

Pilot Study on Integrating YanZhao Cultural Elements into Wayfinding Signage at Hebei Garden Expo Park

Fan Zhuxiao¹, *Nur Hisham Ibrahim², Shahrnizam Sulaiman³

^{1,2,3}College of Creative Arts, Universiti Teknologi MARA, Perak Branch, Seri Iskandar Campus, Malaysia

1246715897@qq.com¹, nurhi540@uitm.edu.my², shahrnizam@uitm.edu.my³

*Corresponding author

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ABSTRACT

This study evaluates the feasibility of integrating YanZhao cultural elements into Wayfinding signage at Hebei Garden Expo Park. Through a pilot study, initial feedback from visitors was collected to assess the effectiveness and appeal of culturally integrated signage. The findings from this pilot study were used to refine the interview questions and research methodology for the main study. This research aims to enhance visitor experience, promote regional culture, and improve navigation efficiency by incorporating YanZhao cultural elements into Wayfinding signage.

Keywords: YanZhao cultural, wayfinding signage, pilot study, Integration, Hebei Garden Expo Park



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1. INTRODUCTION

1.1 Research Background

Understanding how to navigate effectively is crucial for successful travel, especially in scenic spots (Montello & Sas, 2006). Shamsuddin et al. (2022) claimed that Wayfinding design, including environmental cues and cognitive abilities, helps users determine their destinations and routes. Ryan and Hill (2022) reported that effective wayfinding signage significantly enhances route awareness, safety, and familiarity with the area.

China's scenic Wayfinding signage design is in its infancy; many signage designs are similar, serving only the fundamental function of guidance. However, more is needed to meet the needs of long-term scenic spot development (Wang, 2021). At present, many cities in China carry out the design and promotion of unique display parks. The Provincial Party Committee and the provincial government have stressed the importance of the provincial Garden Expo Park in Hebei Province. The aim is to utilize the expo as a valuable tool to augment the amount of urban greenery and improve urban landscaping. They hope to enhance the city's image, change development concepts, and improve infrastructure through this (Li & Shi, 2020). YanZhao culture, integral to Hebei Province, is rich in historical, regional, and cultural connotations (Ma, 2013).

Effective signage is a crucial means of communication, particularly in culturally significant contexts (Ibrahim, Butler, & Kennedy, 2011). The authors emphasize the importance of designing signage systems that reflect the identity and culture of the community, which is especially relevant when considering the integration of YanZhao cultural elements in the wayfinding signage at Hebei Garden Expo Park.

Hence, integrating cultural elements into signage design can further enhance the visitor experience by promoting regional culture. This study investigates how integrating YanZhao cultural elements into wayfinding signage can enhance visitor experience and promote regional culture.

1.2 Motivation for This Work

The integration of YanZhao cultural elements into wayfinding signage at Hebei Garden Expo Park has not been systematically evaluated, creating a gap in understanding the potential impact on visitor experience and cultural appreciation. Zong (2013) claimed the garden was hastily completed under a tight schedule to meet the first Garden Expo in April 2012. The overall design of the park needs to be improved, and the design of its internal environmental facilities cannot become the representative of the garden in the Shijiazhuang area and even Hebei Province. Additionally, there is limited initial feedback from visitors regarding the effectiveness and appeal of culturally integrated wayfinding signage. There is a need to identify key design elements of YanZhao culture that can enhance visitor experience and cultural identity, and to refine the research methodology and interview questions based on initial findings from a pilot study.

1.3 Problem Statement

Integrating regional cultural symbols into the Wayfinding design practice presents many problems, such as some signage needing to attach more importance to extracting cultural symbols and ignoring easy identification (Gibson, 2009). Systematic evaluation has yet to occur regarding integrating YanZhao cultural elements into wayfinding signage at Hebei Garden Expo Park and creating a gap in understanding the potential impact on visitor experience and cultural appreciation. The existing wayfinding signage needs distinctive YanZhao cultural features, resulting in missed opportunities to enhance regional cultural identity and improve navigation efficiency. Additionally, visitors need more initial feedback regarding the effectiveness and appeal of culturally integrated wayfinding signage (Iftikhar et al., 2021). There is a need to identify key design elements of YanZhao culture that can enhance the visitor experience and cultural identity and refine the research methodology and interview questions based on initial findings from a pilot study.

