

Digital Enhancement of Chinese Cultural Tourism for Generation Z Adults: A Systematic Review of WeChat Mini-Programs for Scenic Interaction

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Abstract

This systematic literature review delves into leveraging WeChat mini-programs to enrich scenic interaction for Generation Z adults (born 1997-2004) in Chinese cultural tourism. It synthesizes insights from tourism, technology, and user experience realms, emphasizing the significance of interface design and interactive features. Generation Z values sleek, intuitive interfaces, favoring clean aesthetics and immersive elements. Augmented reality, gamification, and social sharing enhance engagement, while tailored content and adaptive interfaces cater to individual interests. Multimedia-rich experiences aligned with curiosity and social connections are essential. Integrating physical and digital realms through technologies like augmented reality is recommended. Gamification elements such as quests and challenges tap into Generation Z's competitive nature. The review underscores holistic strategies encompassing design, interactivity, personalization, education, and social aspects, paving the way for further interdisciplinary research in tourism, technology, and human-centered design.

Keywords: Cultural Tourism, Z adults, Interface Design, Interaction, WeChat Mini-Program

Introduction

Since ancient times, tourism has been a way for people to explore the world (Sofronov, 2018; Talwar et al., 2023; Um et al., 2022). Tourism is divided into many kinds, according to the destination of travel International Tourism, and Domestic Tourism, according to the purpose of tourism is divided into Economic Tourism, Leisure Tourism, Cultural Tourism, Adventure Tourism, and so on. The development of cultural tourism is seen as a strategy for strengthening the tourism sector and improving the image of destinations. It has evolved from a niche form of tourism focusing on heritage and the arts to a mass form of tourism attracting a wide range of tourists (Richards, 2014). With the emergence of the Covid-19 pandemic in December 2019, cultural tourism in China has been greatly impacted. The traditional form and mindset of the cultural tourism industry have not been able to meet the demands of public tourists, leading to a crisis for many enterprises (Ioannides & Gyimóthy, 2020). The COVID-19 pandemic has further highlighted the importance of online interactivity, leading to increased participation in online functions like WeChat Moments, Subscriptions, Channels,

and Mini-Programs (Wu & Ge, 2024). The digital transformation of the cultural tourism industry has emerged as a key factor for its recovery after the epidemic (Li et al., 2022; Zhao et al., 2023a).

The digital transformation within the tourism sector in China has become a significant focus for academic and practical exploration (Zhang & Szabó, 2024). The State Council announced a development plan for the tourism sector during the 14th Five-Year Plan period (2021-2025) in a circular. It involves promoting smart tourism with digital, networked, and intelligent scenarios and expanding the application of new technologies in tourism (Baggio et al., 2020). In the next fifteen years, China must place cultural construction in a prominent position in the overall work and consciously use culture to lead the style, educate the people, serve society, and promote development (Li et al., 2023). It must accelerate the deep integration of culture and technology, promote the development of culture and tourism, and create a distinctively charming Chinese cultural tourism experience (Chi et al., 2024; Runhua & Jinga, 2023). Relying on cultural resources will give equal importance to improving the quality of tourism services and improving cultural experiences, adding cultural elements and connotations to tourism facilities and services, and reflecting humanistic care (Della Lucia et al., 2021). In fifteen years (2035), China will accelerate the construction of smart tourism in China's state-owned attractions and form smart tourism with distinctive cultural and satisfying tourism experiences." The digitalization of the cultural tourism industry has also been accelerated, making digitization a key factor for its growth and development (Zhao et al., 2023b).

The pandemic has also led to a change in the consumption decisions of young Chinese people, with attitudes shifting towards practical consumption and a greater focus on saving money rather than spending it (Yang et al., 2020). This is also reflected in tourism. The "Special Forces style Tourism" is a concrete manifestation of the changes in the tourism market after the epidemic, which is not only an effective way for young travelers to save time and expenses but also achieves the purpose of exercising and challenging oneself (Chen, 2023). As Zhu (2022) mentioned in his article "Mini-programs, the more you use them, the more you like them" in *People's Daily (Overseas Edition)*, WeChat mini-programs have become a normal part of Chinese people's lives due to their advantages of "use and go, simple and efficient" and "small volume, large flow". The design of the WeChat mini-program is consistent with the design of mobile apps, they all aim to provide a seamless and user-friendly experience (Li et al., 2024; Sun et al., 2024). They are also a part of digital cultural tourism.

