

Study on the Spatial Geographic Distribution and Development Status of Nonheritage Exhibition Halls in Henan Province Based on GIS

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Abstract:

Along with the development of China's intangible cultural heritage protection, the community is very concerned about the cognition, development and construction of non-heritage demonstration halls. Based on GIS spatial technology, this paper carries out an in-depth study on the spatial geographic distribution and development status of the demonstration exhibition halls of intangible cultural heritage in Henan Province. By statistically analyzing the geographic coordinates and distribution of provincial and municipal non-heritage demonstration halls in Henan Province, the study reveals the imbalance of non-heritage demonstration halls in the whole basin. The study found that the current NRL exhibition halls in Henan Province are deficient in living presentation, creative distinctiveness and digital integration. This study provides a reference basis for rationally planning the resource allocation of non-heritage exhibition halls and strengthening the protection and support of weak regions, with a view to promoting the high-quality development of non-heritage demonstration halls in Henan Province and realizing the creative transformation and innovative development of cultural heritage.

Keywords:

Non-heritage Demonstration Pavilions, Geographic Distribution, Development Status Quo

1. Introduction

Intangible cultural heritage (ICH for short), as a core component of the national cultural heritage system, embodies the traditional cultural expressions and the cultural space carried by each ethnic group that have been inherited from generation to generation and closely embedded in the daily lives of the people in the long course of history, and its preservation and inheritance is conducive to the enhancement of national identity and the promotion of cultural self-consciousness and self-confidence. Intangible Cultural Heritage Compared with the characteristics of cultural heritage

such as physical objects and specific places, “intangible cultural heritage” is its core characteristic and distinctive feature. At the same time, as a public cultural venues, to fulfill the mission of protecting and passing on intangible cultural heritage, to play the functions of display, collection, education, research, etc., the development of intangible cultural heritage museums is constantly expanding and helping the development of China’s museum cause of high quality [1]. The “14th Five-Year Plan” for the protection of intangible cultural heritage “to promote the construction of national cultural and ecological reserves inheritance experience facilities system, support the construction of a comprehensive intangible cultural heritage museum, according to the actual construction of local intangible cultural heritage thematic museums, according to the need to set up all levels of intangible cultural heritage representative project inheritance Institute (point). ” Therefore, based on the spatial analysis function of ArcMap, it is of great significance to count the spatial distribution profile of non-legacy demonstration pavilions in Henan Province and analyze their development status for the level of non-legacy display and dissemination. Through scientific analysis, it is possible to rationally plan the allocation of resources, strengthen the protection and support of weak areas, and ensure the continuity and balanced development of non-heritage inheritance. At the same time, it can clarify the spatial relationship between demonstration centers, promote cross-regional cooperation and exchange, clarify the current status quo problems, enrich the contents and forms of ICH dissemination, and then enhance the public’s cognition and recognition of ICH, and promote the inheritance and development of Chinese excellent traditional culture.

2. Data Source and Research Method

2.1. Data Sources

Taking the list of the second batch of provincial-level ICH demonstration halls published by the Department of Culture and Tourism of Henan Province and the list of municipal-level ICH demonstration halls issued by the people’s governments of various cities as the basic data source, a total of 49 provincial-level ICH demonstration halls and 87 municipal-level ICH demonstration halls in Henan Province have been compiled as of 2024. With the help of Google Earth software to accurately locate the non-heritage demonstration and exhibition halls in Henan Province, and use the geographic coordinate system GCS WGS 1984 to import and convert in GIS.

In this paper, the 1:3.5 million ethnic distribution map of the province in the base map database published by Henan Provincial Department of Land and Resources is used to construct the county base map in ArcMap, and the most representative township-level administrative unit of the NRL project within the county is taken as the research unit, and the spatial analysis function of ArcMap is used to carry out the buffer analysis based on the points and lines, and the resource analysis of different types of “ NRL demonstration space”. non-heritage exhibition space” resource statistics analysis. [2]

2.2. Research Methods

After data processing and organization, the categories and level structure of intangible cultural heritage display spaces in Henan Province are analyzed through statistical analysis. Using Excel to sort out the geographic coordinates of the

demonstration exhibition halls of intangible cultural heritage at the provincial and municipal levels in Henan Province, and on the basis of converting latitude and longitude into decimal system, the data of the exhibition halls of intangible cultural heritage are organized and coded. Then the kernel density estimation method in ArcGIS 10.8.1 software was utilized to draw the kernel density map of the overall and each type of non-heritage demonstration halls in Henan Province, and to explore the main distribution areas of the non-heritage demonstration halls.

