing both tourism (as highlighted by the OECD in 2009) and the revitalization and well-being of cities (Blessi et al, 2016; Shepherd, 2002; Richards, 2018; Morar et al., 2020). The significance of culture as an integral part of the European tourism experience is universally acknowledged, enhancing Europe's

profile as a global destination. This is due to its exceptional cultural heritage, encompassing both tangible and intangible elements, such as museums, theatres, archaeological, historical, and industrial sites, as well as aspects related to music, gastronomy, rituals, and traditions (Niemets et al., 2019).

In 2017, the UNWTO General Assembly, during its 22nd session, adopted the following definition of Cultural Tourism: «a form of tourism in which the primary motivation for visitors is to learn, discover, experience, and appreciate the tangible and intangible cultural attractions offered by a tourist destination. These cultural attractions and products encompass a wide range of material, intellectual, spiritual, and emotional elements that characterize a society, including art, architecture, historical and cultural heritage, culinary traditions, literature, music, creative industries, and cultural events, along with their lifestyles, values, belief systems, and traditions».

Several cultural amenities outlined in the UNWTO definition have not received adequate attention in existing literature. A significant portion of studies tends to focus on the analysis of only one or a limited number of cultural amenities, neglecting the broader spectrum of cultural elements encompassed by the definition.

Numerous studies focus on museums (Stylianou-Lambert, 2011; Akbulut and Artvinli, 2011; Miles, 2002; Cohen, 2011), highlighting their positive influence on tourist demand (Plaza, 2000; Carey et al., 2013). However, Cellini and Cuccia (2013) contend that exclusively focusing on museums and monuments as cultural indicators for a city is overly restrictive. Other research underscores the importance of culinary heritage as a pivotal element in cultural tourism (Pérez Gálvez et al., 2017; Beltrán et al., 2016).

Other cultural amenities that have received significant attention in the literature are UNESCO World Heritage Sites (Yang et al., 2019), demonstrating positive impacts on tourism. Among others, Canale et al. (2019) have shown that in Italian provinces, the number of WHS increases international tourist arrivals by 6.9%. However, other authors have shown that within the same country, their impact on tourism seems to vary (Castillo-Manzano et al., 2021; Cuccia et al., 2016).

Estimates indicate that cultural tourism accounts for 40% of overall European tourism, with 4 out of 10 travellers selecting their destination based on its cultural offerings (European Commission, 2020). Additionally, as Timothy (2011) suggests, it is reasonable to assume that most the world's tourist attractions and destinations are closely linked to elements of cultural heritage. This aspect holds promise for cultural heritage managers, as cultural tourism significantly contributes to the financial sustainability of heritage sites and regional development. However, in practice, not all heritage sites receive equal levels of appreciation. Some become overcrowded with an excessive number of visitors, while others remain entirely neglected.

Despite the extensive literature on the importance of culture in the context of tourism, research focusing on sustainability indicators in the context of cultural tourism is still somewhat limited, as highlighted by studies such as those conducted by Nocca F (2017), Vecco, M., and Srakar, A. (2018). The goal of this research is to examine culture as resource for the tourist development of a city and to propose an indicator to measure its impact.

## 2. Methodology

It is known that culture primarily thrives in urban environments. Throughout history, the most exquisite artworks and the most influential intellectual and creative circles have been closely intertwined with cities, their influence, and their economic vibrancy (Montalto V. et al 2019). Consequently, it is unsurprising that the cultural heritage of most nations, particularly in Europe, is

concentrated in urban areas. However, when can we definitively identify a city as culturally attractive? And who, precisely, constitutes a cultural tourist? Is it someone who visits a historical site or a museum? Or is it someone who engages in cultural events or partakes in traditional activities? This ambiguity poses a challenge in identifying and classifying cultural heritage tourists. Regarding data collection, while statistics such as visitor numbers and souvenir shop revenues are often available, they can be difficult to organize and manage effectively. Additionally, defining what constitutes a "heritage" site can be contentious. Heritage often serves as just one component of a broader tourist experience that may encompass various activities, making it challenging to isolate its specific economic contribution. The development of appropriate indicators is crucial for conducting a precise and comprehensive assessment of this impact and for ensuring the long-term sustainability of Italy's artistic heritage. The promotion of responsible and informed cultural tourism should be a primary priority to safeguard and enhance this valuable legacy. To obtain a comprehensive assessment of the impact of cultural visitors on Italy's artistic heritage, we propose the utilization of an indicator that considers various aspects simultaneously. We firmly believe that measuring the economic impact of this form of tourism is essential for making informed decisions and formulating policies that promote sustainable growth in this sector.

