

Analyzing the contribution of cultural heritage-related factors to city reputation. The case of civic museums in Brescia, Italy

Paola Beccherle^a, Luciana Lazzeretti^a, Stefania Oliva^{a,*}

^a Department of Economics and Management, University of Florence, via delle pandette 9, 50144 Florence, Italy

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ABSTRACT

The article explores how the city reputation is shaped by cultural heritage-related factors, analyzing the case of the industrial city of Brescia in Italy. By examining the literature, the theoretical framework identifies city reputation's dimensions and how cultural heritage-related factors can contribute to them. Moreover, applying the topic modeling technique to a corpus of 1791 newspaper articles collected during the Italian Capital of Culture 2023 event, the analysis labels the topics associated with the different dimensions of city reputation to identify the contribution of civic museums' activities to reputation. Results show that the influence of cultural heritage-related factors primarily involved some dimensions of city reputation – livability, social dimensions, landscape quality, infrastructures and identity – while others remain residual. These results are of interest to local policymakers and shed light on the existing relationship between cultural heritage and city reputation, which is an aspect that is still not widely studied.

1. Introduction

In recent years, numerous studies have explored city reputation from different perspectives (Ali et al., 2021; Delgado-García et al., 2018; Serić & Vernuccio, 2020). A strong reputation helps cities attract and retain residents, foster social trust, bring in new business and increase the city's performance (García & Puente, 2016; Torres & Godinho, 2020).

The city's reputation is built upon multiple factors, including infrastructure, economic performance, and cultural vibrancy. Among the elements that can influence reputation, a recent strand of research provides evidence that cultural attractiveness, activities, and events form a solid foundation for a city's reputation (Dastgerdi & De Luca, 2019; Pavković et al., 2021). Despite these initial attempts, while extensive literature explores city reputation (Bell, 2016; Braun et al., 2018), the specific role of cultural heritage remains underexamined.

Starting from contributions that identify relevant dimensions of the city's reputation (Anholt, 2006; Amendola, 2010; Bonaiuto et al., 2019; Micera & Crispino, 2017; see also Best Cities ranking and City Prosperity Index), the article aims to explore how cultural heritage related factors impact it, analyzing the case of Brescia in Italy. The city is reshaping its reputation, complementing its traditional one as an industrial city with that of a cultural city. This transformation culminated in its designation as the 2023 Italian Capital of Culture (ICoC) alongside Bergamo

(Beccherle et al., 2024). To achieve this goal, the city has implemented targeted cultural policies with the pivotal role of the civic museums managed by the Fondazione Brescia Musei (FBM) – Brescia Museums Foundation.

By analyzing newspaper articles, this study employs topic modeling techniques to explore how the civic museums' activities have shaped Brescia's city reputation dimensions. In particular, a corpus of 1791 newspaper articles has been analyzed through the Latent Dirichlet Allocation (LDA) to identify thematic patterns within the textual data. These have been compared with data from interviews and desk analysis to triangulate and corroborate results.

Overall, the analysis results show evidence that cultural heritage-related factors influence Brescia's city reputation, particularly concerning the city's quality of life, social aspects, landscape quality, infrastructure, and identity. In contrast, other dimensions of city reputation emerge as residual, such as economic dimensions and environmental sustainability.

The novelty of the research is twofold. Firstly, the study merges the literature on city reputation and cultural heritage management, offering a theoretical contribution to the management of places and the role of cultural heritage. For this purpose, a theoretical model for analyzing the dimensions of city reputation and how cultural heritage-related factors can influence it is developed. This model can be applied beyond the case

* Corresponding author.

E-mail addresses: paola.beccherle@unifi.it (P. Beccherle), luciana.lazzeretti@unifi.it (L. Lazzeretti), stefania.oliva@unifi.it (S. Oliva).

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study analyzed in the present study and allows comparison between cases. The second contribution is methodological because the analysis uses the innovative methodology of the text-mining approach to study this relationship. In particular, topic modeling techniques have recently been successfully applied to study several subjects concerning urban management (Cui et al., 2025; Margherita et al., 2023). This study extends their application to the domain of city reputation.

The paper contributes to both urban studies and cultural heritage management literature. Concerning urban studies, the work answers the call of several authors in international journals who underline the necessity of increasing the research on city reputation. Indeed, despite extensive literature on corporate reputation exists, the city-level reputation is still short on (Pérez-Cornejo et al., 2023). Moreover, although interest in the factors that drive urban performance and development (Delgado-García et al., 2018), city reputation remains an understudied topic.

Furthermore, literature on cultural heritage acknowledges its importance as a key element that contributes to the uniqueness of a place, thereby playing a role in shaping its identity and enhancing its reputation (Foroudi et al., 2020). The work contributes to understanding the dynamics of this process, particularly the role of museums. Indeed, museums have been widely regarded as key symbols in place-making (Evans, 2003), suggesting they can drive paths of transformation and become symbolic elements of the city (Plaza, 2006). Despite city development and urban regeneration projects driven by cultural heritage being a well-suited topic in literature (García, 2005; Grodach, 2008; Vanolo, 2008; Zukin, 1995), its role in city reputation requires further investigation.

The article is structured as follows. Section 2 summarizes the literature on city reputation and merges it with literature on cultural heritage studies to define crucial dimensions of city reputation. Section 3 outlines the research design and methodology applied for the analysis. Section 4 discusses the results. Finally, Section 5 provides the conclusions, discussing the contribution of the study, its limitations and future research.

2. Theoretical background

2.1. City reputation: A literature review

The literature on city reputation is multidisciplinary and lacks a unified definition or theoretical framework. Research on the topic draws from multiple fields, particularly marketing, tourism management, sociology, and urban development. A considerable amount of research pertains to city branding literature, where several studies have contributed to analyzing the reputational capital of cities (Anholt, 2010; Bell, 2016). Research on place branding suggests that it can be a valuable tool for stakeholders and local government to positively influence the city's reputation (Braun et al., 2018). In this sense, the place's brand can concur to creating the place's reputation by promoting investment opportunities or offering high-quality local products and a positive visitor experience (Govers, 2011). Although city reputation has attracted considerable interest in place branding literature, this approach is criticized for commodifying places and producing oversimplified narratives (Freire, 2005; Pasquinelli, 2010).