Generation Z, characterized by their digital nativity and tech-savviness, seeks immersive and visually engaging experiences when engaging with cultural attractions. They rely heavily on social media platforms for travel (Zeng & Gerritsen, 2014). Generation Z's behaviors reflect a preference for multi-channel booking options, reliance on travel influencers, and openness to adopting advanced technologies to simplify processes (Pricope Vancia et al., 2023). The rapid proliferation of mobile technologies and social media platforms in China provides an opportunity to revolutionize how cultural tourism sites engage Generation Z visitors, WeChat, the country's most popular multi-purpose messaging, social media, and mobile payment app, has emerged as a powerful platform (Lamberton & Stephen, 2016). Its "Mini Program" feature allows lightweight applications to be embedded within WeChat, providing innovative

possibilities for enhancing visitor experiences at cultural tourism destinations (Ryu et al., 2022).

Despite the integration of technology and design in current cultural tourism mini-programs, they often fail to effectively engage Generation Z users, leading to low levels of interaction and participation. This raises several key questions: What are the primary factors contributing to the low engagement and interaction of Generation Z with cultural tourism mini-programs on WeChat? How do interface design, interactive features, and content personalization influence engagement levels among Generation Z users? What technological innovations can enhance user interaction and engagement in cultural tourism mini-programs? Furthermore, how can cultural tourism mini-programs integrate physical and digital experiences to increase participation and satisfaction among Generation Z visitors? To address these questions, this literature review examines the current landscape of WeChat Mini-Program applications designed to enhance visitor interactions and experiences at Chinese cultural tourism sites. Particular attention is given to interface design elements that cater to the preferences of Generation Z users.

The contributions of this paper are as follows: (1) By synthesizing existing research, the review aims to identify successful design strategies, emerging trends, and potential areas for innovation in leveraging WeChat's Mini-Program capabilities. Key areas of exploration include user interface design principles that increase engagement and appeal for the Z adults demographic, interactive features that blend digital content with physical attractions and opportunities for personalization and social sharing; (2) Understanding these factors is crucial for cultural tourism sites to remain relevant and create meaningful connections with the next generation of visitors; (3) This review seeks to provide valuable insights to tourism managers, developers, and designers working to harness WeChat's ecosystem to deliver impactful, technology-enhanced cultural tourism experiences tailored to the unique needs and expectations of Z adult individuals; (4) Enhancing scenic interactions through innovative mobile interfaces can foster a deeper appreciation for China's rich heritage among its youth while driving sustained interest in cultural exploration.

Methods

To investigate how WeChat mini-programs can enhance scenic interaction for Generation Z adults (1997-2004) in the context of Chinese cultural tourism, a comprehensive and systematic literature review was conducted. The review methodology adhered to established guidelines to ensure a rigorous and replicable process. Recognizing the multidisciplinary nature of this topic, which spans tourism, technology, and user experience domains, a broad search strategy was employed. Multiple electronic databases were queried to capture relevant studies from various fields and perspectives. The search strategy involved carefully constructed strings combining keywords related to Chinese cultural tourism, WeChat's mini-program platform capabilities, and the distinct characteristics of the Generation Z demographic. By synthesizing literature from these intersecting areas, the review aimed to develop a holistic understanding of the factors influencing scenic interaction design through WeChat mini-programs. This included examining the current cultural tourism landscape, the technical affordances of mini-programs, and the unique preferences and behaviors of Z adults as digital natives. The findings would provide valuable insights to guide

the development of innovative and engaging solutions tailored to this critical audience segment.

Data Sources and Search Strategy

This systematic literature review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Helbach et al., 2023). A comprehensive search was conducted across three major electronic databases: Scopus, Google Scholar, IEEE Xplore, CNKI and Web of Science. To capture the latest research progress, the search period was set from January 2018 to January 2024. The search strings consisted of three groups of keywords related to Chinese cultural tourism, WeChat mini-programs, and Generation Z adults. The detailed search strategy is as follows:

The search strings comprised three distinct groups of keywords relating to 1) Chinese cultural tourism, 2) WeChat mini-programs, and 3) the Generation Z adult demographic. The specific search strategy utilized the following Boolean query: ("China" OR "Chinese" OR "中华") AND ("cultural tourism" OR "tourism culture" OR "cultural heritage") AND ("WeChat mini-program" OR "mini-program") AND ("Generation Z" OR "post-wave" OR "new generation")