3. Overview of the Spatial Distribution of Non-heritage Exhibition Halls in the Whole Basin

Various forms of non-heritage exhibition space, part of which is based on the existing museums, cultural centers, art galleries and other non-heritage exhibition halls; the other part of which is specially constructed venues named with non-heritage, such as non-heritage museums and exhibition centers, non-heritage practice halls (institutes) and so on, which are the objects of study in this paper. In Henan Province, some of the non-legacy exhibition halls first originated from the private sector, started from individuals, and belonged to the private non-legacy exhibition and training space, and then gradually transformed into the public non-legacy exhibition space. [3] There are also some attached to the non-heritage research institutions, with non-heritage research as the main, non-heritage product display as a supplement. This kind of display space is mostly found in the non-heritage exhibition halls of non-heritage protection centers around the world, and the construction situation is mostly affected by policy support, economic factors, and the number of non-heritage endowments.

The distribution of non-heritage demonstration and exhibition halls in each city in the whole basin presents unevenness, according to Figure 1 and Figure 2, we know that the first echelon of Xuchang City and Puyang City have the most number of non-heritage demonstration and exhibition halls, and we know that Xinyang City has a unique geographic environment, and most of the counties and districts of Xinyang City are in the hinterland of the Dabie Mountains, which is rich in landscape resources, and with the passage of time, many non-heritage projects are bred on this land. Humanities scenic spots, natural scenic spots and traditional settlements are the main spatial carriers of the development of non-heritage resources, on the basis of this rich material resources, the government gives special funds to support, after a number of evaluation and review of the introduction of a part of the provincial and municipal non-heritage demonstration and exhibition halls. Puyang City Government for the protection and development of intangible heritage of the same importance to the cause of 2021, Puyang City, Culture, Radio, Television and Tourism Bureau in accordance with the declaration of the counties and districts, by the organization of expert evaluation, collective research and other procedures, to determine the "Liu's straw paintings showroom" and other 13 showroom for the intangible cultural heritage of the demonstration of the demonstration of the showroom in Puyang City. The number is located in the second echelon of the prefecture-level city of Zhengzhou City, Xuchang City, Zhumadian City, Sanmenxia City, the third echelon of the interval in the 5-10 prefecture-level city of five are Nanyang City, Pingdingshan City, Jiaozuo City, Xinxiang City, Hebi City. The fourth echelon of 1-5 prefecture-level cities are Luoyang City, Kaifeng City, Shangqiu City, of which Luoyang City and Kaifeng City are rich in non-heritage items, the number of non-heritage in the forefront of Henan Province, but the number of non-heritage demonstration halls publicized by the government is very small, mainly in the provincial people's government announced

the provincial level of non-heritage demonstration halls are mainly, the two governments of municipal non-heritage demonstration halls have not yet started to assess the work.

