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IN CHINA

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ENHANCING THE CONNECTION BETWEEN PEOPLE AND HERITAGE THROUGH SOCIAL MEDIA IN CHINA

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ABSTRACT:

Although numerous participatory methods and assessments have been tested in the western context, the community participation practice is still limited in China, a developing country. In addition, due to the diversity of cultural, historical, economic, and social backgrounds, Chinese community participation differs from similar international approaches. Hence it is critical to explore how engaging Chinese people with their own heritage properties can foster stewardship, multi-stakeholder connection, and support policy and strategy making.

It is very challenging to preserve the character of historic urban landscapes because they change over time in a rapidly developing urban context. Research on revealing people's stories and preferences concerning the Chinese historic urban landscape in their visiting and living experience is needed to address this concern directly. The study applies a novel approach to explore public attitudes based on the fusion of social media data, land use data and other information. It examines the spatial patterns of public responses towards the government-led urban heritage conservation projects in the historic city centre of Harbin, China, in sixteen months (2021-2022). The article concludes that social media plays an important role in accessing broader communities, monitoring people's preferences, and observing heritage attributes and values for inclusive urban heritage management.

1. INTRODUCTION

The rich architectural heritage and historic city centres across China have a strong potential to support urban regeneration and inclusive heritage management. However, the conditions of numerous heritage sites are always severely deprived, neglected, or inactive due to the lack of public participation (Deng et al., 2015; Liang et al., 2022; Verdini et al., 2017). According to UNESCO's Recommendation on the Historic Urban Landscape (HUL), using Information and Communication Technologies is explicitly recommended for holistic urban heritage conservation (van der Hoeven, 2019). The research explores how social media can contribute to implementing HUL and further facilitate urban heritage conservation by enhancing public participation.

Except for the introduction and conclusion, the main body of this paper is structured in five parts: literature review, problem statement, research method, findings and discussion. Against the research background and case study analysis, we discuss and explore the essential components of the social-media data assessment framework, aiming to answer the following four questions: (1) What are the spatial patterns of how the public responded to urban conservation projects? (2) To what extent does the response vary between people from different backgrounds (such as gender and between local and non-local residents)? (3) Which areas of architectural and urban heritage value impact on people's daily lives (such as home-based activities and travel related activities)? (4) What policy lessons can be learnt from the interpretation of the results of this research in order to enhance community engagement in urban heritage conservation?

2. RESEARCH BACKGROUND

By attempting to encompass both the tangible and intangible components of historic urban areas, the HUL Recommendation provides an integrated approach to urban heritage conservation (Bandarin and Oers, 2014). It aims to protect historic urban landscapes from being fragmented and degraded by uncontrolled and rapid urban development. The Recommendation also pointed out that rampant urban transformation can undermine the identity of a place, although it acknowledges the economic and socio-cultural benefits that come along with urbanisation (Bonfantini, 2016). In addition, the Recommendation seeks to raise awareness of the social, cultural and economic value of urban heritage in this context of urbanisation (Oers and Roders, 2013). While recognising that cities are dynamic, HUL defines urban change and development as no longer being opposed to the historic urban landscape maintenance but as part of it and needs to be managed (Bandarin and Oers, 2012).

Along with the widely recognized vital role of the local community in international practices, in 2012, establishing, mentation, implementing, and promoting the UNESCO Operational Guidelines for the Implementation of the World Heritage Convention encouraged involving broader communities worldwide in the heritage conservation process (UNESCO, 2012). Heritage professionals are trying to involve as many citizens as possible in decision-making processes related to heritage management and making participatory activities inclusive. Recently, the identification and engagement local and minority groups regarding the decision-making of heritage

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conservation plans have been further highlighted by ICOMOS as an issue of concern (ICOMOS, 2020). It is worth mentioning, social media has become an essential tool for connecting people with their cultural heritage and contributing to relevant practices and research (Deng et al., 2015; Nummi, 2018).

Social media has become one of the most popular spaces to express people's opinions and discuss heritage values as a window to nonexpert perceptions (van der Hoeven, 2020). It can be used to share information about cultural heritage events and activities, promote local cultural heritage sites, or provide a space for community members to share their personal stories and experiences related to cultural heritage (Giaccardi, 2012; Liang et al., 2021). It can also be used to crowdsource information, resources, and ideas from community members, allowing for more collaborative and inclusive decision-making in cultural heritage initiatives (Bai et al., 2022; Ginzarly et al., 2019).