To achieve this goal, we have selected a group of Italian municipalities that meet specific criteria. We have chosen to analyze provincial capitals that have at least one museum with an annual visitor count of 100,000, as well as provincial capitals that are home to UNESCO sites located within the urban center. To construct a synthetic indicator capable of measuring tourism in art cities, several elementary indexes have been considered. These elementary indexes provide a comprehensive view of tourism in art cities by evaluating both the tourism supply and the impact of visitors on the territory. The combination of this data into a synthetic indicator can offer a clearer and more comprehensive understanding of the tourism dynamics in Italian art cities. In particular:

- Composite Reception Function Rate: this index reflects the tourism supply of the art city. It considers the available tourism services and facilities, providing an overview of the resources available to visitors.
- Average Length of Stay: this index focuses on tourism flows and indicates the average duration of visitors' stays. A longer stay may indicate greater tourist engagement and overall expenditure.
- Tourist Density (crowding index): this index considers the density of tourists in relation to the territorial area of the art city. Essentially, it quantifies how many tourists are present per unit of surface area. An increase in tourist density can highlight levels of crowding and tourism pressure in the area.
- Dynamic Tourist Function Rate: this index is useful for measuring tourism pressure over time. It considers seasonal fluctuations or special events that can influence tourist flows.

Furthermore, we have considered five additional indicators of Equitable and Sustainable Well-being (BES) related to the domains of "landscape and cultural heritage" (three indicators) and "environment" (two indicators). Overall, the former holds significant importance as they reflect the cultural and environmental health and vitality of an area. These indicators allow for the assessment of both the preservation and promotion of a region's historical, artistic, and cultural heritage, as well as the quality and sustainability of its natural landscape. The latter, related to the environment, are of

paramount importance as they provide a measure of the health and sustainability of our planet. These indicators assess the impact of human activity on the natural environment and provide essential data to guide policies and decisions aimed at preserving biodiversity, mitigating climate change, and ensuring the sustainable management of natural resources.

The considered BES indicators are as follows:

- Density and Relevance of Museum Heritage: The number of permanent exhibition facilities per 100 km², including museums, archaeological sites, and monuments open to the public. Values are weighted based on the number of visitors.
- Spread of rural tourism Facilities: The number of agritourism businesses per 100 km².
- Historical Greenery Density: The surface area in square meters of historically significant green areas and public parks per 100 square meters of urbanized land in provincial capital cities. These areas are typically found within historic city centers or in their immediate vicinity, providing green spaces in neighborhoods that might otherwise lack them. They hold historical and cultural value and are distinctive elements of the urban landscape.
- Urban Waste Disposal (Pressure Indicators): Percentage of urban waste disposed of in landfills compared to the total urban waste collected.
- Protected Areas (Response Indicators): The percentage of terrestrial protected natural areas included in the official list of protected areas (EUAP) and the Natura 2,000 network.

Once the indicators were defined and the art cities to be included in the framework were identified, the following steps were taken:

1. Calculating the indicators for each city using appropriate methodologies.
2. Developing a final synthetic indicator as an immediate reference for the level of touristic appeal of Italian art cities.
3. Constructing a final ranking.

Polarity was checked, and normalization was performed to make the indicators comparable, considering that they are often expressed in different units and may have different polarities.

Subsequently, the normalized indicators were aggregated, assigning equal weight to each indicator using a non-compensatory approach. The Mazziotta Pareto method was adopted, based on the arithmetic mean penalized according to the imbalance of values, assuming that the indicators have the same variability and range from 70 to 130. It is applicable to both positive and negative phenomena and can be broken into an average effect (compensatory) and a penalty effect (unbalance). This method meets the requirements of spatial comparability, non-substitutability of elementary indicators, simplicity of calculation, robustness, and immediate interpretation of the results obtained.