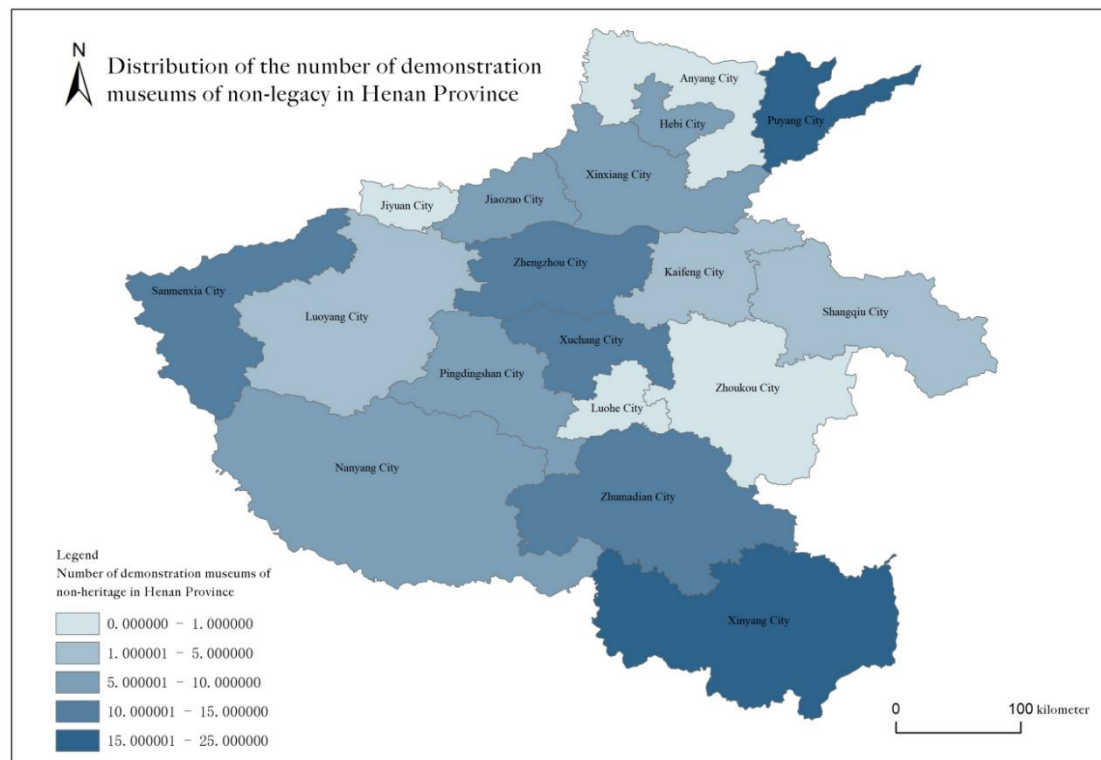


Figure 1. Distribution of the Number of Nonlegacy Demonstration Halls in Henan Province.

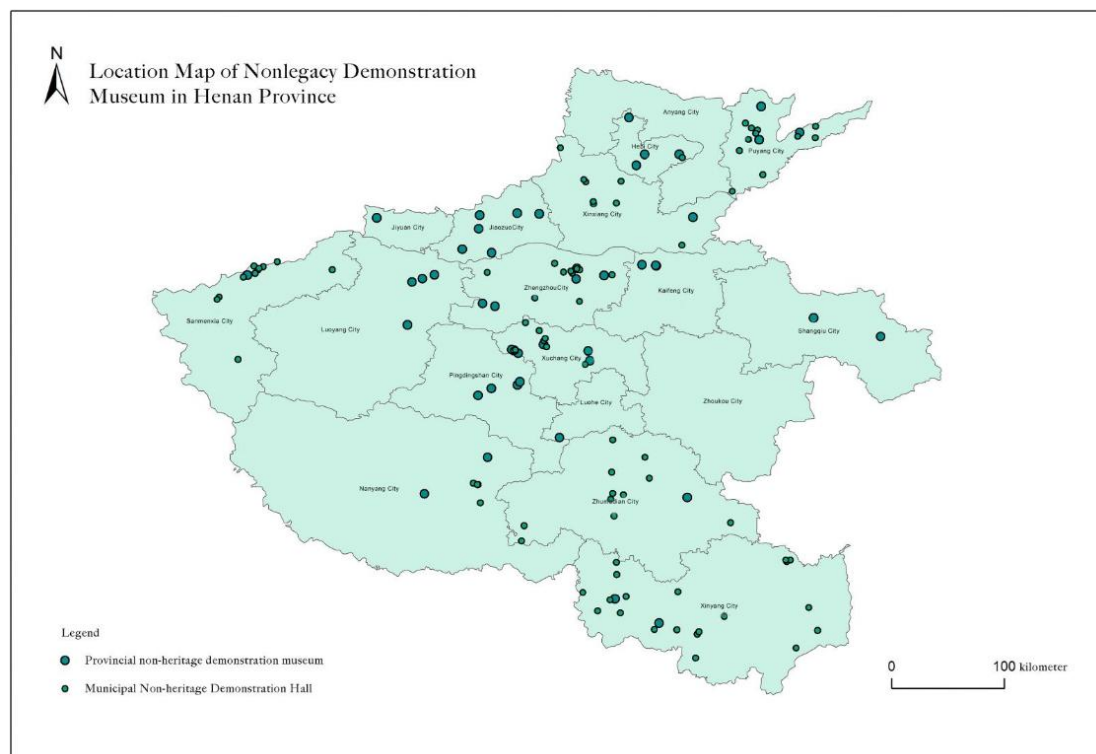


Figure 2. Distribution of the Location of Nonlegacy Demonstration Halls in Henan Province.