1.4 Research Objective

Based on the fundamental situation analysis of the research, there is a need to:

1. To evaluate the feasibility of integrating YanZhao cultural elements into wayfinding signage at Hebei Garden Expo Park.
2. To collect initial feedback from visitors on the effectiveness and appeal of culturally integrated wayfinding signage.
3. To utilize the findings from the pilot study to optimize the design of interview questions and refine the research methodology for the main study.

Table 1 Correspondence Between Problem Statement and Research Objectives

Problem Statement (PS)	Research Objectives (RO)
The integration of YanZhao cultural elements into wayfinding signage at Hebei Garden Expo Park has not been systematically evaluated, creating a gap in understanding the potential impact on visitor experience and cultural appreciation.	To evaluate the feasibility of integrating YanZhao cultural elements into wayfinding signage at Hebei Garden Expo Park.
There is limited initial feedback from visitors regarding the effectiveness and appeal of culturally integrated wayfinding signage.	To collect initial feedback from visitors on the effectiveness and appeal of culturally integrated wayfinding signage.
There is a need to refine the research methodology and interview questions based on initial findings from a pilot study.	To utilize the findings from the pilot study to optimize the design of interview questions and refine the research methodology for the main study.

(Source: Adapted from Fan,2024)

2. LITERATURE REVIEW

The literature review explores the historical and cultural significance of YanZhao culture, theories of wayfinding signage design, and the benefits of integrating cultural elements into public spaces. It provides a theoretical foundation for understanding how YanZhao cultural elements can enhance wayfinding signage.

2.1 YanZhao Culture

Yanzhao culture fundamentally originated from the collective creation of the Yan people centered around Ji Cheng and the Zhao people centered around Handan. Ji Cheng and Handan represent the core cultural regions, with the former symbolizing the culture of northern Hebei Province and the latter representing the culture of central and southern Hebei Province. Through the cultural diffusion from these core regions, the customs, traditions, and values spread outward from these two centres, forming what is now known as "YanZhao Culture." (Liu & Bao, 2008). It encompasses various aspects such as architecture, folk art, decorative patterns, sculpture, and historical and cultural landscapes (Ma, 2013). These elements reflect the region's rich cultural heritage and provide a unique identity. Wu and Yu (2023) reported that cultural relics and historic sites are visible in the beautiful land of YanZhao, and the cultural heritage is diverse. To protect these non-renewable and irreplaceable resources of China's excellent civilization, the standing committees of the Hebei Provincial People's Congress at all levels have consistently built a legal protection network for cultural relics and heritage. Hence, YanZhao culture is deeply rooted in the history and traditions of Hebei Province.

2.2 Hebei Garden Expo Park

Hebei Garden Expo Park covers about 80 hectares, with a layout featuring a front lake and back mountain. The landscape constitutes approximately two-thirds of the park. The Yanzhao Garden, the main exhibition area located in the northern part, spans around 120,000 square meters. It showcases Hebei Province's culture and garden landscapes through 11 exhibition gardens, each representing one of the 11 prefecture-level cities in Hebei Province. These gardens, ranging from 5,500 to 12,000 square meters each, are strategically positioned along the main tour routes for visitor convenience, reflecting their geographical locations within the province (Ge, 2013). Zong (2013) claimed the garden was hastily completed under a tight schedule to meet the first Garden Expo in April 2012. The overall design of the

park needs to be improved, and the design of its internal environmental facilities cannot become the representative of the garden in the Shijiazhuang area and even Hebei Province.

2.3 Wayfinding signage Design

Arthur and Passini (1992) suggested connecting individuals, signage, and architectural structures by utilizing the "Wayfinding" technique to recognize the crucial components of wayfinding signage systems to communicate between individuals and edifices (Arthur & Passini, 1992). Wayfinding signage can be an informational medium that helps the users by comprising all other signs used in guiding or directing the users to the final destinations. According to Calorie & Vanden-Eynden (2015), Environmental Graphic Design (EGD) encompasses more than just logo design; it also involves creating a cohesive visual and information communication system for the entire environment. Signage design, graphics, and information are essential components of environmental graphic design (EGD), aiding in efficiently navigating complex spaces through well-designed elements integrated into buildings.

