

Case Study

Metaverse Era: Digital Media Technology Strategies for Brand Communication - A case study of Jingxing

Lifen Ren^{1*}, **Sabrina Mohd Rashid**², **Normahfuzah Ahmad**²¹ Affiliation 1 School of Multimedia Technology and Communication, Universiti Utara Malaysia, Changlun, Malaysia² Affiliation 2 School of Multimedia Technology and Communication, Universiti Utara Malaysia, Changlun, Malaysia* Corresponding author: Lifen Ren, renlf2020@sina.com**CITATION**

Ren L, Rashid SM, Ahmad N. Metaverse Era: Digital Media Technology Strategies for Brand Communication - A case study of Jingxing. *Metaverse*. 2025; 6(4): 8234.
<https://doi.org/10.54517/m8234>

ARTICLE INFO

Received: 2 September 2025
Revised: 18 November 2025
Accepted: 25 November 2025
Available online: 3 December 2025

COPYRIGHT

Copyright © 2025 by author(s).
Metaverse is published by Asia Pacific Academy of Science Pte. Ltd. This work is licensed under the Creative Commons Attribution (CC BY) license. <https://creativecommons.org/licenses/by/4.0/>

Abstract: The integration of metaverse technology in tourism destination development has become an industry consensus, with numerous destinations utilizing immersive interactive experiences to inject vitality into tourism. However, existing research has insufficiently addressed how digital media technologies in the metaverse era drive tourism destination brand communication. Focusing on the Jingxing tourism destination, this study addresses its current challenges including superficial cultural experiences, unidirectional communication patterns, and fragmented technology application by proposing innovative brand communication strategies utilizing digital media technologies. Based on the Uses and Gratifications Theory and employing content analysis and in-depth interviews, the research demonstrates how the immersive and interactive characteristics of digital media technologies align with users' deep-seated cognitive, emotional, and social needs. Building on this foundation, the study constructs a four-dimensional strategic system centered on immersive narrative experiences, interactive co-creation platforms, technology ecosystem integration, and sustainable operations. Through VR/AR scene reconstruction, UGC community co-creation, digital asset distribution, and virtual-physical integration models, this system aims to transform Jingxing from a geographical destination into a cultural IP and emotional connection space, ultimately achieving a paradigm shift in brand communication from one-way dissemination to user-driven engagement and from information delivery to value co-creation, thereby providing theoretical references and practical pathways for the digital communication of similar cultural heritage tourism destinations.

Keywords: Metaverse; Digital Media Technology; Jingxing Tourism Destination; Brand Communication

1. Introduction

With the rapid advancement of digital technology, the metaverse, as a novel digital space that deeply integrates the virtual and real worlds, is reshaping the experiential logic and brand communication paradigms of the tourism industry [1]. The metaverse combines cutting-edge digital media technologies such as virtual reality (VR), augmented reality (AR), blockchain, artificial intelligence (AI), and digital twins to construct immersive and interactive three-dimensional virtual environments, offering users experiences that transcend physical limitations [2]. This technological paradigm has not only revolutionized fields such as entertainment, social interaction, and education but has also provided unprecedented opportunities for the innovative transformation of the tourism industry. Through multi-dimensional perception and dynamic interaction, digital media technologies can break through spatial and temporal boundaries, enhance users' sense of participation and emotional connection, thereby opening new pathways for the brand communication of tourist

destinations [3].

Located in western Shijiazhuang, Hebei Province, China, Jingxing County possesses abundant historical cultural heritage and unique natural landscapes. However, amid the wave of digital technology dissemination, the brand communication of Jingxing tourism destination remains in a transitional phase where traditional models are merely superficially integrated with modern technologies. Currently, partial implementation of 720° cloud panoramas and VR technology has been utilized to showcase scenic areas' cultural history, while brand communication primarily relies on the "Two Wei and One Tik Tok " social media ecosystem comprising WeChat, Weibo, and Tik Tok. Nevertheless, the current approach demonstrates superficial technological application, deficient immersive interactive experiences, fragmented brand image, and uncoordinated communication platforms.

Against this backdrop, this research focuses on how to leverage digital media technologies in the metaverse era to empower the brand communication strategy of Jingxing tourism destination. Employing the Uses and Gratifications Theory, the study adopts the audience's perspective to analyze their media usage motivations and satisfaction attainment, thereby providing theoretical foundations for Jingxing's tourism destination brand communication through digital media. This research attempts to propose an innovative brand communication model aimed at enhancing Jingxing's brand expression, communicative power, and attractiveness. This endeavor not only contributes to deepening the cultural value exploration of Jingxing tourism but also provides theoretical references and practical insights for the digital transformation of similar cultural heritage tourism destinations.