In the fifth echelon, Zhoukou City and Anyang City have not been selected as provincial-level non-heritage demonstration halls, and similarly, the evaluation of municipal-level non-heritage demonstration halls has not been opened, while Jiyuan City and Luohe City have one provincial-level non-heritage demonstration hall each due to their limited area resources and correspondingly small number of non-heritage items. At present, the evaluation of the demonstration and exhibition center of nonheritage in Henan Province is still in progress, so the research data will be further deepened and improved.

Open ArcToolbox in ArcGIS 10.8.1, find the Spatial Analyst tool in the toolbox, and then click on the Kernel Density Analysis tool in the Density Analysis toolset to estimate the kernel density of the spatial distribution of the NRM demonstration pavilions in the whole river basin of Henan Province, so as to generate a kernel density map of the NRM demonstration pavilions in Henan Province as a whole (see Figure 3). The data is distributed in a cluster shape with a main core area, a sub-core area, two tertiary core areas and two tertiary core areas, of which the main core area is mainly concentrated in the central part of the country, at the intersection of Zhengzhou City, Xuchang City and Pingdingshan City, and radiates to Kaifeng City, Xinxiang City, Jiaozuo City and Pingdingshan City. The secondary core area is mainly concentrated in Puyang City, the radiation area including Anyang City, Hebi City part of the region. The two tertiary core areas one is centered in Xinyang city, the other is spreading to the surrounding areas with the northern part of Sanmenxia city, and the other is the western part of Xinyang city as the main concentration point. The fourth-level core area has a small KD value and does not cover a large area, with Nanyang City and Zhumadian City as the main areas. The rest of the regions with the lowest KD values are concentrated in the southwestern and eastern parts of Henan Province.

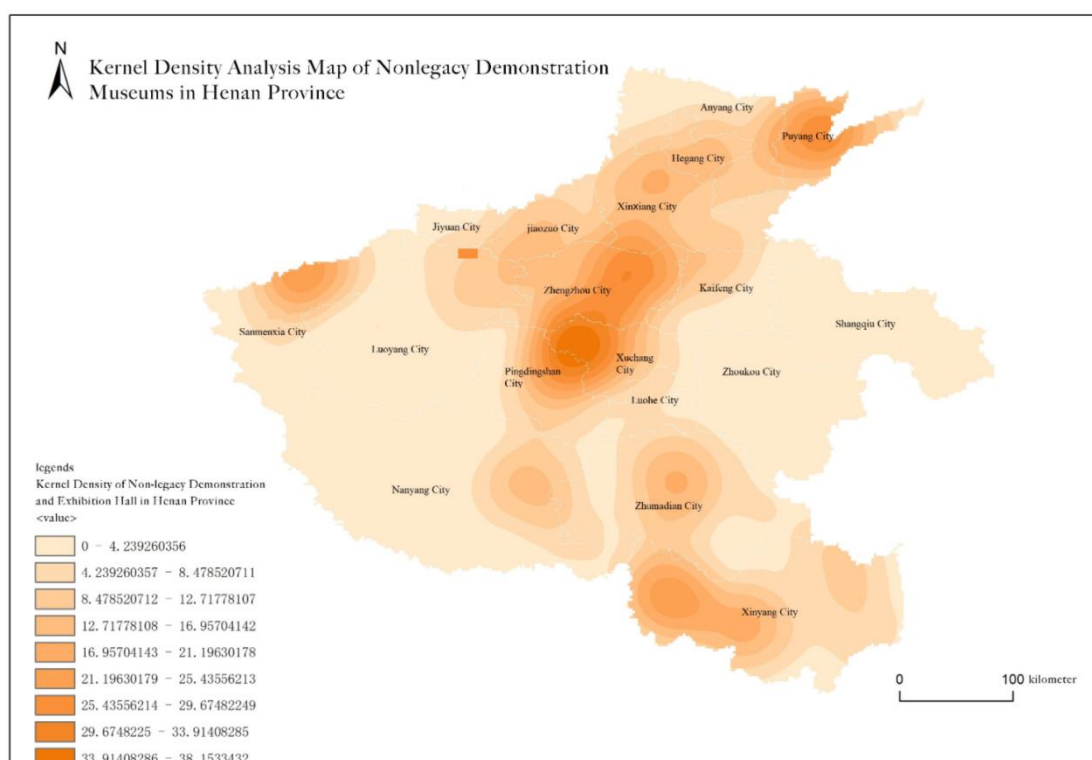


Figure 3. Kernel Density Analysis of Nonlegacy Demonstration Museums in Henan Province.