Another strand of literature on city reputation is related to tourism studies, mainly focusing on tourism destinations' reputation (Morgan et al., 2011; Marchiori & Cantoni, 2011). According to the literature, a strong destination reputation enhances tourism demand (Albaladejo et al., 2016; Nie, 2022) and reflects positively in the global market (Pavković et al., 2021). However, the reputation related to tourism is limited compared to the broader city context (Pavković et al., 2021). In turn, tourism may influence how the city reputation is perceived by its residents (Ramkissoon & Nunkoo, 2011).

In sociology, city reputation is seen as collective perceptions derived from social interactions, often studied at the neighborhood level

(Arthurson, 2013; Bonaiuto & Alves, 2012). Poor reputations can restrict residents' opportunities (Trueman et al., 2008), while positive reputations attract new residents and foster well-being (Kullberg et al., 2010).

Finally, in urban and regional studies, reputation is seen as both expectations based on past actions (Glückler, 2007) and as stakeholder perceptions of a city's ability to fulfill needs (García & Puente, 2016). It influences economic indicators such as employment, migration, and business concentration (Delgado-García et al., 2018) and can be influenced by the innovation capability of the territory (Aula & Harmaa-korpi, 2008). A good reputation also enhances investment and talent attraction (Dastgerdi & De Luca, 2019) and indirectly boosts tourism (Torres & Godinho, 2020).

An analysis of the literature on city reputation assessment reveals that several dimensions have been identified as crucial in creating a positive reputation. Established models such as City RepTrak, the Anholt-Ipsos City Brands Index, and the Best Cities Ranking evaluate reputation based on economic, environmental, and governance dimensions. As for definitions, the assessment of city reputation has also been proposed across different disciplines. In sociology and psychology, Amendola (2010) presents ten dimensions for the theoretical definition of city reputation based on citizens' and stakeholders' needs. A significant contribution to the topic is that of Bonaiuto et al. (2019), who, adopting an approach rooted in social psychology, developed and validated the City Reputation Indicators (CRIs). It assesses a city's reputation from the perspective of its inhabitants over time. Florida (2012) considers a place attractive if it has cultural and leisure facilities - museums, restaurants, bars, etc. - related to the history and culture of the place. Moreover, he considers the community's diversity in terms of ethnic group, age and sexual orientation crucial. Another significant contribution within this stream of literature is that of Morgan et al. (2011), who noted that environment, people, and activities are the 'soft' factors of a place and constitute its urban singularity (Elshater & Abu-saada, 2022). The branding literature offers insights into place branding and city reputation, suggesting that the concepts are complementary, as the former requires a comprehensive reputation management strategy to be effective (Bell, 2016). In the tourism literature, models such as that of Micera and Crispino (2017) analyze the reputation of destinations by considering factors such as transport, culture, and safety. Recent analyses consider economic, social and environmental sustainability determinants of city reputation (Pérez-Cornejo et al., 2023).

Moreover, the literature highlights the need to consider cities as complex social constructs shaped by spatial and temporal dynamics (Bettencourt, 2015). Accordingly, approaches to city reputation should reflect this complexity, acknowledging the continuous transformation of cities through stakeholder interactions (Giovannardi et al., 2013). As a consequence, research on city reputation should adopt a comprehensive, interdisciplinary perspective that accounts for the diverse perceptions of city stakeholders (citizens, economic agents, social institutions, etc.).

3. Conceptual framework

3.1. Constructing the conceptual framework: The steps

Considering the aim of the analysis, a multi-step process was developed to identify the theoretical lens through which to examine the relationship between cultural heritage-related factors and city reputation. This involved reviewing academic literature and practitioner reports on city reputation, identifying and thematic clustering of its core dimensions, and a targeted analysis of how cultural heritage contributes to each dimension. The dimensions most influenced by cultural heritage were then selected to construct the theoretical framework. Fig. 1 summarizes the steps followed.

3.2. The dimensions of city reputation and cultural heritage

Analyzing the literature, several dimensions of city reputation

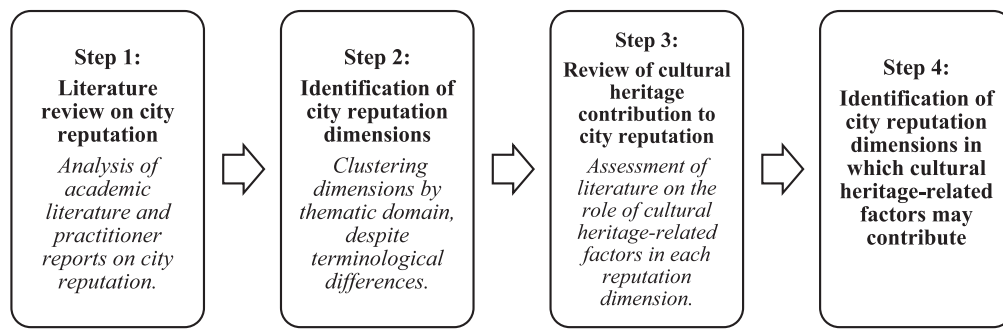


Fig. 1. Conceptual framework's flow chart. Source: Authors' elaboration.

emerge, some of which can be related to the city's cultural heritage. When looking at cultural heritage-related factors, even in cities not traditionally regarded as cultural hubs, the interplay between the city's reputation and the local cultural heritage is recognized (Foroudi et al., 2020; Pavković et al., 2021). Indeed, local cultural heritage-related factors – such as tangible and intangible cultural heritage, cultural strategies and policies – represent key drivers of the city's soft power, playing a crucial role in its attractiveness and competitiveness in a globalized world (Lord & Blankenberg, 2016).

Considering specifically the city reputation dimensions in which the cultural heritage-related factors play a role, several analyses focus on aspects related to the livability of places. In these terms, one of the most frequently explored dimensions of the city's reputation is *Quality of Life*, which encompasses factors such as lifestyle, cosmopolitanism, employment opportunities, healthcare services, sports facilities, and cultural and leisure activities (Amendola, 2010; Anholt, 2006; Bonaiuto et al., 2019). Recent research highlights that cultural heritage significantly enhances the quality of life of individuals in cities, impacting well-being. Empirical evidence shows that cultural opportunities positively impact individual well-being when they exist within an environment that supports cultural engagement and participation (Blessi et al., 2016).