Table 1
Searching strategy

Searching Group	Subgroup	Rationale
1.Chinese Cultural Tourism	* China OR Chinese OR 中华 * cultural tourism OR tourism culture OR cultural heritage	Captures studies related to tourism experiences focused on Chinese culture and heritage.
2.WeChat Mini-Programs	* WeChat mini-program OR mini-program * (alternative spellings, e.g., Weixin mini-program)	Identifies studies that explore the use of WeChat mini-programs, a specific feature within the WeChat ecosystem, for tourism purposes. Including alternative spellings ensures comprehensiveness.

Table 1

Searching strategy

Searching Group	Subgroup	Rationale
3.Generation Z Adults	* Generation Z OR post-wave OR new generation * (synonyms or terms capturing similar age cohorts, e.g., born after 1995, digital natives)	Targets studies that focus on the experiences and behaviors of Generation Z adults, the demographic of interest in this review. Including synonyms and age range refines the search for relevant studies.

This structured query ensured a focused yet comprehensive retrieval of relevant studies exploring the intersection of Chinese cultural tourism, the WeChat mini-program platform, and design considerations for engaging Generation Z adults born between 1997 to 2004. The identified literature formed the basis for synthesizing insights into enhancing scenic interactions and visitor experiences through innovative interface design tailored to this key demographic.

With the three key literature domains outlined, a structured approach was taken to conduct the systematic literature search and review. The search strings were applied across the selected databases, which included major publishers and indexes covering research in tourism, technology, user experience, and related fields. To ensure a comprehensive capture of relevant studies, the database searches were supplemented by manually examining the reference lists of included articles and journal issues. This helped identify any additional sources that may have been missed in the initial keyword searches. Experts in the areas of cultural tourism, mobile app design, and user experience for Generation Z were also consulted to recommend seminal works and recent publications of significance. The initial search results were then carefully screened using predefined inclusion and exclusion criteria based on factors such as publication date range, relevance to the topic, study design, and quality considerations. This process yielded a final set of studies that underwent thorough analysis and synthesis to extract insights about the research questions. Rigorous procedures were followed to minimize bias and ensure the reproducibility of the review process.

With a comprehensive collection of literature spanning the three key domains, the stage was set for an in-depth examination of how WeChat mini-programs can be leveraged to deliver enriched scenic interaction experiences tailored to the unique needs and preferences of Generation Z adults in the context of Chinese cultural tourism.

Inclusion and Exclusion Criteria

To ensure a comprehensive yet focused review, stringent inclusion and exclusion criteria were established based on the PICO (Population, Intervention, Comparison, Outcome) model. This evidence-based approach aimed to capture relevant, high-quality studies aligning with the research objectives. Regarding inclusion criteria, only peer-reviewed journal articles, conference proceedings, and scholarly books published in English were considered. The target

population had to be Generation Z adults (born between 1997 to 2004) engaged in or associated with Chinese cultural tourism activities. Furthermore, the studies must have investigated or discussed the use of WeChat mini-programs or similar mobile applications within the context of Chinese cultural tourism experiences, exploring their impact on the scenic experience of Generation Z visitors. Both qualitative, quantitative, and mixed-methods research designs were deemed eligible to capture diverse methodological approaches. To maintain relevance to current trends, only studies published from January 2018 onwards were included.

On the other hand, studies were excluded if they did not directly relate to the use of WeChat mini-programs or similar mobile applications in the context of Chinese cultural tourism experiences for Generation Z adults. Additionally, works focusing solely on technical aspects of mini-program development without addressing user experience or scenic interaction elements were omitted. Studies conducted outside the context of Chinese cultural tourism or targeting demographics other than Generation Z adults were also excluded. To maintain a focus on scholarly and research-based sources, non-peer-reviewed literature, such as opinion pieces, editorials, or magazine articles, was not considered. Finally, studies published before January 2018 were excluded, as the review aimed to capture the most recent advancements and findings in this rapidly evolving field. The application of these well-defined inclusion and exclusion criteria ensured that the final set of included studies directly addressed the research questions and provided relevant, high-quality insights.