Sjolund et al. (2018) pointed out that environmental cues and path integration work together in the wayfinding process. Various signals may guide navigation to a previously stored destination, some originating from within the individual and others from the surrounding environment. Environmental cues such as color coding, landmarks, and signage are crucial for effective wayfinding. Accessibility in outdoor environments is considered one of the key strategies for integrating universal design (Ramli et al., 2023). Wayfinding technology should complement existing ecological information to provide a seamless user experience. Real-time location and tracking capabilities are critical for modern wayfinding applications. Symonds et al. (2017) examine the impact of sociocultural factors on wayfinding. They discuss how cultural norms, social networks, and community practices influence individuals' navigation strategies and interpretation of spatial information.

Therefore, Effective wayfinding signage design involves the use of visual cues and spatial information to guide visitors through an environment. Theories such as Environmental Graphic Design (EGD) and Kevin Lynch's urban form theory emphasize the importance of legibility, clarity, and cultural relevance in signage design (Lynch, 1984).

2.4 Conceptual Framework and Theories

The main research employs several conceptual frameworks and theories to justify the integration of YanZhao cultural elements into wayfinding signage. The primary theory underpinning this research is the Environmental Graphic Design (EGD) theory, which focuses on the visual communication in physical spaces to enhance the user experience (Calori & Vanden-Eynden, 2015). Additionally, Kevin Lynch's urban form theory provides a basis for understanding the spatial organization and legibility of urban environments.

Eco (1979) stated that understanding underlying codes can explain how elements communicate cultural significance. Eco's theory aids in analysing how specific designs encode cultural elements into semiotic systems. Ensuring that the signage not only guides but educates and enriches the cultural experience of the visitors. Semiotics also supports the integration of cultural elements, studying signs and symbols as a significant part of communication.

Figure 1 illustrates the proposed conceptual framework based on the theories and conceptual models discussed. The framework outlines the relationship between YanZhao cultural elements and wayfinding signage and their impact on visitor experience and cultural identity.

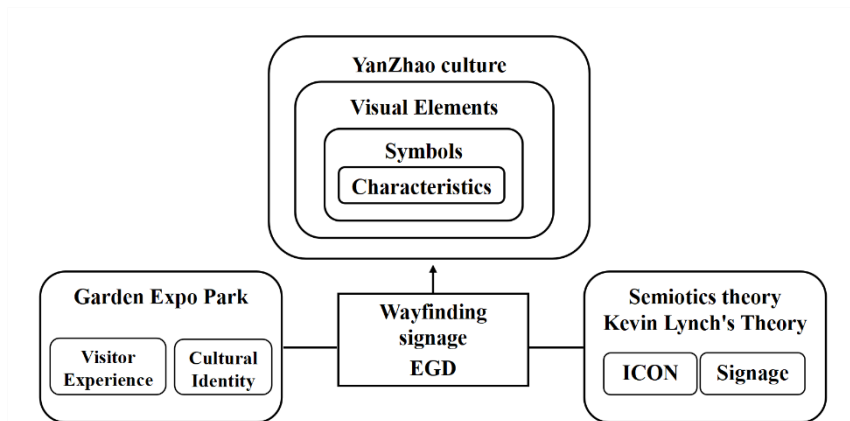


Figure 1 Conceptual Framework (Source: Adapted from Fan,2024)

The framework integrates YanZhao cultural elements into the design of wayfinding signage at Hebei Garden Expo Park. It draws on the Environmental Graphic Design (EGD) theory to ensure that visual elements such as symbols and characteristics derived from YanZhao culture are effectively incorporated into the signage. This integration is informed by Kevin Lynch's urban form theory and semiotic theory, which guide the placement and design of signage to enhance legibility and cultural representation.