Social media enhances the connection between people and heritage by making it more accessible (Arrigoni et al., 2019). The convenience of accessing heritage information online has made it possible for people to learn more about their cultural heritage, even if they are not physically located near a heritage site (Ch'ng et al., 2020). Social media platforms offer virtual tours of heritage sites, allowing people to experience the locations providing interactive experiences such as virtual reality simulations and augmented reality experiences (Han et al., 2020). This accessibility has encouraged more people to engage with their cultural heritage and has contributed to the preservation of heritage sites by raising awareness.

Social media allows people to connect with others with similar interests and form communities around their cultural heritage (Hood and Reid, 2018). By sharing their experiences at heritage sites, posting photos and videos, and engaging in discussions, participants contribute to preserving cultural heritage by raising awareness and encouraging others to engage with it (Psomadaki et al., 2019). People can also make donations through social media, sign up for volunteer programs, and participate in events that preserve heritage sites (Beel et al., 2017; Foa, 2019). This level of participation has helped create a sense of community among heritage supporters and forges a deeper connection with heritage (Cotterill et al., 2016).

Despite the growing interest in social media for cultural heritage conservation, too little attention has been paid to assessing public attitudes in responding to ongoing construction projects in the historic city centre. Thus, the article explores how to use social media to investigate participants' preferences and their understanding of heritage attributes and values in conserving historic urban landscapes.

3. CASE STUDY AS PROBLEM STATEMENT

After being colonized by Russia for several decades, the city center of Harbin, especially the Daowai district, has shaped a unique urban landscape style assembled by numerous 'Chinese Baroque' buildings with a hybrid of Baroque façade and traditional Chinese quadrangle (Jin et al., 2018). Today, a small part of the historic area has been renovated in turning gentrified thanks to the government-led urban regeneration project since the 2010s (see Figure 1). At the same time, many buildings remain unattended and in decay (see Figure 2). Without fully participating in the heritage conservation process, many local

people were forced to relocate from their live-since-born houses, which caused tension and widespread discontent (Zhang, 2021). In particular, hard-to-access residents, as minority groups, due to the highlighted ethnicity, religion, disabled issues, etc., were largely ignored in the heritage management process. Decision-making processes related to heritage management should be inclusive and involve the participation of broader communities. Research on revealing people's stories and preferences concerning the Chinese historic urban landscape in their visiting and living experience is needed to address this concern directly.

Figure 1. Well-renovated and upgraded area in Daowai district after the first phase of the renovation project.

Figure 2. Fading and decaying historic area in Daowai district caused by uncontrolled urbanisation.

The Chinese Baroque district in Harbin represents an important chapter in China's history, reflecting the cultural exchange between China and the West during the early 20th century. The district is a unique blend of Chinese and Western architectural styles, showcasing the creativity and ingenuity of the architects and builders of the time. The district is not only a testament to the rich cultural heritage of Harbin but also a symbol of China's progress and development over the past century. However, despite its significance, the Chinese Baroque district in Harbin is facing numerous challenges in terms of heritage conservation. One of the major challenges is the rapid pace of urban development, which has resulted in the destruction of many heritage buildings. Additionally, the district has suffered from neglect and a lack of investment in conservation efforts, which has led to the deterioration of many buildings.

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To address these challenges, local authorities in Harbin have taken several measures to preserve the Chinese Baroque district. One of the key measures has been creating a heritage conservation plan, which outlines the steps to safeguard the Chinese Baroque community and its heritage buildings. The program includes a range of measures, including restoring heritage buildings, creating public spaces, and promoting cultural tourism. Another important measure has been the establishment of a heritage trust, which will provide financial support for the preservation of heritage buildings in the district. The trust will be funded by private donations and will collaborate with local authorities to ensure that the heritage buildings are preserved for future generations. Establishing the heritage trust is important in ensuring the long-term sustainability of heritage conservation efforts in the Chinese Baroque district.