4. Analysis of the Current Situation of the Development of Non-Legacy Exhibition Halls in Henan Province

4.1. *Weak presentation of living nature*

The importance of vivacity as a core feature of the survival of intangible cultural heritage is widely recognized in the academic world. Liu Kaili pointed out that, in the historical evolution of non-heritage, if it can flexibly adapt to the needs of social change, it can maintain its vitality in the continuous change, and this process is the vivid embodiment of the living nature, especially in its inheritance mechanism. [4]

The living nature of NRL can be analyzed from two dimensions: firstly, the individual dimension, focusing on the individual bearers of skills and knowledge, who, as the direct carriers of cultural genes, demonstrate the high degree of individuality and uniqueness of NRL; secondly, the social dimension, emphasizing that NRL, as a shared resource, is deeply influenced by the social environment, the community's needs and the public's perception of its survival and development. [5] When exploring the core of the living presentation of NHs, the human factor is crucial, which not only includes the individual as the core bearer, but also covers the wider social public - i.e., the common culture holders. Therefore, the living presentation of NRLs is essentially a process of deep human participation, which requires that the inheritance of NRLs must be closely adapted to the way of life of the modern society and realize the modernization and transformation of the inheritance method.

However, as a practical product of museumization of non-heritage, the non-heritage exhibition hall faces challenges in presenting the living nature of non-heritage. The traditional museum-style collection display concept often focuses on presenting NRL through text and static exhibits, which ignores the dynamic and vivid essential features of NRL, resulting in the lack of its true state. In addition, when planning exhibitions, some of the non-heritage exhibition spaces excessively favor one-way information transmission methods, such as exhibitions and performances, and neglect the interactive experience with the audience, especially the lack of direct participation of non-hereditary inheritors, which makes it difficult for the audience to obtain a profound cultural experience, and thus weakens the ability of the non-hereditary exhibition halls to present non-hereditary living nature.

Kaifeng, as a famous historical and cultural city, has rich non-heritage resources, and the construction of its non-heritage exhibition hall is also quite large. Provincial demonstration halls such as the Bianbian Embroidery Exhibition Hall and the Zhuxian Town Woodblock Printing Exhibition Hall, as well as a number of museums and cultural centers in the city, together constitute a network of NRM exhibition. However, most of these exhibition halls follow the traditional museum model of collectivization, focusing on the presentation of text and static exhibits, ignoring the dynamic nature of NRM and the central role of the inheritors. In addition, although some of the museums have attempted to increase interactivity through exhibitions and performances, overall the depth and breadth of the audience's experience still needs to be improved. Luoyang City has also invested heavily in the display of non-heritage, with the provincial demonstration pavilion and the soon-to-be-completed Yellow River Basin Intangible Cultural Heritage Protection Exhibition Center both reflecting the importance attached to the protection of non-heritage. However, similar to Zhengzhou and Kaifeng, Luoyang's NRM exhibition halls also face the problem of insufficient living presentation. Xuchang City, Puyang City, and the rest of Xinyang

Cities have also established a number of NRH exhibition centers, but they also suffer from the problem of weak living presentation. These showrooms are richer in display content, but the display form is single, lack of innovation and interactivity. Especially in some county-level cultural centers and museums, the display of non-legacy often exists only as an accessory content, and it is difficult to attract enough attention and interest from the audience. At the same time, due to the lack of professional teams and financial support, the maintenance and management of these exhibition halls also face many difficulties.

In short, when promoting the living presentation of NRLs, NRL exhibition halls need to adopt more diversified, interactive and experience-oriented display strategies, strengthen the core role of NRL bearers, and promote the active participation of the public to ensure that the NRLs can maintain their vitality and vigor in the context of modernization.