Part of the literature also focuses on the social dimension of the city's reputation. *Place Attachment* and *Civic Participation* reflect citizens' emotional ties to the city and their active involvement in community life (Amendola, 2010). Museums, in particular, serve as catalysts for civic engagement, transforming into inclusive and democratic spaces that foster dialogue, cooperation, and a sense of belonging (Black, 2012; Burke, 2018). Similarly, *Inclusiveness*, which encompasses social equity and openness (City Prosperity Index), is strengthened through cultural initiatives that promote participation and accessibility, fostering social cohesion (Sandell, 1998). Furthermore, *Education* also plays a crucial role in shaping a city's long-term success (Best Cities ranking). Beyond preserving history and art, museums serve as educational hubs that bridge the gap between experts and the public, facilitating collective learning (Lazzeretti, 2022; Salerno, 2018).

Moreover, elements pertaining to the economic dimension shape the city's reputation. Literature recognizes that the reputation of cities is deeply tied to *Productivity*, *Business-Friendly Environment*, and *Local Craftsmanship*. Cultural infrastructure and creative industries can drive urban economies, increasing competitiveness and attracting investments (see, for example, the case of the Guggenheim effect in Bilbao, Plaza, 2006, 2008). Additionally, integrating culture with entrepreneurship fosters innovation and the emergence of creative districts, positioning the city as an attractive place for business (Florida, 2007; Lazzeretti, 2009). Museums and cultural organizations also support *Handicrafts and Local Products* by providing spaces for workshops, exhibitions, and growth opportunities that promote traditional craftsmanship and locally produced goods. In this sense, even the *Food* represents a dimension of the city's reputation. Observing a comprehensive cultural experience concerning the city's cultural heritage, culinary traditions and related cultural events enhances the visitor

experience and strengthens the city's gastronomic identity, adding to its overall appeal (Kotler, 2001). Finally, an important economic sector increasingly influencing the city's reputation concerns the tourism industry. In this regard, *Affordability* of housing prices and *Accommodation* have become increasingly sensitive issues. Affordable housing and cost of living (Best Cities ranking) are critical for residents. Yet, cultural tourism can sometimes contribute to rising real estate prices, straining local housing markets and reducing economic accessibility (Garay-Tamajón et al., 2022). Meanwhile, cultural heritage can positively influence the hospitality sector by attracting visitors and fostering the growth of hotels, B&Bs, and other accommodations (De Luca et al., 2020; Micera & Crispino, 2017).

Relevant dimensions of the city's reputation relate to its infrastructure. *Mobility and Infrastructural Connectivity* encompass the efficiency of public transportation and traffic management (Bonaiuto et al., 2019). Cultural initiatives can contribute to more sustainable urban mobility by encouraging walking, cycling, and the use of public transport, integrating cultural heritage with urban accessibility (Jeong, 2019). Moreover, it can impact by driving infrastructure development and new projects, thereby improving city conditions and enriching residents' everyday experiences (Liu, 2014). Similarly, *City Care and Maintenance* contribute to the reputation of places. In this respect, museums and cultural institutions contribute to city maintenance by driving urban regeneration projects that improve aesthetic appeal and livability (Plaza & Haarich, 2009).

From an environmental perspective, *Landscape Quality*, which includes historical-artistic heritage and urban renewal efforts, is often enhanced by cultural sites, particularly UNESCO-listed locations that preserve urban landscapes (Francini & Rozochkina, 2024). Likewise, *Environmental Sustainability* is gaining importance, with cultural organizations playing a role in promoting sustainable practices through energy-efficient operations and educational programs that raise public awareness about environmental responsibility (Hebda, 2007; Pencarelli et al., 2016).

Finally, two key dimensions influencing the city's reputation pertain to the city's image. The first is the *Place Identity*, which refers to the city's distinctive character, cultural diversity, and how residents identify with their surroundings (Best Cities ranking). In this regard, cultural policies supporting museums and heritage sites strengthen this identity, reinforcing local pride and fostering a deeper connection to places (Heidenreich, 2015; Sternberg, 1997). Moreover, the *Global Presence and Visibility* (Anholt, 2006) influences how a city is perceived. Cultural institutions play an active role in shaping visibility. The strategic use of digital communication by cultural organizations, including museums, enhances a city's global reputation by increasing its online presence and reinforcing its image as a vibrant cultural destination (Lazzeretti, 2023; Plaza & Haarich, 2015). Table 1 summarizes how cultural heritage-related factors can potentially contribute to a city's reputation.

Table 1

City reputation dimensions and how cultural heritage-related factors can contribute to them. Source: Authors' elaboration.

	City reputation dimensions	Cultural heritage-related factors' contribution to city reputation dimensions
Livability	Quality of life <i>Best Cities ranking</i> Bonaiuto et al. (2019) Amendola (2010) <i>Anholt-Ipsos City Brands Index</i>	Enhancing urban infrastructure and daily experiences, contributing to improved living conditions Liu (2014)
Social dimension	Place attachment and civic participation Amendola (2010) Bonaiuto et al. (2019)	Strengthening citizens' sense of belonging and pride and fostering civic participation in cultural heritage by creating inclusive spaces for dialogue. Black (2012) Burke (2018)
	Education <i>Best Cities ranking</i>	Fostering collaboration between cultural heritage experts and citizens and stimulating collective learning. Lazzeretti (2022) Salerno (2018)
	Inclusiveness <i>City Prosperity Index</i> Bonaiuto et al. (2019)	Fostering social cohesion by promoting inclusion through access to cultural spaces, events, and diverse representations. Sandell (1998)
Economic dimension	Productivity <i>City Prosperity Index</i>	Fostering creative economies by stimulating innovation and attracting investments. Lazzeretti (2009) Plaza (2006, 2008)
	Business-friendly environment <i>Best Cities Ranking</i>	Supporting the development of creative districts, encouraging innovation and fostering an environment conducive to business growth. Florida (2005) Lazzeretti and Oliva (2021)
	Handicrafts and local products Micera and Crispino (2017)	Preserving and enhancing local artisanal traditions as intangible heritage and promoting locally-produced goods through workshops, tours, and museum shops. Larkin et al. (2024)
	Accommodation Micera and Crispino (2017)	Boosting the hospitality sector by attracting cultural tourism. However, sustainable policies are required to avoid straining local resources. De Luca et al. (2020)
	Affordability Bonaiuto et al. (2019) <i>Best Cities ranking</i>	Cultural tourism can negatively impact housing affordability by increasing real estate demand and reducing economic accessibility. Garay-Tamajón et al. (2022)
	Food Bonaiuto et al. (2019)	Preserving and enhancing local culinary traditions and integrating culinary experiences into cultural events. Kotler (2001)
Environmental dimension	Environmental sustainability <i>City Prosperity Index</i>	Promoting responsible behaviors through exhibitions and operational practices that raise awareness among the public. Hebda (2007) Pencarelli et al. (2016)
	Landscape Quality Bonaiuto et al. (2019)	Preserving and enhancing urban landscapes, supporting cultural tourism and aesthetic value. Francini and Rozochkina (2024)
Infrastructures	Care and Maintenance Bonaiuto et al. (2019)	Playing a key role in urban regeneration, improving aesthetic