Local authorities have also taken steps to promote cultural tourism in the district by developing a range of tourism-related activities and programs. The provincial government hope to raise awareness of the local community by promoting cultural tourism and generating income that can be used to support heritage conservation efforts. On May 7, 2022, the Daowai District Government of Harbin held the operation launching ceremony of the first and second phases of the renovation project of the Chinese Baroque Historic District. The third-round reconstruction project has been approved by the relevant departments for construction and is scheduled to start construction on August 5, 2022 and be complete on December 31, 2023.

4. METHOD

The study proposes to make use of social media, which has made it possible for people to access and learn about cultural heritage from a distance, in order to have access to a wider group of people. Among the various Chinese social media platforms, the study chooses to collect and analyse the information, comments and geo-location data of the users from one of the most popular platforms, Weibo. This study used a web crawler tool to obtain data, focusing on geolocated posts with the following settings.

The keyword search string consisted of the location qualifier 'Lao Daowai' or 'Chinese Baroque' plus a number of synonyms in the Chinese context, such as 'Historic Buildings' related to urban heritage. In order to better observe people's attitudes towards upcoming renovation projects, the data was collected between the end of the second phase of the Chinese Baroque Historic District renovation project (7 May 2021) and the start of the third phase (5 August 2022). The spatial domain as the sampling points, i.e., the real-time geolocation of the Weibo posts, was limited to the Harbin city area when the tweets were collected. The final available data were obtained from 130 posts after a series of data cleaning steps, such as data de-duplication, content determination and checking for missing information. The next step of data cleaning is data analysis, which mainly consists of two parts: User information (including gender, account IP, etc.) and content identification of published Weibo.

As one of the pioneering trials, this study identified the content manually rather than using Machine Learning tools. This was mainly due to the small amount of data obtained, which was just over 100 items. Subsequent research and practical applications should encourage the use of Artificial Intelligence tools, such as Natural Language Processing, for large collections of text content recognition. The content semantic analysis step determines the user's emotional disposition (i.e., positive, neutral, negative),

whether the post's content is related to home activities or travel, and extracts keywords related to heritage values and attributes, such as architecture, street, humanities, history. These keywords were further divided into attribute and value categories in accordance with the HUL recommendation: heritage attributes refer to the actual conservation of intangible and tangible heritage, while values refer to the motivation for conservation (van der Hoeven, 2019).

The final step is to visualize the processed data through ArcGIS to explore the spatial pattern of user responses to the Chinese Baroque cultural heritage renovation project. The geographic information data of Harbin City for this study was obtained from the revised draft of Harbin City Master Plan (2011- 2020). The visual representation of the spatial pattern was made by setting the user's positive and negative attitudes and heritage values and attributes as two groups of distal representation colors, respectively.

5. RESULT AND FINDINGS

5.1 User information statistics

After collating the 130 user portraits obtained, this study classified users into three categories: gender, account IP address, and geolocation (see Table 1). Table 1 shows that the number of male users was approximately equal to the number of female users, with no significant bias. Identifying IP addresses allowed us to determine that the proportion of locals was approximately 43% of the total, showing that both locals and tourists have a strong willingness to express themselves. In this step, missing information due to users not wanting to share address information and making their own privacy settings, etc. is displayed in N/A. Due to legal restrictions on the protection of personal data privacy, this paper only examines and analyses user information that is publicly available.

Category	Details	Amount	Rate
Gender	Male	64	49.2%
	Female	66	50.8%
Local IP	Yes	56	43.1%
	No	53	40.8%
	N/A	21	16.2%
Geo-location	Daowai District	58	44.6%
	Other Places	72	25.4%

Table 1. User Information Statistics after Purification Process.

Interestingly, the real-time location of almost half of the users at the time of posting was the historic Chinese Baroque area in the Daowai district of Harbin, while the other half of the participants were not in their current heritage area. It is clear that social media has a very clear advantage in connecting different stakeholders and minority groups across distances. Social media provides a platform for these people with a common interest in the preservation of Harbin's urban heritage to exchange ideas, making it easier for users to present themselves online and engage in heritage value sharing, collaborative planning and bottom-up communication.