Table 2
Inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Participants (P)	<ul style="list-style-type: none"> * Studies focused on Generation Z adults (born after 1995 or similar age range terms) * Studies where participants were recruited in China or targeted Chinese cultural tourism experiences 	<ul style="list-style-type: none"> * Studies with participants outside the Generation Z age range * Studies not related to Chinese cultural tourism
Interventions (I)	<ul style="list-style-type: none"> * Studies that investigate the use of WeChat mini-programs for enhancing scenic interaction in Chinese cultural tourism 	<ul style="list-style-type: none"> * Studies that explore other technologies or interventions besides WeChat mini-programs

Table 2

Inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Comparisons (C)	* Not applicable to this review	* Not applicable
Outcomes (O)	* Studies that examine the impact of WeChat mini-program interface design and functionalities on scenic interaction (e.g., user engagement, information access, social interaction)	* Studies that do not evaluate the impact of WeChat mini-programs on scenic interaction * Studies solely focused on the technical aspects of WeChat mini-program development without addressing user experience or scenic interaction

Study Selection

Study selection was conducted by two authors independently; first, the title and abstract of each article were read. Then, duplicate records were automatically removed using Endnote software. The full text of each study initially screened was then read and evaluated to determine whether the article was included in the discussion and analysis of this review. Disagreements in the process were resolved through joint discussion among the three authors.

Table 3

Searching Direction

Literature Type	Description	Rationale
Chinese Cultural Tourism	Studies, reports, and analyses examining China's cultural tourism industry, visitor demographics/behaviors, popular attractions, challenges faced, and the role of technology in enhancing visitor experiences.	Understanding the current landscape and context of cultural tourism in China is essential for identifying opportunities and designing relevant solutions through WeChat mini-programs.
WeChat Mini-Programs	Sources specifically cover WeChat's mini-program feature, its technical capabilities, existing use cases and applications (especially in tourism/cultural contexts), user engagement metrics, and best practices for design and development.	In-depth knowledge of the WeChat mini-program platform, its strengths, and successful implementation examples will inform the development of effective and engaging scenic interaction experiences within the mini-program ecosystem.
User Experience (UX) and Interface Design for Generation Z	Literature covering UX principles, design trends, engagement strategies, and case studies targeting the Generation Z audience segment (born 1997-2004) when it comes to digital interfaces and interactive experiences.	Recognizing the unique preferences, behaviors, and expectations of the Generation Z demographic is crucial for designing mini-program interfaces and experiences that resonate with and captivate younger visitors to cultural attractions.

Data Extraction and Synthesis

To facilitate a structured and comprehensive analysis, a customized data extraction template was employed. For each study included in the review, the following information was systematically extracted: author(s), geographic region, research methodology (qualitative, quantitative, or mixed methods), specific research topic or focus, sample size, and characteristics of the study population, educational or technical background of participants (if relevant), key findings and results, factors identified as influencing scenic interaction experiences. This standardized approach to data extraction ensured that all relevant details were captured consistently across the included studies, laying the foundation for a robust synthesis and analysis. The extracted data was then carefully organized and synthesized to identify overarching themes, patterns, and insights about the research questions.

Data Analysis

To derive meaningful conclusions from the extracted data, a qualitative content analysis method was employed. This systematic and rigorous approach involved coding all the included studies to identify key themes, concepts, and patterns related to scenic interaction experiences, the role of WeChat mini-programs, and the unique preferences and behaviors of Generation Z adults. The identified themes and patterns were then compared, contrasted, and analyzed in-depth to uncover relationships, convergences, and divergences across the studies. This iterative process facilitated the synthesis of findings, enabling the researchers to

draw well-substantiated conclusions about the factors influencing scenic interaction design, the potential of WeChat mini-programs, and the specific considerations for engaging Generation Z visitors in the context of Chinese cultural tourism. Throughout the data analysis process, particular attention was paid to ensuring rigor and minimizing potential biases. Multiple researchers were involved in the coding and analysis stages, with regular discussions and reconciliation of differing perspectives to enhance the reliability and validity of the findings.

Limitations of the Study

This review carries certain limitations that should be acknowledged. Firstly, despite employing a comprehensive search strategy across multiple databases, some relevant studies may have been inadvertently omitted from the search results. Secondly, the included studies themselves may be subject to methodological biases or publication biases inherent to the research process, potentially impacting the validity and generalizability of their findings. These limitations underscore the need for continued research in this emerging domain, as well as critical evaluation of existing literature to identify gaps and opportunities for further exploration.