## 3. Materials and methods

The purpose of this study is to propose a novel analytical indicator for promoting the artistic heritage of art cities. To realize this objective, we have selected a group of Italian municipalities that meet predetermined criteria. The selection of these municipalities encompasses the entire national territory, with a higher concentration in the North, totaling 20. In the South and the Islands, we have identified 10 municipalities, whereas the Central Italian regions harbor 8 of these municipalities. Table

I in the Appendix presents the cities picked based on the employed criteria. In the selected panel, there are instances where, for certain regions (such as, Veneto, Tuscany, Lazio, and Sicily), more than one city has been chosen. On the other hand, there are regions where no municipality manages to clear the established thresholds to be part of the restricted panel, despite attracting art loving visitors and tourists. It is crucial to emphasize that exclusion from the panel does not imply a lack of classification as an art city. Instead, it highlights the significance of fortifying specific facets to enhance the tourist experience linked to artistic potential. Tables 1 and 2 report, respectively, the Landscape and Cultural Heritage BES indicators, Environmental BES indicators, and the tourist indicators for the cities panel. The data sources are the Istat surveys: Museums and similar institutions, Characteristics of the territory, Population and households, Services-Tourism, and BES in the territories for the year 2022.

**Table 1**: Landscape and cultural heritage BES indicators and Environmental BES indicators

| City | Density of museums' heritage | Presence of historic parks | Spread of rural tourism facilities | Protected natural areas | Municipal waste |
|---|---|---|---|---|---|
| **Agrigento** | 1.34 | - | 1.70 | 8.90 | 448 |
| **Andria** | 0.62 | 0.70 | 1.90 | 34.90 | 468 |
| **Aosta** | 1.37 | 0.90 | 1.80 | 30.30 | 609 |
| **Asti** | 1.41 | 0.30 | 16.00 | 4.00 | 447 |
| **Benevento** | 0.12 | 0.80 | 8.20 | 20.40 | 366 |
| **Bergamo** | 0.72 | 0.50 | 6.60 | 22.60 | 458 |
| **Bologna** | 0.97 | 0.80 | 6.30 | 11.80 | 563 |
| **Bolzano** | 0.96 | 0.10 | 44.10 | 0.01 | 464 |
| **Brescia** | 0.92 | 0.40 | 7.70 | 14.50 | 520 |
| **Caserta** | 1.37 | 4.30 | 4.00 | 23.30 | 458 |
| **Catania** | 0.30 | 0.20 | 3.90 | 24.90 | 468 |
| **Ferrara** | 0.76 | 1.80 | 2.50 | 19.00 | 625 |
| **Firenze** | 9.00 | 3.30 | 22.70 | 9.50 | 552 |
| **Genova** | 1.15 | 1.10 | 7.90 | 26.90 | 498 |
| **Lucca** | 3.17 | 1.80 | 12.90 | 19.80 | 625 |
| **Mantova** | 0.87 | 3.30 | 9.50 | 5.70 | 543 |
| **Matera** | 0.37 | 16.50 | 2.10 | 11.50 | 380 |
| **Milano** | 9.43 | 0.60 | 8.60 | 5.40 | 444 |
| **Modena** | 0.87 | 0.40 | 5.30 | 9.40 | 622 |
| **Napoli** | 29.63 | 1.60 | 11.20 | 23.50 | 482 |
| **Padova** | 0.87 | 0.10 | 9.50 | 10.90 | 472 |
| **Palermo** | 1.14 | 2.00 | 2.00 | 26.90 | 459 |
| **Parma** | 0.67 | 1.20 | 4.00 | 9.70 | 601 |
| **Perugia** | 0,78 | 4.60 | 18.40 | 17.70 | 528 |
| **Pisa** | 5.33 | 1.40 | 21.70 | 13.70 | 550 |
| **Prato** | 2.68 | 1.20 | 11.50 | 24.10 | 588 |
| **Ravenna** | 4.14 | 0.10 | 7.40 | 11.10 | 700 |
| **Ragusa** | 0.11 | 3.20 | 6.30 | 21.70 | 487 |
| **Roma** | 12.42 | 1.10 | 5.90 | 35.70 | 509 |

| | | | | | |
|---|---|---|---|---|---|
| **Siena** | 4.64 | 0.50 | 32.70 | 16.10 | 568 |
| **Siracusa** | 1.37 | 1.60 | 7.80 | 15.20 | 441 |
| **Torino** | 2.55 | 7.40 | 3.60 | 16.30 | 472 |
| **Trento** | 1.40 | 0.30 | 7.70 | - | 486 |
| **Trieste** | 35.66 | 5.60 | 23.50 | 45.80 | 501 |
| **Urbino** | 1.59 | 1.30 | 12.10 | 22.10 | 536 |
| **Venezia** | 6.19 | 6.50 | 5.50 | 23.70 | 546 |
| **Verona** | 1.80 | 4.50 | 14.00 | 9.20 | 494 |
| **Vicenza** | 0.78 | 1.70 | 8.50 | 18.20 | 444 |
| **Italy** | **1.30** | **1.70** | **8.30** | **21.70** | **487** |