Of the 130 tweets received, the vast majority had less than 100 retweets, comments and likes. In particular, a Weibo post published by a user with an IP address in Shanghai on 10 January 2022 at 12:51:58 received a lot of attention. It was retweeted 1,067 times, commented 526 times and liked 2,720 times. It reads: "Harbin's Lao Daowai is the largest Chinese Baroque district in China. So, what is Chinese Baroque? Tell you in a

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minute!" The second most popular was a post from the local government promoting the heritage value of Harbin's historic district, which received over a hundred likes and retweets. This shows that urban heritage conservation is a relatively hot topic among Chinese social media users, generating widespread interest.

It is important to stress that, the analysed data lacked information on the demographic attributes of social media users, such as age, education level, and occupational status. As such, future studies should focus on enhancing methodological comparisons and devising innovative approaches that incorporate the demographic features of social media users. In particular, such investigations should aim to establish connections between the study data and the characteristics of the underlying population to underscore any potential population bias and ensure greater representativeness of the sample (Ginzarly et al., 2019).

5.2 Content semantic identification of obtained Weibo posts

The results of the manual content analysis and label recognition are shown in Table 2. The statistics show that more than half of the people are neutral towards the preservation of Chinese baroque urban heritage. In addition, the number of users who have a clear preference with a positive sentiment is about four times higher than the number of users who have a negative sentiment. Overall, there are far more users who are optimistic about the Harbin China Baroque regeneration project than those who are not. The spatial pattern of citizens' responses is visualised and analysed in section 5.3 in conjunction with geographic information data on Harbin City.

Category	Indicator	Amount	Rate
Attitude	Positive	45	34.6%
	Neutral	74	56.9%
	Negative	11	8.5%
Travel Activity	Yes	61	46.9%
	No	69	53.1%
Keywords for Heritage Attributes and Values	Architecture	46	35.4%
	Collective Memory	40	30.8%
	History	15	11.5%
	Street	14	10.8%
	Food	11	8.5%
	landscape	5	3.8%
	Transportation	3	2.3%
	Policy	1	0.8%
	N/A	32	24.6%

Table 2. Result Obtained from Manual Content Semantic Analysis and Label detection.

Forty-five users unabashedly expressed their affection for the area, such as "The buildings in China Baroque are all kind of restored as old, I found the feeling of old Harbin here (posted on 2022-07-04 12:29:22)". Meanwhile, the eleven negative comments mainly complained about the desolation of the urban landscape and the poor state of preservation of the buildings in the China Baroque Historic District. For example, one Harbin resident wrote: "Harbin Old Daowai, which has the largest Chinese Baroque complex in China, but most of it is unprotected (Released on 2022-03-24 20:47:28)".

Perhaps influenced by the epidemic quarantine policy, slightly fewer users posted textual content related to tourism activities than those who stayed at home. Posts containing words such as "check in" or "travelogue" were classified as travel-related, while other tweets with no obvious characteristics were classified as stay-at-home. By tagging each text message with multiple keywords, we can see that users' focus on the target heritage sites is more on aspects of architecture and collective memory. It is worth noting that due to the diversity of textual information, each tweet was given between zero and four tags based on its content. The data shown as N/A in Table 2 are tweets that contain only the place names of Chinese baroque or similar.

It is imperative to acknowledge that our semantic analysis is confined solely to the textual content of the descriptions. Nevertheless, Weibo furnishes supplementary information, including tags and topics, that can potentially unveil additional insights into users' comments regarding the images they upload and the heritage values that underpin different situations. Moreover, it is worth emphasizing that social media data analysis outcomes do not necessarily align with the broader perceptions of the public sphere. This is because Weibo or any social media user cannot be considered as an accurate representation of civil society at large.

5.3 Spatial distribution of user sentiment towards Chinese Baroque urban heritage conservation projects

The study conducted a sentiment analysis of Weibo content by evaluating and assessing its semantics on a per-article basis, after which a corresponding label (positive, neutral, negative) was assigned to each post. The resulting label assignment dataset, along with latitude and longitude information, was then imported into ArcGIS software and combined with the geographic information of Harbin city for further computing processing. The resultant output is shown in Figure 3, with the red areas indicating significant positive emotions and the blue representing the significant negative emotions.