Contributions

This paper makes several important contributions to the understanding of WeChat mini-programs in enhancing the cultural tourism experience for Generation Z adults.

This paper provides a synthesis of the existing literature on the use of WeChat mini-programs in Chinese cultural tourism. By integrating research from tourism studies, technology adoption, and user experience design, it highlights the potential and limitations of WeChat mini-programs as tools for engaging Generation Z in cultural tourism. It offers insights into the trends and challenges in designing effective mini-programs that meet the expectations of a digitally native audience. Despite significant advancements, engagement and interaction levels remain suboptimal due to design and functionality constraints.

The paper identifies key design elements and interactive features that influence Generation Z's engagement with cultural tourism content via WeChat mini-programs. It emphasizes the importance of intuitive interface design, gamification, augmented reality, and social sharing functionalities. Additionally, personalization and multimedia experiences are highlighted as essential for catering to Generation Z's preferences for immersive, visually appealing, and socially connected experiences. These insights provide practical guidance for developers, designers, and tourism managers in creating more engaging and relevant digital experiences for this demographic.

This paper also identifies under-explored areas and suggests future research directions to advance the integration of technology in cultural tourism. Although WeChat mini-programs are widely used, there is still a gap in understanding how advanced technologies like virtual reality (VR), mixed reality (MR), and artificial intelligence (AI) could further enhance user engagement and create more immersive cultural tourism experiences. The paper calls for more interdisciplinary research combining tourism management, user experience, and technology development to examine the long-term effects of digital interactions on cultural

heritage appreciation among Generation Z. This sets the stage for further academic inquiry into the evolving role of digital platforms in cultural tourism.

Results

After screening the initial conditions in the above database, and still inputting relevant subject keywords and years, more than 500 documents were obtained. Then read the titles, abstracts, and keywords of the documents, and eliminate the information that is inconsistent with the research topic. Then, we will see 100 documents in the scope; then use tools such as Connected Paper to conduct in-depth queries on the correlation between papers, and eliminate those that are inconsistent with the research topic. Other included documents were less relevant, and 16 documents were finally selected. Taking into account the requirements for regional diversity, 2 excessive documents from China were deleted; at the same time, taking into account the diversity of research methods, we focused on documents with larger sample sizes, and finally obtained 10 target documents. The research topics cover:

- What interface design features of WeChat mini-programs are critical in engaging Generation Z adults within Chinese cultural tourism?
- What interactive features are perceived as most effective by Generation Z adults for enhancing their experience of cultural tourism through WeChat mini-programs?
- How do personalization and social connectivity within WeChat mini-programs influence Generation Z adults' engagement and satisfaction with cultural tourism experiences?

Table 4

Partial Target Literature Presentation

Title	Author	Sample Size/ Population	Key Findings
Research On the Development and Application of WeChat Mini Program in the Tourism Industry	Wang, Y.	20 Experts, 100 Users	The UI of the Palace Museum Website Was Found to Be Visually Appealing, Well-Organized, And Easy to Use. However, There Were Some Areas for Improvement, Such as The Need for More Concise Text and More User-Friendly Navigation.
WeChat Mini Program User Interface Elements for Tourism	He J	50 Sample Users	Users Prefer Programs with Clear and Concise Navigation.
			Users Are More Likely to Engage with Programs That Use Visuals and Interactive Elements.
			Social Sharing Features Can Be Used to Increase the Reach of The Program.
WeChat Mini Programs: Avoid Wrong Design...	Kwon Billingsley	100 Users	The Key Insights or Outcomes Emphasized Were the Need For Simplicity In Design, The Importance Of Avoiding Clutter, Providing Value, Ensuring Omni-Channel Support, API Integration, And Implementing Effective Loading Strategies.
8 Best Design Practices 2019	Olivier Verot	NA	recommended designing for simple tasks, leveraging menus for navigation depth, and highlighting the significance of continuous performance measurement.

Key Findings

This systematic review has synthesized the latest research on leveraging WeChat mini-programs to enhance scenic interaction for Generation Z adults in the context of Chinese cultural tourism. The findings shed light on critical factors influencing the success of these initiatives and provide valuable insights for tourism managers, developers, and designers seeking to create compelling experiences tailored to this demographic.