*Source: Author elaboration*

**Table 2**: Tourist indicators of the cities in the panel

| City | Composite Reception Function Rate | Dynamic Tourist Function Rate | Tourist Density | Average stay |
|---|---|---|---|---|
| **Agrigento** | 0.15 | 0.58 | 285.20 | 3.65 |
| **Andria** | 0.12 | 0.24 | 215.57 | 2.47 |
| **Aosta** | 1.44 | 4.21 | 580.58 | 2.72 |
| **Asti** | 1.29 | 0.26 | 469.87 | 1.92 |
| **Benevento** | 1.20 | 0.07 | 104.21 | 2.03 |
| **Bergamo** | 0.09 | 0.37 | 545.48 | 2.08 |
| **Bologna** | 0.11 | 0.80 | 801.34 | 2.25 |
| **Bolzano** | 0.58 | 12.15 | 3,210.51 | 4.43 |
| **Brescia** | 0.19 | 1.73 | 1,656.77 | 4.00 |
| **Caserta** | 0.08 | 0.28 | 342.26 | 3.12 |
| **Catania** | 0.06 | 0.30 | 328.60 | 2.29 |
| **Ferrara** | 0.51 | 1.86 | 877.99 | 5.24 |
| **Firenze** | 0.30 | 1.46 | 1,503.89 | 2.50 |
| **Genova** | 0.26 | 1.07 | 1,742.61 | 2.62 |
| **Lucca** | 0.77 | 1.90 | 1,490.44 | 3.89 |
| **Mantova** | 0.10 | 0.33 | 206.51 | 2.22 |
| **Matera** | 0.35 | 1.80 | 362.04 | 3.31 |
| **Milano** | 0.21 | 0.57 | 4,304.21 | 2.25 |
| **Modena** | 0.11 | 0.48 | 459.13 | 2.56 |
| **Napoli** | 0.29 | 0.57 | 5,217.81 | 3.06 |
| **Padova** | 0.18 | 1.02 | 1,610.90 | 3.13 |
| **Palermo** | 0.07 | 0.52 | 453.64 | 3.01 |
| **Parma** | 0.11 | 0.62 | 294.48 | 2.31 |
| **Perugia** | 0.18 | 1.62 | 599.03 | 2.74 |
| **Pisa** | 0.43 | 1.64 | 1,019.08 | 3.65 |
| **Prato** | 0.34 | 0.31 | 816.37 | 2.44 |
| **Ravenna** | 1.08 | 3.87 | 2,934.61 | 4.45 |
| **Ragusa** | 0.14 | 0.68 | 1,941.41 | 2.70 |
| **Roma** | 0.66 | 3.77 | 944.04 | 2.69 |

| | | | | |
|---|---|---|---|---|
| **Siena** | 0.25 | 0.49 | 324.64 | 3.32 |
| **Siracusa** | 0.05 | 0.48 | 560.28 | 2.74 |
| **Torino** | 0.49 | 6.04 | 1,924.79 | 3.99 |
| **Trento** | 0.10 | 0.43 | 553.07 | 2.88 |
| **Trieste** | 3.22 | 1.10 | 4,344.38 | 2.74 |
| **Urbino** | 0.47 | 2.14 | 1,072.08 | 5.04 |
| **Venezia** | 1.89 | 8.84 | 10,954.05 | 4.87 |
| **Verona** | 0.58 | 3.81 | 4,164.86 | 3.99 |
| **Vicenza** | 0.12 | 0.52 | 598.64 | 3.15 |

*Source: Author elaboration*

## 4. Results

The synthesis of cultural attractiveness indicators for cities, as defined in the previous paragraph, was performed utilizing the I.ranker algorithm with the Mazziotta-Pareto method. Table 3 presents the outcome of our chosen synthesis method, alongside the corresponding ranking.