4.2. Insufficient Creative Distinctiveness

Under the background of rapid regional economic development, the living display practice of intangible cultural heritage museum presents significant regional differences and academic exploration value. By virtue of their resource advantages, the ICH display spaces in economically developed regions extensively use advanced display technologies such as dynamic simulation, scene simulation, and immersive interactive experience, which not only enriches the means of display, but also achieves a breakthrough in creative expression, providing strong support for the revitalization and inheritance of ICH. [6] In contrast, the construction of NRL exhibition halls in resource-poor areas faces many challenges, including institutional barriers, lack of funds, insufficient professional talents and lagging technology, etc., which together constrain the innovation and deepening of the exhibition mode. This kind of non-heritage exhibition space often adopts the traditional graphic display boards and static physical display, which is not only difficult to show the dynamic characteristics and deep cultural connotation of non-heritage, but also easy to lead to the display of the content of the homogenization and modeling, which affects the public's knowledge of and interest in non-heritage.

From the academic point of view, in view of the diversity of non-legacy types in China, differentiated display strategies should be adopted to realize the precise presentation of different types of non-legacy. Specifically, for oral tradition and performing arts NHs, a multi-dimensional performing arts space display system should be constructed to comprehensively reproduce the performing arts process and cultural atmosphere through live performance, video playback, and virtual reality (VR) and other technological means; and for traditional skills NHs, micro-photography, three-dimensional scanning, and dynamic demonstration and other technologies are required to refine and visualize the process of their skills. For traditional arts and crafts NHs, micro-photography, three-dimensional scanning, and dynamic demonstration technologies should be used to refine and visualize the process of their techniques, so as to show their exquisite skills and unique charm. However, some of the current NRH museums have the problem of insufficient creativity in display practice, failing to effectively combine the characteristics of their respective resources to carry out differentiated displays, resulting in the common phenomenon of “a thousand museums in a row”. In addition, some of the non-heritage demonstration pavilions have deviated from the cultural core in the positioning of the pavilions, overly pursuing the visual impact of modernized spatial design, but neglecting the

excavation and presentation of the deep cultural connotations of non-heritage, which affects its function as a platform for cultural inheritance and innovation.

In the supply of services and cultural and creative product development, the non-heritage museum also faces the dilemma of lack of creativity. The lack of continuity and thematic planning of service supply makes it difficult to meet the diversified cultural needs of the public; cultural and creative products mostly stay on the surface of decorative design, and the lack of high-value-added, high-technology and branded high-quality products makes it difficult to stimulate the public's enthusiasm for consumption and sense of identity. [7] Therefore, the future construction and development of non-heritage museums need to further strengthen academic research and theoretical guidance, in-depth excavation of non-heritage resource characteristics and cultural connotations, innovative means of display and service modes, and enhance the creativity and market competitiveness of cultural and creative products, in order to promote non-heritage in the modern society of the living heritage and sustainable development. At the same time, interdisciplinary cooperation and exchanges will be strengthened, and research results in cultural anthropology, sociology, communication and other related fields will be introduced, so as to provide a broader academic vision and theoretical support for the construction and development of the non-heritage museum.

4.3. Lagging digital integration

The Opinions on Promoting the Implementation of the National Cultural Digitization Strategy clearly states that it is necessary to “develop new scenes of digital cultural consumption, and vigorously develop new digital cultural experiences integrating online and offline, and combining online and presence”. This strategic direction emphasizes the far-reaching significance of digital integration in the cultural field, which not only plays a key role in promoting the sharing of cultural resources and scene innovation, but also opens up a more diversified and efficient path for the display and dissemination of intangible cultural heritage. [8] However, examining the current status of digital display in the Intangible Cultural Heritage Museum of Henan Province, it is not difficult to find that it is still in the initial exploration stage, facing multiple challenges. The first problem is that the wide application of digital technology has not yet fully penetrated into the field of non-heritage museums. Although some of the province's non-heritage museums have tried to use digital means of display, but overall, the digital infrastructure is still inadequate. For example, although the Hi-tech Zone Intangible Cultural Heritage Exhibition Hall in Zhengzhou City and the Intangible Cultural Heritage Exhibition Hall in Gongyi City have been built and opened to the public, they have not yet formed a unified and systematic platform for digital display. Most of the exhibition halls still rely on the traditional physical display and dynamic performance, and lack the integration of high-definition video, virtual reality (VR), augmented reality (AR) and other modern technological means, resulting in a single experience for the audience, and it is difficult to understand the cultural connotation of the intangible cultural heritage and the essence of the skills.