Table 1 (continued)

	City reputation dimensions	Cultural heritage-related factors' contribution to city reputation dimensions
	Mobility and infrastructural connectivity Bonaiuto et al. (2019)	and functional aspects of city maintenance. Plaza and Haarich (2009) Stimulating the adoption of sustainable mobility solutions, such as walking, cycling, and public transport. Jeong (2019)
Place identity	Presence and visibility image <i>Anholt-Ipsos City Brands Index</i>	Enhancing the city's visibility through institutional communication and cultural activities, attracting attention and improving competitiveness. Plaza and Haarich (2015) Lazzeretti (2023)
	Place identity <i>Best Cities ranking</i> Bonaiuto et al. (2019)	Preserving and enhancing the local cultural heritage through collections, representations, dedicated events and spaces to reflect on the local identity. Sternberg (1997) Heidenreich (2015)

4. Research design

4.1. Context of the analysis

As highlighted by the theoretical section, while the strategic role of cultural heritage-related factors in the city's reputation is widely recognized, many studies address this topic indirectly rather than explicitly (Mariutti & Giraldo, 2021). The present analysis aims to fill this gap by applying the dimensions identified to explore the reputation of the Italian city of Brescia and its relationship with cultural heritage-related factors. In particular, the study explores how the civic museums' activities have shaped Brescia's city reputation dimensions.

Situated in northern Italy, Brescia is a mid-sized city historically recognized for its strong manufacturing industry. Over the past two decades, however, it has undergone a significant transformation, seeking to redefine its image by integrating a cultural identity alongside its industrial heritage. This shift has been driven by a strategic combination of public policies, private investments, and significant cultural heritage-led urban interventions - including the restoration and enhancement of historic buildings hosting civic museums.

Brescia constitutes a particularly relevant and illustrative case for investigating the contribution of cultural heritage-related factors to city reputation. The transformation of the city's reputation has resulted from coordinated efforts between local government and private and public institutions, with cultural organizations playing a crucial role. In particular, the civic museums managed by the FBM are at the center of process governance (Beccherle et al., 2024). The efforts culminated in 2020 with the designation of Brescia as the ICoc 2023, alongside the nearby city of Bergamo (Presidente della Repubblica, 2020), marking a key moment in which cultural policy, cultural heritage enhancement, and reputation-building converged. The civic museums helped promote Brescia's reputation as a city of culture, emphasizing the importance of preserving and enhancing local heritage as a cornerstone for the city's image promotion.

For this reason, the analysis is situated during the year of the ICoc 2023, which represents the most significant opportunity for Brescia to express and consolidate its cultural repositioning publicly. The focus on the civic museums is particularly justified given their pivotal role in articulating and conveying the city's cultural vocation, making them a key actor in shaping the public perceptions and reinforcing Brescia's reputation as a city of culture.

4.2. Research design and methods

The analysis focused on media discussions through text-mining techniques to explore the dimensions of reputation in Brescia and the relationship with cultural heritage-related factors. A shared understanding exists that communication, including media narratives and shared stories, plays a crucial role in shaping perceptions (Kotler & Gertner, 2011). Moreover, media narratives provide an opportunity to explore information and uncover unexpected perspectives, which would not be achievable with predefined questions in a survey. Several studies examine the mental associations in press coverage, review platforms, and social media, analyzing word semantic connections. This approach is based on the idea that words shape how people perceive things (Sevin, 2014), with these associations serving as a proxy for reputation (DiMaggio et al., 2013). Moreover, text-mining techniques have been widely used in the literature to assess places' reputation and identity (de Oliveira Capela & Ramirez-Marquez, 2019; Költringer & Dickinger, 2015; Micera & Crispino, 2017). Moreover, they have also been applied to studies related to cultural policies and museums (Riva & Agostino, 2022; Su & Teng, 2018).

To analyze the dimensions of Brescia's reputation, we applied the topic modeling analysis using the Latent Dirichlet Allocation (LDA) to identify thematic patterns within the textual data. By analyzing word co-occurrences, LDA offers a probabilistic framework for uncovering latent themes across large text corpora (Blei et al., 2003; Mohr & Bogdanov, 2013). This method is particularly useful for studying reputation through qualitative and quantitative lenses, providing a multi-dimensional perspective (Ali et al., 2021).

4.3. Data sources and collection

A corpus of press articles collected by the civic museums for 2023 represented the dataset for the topic modeling analysis. It encompassed news published between January 1st and December 31st, 2023, amounting to 1791 articles.

4.4. Analysis process

The analysis was conducted in the following stages:

1. *Text pre-processing*: the textual corpus underwent standard pre-processing procedures, including removal of non-alphanumeric characters, numbers, and stop-words, followed by word tokenization.
2. *Document-Term Matrix construction (DTM)*: the cleaned text was structured into a DTM, where each entry represents the frequency of a term within a given document. This matrix served as the input for the subsequent topic modeling.
3. *LDA Topic modeling*: LDA was applied to uncover latent thematic structures within the corpus. LDA assumes that each document is composed of a mixture of latent topics, while each topic is represented as a probability distribution over words. The generative process is grounded in a probabilistic model, drawing topics from a Dirichlet distribution and assigning words to topics via multinomial distributions.
4. *Model refinement*: to determine the optimal number of topics, the LDA model was run iteratively (100 times), selecting the topic configuration that consistently achieved the highest coherence score. Topic coherence measures the degree of semantic similarity among the most relevant words within a topic.
5. *Topics labelling*: given the manageable number of topics, the labelling process incorporated a human-in-the-loop approach, enabling accurate and contextually informed assignment of topic labels based on keyword interpretation.

6. *Topics categorization*: topics were categorized according to the city reputation dimensions established in the literature, facilitating the integration of empirical findings with the theoretical framework.

4.5. Triangulation with other data sources

The interpretation of the topics was further refined by incorporating insights from both primary and secondary data sources, which helped triangulate and corroborate the results. We conducted fourteen semi-structured face-to-face interviews between February and August 2024 with museum staff, management, and key actors involved in the Bergamo-Brescia ICoC 2023. Interviews with key stakeholders and analysis of institutional reports, social media content, website data, and press releases provided valuable contextual information, contributing to a deeper understanding of emerging themes.