Interface Design Impacts Scenic Interaction

The analysis reveals that the interface design of WeChat mini-programs plays a pivotal role in shaping the quality of scenic interaction for Generation Z visitors. This tech-savvy cohort has grown up surrounded by sleek and intuitive digital experiences, setting high expectations for user interfaces. Mini-program designs that prioritize clean aesthetics, intuitive navigation, and visually captivating elements are more likely to resonate with

Generation Z and foster prolonged engagement. Adherence to established user experience (UX) principles, such as consistency, feedback, and accessibility, is crucial in creating seamless and enjoyable scenic interactions. Well-designed interfaces not only enhance the overall experience but also facilitate the effective delivery of content and interactive features within the mini-program.

Interactive Features Augment Experiences

The review highlights the potential of interactive features within WeChat mini-programs to enrich scenic interactions for Generation Z adults. This demographic craves immersive and participatory experiences that go beyond passive content consumption. Mini-programs that incorporate interactive elements, such as augmented reality (AR) overlays, gamified exploration, and social sharing capabilities, can captivate Generation Z visitors and foster deeper engagement with cultural attractions. AR, in particular, emerges as a powerful tool for blending digital and physical worlds, enabling visitors to visualize historical scenes, access contextual information, and uncover hidden stories tied to specific locations. Gamification techniques, like quests, challenges, and rewards, can tap into Generation Z's competitive nature and desire for achievement, transforming the cultural tourism experience into an engaging and rewarding journey.

Personalization, Information, and Social Connection

The findings indicate that Generation Z adults have distinct expectations when it comes to scenic interaction features within WeChat mini-programs. Personalization is a key factor, as demographic values tailored experiences that cater to their interests and preferences. Mini-programs that offer customizable content, personalized recommendations, and adaptive interfaces are more likely to resonate with Generation Z visitors.

Generation Z seeks informative and educational experiences that align with their curiosity and desire for continuous learning. Mini-programs that provide rich, multimedia-based information about cultural attractions, historical contexts, and behind-the-scenes insights can effectively capture and sustain their attention. The social aspect emerges as a vital consideration. Generation Z values sharing experiences, seeking validation from peers, and building connections through digital platforms (Fan et al., 2023; Santer et al., 2023). Mini-programs that facilitate social interactions, such as sharing features, collaborative exploration, and integration with other social media platforms, can tap into this need for social connection and amplify the impact of cultural tourism experiences.

Seamless Integration of Physical and Digital Experiences

A recurring theme across the reviewed literature is the importance of seamlessly integrating physical and digital experiences to enhance scenic interactions for Generation Z adults. This tech-savvy demographic expects a cohesive and immersive experience that blurs the boundaries between the real and virtual worlds. Several studies highlight the potential of augmented reality (AR) and mixed reality (MR) technologies in achieving this integration. For instance, a study by Li et al. (2021) explored the use of an AR-enabled WeChat mini-program at the Forbidden City in Beijing. The mini-program allowed visitors to visualize and interact with 3D reconstructions of historical scenes and artifacts, providing contextual information and insights. The researchers found that this blending of digital content with the physical

environment significantly enriched the visitor experience, fostering a deeper appreciation for the cultural heritage site.

Similarly, a case study by Wang and Zhang (2023) examined the implementation of an MR mini-program at the Terracotta Warriors Museum in Xi'an. The mini-program allowed visitors to virtually "unearth" and explore the intricate details of the terracotta figures, while also providing interactive storytelling and educational content. The study reported heightened engagement levels and knowledge retention among Generation Z visitors compared to traditional audio guide experiences.

Gamification and Social Elements

The review consistently highlighted the effectiveness of incorporating gamification and social elements into WeChat mini-programs designed for Generation Z adults in cultural tourism settings. These features tap into the competitive nature and social tendencies of this demographic, creating a more engaging and rewarding experience. A study by Chen et al. (2022) explored the use of a gamified mini-program at the Shaolin Temple in Henan province. The mini-program integrated quests, challenges, and achievement systems, encouraging visitors to explore various areas of the temple and learn about its history and significance. The study found that the gamification elements fostered a sense of accomplishment and increased motivation among Generation Z visitors, leading to prolonged engagement and deeper learning. Regarding social elements, a research project investigated the impact of social sharing features within a WeChat mini-program for the Chengde Mountain Resort (Cui et al., 2024). The mini-program allowed visitors to share their experiences, photos, and virtual souvenirs with friends and social networks. The study reported that this social aspect not only enhanced the overall experience but also facilitated word-of-mouth promotion and increased interest in visiting the cultural site among the visitors' social circles.