In addition, as an emerging cultural institution, the NRH museum also shows a certain lag in digital communication. Specifically, the lagging platform effect is one of the significant problems. Currently, the construction of non-heritage museums focuses on the physical operation of offline venues, while the content release and publicity strategy of online social media platforms is relatively weak. Most of the

current non-heritage museums in Henan Province have the same problem in digital content creation and updating. On the one hand, due to the lack of professional digital creation team and technical support, it is difficult for the exhibition halls to reach the professional level in the production of digital content; on the other hand, due to the wide variety of non-heritage items and complex techniques, the collection, arrangement and editing of digital content require a lot of time and resources, which leads to slow updating of the content, and fails to satisfy the audience's increasing demand for information.

5. Conclusions

Through GIS spatial analysis technology, this study systematically reveals the spatial geographic distribution characteristics of the demonstration pavilions of non-heritage in Henan Province and their development status, providing a scientific basis for the protection and inheritance of non-heritage. The study found that the non-legacy demonstration halls in Henan Province show an uneven situation in geographical distribution, with the central part and some economically and culturally developed cities having more concentrated demonstration halls, while some marginal areas are relatively weak. This uneven distribution reflects the important role of policy orientation, economic investment and cultural consciousness in the protection of NRLs. In the analysis of the current situation, the exhibition halls of NRLs are deficient in the presentation of living nature, creative distinctiveness and digital integration. Weak presentation of living nature, failing to fully demonstrate the dynamic characteristics of non-heritage and the core role of the inheritors; creative distinctiveness is insufficient, the display content is seriously homogenized, the lack of differentiated display strategy; digital integration lags behind, the application of digital technology is limited, and the effect of the online dissemination platform has not been brought into full play. These problems jointly constrain the effectiveness of the non-heritage exhibition halls in terms of inheritance and dissemination.

Based on this, this study suggests further optimizing the resource allocation of non-heritage exhibition halls, strengthening cross-regional cooperation, especially increasing support in non-heritage resource-rich areas, and promoting balanced layout and high-quality development. At the same time, it should deepen the research and dissemination of non-heritage, strengthen the living display, innovate the display means and service mode, and enhance the public's cognition and recognition of non-heritage culture. In addition, it should accelerate the digitization process of non-heritage exhibition halls, build an integrated online and offline display and dissemination system, broaden the non-heritage dissemination channels, enhance the dissemination effect, and jointly promote the inheritance and innovative development of Chinese outstanding traditional culture.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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References

- [1] Guo, Y. Intangible Cultural Heritage Pavilion Interpretation and Its Display System--Cognition and Practice of Zhejiang Intangible Cultural Heritage Pavilion. *Chinese Museum*, 2024, 03, 28-38+135.
- [2] Liang, J.; Wang, H.M. Spatial Distribution Characteristics and Influencing Factors of Intangible Cultural Heritage in the Pearl River-West River Economic Zone. *Social Science*, 2018, 12, 39-49.
- [3] Liang, L.W. From Display to Connection: the Extension of Social Functions of Nonheritage Museums--Taking the Weinan City Nonheritage Display and Transmission Museum as an Example. *Journal of Weinan Normal College*, 2023, 38(12), 81-87.
- [4] Li, J. The “non-material” cannot be treated too “material”. China Culture News, 2010-10-21(008).
- [5] Ma, G.Q.; Zhu, W. Cultural Anthropology and Intangible Cultural Heritage. Beijing: Sanlian Bookstore, 2018.
- [6] Du, Y.H. From Context to Habitat: Exploring the Protection Practice of “Intangible Heritage” in Museums. *Journal of Literature and Museums*, 2020, 01, 107-113.
- [7] Guo, W.H.; Zhang, X.N.; Ma, Y. Research on the status quo of domestic intangible cultural heritage museums. *Heritage and Conservation Research*, 2018, 3(10), 94-97.
- [8] Xu, J.L.; Wang, T.T. Research on the construction of non-heritage museums under the perspective of scene theory. *Journal of Changjiang University(Social Science Edition)*, 2023, 46(06), 33-39.



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