4.6. Results presentation

The results are presented through a synthesis table (Table 2), which applies the theoretical framework identified in the literature to the Brescia case study. The table summarizes the main themes that emerged from the topic modeling analysis, and illustrates how these themes demonstrate the contribution of cultural heritage-related factors to Brescia's reputation. This approach allows for a structured interpretation of the findings, linking theoretical constructs with empirical evidence.

5. Results: The role of cultural heritage-related factors in the city's reputation

In order to contribute to the urban studies and cultural heritage management literature, the theoretical model based on the dimensions of city reputation and the relationship with cultural heritage-related factors is explored through the topic modeling applied to the case of civic museums in Brescia. The analysis revealed that civic museums' activities pertain to the city's reputation throughout the identified dimensions.

Considering the city's livability, civic museums contributed to the dimension of *Quality of life* by bringing cultural vibrancy and services with temporary exhibitions, film screenings, guided tours, and initiatives for residents of all ages. The significance of temporary exhibitions for the city's cultural life emerged from the topic modeling analysis, which highlighted themes related to exhibitions on historically recognized local artists, such as Salvoldo and Romanino, as well as the initiative "Il Pugile e la Vittoria", featuring two bronze sculptures from the Hellenistic and Roman periods displayed together for the first time in Brescia at the civic museums. Additionally, the analysis identified topics linked to the temporary exhibitions held at the civic museums integrating contemporary artworks within the Roman Archaeological Park (Emilio Isgrò's and Francesco Vezzoli's artworks). This range of initiatives is further enriched by numerous screenings at the Cinema Nuovo Eden, which is part of the facilities managed by the civic museums and also emerged as a key theme in the topic modeling analysis. The crucial role of Brescia's civic museums in enhancing residents' quality of life has been recognized and awarded by a local bank foundation through the "Call for Culture", which aims to promote the social, cognitive, and psychological well-being of individuals within society. Finally, considering the other topics that emerged from the topic modeling analysis related to this dimension, it is possible to observe themes linked to different cultural events in the city not organized by the civic museums, such as concerts and cultural festivals, which further strengthen the role of cultural institutions in enhancing the quality of life for Brescia's residents.

Directly related to this, it emerges that the initiatives undertaken by civic museums also influence the social dimension. In particular, civic museums contribute to the *Education* dimension of the city's reputation

Table 2

Results from the topic modeling analysis conducted on the newspaper articles.

Categories	City's reputation dimensions	Topic name	Most significant words	Interpretation
Livability	Quality of life	"Civic museums Temporary exhibitions"	epigraf; grec; isgr; vezzol; cancel.	Words related to the temporary exhibitions of the civic museums (such as Emilio Isgrò's and Francesco Vezzoli's exhibitions).
		"Nuovo cinema Eden projections calendar"	eden; prosett; documentar; coprodott; violenz; femminil;	Words related to the programming of Cinema Nuovo Eden, managed by the civic museums. It screens art-house films and documentaries on sensitive contemporary topics such as violence against women.
		"Civic museums' initiatives calendar"	romanin; savold; novembr; ottobr; palinsest.	Words related to the exhibitions of the civic museums on Brescian artists such as Savoldo and Romanino.
		"Grant to the civic museums to promote the citizens' social, cognitive, psychological well-being"	band; ragazz; fragil; caripl; beness.	Words related to awarding the 2023 "Call for Culture" of a local bank foundation to the civic museums, enabling the realization of events to promote the social, cognitive, and psychological well-being of individuals within society.
		"Events in the city"	weekend; concert; rassegn; ingress.	Words related to cultural events in the city not organized by the civic museums, such as concerts, cultural festivals, etc.
	Place attachment and civic participation	"Light Festival show organized by A2A"	light; illumin; lumin; energet; fond.	The topic contains words related to the event <i>Light is Life</i> , organized in Brescia by a local foundation, linked to the multi-utility company A2A.
		"Temporary exhibition 'Il Pugile e la Vittoria'"	scontr; latin; specul; quirinal;	Words related to the exhibition featuring two bronzes from the Hellenistic and Roman periods, displayed together for the first time in Brescia at the civic museums.
		"Collaboration between the civic museums and the Diocesan Museum"	chies; dioces; prest; sacr; icon.	Words related to the exhibition organized with the Museo Diocesano.
		"Collaboration between the cities of Bergamo and Brescia"	bergam-bres; integr; scont; manifest; convenzion.	Words related to the collaboration between the cities of Brescia and Bergamo for the realization of the ICOC event, such as "agreements," "integrations," "connection," etc.
		"Opening of the Museo del Risorgimento"	patriot; garibaldi; garibaldin; battaglia; guerzon.	Words related to the reopening of the Museum of the Risorgimento.
Social dimension	Education	"Exhibitions organized by the civic museums in the province"	romed; marasin; provenient; quadr.	Words related to the exhibition organized in the province of Brescia and promoted by the civic museums.
		"civic museums for civic education"	democraz; scuol; ambient; consapevol; civilt.	Words related to civic education activities organized by the civic museums to raise awareness about the fragility of cultural heritage and environmental issues.
		"Educational activities related to the civic museums' collections"	gioc; longobard; tavol; convegno; scientif.	Words related to educational and scientific activities organized by civic museums, such as educational games, discussion panels, and scientific conferences.
	Inclusiveness	"The role of the museum for reflection on current issues"	carcer; documentar; reportage; resistant; global.	Words related to the activities of civic museums organized for shared reflection on contemporary and sensitive global issues.
		"Civic museums initiatives on women in prisons and war"	donn; ucrain; carc; deten; critic;	Words related to civic museum initiatives reflecting on the condition of women, such as incarcerated women and women in war-affected countries.
		"Temporary exhibition 'Nomad in a Beautiful Land'"	pitocchett; la chapelle; land; nomad; pover.	The topic includes words related to the temporary exhibition <i>David LaChapelle for Giacomo Ceruti: Nomad in a Beautiful Land</i> , organized by civic museums.
	Economic dimension	"Grant to promote the citizens' social, cognitive, psychological well-being"	band; ragazz; fragil; caripl; beness.	Words related to awarding the 2023 "Call for Culture" of a local bank foundation to the civic museums, enabling the realization of events to promote the social, cognitive, and psychological well-being of individuals within society.
		Productivity	fabbric; cresc; merc; econom; invest; business; bilanc.	Words related to economic productivity such as "fabric", "invest", and "business" (i.e. factory, investment, and business).
		Business-friendly environment	partner; sistem; opportun; invest; prestig; tecnologi; speriment; laborator.	Words related to the business ecosystem "partner", "opportun", and "speriment" (i.e. partner, opportunity, and experimental).
		Handicrafts and local products	berlucc; cantin; specific; fratell; figl.	Words related to the artistic collaboration between the civic museums and a local winery, which involves hosting a sculpture commissioned by the winery at the civic museums.
Economic dimension	Accommodation		pernott.	Words related to the tourism accommodation (i.e. 'overnight stay').
	Affordability		scont.	Words related to price affordability, such as "scont" (i.e. 'discount').
	Food		ristor; cantin; dolc.	Words related to the food and wine sector, such as "ristor", "cantin", and "dolc" (i.e. restaurant, winery, and dessert).