Table 2 IV and DV Relationship

Visual and Design Characteristics of Wayfinding Signage (IV)	Influence on Visitor Experience (DV)	Influence on Cultural Identity (DV)
Visual Elements of YanZhao Culture	Positive feedback on ease of navigation and enhanced park experience	Strengthened cultural connection to Hebei Province and local identity
Incorporation of YanZhao Cultural Symbols and Features	Visitors appreciated the cultural relevance, leading to increased satisfaction	Enhanced visitors' sense of belonging to the region and understanding of local culture
Design Characteristics (Legibility, Placement, Materials)	Improved visitor satisfaction due to clarity and easy navigation	Visual representation of YanZhao culture through design, fostering cultural appreciation
Integration of Cultural Elements in Signage Design	Increased visitor comfort and engagement through culturally infused design	Reinforced cultural identity through meaningful and regionally relevant signage

(Source: Adapted from Fan,2024)

3. METHODOLOGY

3.1 Research Design

A pilot study was conducted to identify issues with the current wayfinding signage at Hebei Garden Expo Park. Interviews with 21 visitors revealed significant insights into the usability and cultural representation of the signage. The pilot study aimed to test the interview questions, identify any potential issues with the data collection process, and refine the research methodology. The pilot study confirmed the feasibility of the data collection process and provided preliminary insights into the impact

of YanZhao cultural elements on visitor experience and cultural identity. Minor adjustments were made to the interview questions to enhance clarity.

The research employs a qualitative approach, focusing on interviews to gather in-depth insights. Thematic analysis was conducted on the interview transcripts to identify recurring theme in characteristics of wayfinding signage (IV) influenced visitor experience and cs related to visitor satisfaction, ease of navigation, and appreciation of cultural elements. This analysis helped to establish how the visual and desultorily identity (DV).

3.2 Sampling

The pilot study involved purposive sampling to select 21 Hebei Garden Expo Park visitors who had interacted with the wayfinding signage. Researchers commonly utilize the principle of saturation to justify sample sizes. They reach saturation when they observe no new data themes or insights. Studies indicate that conducting 12 to 20 interviews suffices to achieve data saturation for focused research questions (Vasileiou et al., 2018). Participants were chosen based on their willingness to provide detailed feedback on their experience.

3.3 Data Collection

1. Literature Document Review: A comprehensive review of existing literature on wayfinding design, YanZhao cultural elements, and their integration into public spaces was conducted. The review helped establish a theoretical foundation and identify best practices for integrating cultural aspects into wayfinding signage.
2. Interviews: Conducted semi-structured interviews with 21 visitors at Hebei Garden Expo Park. The interview questions focused on visitor satisfaction, ease of navigation, and appreciation of YanZhao cultural elements.
3. Observation: Observed how visitors interacted with the culturally integrated wayfinding signage, noting any difficulties or positive reactions.

3.4 Qualitative Analysis

Thematic analysis of interview transcripts to identify recurring themes and insights related to wayfinding challenges and cultural integration. Design interview questions to address the independent variables (IV) and dependent variables (DV). This study used ATLAS.ti to analyse the transcripts in the interview to establish how the visual and design characteristics of wayfinding signage (IV) influenced visitor experience and cultural identity (DV). The analysis contains three segments:

1. Coding: Pilot study interview transcripts were analysed to identify key themes and patterns.
2. Theme Identification: Themes related to the effectiveness of wayfinding signage, visitor satisfaction, and cultural identity were identified and analysed.
3. Adjustment: Based on the pilot study's findings, the Researcher revised the interview questions to enhance their clarity and relevance.

3.5 Ethical Consideration

The study adhered to ethical guidelines for research with human participants. Informed consent was obtained from all participants, and their confidentiality and anonymity were maintained. Moreover, participants were informed of their ability to opt out of the study without any inquiries or repercussions. The confidentiality of all participants' personal information will be safeguarded, with only authorized personnel like researchers and supervisors having access to the data and recorded details.

4. RESULTS AND DISCUSSION

Usage of Wayfinding Design System: 90% of the interviewees affirmed the role of wayfinding signs in navigating the park during their visit.

Need for Improvement: 81% of participants think the Hebei Garden Expo Park Wayfinding system design still needs improvement. 62% participants emphasized the importance of integrating cultural elements to improve the overall experience. Participating tourists agree with the suggestion of incorporating YanZhao cultural elements.

Table 3 Summary of Pilot Study Findings

Question	Total of respon ders	YES	NO
Have you used the wayfinding design system during your visit to the Hebei Garden Expo Park?	21	90% (19 people)	10% (2 people)
Does the wayfinding signage design need to be improved?	21	81% (17 people)	19% (4 people)

(Source: Adapted from Fan,2024)

The Likert scale illustrates the participants' evaluations of integrating YanZhao cultural elements.