Figure 3 illustrates that the users expressing positive emotions are concentrated in three specific areas: the historical district of Daowai (Chinese Baroque), the Heilongjiang Provincial Museum (the default positioning in Harbin), and the historical landscape of Central Street (a famous tourist attraction). The Chinese Baroque area exhibits the highest concentration of positive sentiment, with approximately 60 items of data, followed by the Heilongjiang Provincial Museum with around 40 items, Central Street with only a dozen items. In the interim, a significant proportion of users provided unequivocally positive feedback regarding the three aforementioned areas. However, unfavorable comments predominated in the remaining peripheral areas. Users from outside Harbin's central historic district and even from suburban counties seem to have a rather critical attitude towards urban heritage conservation (see Figure 4).

Figure 3. Spatial Distribution of Users' Positive Sentiment towards Chinese Baroque Urban Heritage Conservation Projects.
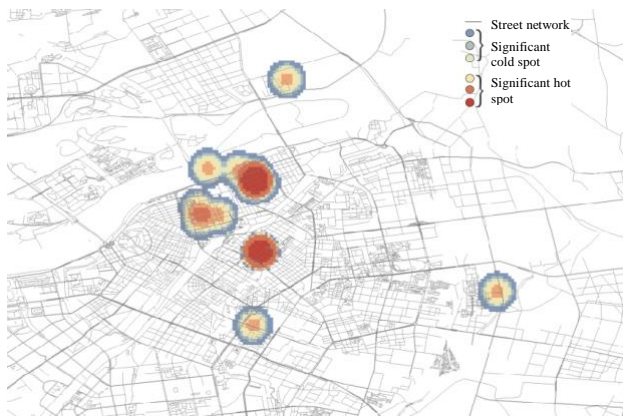
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Figure 4. Spatial Distribution of Users' Negative Sentiment towards Chinese Baroque Urban Heritage Conservation Projects.

5.4 Spatial patterns of user preference for heritage attributes and values

The present study employs an analysis of data categorization of heritage attributes and values, building upon the findings of the keyword statistics discussed in section 5.2 and the theoretical framework of the HUL recommendation. Specifically, the keywords "architecture," "street," and "landscape" were grouped under the category of architectural attributes, while "history," "collective memory," and "policy" were grouped under the category of heritage values. The remaining keywords were identified as falling somewhere in between these two categories. Overall, a total of 71 data items were found to pertain to heritage attributes, while 56 were identified as relating to heritage values.

Figure 5 and Figure 6 depict the spatial distribution of users' preferences for heritage following the application of geographic information visualization and analysis. The results of the study revealed a correlation between cultural and natural attributes within the city, as well as tangible and intangible attributes. Users located in the central historic district demonstrated a pronounced interest in the complex social values attached to heritage (see Figure 5), while those focused on the tangible heritage aspect tended to come from the urban periphery (see Figure 6). The findings further suggest that static spaces and dynamic cultural and spiritual needs, as well as urban ecology, remain relatively disparate. This may be attributed to the fact that urban heritage regeneration policies, such as the Chinese Baroque regeneration project and related regulations, are often treated in isolation from other aspects of the city and do not account for the urban environment. The complex relationship between semantics, space and the urban environment needs to be explored comprehensively in subsequent studies.

Figure 5. Spatial Patterns of User Preference for Heritage Values.

Figure 6. Spatial Patterns of User Preference for Heritage Attributes.

6. DISCUSSION

Involving local communities in China's urban heritage conservation projects is seen as a critical component of successful conservation efforts, and is essential for ensuring that cultural heritage is preserved and protected for future generations. The data procured from social media platforms furnishes insights from numerous participants residing in the city and enables access to a wider community that transcends spatial boundaries. Nevertheless, it is crucial to supplement the insights gleaned from social media with other conventional survey methods, such as questionnaires, interviews, and workshops, to yield more comprehensive findings. The outcomes generated by disparate survey methods may either correspond or diverge, but a synthesized appraisal can offer a more nuanced understanding of the relationship between multiple stakeholders and urban heritage assets. However, the extent to which the written texts are genuine personal beliefs, rather than a collection of biased ideas published for the purpose of self-promotion, is still under debate.