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Table 2 (continued)

Categories	City's reputation dimensions	Topic name	Most significant words	Interpretation
Environmental dimension	Environmental sustainability		ambient; natural; natur; ferroviar; paesagg; riqualf.	Words related to the environment, such as “ambient”, “natural”, and “paesagg” (i.e. environment, natural, and landscape).
	Landscape Quality	“Refurbishment of the corridoio UNESCO and temporary site-specific exhibition by Fabrizio Plessi”	corridoio; monumental; fabriz; digital; multimedial.	Words related to a temporary exhibition featuring immersive digital installations, large-scale video projections, and monumental digital walls. The exhibition marked the inauguration of the <i>UNESCO Corridor</i> , a monumental pathway within the World Heritage site that links two archaeological landmarks. The topic includes words related to the restoration of Brescia's Roman archaeological area entrusted to renowned international architects.
	Care and Maintenance	“Refurbishment and opening of the Museo del Risorgimento”	architett; recuper; riqualf; soprintendent; corridoi.	Words related to the reopening of the “Museum of the Risorgimento”.
Infrastructures	Mobility and infrastructural connectivity	“Urban development preparations for the Italian Capital of Culture”	apertur. ciclov; migl; chius; pedonal; inaugural.	Words related to this topic concern the city's infrastructure improvements ahead of the Bergamo-Brescia ICOC event, such as cycle routes, pedestrianizing areas around civic museums, and refurbishing urban paving.
	Presence and visibility	“Bergamo-Brescia Italian Capital of Culture 2023”	assessor; bellezz; promuov; bergamasc; pandem.	Words related to Bergamo-Brescia ICOC and the objectives of the local administrations to jointly promote the two cities and their cultural heritage for a full recovery after COVID-19.
Identity	Place identity	“Brescia and its cultural heritage attractions”	duom; chies; borg; giardin; longorbard.	Words related to points of interest in Brescia, such as churches – including the cathedral–gardens and historic villages.
		“Tourism in Brescia”	turism; cresc; econom; destin; record;	Words related to the growing tourism in the city, which is increasingly becoming a popular tourist destination, reaching a record in 2023.
		“Online press”	online; news; redazion; quotidian; digital.	Words related to the city's communication strategy and the event, including online news and digital media coverage.
		“Enhancement of Brescian historicized artists”	morett; lott; romanin; salvold; cecc.	The topic includes words referring to the names of historically recognized artists originating from or active in the city.
	Place identity	“Commemoration of the neofascist massacre organized by civic museums”	anniversar; polaroid; bomb; terror; cinquantessim; commemor.	Words related to initiatives organized by the civic museums to commemorate the fiftieth anniversary of the “Piazza della Loggia Massacre” in Brescia, a terrorist attack.

by offering educational activities for audiences of all ages and backgrounds, enabling them to explore local art history and civic education, and publishing dedicated volumes. The topic modeling analysis identified themes related to educational and scientific activities organized by civic museums, including educational games, discussion panels, and scientific conferences. Other topics are more specific, relating to academic activities organized by the civic museums to raise awareness on various issues. For instance, cultural heritage fragility and environmental concerns are the focus of workshops organized with important partners, such as UNESCO. Additionally, new civic education programs encourage reflection on the recovery of social identity and cultural opportunities (Fondazione Brescia Musei, 2024).

As emerged from the analysis, Brescia's civic museums contribute to the *Inclusiveness* dimension of the city's reputation by organizing events and spaces for dialogue that foster reflection on contemporary issues such as women's and queer rights, ongoing wars, and social inequalities (Fondazione Brescia Musei, 2024). The topic modeling analysis identified themes related to these initiatives, encouraging engagement with contemporary and sensitive global issues. A key example is the condition of women in society, including incarcerated women, women in war-affected countries, and the broader issue of gender equality. This is also reflected in the interviews, which highlight how civic museums have organized various initiatives in collaboration with the local prison and exhibitions within the “Art and Rights” series, inviting dissident artists to participate (Interview n. 11). Regarding inclusivity, the topic modeling analysis also identified themes related to reflections on social hardship and poverty among the lower classes. A notable example is the temporary exhibition David LaChapelle for Giacomo Ceruti: “Nomad in

a Beautiful Land”, organized by the civic museums. The civic museums are also committed to accessibility and inclusivity for fragile publics, such as guided tours for visual and hearing impairments (Interview n. 11; Fondazione Brescia Musei, 2024). Moreover, they contribute to Brescia's inclusivity by participating in the ORLANDO Festival, which fosters reflection on queer identities through film screenings (Fondazione Brescia Musei, 2024).

Again, in terms of the social dimension of city reputation, civic museums contribute to *Place Attachment and Civic Participation* by providing opportunities for civic engagement, notably strengthening collaborations with other cultural organizations and local institutions. The topic modeling analysis identified several key themes related to these collaborations. Notably, one refers to three exhibitions organized with the Museo Diocesano, enabling the opening of churches and sanctuaries across the city and contextualizing works from the civic museums' collections (Comune di Bergamo & Comune di Brescia, 2022). Additionally, the analysis detected topics related to the collaboration between Brescia and Bergamo local administration. The centrality of the partnerships with other institutions—both local and regional—is confirmed by interviews (Interview n.10; Interview n. 11). Collaborations and related events organized created an impact on civic participation, with an increase in 2023 of 12 % in the number of citizens visiting the civic, compared to the previous year (Fondazione Brescia Musei, 2024).