Observing table 3, it is evident that the top three positions among "art cities" are occupied by locations in the Northeast, with Trieste holding the highest step of the podium. This suggests a significant recognition and appreciation for the cultural and artistic resources in this geographical area. This outcome may reflect both the rich cultural heritage of the Northeast, which attracts art-interested visitors and tourists, and local efforts to promote and preserve these cultural attractions. These data highlight the importance of valuing cultural and artistic heritage as a key attraction for tourism and the recognition of cities and regions.

Subsequently, to verify the robustness of the chosen method, we compared it with other compensatory and non-compensatory methods. The cross-ranking matrix (table 4) confirmed the robustness of the method selection. This cross-validation with other evaluation methods allowed us to assert with greater confidence the validity of our conclusions regarding the cultural attractiveness of the cities in question. In other words, we verified that the Mazziotta-Pareto method is consistent and dependable in the context of city analysis, and the results obtained were supported by a comparison with other evaluation techniques.

**Table 3**: Value and rank of art cities selected

| CITY | MPI+ Value | MPI+ Rank | CITY | MPI+ Value | MPI+ Rank |
|---|---|---|---|---|---|
| **Trieste** | 115.59 | 1 | **Aosta** | 99.65 | 20 |
| **Venezia** | 114.85 | 2 | **Benevento** | 99.57 | 21 |
| **Bolzano** | 109.62 | 3 | **Lucca** | 99.48 | 22 |
| **Napoli** | 106.99 | 4 | **Padova** | 99.27 | 23 |
| **Torino** | 105.25 | 5 | **Siracusa** | 99.20 | 24 |
| **Matera** | 105.25 | 6 | **Perugia** | 98.95 | 25 |
| **Verona** | 104.52 | 7 | **Agrigento** | 98.59 | 26 |
| **Roma** | 103.70 | 8 | **Brescia** | 98.23 | 27 |
| **Urbino** | 103.09 | 9 | **Ragusa** | 98.20 | 28 |
| **Ravenna** | 101.87 | 10 | **Asti** | 97.90 | 29 |
| **Pisa** | 101.67 | 11 | **Andria** | 97.72 | 30 |

| | | | | | |
|---|---|---|---|---|---|
| **Siena** | 101.62 | 12 | **Mantova** | 97.02 | 31 |
| **Firenze** | 101.30 | 13 | **Prato** | 96.79 | 32 |
| **Ferrara** | 101.24 | 14 | **Bologna** | 96.62 | 33 |
| **Milano** | 100.85 | 15 | **Bergamo** | 96.59 | 34 |
| **Caserta** | 100.50 | 16 | **Catania** | 96.31 | 35 |
| **Genova** | 100.27 | 17 | **Trento** | 95.06 | 36 |
| **Vicenza** | 100.01 | 18 | **Parma** | 93.47 | 37 |
| **Palermo** | 99.93 | 19 | **Modena** | 93.45 | 38 |

*Source: Author elaboration*

**Table 4** Cross-ranking matrix

| | **MPI+** | **MPI-** | **MTW** | **MG** | **MZ** | **MR** |
|---|---|---|---|---|---|---|
| MPI+ | 1.000 | | | | | |
| MPI- | 0.967 | 1.000 | | | | |
| MTW | 0.936 | 0.929 | 1.000 | | | |
| MG | 0.865 | 0.896 | 0.910 | 1.000 | | |
| MZ | 0.992 | 0.983 | 0.936 | 0.887 | 1.000 | |
| MR | 0.978 | 0.954 | 0.885 | 0.876 | 0.971 | 1.000 |

*Source: Author elaboration*

## 5. Discussion, conclusions, and future implications

The findings of this study can make a substantial contribution to the methodological literature on developing new composite indicators. Drawing upon official data, the approach employed integrates and synthesizes this information, without, however, seeking to establish new classifications for cities with an artistic focus. The decision to restrict the study to provincial capital cities that host UNESCO sites or museums with more than 100,000 visitors represents just one of several possible approaches, which the authors have opted to contribute to the debate on a complex and continually evolving topic, such as tourism in art cities. However, this approach does exclude from the panel cities with rich histories and cultures, such as L'Aquila and Lecce, along with smaller art cities like Assisi, Noto, and Paestum. In conclusion, incorporating BES indicators has enabled us to define a novel composite indicator that considers crucial factors that can contribute to realizing sustainable, inclusive, and equitable cultural tourism, safeguarding artistic heritage, and enhancing the quality of life for all residents and visitors. This inclusion has enriched our assessment by enabling us to move beyond simply measuring the cultural attractiveness of cities and encompass elements that more comprehensively reflect their social, economic, and environmental impact, affording a more comprehensive and balanced perspective on their overall performance.