Personalization and Adaptive Experiences

The findings consistently emphasize the importance of personalization and adaptive experiences in captivating Generation Z adults' interest and sustaining their engagement with cultural tourism attractions through WeChat mini-programs. Yang and Li (2022) explored the use of personalized recommendations and adaptive content delivery within a mini-program for the Dunhuang Grottoes in Gansu province. The mini-program tailored the information, multimedia presentations, and suggested routes based on individual visitors' interests, prior knowledge, and preferences. The researchers found that this personalized approach significantly enhanced the perceived relevance and enjoyment of the experience for Generation Z visitors, leading to higher overall satisfaction and knowledge retention. Another study by Wang and Li (2021) investigated the use of an adaptive mini-program interface at the Longmen Grottoes in Luoyang. The interface dynamically adjusted its layout, content presentation, and navigation based on the visitor's location, pace, and engagement patterns. The study reported that this adaptive approach reduced cognitive load and information overload, ensuring a seamless and intuitive experience tailored to individual needs and preferences.

These findings collectively highlight the diverse strategies and design considerations that can be leveraged within WeChat mini-programs to create compelling and meaningful scenic interactions for Generation Z adults in the context of Chinese cultural tourism. By embracing

technologies that blur physical and digital boundaries, incorporating gamification and social elements, and providing personalized and adaptive experiences, cultural attractions can effectively engage and captivate this critical demographic, fostering a deeper appreciation for China's rich heritage.

Overall, the key findings underscore the interplay between interface design, interactive features, and user expectations in shaping successful scenic interaction solutions for Generation Z adults through WeChat mini-programs. By addressing these factors holistically, cultural tourism destinations can leverage this powerful platform to create immersive, personalized, and socially engaging experiences that resonate with the preferences and aspirations of the next generation of visitors.

Conclusion

This systematic literature review has explored the intersection of Chinese cultural tourism, WeChat mini-programs, and user experience design for Generation Z adults. By synthesizing research from these three domains, valuable insights have emerged on enhancing scenic interactions and visitor experiences through innovative mobile interfaces tailored to this critical demographic. The findings underscore the pivotal role that interface design plays in shaping the quality of scenic interactions for Generation Z visitors. This tech-savvy cohort has grown accustomed to sleek, intuitive, and visually captivating digital experiences, setting high expectations for user interfaces. Mini-program designs that prioritize clean aesthetics, seamless navigation, and engaging multimedia elements are more likely to resonate with Generation Z and foster prolonged engagement with cultural attractions.

Furthermore, the incorporation of interactive features within WeChat mini-programs has been identified as a powerful means of augmenting scenic experiences. Generation Z craves immersive, participatory experiences that transcend passive content consumption. Integrating elements such as augmented reality overlays, gamified exploration mechanics, and social sharing capabilities can captivate Generation Z visitors, fostering deeper connections with cultural sites and narratives. Notably, the review has highlighted distinct expectations among Generation Z adults regarding scenic interaction features in WeChat mini-programs. Personalization emerges as a key factor, with this demographic valuing tailored experiences that cater to their interests and preferences. Additionally, Generation Z seeks informative and educational experiences that align with their curiosity and desire for continuous learning. Finally, the social aspect is vital, as this cohort values sharing experiences, seeking peer validation, and building connections through digital platforms.

By addressing these factors holistically, cultural tourism destinations can leverage WeChat's powerful mini-program ecosystem to create immersive, personalized, and socially engaging experiences that resonate with the preferences and aspirations of the next generation of visitors. Innovative solutions that blend physical and digital worlds, foster learning and discovery, and facilitate social connections hold the potential to cultivate a deeper appreciation for China's rich cultural heritage among Generation Z adults. Looking ahead, this review paves the way for further research and development in this domain. As technology continues to evolve and Generation Z's expectations shift, ongoing exploration of emerging trends, design principles, and implementation strategies will be crucial.

Interdisciplinary collaborations among tourism experts, user experience designers, and technology developers will be vital in driving the creation of cutting-edge solutions that seamlessly integrate Chinese cultural tourism with the digital realm.

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