Civic participation and place attachment are deeply intertwined with the city's identity. In particular, the civic museums have played a crucial role in shaping and continuously redefining *Place Identity* by promoting Brescian historicized artists and commemorating historical events that

have contributed to the city's collective consciousness. The topic modeling analysis highlights how the civic museums have actively enhanced the recognition of historically significant artists originating from or active in Brescia, such as Il Moretto, Lorenzo Lotto, Il Romanino, and Giovanni Gerolamo Salvoldo. Additionally, keywords emerged concerning initiatives organized by the civic museums to commemorate historical events important for the city (see, for example, the fiftieth anniversary of the Piazza della Loggia Massacre in Brescia).

From the topic modeling, the economic dimension emerged as a residual dimension. In fact, only a few isolated terms related to this aspect emerged, not pertaining to a distinct thematic cluster. For example, concerning the *Accommodation* dimension, the only relevant term identified was “pernott” (i.e., overnight stay), which is closely tied to the tourism theme. Similarly, terms related to *Productivity*, such as “fabbric,” “invest,” and “business,” as well as those linked to a *Business-friendly Environment*, including “partner,” “opportun,” and “speriment” (i.e., partner, opportunity, and experimental), were detected. Furthermore, concerning *Local handicrafts and products*, civic museums collaborated with a local wine producer for an artistic project, which emerged from the topic analysis (Fondazione Brescia Musei, 2024). Considering the city's *Affordability*, the civic museums contribute by offering discounted and free entry, as evidenced by the word “scont” (i.e., discount) among the most significant terms. Finally, some words related to the *Food* dimension also appeared in the analysis, such as “ristor,” “cantin,” and “dolc” (i.e., restaurant, winery, and dessert).

Another key aspect of a city's reputation is the environmental dimension. Concerning this aspect, the topic modeling analysis showed that terms do not form a cohesive cluster but are scattered across various topics, such as “ambient,” “natural,” and “paesagg” (i.e. environment, natural, landscape). However, based on secondary data sources and interviews, it emerged that the civic museums have been actively engaged in various aspects of *environmental sustainability* through exhibitions, educational activities, and structural interventions in their buildings (Comune di Bergamo & Comune di Brescia, 2022). Additionally, they organized a series of film screenings to raise public awareness of ecological issues, the relationship between humans and nature, and the importance of environmental protection (Fondazione Brescia Musei, 2024). Moreover, they promoted energy efficiency interventions in museums and carried out a project mapping trees in the city's heritage, highlighting that the museums and their green spaces serve as an important environmental lung for Brescia (Fondazione Brescia Musei, 2024). Regarding *Landscape Quality*, the civic museums have contributed to this dimension by creating and opening the “UNESCO corridor” connecting the former Monastic Complex of Santa Giulia with the Archaeological Park, enhancing the Roman Theatre, and restoring the Castello and adjacent spaces. The topic modeling analysis highlighted themes such as a temporary site-specific exhibition that marked the inauguration of the “UNESCO Corridor”.

Another relevant aspect revealed by the analysis concerns *Infrastructures*. In particular, considering the *City Care and Maintenance* dimension, the civic museums contributed to this dimension in 2023 by restoring and reopening the Cinema Nuovo Eden building, the “Museum of the Risorgimento”, and the “Museum of Arms”, as part of a process to enhance the municipal real estate assets of Brescia through the concession of disused properties (Fondazione Brescia Musei, 2024). The topic modeling analysis particularly highlights words related to reopening the “Museum of the Risorgimento”. In relation to *City Mobility and Infrastructural Connectivity*, a topic concerns the city's infrastructure improvements ahead of the Bergamo-Brescia ICoC event. This includes terms related to the Bergamo-Brescia cultural cycle route, pedestrian areas around civic museums, and refurbishing urban paving.

Finally, beyond organizing and promoting their activities, the civic museums have significantly contributed to the city's *Presence and Visibility* across traditional media and digital communication channels. The topic modeling analysis identified keywords related to communication strategies, including online news coverage and digital media

engagement. Moreover, the intensity of this promotional effort was particularly heightened during Brescia and Bergamo's tenure as ICC. The analysis raised this theme, revealing keywords related to the local administration's objectives to jointly promote the two cities and their cultural heritage as part of a broader post-COVID-19 recovery strategy. As a result of the combined promotional efforts of the civic museums and the local administration, and following the extensive visibility campaign during the ICoC year, Brescia is increasingly emerging as a cultural tourism destination.

In summary, the results of the topic modeling analysis show that Brescia's civic museums contribute in varying degrees to all dimensions of the city's reputation. They have the most significant impact on the social and identity-related aspects, while their direct contribution to the reputation's economic and environmental dimensions is more limited. However, their initiatives help promote Brescia's reputation as a city of culture, generating positive effects across all aspects of its reputation. Indeed, the civic museums' initiatives allowed a broader audience to discover a rich yet largely overlooked cultural heritage. This impact is shown by the growing tourism sector, which reached record levels in 2023. Bergamo and Brescia welcomed approximately 11.6 million visitors, marking an increase of about 40 % compared to the same period in 2022 (Interview n.1). Civic museums collected a record-breaking 500,000 visitors and appeared in 4536 media articles during 2023. Out of 86 initiatives they organized in 2023, 72 were carried out in collaboration with other cultural organizations, confirming the impact on developing relationships at the local level (Interview n.9). Collaborations and related events created an impact on civic participation, with an increase in 2023 of 12 % in the number of citizens visiting the civic, compared to the previous year (Fondazione Brescia Musei, 2024). Similarly, in 2023 alone, the museums welcomed 3915 school classes (Interview n. 11), confirming their educational impact. Finally, they contributed to improving the perception of Brescia as a cultural city. In terms of media visibility, over 19,500 journalistic pieces were published in print and online media, promoting presence and visibility (Comune di Bergamo & Comune di Brescia, 2024).

Table 2 summarizes the results of the topic modeling analysis conducted on the newspaper articles.

6. Conclusions

During the last decade, the concept of city reputation has gained momentum in several disciplines. Several analyses have explored the reputation of cities at an international level (Ali et al., 2021; Braun et al., 2018; Delgado-García et al., 2018; Serić & Vernuccio, 2020). Moreover, extensive literature has analyzed the role of cultural heritage for city development (García, 2005; Plaza, 2006; Grodach, 2008). Despite some research and city rankings include cultural facilities, organizations and policies among factors that can increase the city reputation, how this goal can be effectively achieved remains under-researched. Our research extends the analysis to the role of cultural heritage-related factors in molding the city reputation. Moreover, it offers new insights exploring how the activities of the civic museums in Brescia have shaped the city's reputation. To achieve this objective, the analysis uses the topic modeling on newspaper articles collected during the event ICoC 2023 to identify the related topics concerning city reputation dimensions.