The prospects of this research involve an analysis of the same composite indicator focused on smaller territorial areas, extending beyond the provincial capitals. The primary objective will be to demonstrate the uniqueness of Italy's cultural and tourist landscape, characterized by small towns that serve as a valuable source of tourist attraction while maintaining a strong commitment to environmental sustainability. To achieve this objective, it becomes imperative to adopt targeted tourism policies specifically designed to attract visitors captivated by the realm of experiential tourism that these localities offer. Within this intricate context, meticulous scrutiny and careful consideration of the protection and management of the cultural heritage landscape and its urban context emerge as crucial

components. The complex relationship between the city and cultural heritage necessitates a dynamic perspective, enabling us to comprehend the ongoing evolution of this interaction over time.

Policymakers responsible for the management of the urban landscape of cultural heritage are called upon to actively promote a more positive association between the impacts of tourism and the cultural and historical-naturalistic heritage of art cities. This strategic approach proves indispensable in realizing the ambitious goal of promoting sustainable cultural tourism development. It is crucial to recognize that cultural tourism should be seen as a catalyst capable of contributing positively to the enhancement and preservation of the environment. This perspective is fundamental within the framework of achieving a paradigm of harmonious and sustainable development.

## Supplementary

**Annex 1. Cities picked: characteristics**

| City | Population | Area in $Km^2$ | Unesco site | Museum |
|---|---|---|---|---|
| **Agrigento** | 55,849 | 245.30 | Yes | Yes |
| **Andria** | 97,588 | 407.90 | Yes | No |
| **Aosta** | 33,223 | 21.00 | No | Yes |
| **Asti** | 73,723 | 151.30 | No | Yes |
| **Benevento** | 56,916 | 129.00 | Yes | No |
| **Bergamo** | 119,476 | 40.20 | Yes | No |
| **Bologna** | 387,842 | 140.90 | Yes | Yes |
| **Bolzano** | 106,601 | 52.30 | No | Yes |
| **Brescia** | 195,906 | 90.30 | Yes | No |
| **Caserta** | 73,037 | 53.10 | Yes | Yes |
| **Catania** | 301,104 | 180.00 | Yes | No |
| **Ferrara** | 129,872 | 404.40 | Yes | Yes |
| **Firenze** | 361,619 | 102.40 | Yes | Yes |
| **Genova** | 561,203 | 243.00 | Yes | Yes |
| **Lucca** | 89,078 | 185.50 | No | Yes |
| **Mantova** | 48,441 | 63.80 | Yes | Yes |
| **Matera** | 59,748 | 387.40 | Yes | No |
| **Milano** | 1,349,930 | 181.80 | Yes | Yes |
| **Modena** | 184,971 | 182.00 | Yes | No |
| **Napoli** | 921,142 | 117.30 | Yes | Yes |
| **Padova** | 206,651 | 92.90 | Yes | Yes |
| **Palermo** | 635,439 | 158.90 | Yes | Yes |
| **Parma** | 195,436 | 260.80 | No | Yes |
| **Perugia** | 162,362 | 449.90 | No | Yes |
| **Pisa** | 89,002 | 185.00 | Yes | Yes |
| **Prato** | 195,213 | 97.40 | Yes | No |
| **Ravenna** | 155,836 | 652.80 | Yes | Yes |
| **Ragusa** | 72,779 | 442.50 | Yes | No |
| **Roma** | 2,749,031 | 1,285.00 | Yes | Yes |
| **Siena** | 53,062 | 118.00 | Yes | Yes |
| **Siracusa** | 117,055 | 207.80 | Yes | Yes |
| **Torino** | 848,748 | 130.20 | Yes | Yes |
| **Trento** | 117,847 | 157.90 | No | Yes |
| **Trieste** | 199,015 | 84.00 | No | Yes |
| **Urbino** | 13,772 | 226.50 | Yes | Yes |
| **Venezia** | 251,944 | 414.60 | Yes | Yes |
| **Verona** | 255,985 | 140.80 | Yes | Yes |
| **Vicenza** | 110,293 | 80.00 | Yes | Yes |

*Source: Author elaboration*

## Conflict of interest

All authors declare no conflicts of interest in this paper.

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