Table 4 Respondent Evaluations on Integrating YanZhao Cultural Elements

Question	Proportion				
Is it necessary to integrate regional cultural visual elements (Yanzhao culture) into the wayfinding sign design of the Garden Expo Park?	1	2	3	4	5
	-	-	9.5 %	28.5 %	62%
Incorporating YanZhao cultural elements can enhance the artistic atmosphere and uniqueness of the Garden Expo Park	-	-	4.7 %	33.3 %	62%
The integration of Yanzhao cultural elements will improve the tourist experience and satisfaction.	-	-	19 %	19 %	62%
The visual elements of Yanzhao culture have a positive impact on the aesthetics and functionality of the wayfinding sign design.	-	-	19 %	28.6 %	52.4 %
Using Yanzhao cultural elements in the logo design can increase the cultural and educational value of the park	-	-	4.7 %	33.3 %	62%

Likert Scale Agreement
1=Strongly Disagree, 2=Disagree, 3=Neutral,4=Agree,5=Strongly Agree

(Source: Adapted from Fan,2024)

When asked, "Which YanZhao cultural elements impressed you the most? If any, please describe these elements" Table 4 presents the most frequently mentioned elements of YanZhao culture, as reported by different visitors.

Table 5 Interview Responses

Interview Answers	Characteristic Summary
Yuxian Paper-cutting, Gaocheng Palace Lantern, Shadow Play, Hebei Intangible Cultural Heritage	Folk Art
Collections of Hebei Museum, Changxin Palace Lantern	Artworks Modeling and Decoration Patterns
Hu Clothing and Horseback Archery, Small Landscape Works in the Garden Expo	Sculpture Modeling
Summer Resort, Congtai, The north section of the Great Wall, Temples in Zhengding Ancient City, Ancient Buildings in Handan	Architecture
Handan Learning Path	YanZhao Historical Stories

(Source: Adapted from Fan,2024)

Based on the participants' responses and the content of the literature review section, the visual characteristics of YanZhao culture can be distilled from aspects such as architecture, folk art, decorative patterns, sculpture, and historical and cultural landscapes.

These findings highlight the necessity of integrating YanZhao cultural elements to improve the visual and functional aspects of the signage. The results indicate that integrating YanZhao cultural elements into wayfinding signage significantly enhances both visitor experience and cultural identity. The visual representation of these elements not only improves the functionality of the signage but also enriches the cultural experience of visitors. This finding aligns with previous studies on the importance of cultural elements in environmental graphic design (Calori & Vanden-Eynden, 2015).

The pilot study's results and subsequent adjustments help ensure the reliability and validity of the main study's findings.

5. CONCLUSION

This study aimed to explore the integration of YanZhao cultural elements into the wayfinding signage design at Hebei Garden Expo Park and its impact on visitor experience and cultural identity. A qualitative approach involving interviews and thematic analysis uncovered several key insights.

The pilot study was crucial in refining the interview questions and validating the data collection process, providing valuable preliminary insights into integrating YanZhao cultural elements into wayfinding signage. Visitors expressed positive feedback on the culturally integrated wayfinding signage, noting that it enhanced their ease of navigation and overall park experience. Including YanZhao cultural elements not only improved the functional aspects of the signage but also deepened visitors' connection to the local culture, thereby fostering a stronger sense of cultural identity. It has important implications for the design of public spaces, particularly in culturally rich regions like Hebei Province. These initial findings contribute significantly to the main study by highlighting the potential benefits of cultural integration in public space design. However, further in-depth interviews and observations are necessary to confirm these initial findings and fully understand the impact of cultural integration on visitor experience and cultural identity. It has crucial implications for the design of public spaces, particularly in culturally rich regions like Hebei Province. These initial findings contribute significantly to the main study by highlighting the potential benefits of cultural integration in public space design. However, further in-depth interviews and observations are necessary to confirm these initial findings and fully understand the impact of cultural integration on visitor experience and cultural identity.

Future research could expand on this study by exploring the specific characteristics of the visual elements of Yanzhao culture and the long-term impacts of culturally integrated wayfinding signage on visitor behaviour and cultural appreciation.

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AUTHOR CONTRIBUTIONS

All authors played equal contributions towards the production of this paper.

CONFLICT OF INTEREST

The author declares no potential conflict of interest with respect to the research, authorship, and/or publication of this article.

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