The case of Brescia is particularly representative of some specific categories of the city reputation. First, from the analysis, topics related to activities that are crucial for the city's quality of life emerge. The results align with the literature on cultural heritage studies that suggest a positive role of cultural sectors and organizations in the quality of life of individuals through cultural participation (Blessi et al., 2016). Moreover, the dimension of inclusiveness is also well represented by the analysis of the city of Brescia. The study emphasizes several activities related to increasing the awareness of citizens on social issues and consequently influencing social equity and openness, aspects that contribute to city reputation (Florida, 2012). In line with such results,

civic museums also play an important role in fostering education and collective learning, which the literature recognizes as relevant in fostering city reputation (Lazzeretti, 2022; Salerno, 2018).

Several activities developed by the civic museums improved the landscape quality and contributed to the care and maintenance of the city, as well as sustainable mobility, showing efforts by the city’s cultural organization to preserve and enhance the city landscapes. Actions for boosting the city landscape quality and projects for regenerating urban areas and increasing sustainability are considered variables that can influence the city reputation (Plaza & Haarich, 2009; Jeong, 2019; Francini & Rozochkina, 2024).

Finally, another relevant area of the city reputation concerns identity. The activities of the civic museums, especially during the event ICoC 2023, have involved a multi-level process, including several local institutional actors in the organization. Moreover, the city promotional activities incorporated the city’s cultural heritage, promoting local artists and celebrating memorial days. These activities can contribute to a strong place identity and increase the relationship between citizens and place, crucial aspects of the city’s reputation (Heidenreich, 2015; Sternberg, 1997). Moreover, a social media campaign increased the city’s visibility and global presence, reinforcing the city’s reputation (Lazzeretti, 2023).

Contrary to what emerged from the literature on city reputation, in the analysis of Brescia, aspects related to the economic dimension do not appear representative. Despite productivity, the business ecosystem, local handicrafts, the presence of tourism and food industries are all recognized as elements that can foster the reputation of cities (Bonaiuto et al., 2019; Micera & Crispino, 2017), these are not prominent in the analysis. It is possible to suppose that this result, concerning the specific case of Brescia, is related to the objectives of the transition toward a city of culture culminated in the designation of ICoC 2023. As suggested by the interviews, local actors mainly focused on socio-cultural aspects, such as increasing well-being and cultural participation, considering that a strong industrial sector was already in place (Beccherle et al., 2024).

The results from the present case can also be compared with findings from other international cities where cultural heritage has been instrumental in enhancing dimensions of reputation, such as livability, place identity, and social inclusion. As for other Italian cities, the city is basing the transformation of its reputation on cultural assets, but is stressing the social dimension more (Vanolo, 2008). This aspect aligns with some international cases. As Glasgow’s transformation post-1990 through cultural programming (Garcia, 2005), Brescia has leveraged its civic museums to foster civic engagement and pride. Moreover, following similar examples of other capitals of culture, the Brescia case confirms that smaller cities might leverage large cultural initiatives as an arena for citizen engagement (Nelaeva & Iermolenko, 2024). In contrast, unlike Bilbao’s Guggenheim effect (Plaza, 2006), Brescia’s cultural strategy appears to have prioritized socio-cultural objectives over direct economic impacts.

Annexes.

Annex 1
List of interviews with Brescia’s city stakeholders.

Actor type	Role	Data	Interviewed ID	N. of interviews
Political Actors	City’s Mayor	August 2024	1	1
	City’s councilor for productive activities, tourism, social and economic innovation, and digital transition of the city	May 2024	2	1
	City’s member of the organization of ICoC 2023	July 2024	3	1
	Director of the city’s tourism promotion agency	June 2024	4	1

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Our results can suggest recommendations for local authorities as well as city managers internationally. In particular, recognizing that cultural heritage-related factors are essential to a city’s reputation and performance (Delgado-García et al., 2018), local policymakers should embed cultural heritage strategies into a broader urban planning framework to increase livability for citizens and attractiveness for firms, investments, and tourists. Moreover, the ICoC and similar events show that smaller cities can strategically use cultural projects to consolidate cultural-led development strategies and build new narratives in accordance with contemporary urban values such as livability, diversity, and sustainability. At an international level, city managers should invest in digital platforms and online communication to favor post-industrial cities in diversifying their reputation and global positioning.

The research has some limitations. First, the dimensions of the city’s reputation and the contribution of cultural heritage-related factors to it should be statistically validated. Then, Brescia’s reputation was not analyzed from the perspective of various stakeholders. Gaining insights into whether a cohesive reputation exists across different groups would have added value. Finally, since Brescia is a single case study, a cross-case comparison is needed to make the conclusions more generalizable and robust.

Future research could validate the reputation dimensions and collect and analyze data from other communication channels to assess reputation perceptions across different city stakeholder groups. Finally, the case study could be compared with similar cases to test the theoretical framework widely and develop comparative analyses.

CRediT authorship contribution statement

Paola Beccherle: Writing – review & editing, Writing – original draft, Methodology, Investigation, Data curation, Conceptualization.
Luciana Lazzeretti: Writing – review & editing, Supervision, Project administration, Investigation, Funding acquisition, Conceptualization.
Stefania Oliva: Writing – review & editing, Writing – original draft, Project administration, Investigation, Conceptualization.

Declaration of competing interest

No potential conflict of interest was reported by the authors.

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Annex 1 (continued)

Actor type	Role	Data	Interviewed ID	N. of interviews
Economic Actors	Agency that managed social media for ICoC 2023	June 2024	5	1
	Agency responsible for managing the communication of the Municipality of Brescia during ICoC 2023	June 2024	6	1
Non-economic Actors	Agency that managed relations with the press and media for ICoC 2023	June 2024	7	1
	Civic museum's director	February, April and May 2024	8	3
	Multiutility Foundation member of the civic museums' board of directors	June 2024	9	1
	Civic museum's corporate relations, events and fundraising office and communication and events sector coordinator	May 2024	10	1
	Civic museum's educational services coordinator	May 2024	11	1
	Civic museum's curator	May 2024	12	1
		Total		14

Data availability

Data will be made available on request.

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