6.1 Social Media for inclusive decision-making in heritage conservation process

Social media presents an opportunity to promote more inclusive decision-making in the heritage conservation process. By enabling heritage stakeholders and the broader public to provide feedback, share information, and express their opinions, social media can ensure that a diverse range of perspectives is considered when making decisions about heritage conservation.

The primary advantage of utilizing social media for inclusive decision-making is its capacity to involve a wider range of

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stakeholders. This includes individuals who may be unable to attend physical meetings or events and those who may have previously felt excluded from traditional decision-making processes. By providing an accessible and inclusive platform for engagement, social media can ensure that all stakeholders' perspectives and concerns are taken into account.

Real-time feedback is another advantage of social media, which can facilitate a more dynamic and responsive decision-making process. This can enhance trust and encourage greater collaboration among stakeholders as their views and opinions are effectively incorporated into the decision-making process. To promote transparency and build community support, organisations should involve communities in the decision-making process, while also being transparent about their conservation goals and methods.

Inclusive decision-making processes related to heritage management should be established to ensure the participation of hard-to-reach residents. This may involve establishing formal or informal committees or working groups or including community representatives in existing decision-making bodies. In this way, social media can be leveraged to promote greater collaboration and engagement among diverse stakeholders, leading to more effective and inclusive heritage conservation decision-making.

6.2 Social media for empowering local communities by raising awareness and education

The use of social media is a promising approach to empowering local communities in heritage conservation by raising awareness and providing education. The dissemination of information and knowledge through social media can effectively engage and empower local communities to play an active role in preserving and promoting their cultural heritage.

The potential to reach a wide and diverse audience is a key advantage of using social media to empower local communities. The provision of accessible and engaging content on social media can facilitate a better understanding of heritage conservation issues, generate support for heritage conservation initiatives, and inspire local communities to take an active role in the process.

Moreover, social media can be used to promote education and capacity building initiatives that are relevant to heritage conservation. This includes online resources, workshops, and training programs to equip local communities with the necessary knowledge and skills to effectively participate in heritage conservation efforts. Through this, local communities can develop a sense of ownership and responsibility for heritage and make informed and meaningful contributions to the decision-making process.

In addition, social media can facilitate communication and collaboration between local communities and heritage organisations. The use of social media as a forum for sharing information, ideas, and concerns can foster trust and effective partnerships between stakeholders. This can result in greater cooperation and coordination in heritage conservation efforts and ensure that local communities are actively involved in the decision-making process.

7. CONCLUSION

Combining social sciences, urban planning, and heritage conservation knowledge with digital platforms for collecting data on the multiple values held by the public for the architectural heritage site in Harbin is the essential innovative part of this research. Engage individuals and communities with their cultural heritage through implementing and evaluating the big-data approaches created through the project. It is one of the first trials to test the use of social media to collect information on participants' perceptions and relationships with heritage conservation in China.

The article provides evidence and supports replication and up-scaling activities of the implemented community-led regeneration strategies and plans. It explores the potential for social media data to contribute to heritage conservation by better understanding the people's preferences, heritage values, and how to collect the stories from hidden members of communities. It also establishes an open-data-based assessment framework for preference analysis and determine the parameters for evaluating the heritage value of Chinese Baroque district. The study quantifies stakeholders' attitudes in Chinese-Baroque district, Harbin, China over a sixteen-month timeline to fully capture the temporal and spatial dynamics of urban heritage conservation events and changes. Suggestions will also be made for a more inclusive future in the planning and management of both this area of Chinese Baroque and other similar areas of historical interest.

As an echo of UNESCO's Recommendation on the historic urban landscape (https://whc.unesco.org/en/hul), the study contributes an innovative way to connect various stakeholders to cultural heritage at the regional level through the social media platform. The research outputs can help support decision-making by offering several essential indicators from online platforms, such as stakeholders' preferences, to experts and policymakers. Further, this research could be used by authorities and managers to popularize the bottom-up collaborative way in historic city areas across China and to enhance community engagement in the everyday heritage conservation process. The strategic significance of this project is to arouse and appeal to global attention to the inclusiveness and sustainability of heritage conservation, chasing for a balance among various and sometimes conflict needs in economically less developed regions.

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