2. Theoretical Framework

The theoretical framework of this study is constructed at the intersection between the characteristics of "metaverse digital media technologies" and the classic communication theory of "Uses and Gratifications," aiming to establish a solid yet innovative analytical foundation for the brand communication innovation of Jingxing tourism destination.

Digital media technologies in the metaverse era constitute an integrated ecosystem combining virtual reality (VR), augmented reality (AR), mixed reality (MR), artificial intelligence (AI), and 5G connectivity [4], characterized by three distinctive features that set them apart from traditional digital media: immersion, which provides lifelike sensory experiences through highly realistic three-dimensional environments; interaction, where users evolve from passive information recipients into active participants capable of real-time socialization, creation, and manipulation via digital avatars [5]; and persistence, wherein virtual worlds operate independently and maintain continuous existence regardless of user login status. These characteristics collectively transform brand communication in the metaverse era into a deeply experiential, user-driven, and community-co-created process, fundamentally revolutionizing the conventional one-way dissemination model that has long dominated tourism marketing.

The growing scholarly attention to Uses and Gratifications Theory in recent years correlates strongly with the rapid advancement of new media technologies [6]. As noted by Ruggiero, a prominent contemporary scholar of this theoretical framework, in his seminal work "Uses and Gratifications in the 21st Century," the theory consistently provides cutting-edge theoretical pathways whenever new mass communication media emerge, particularly during their initial developmental

phases. More significantly, new media technologies have fundamentally empowered users with active participation in media processes, establishing unprecedented interactive patterns between communicators and recipients [7]. This paradigm shift has substantially elevated the theoretical relevance of the audience-centered Uses and Gratifications framework, refer to **Figure 1**.

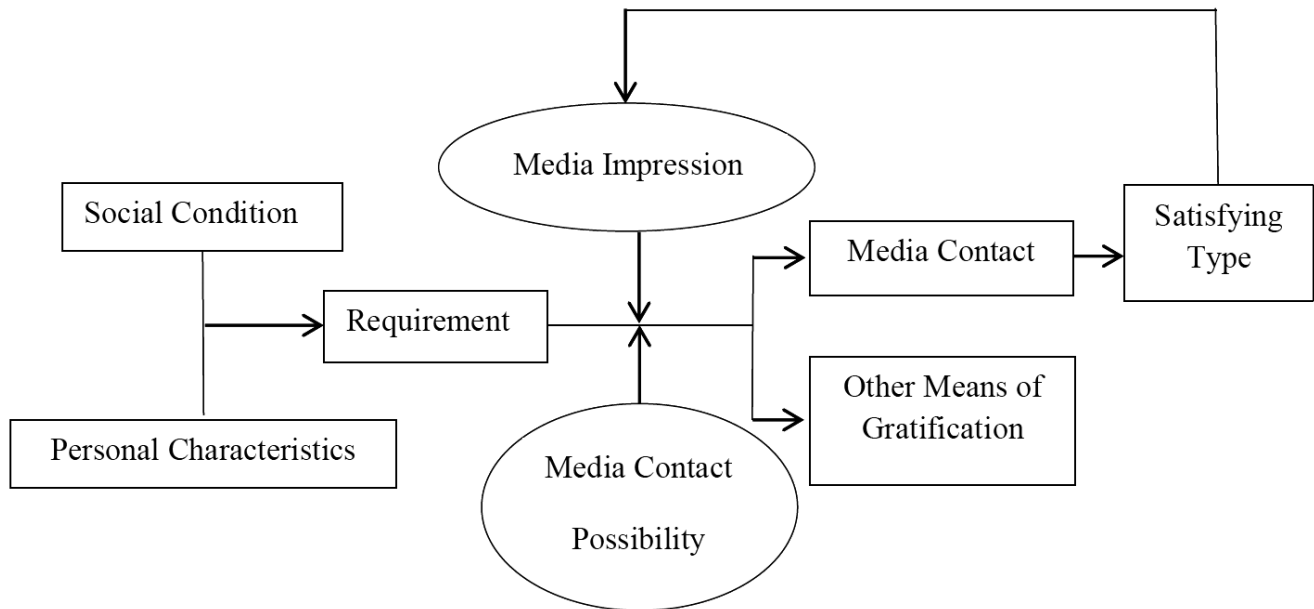


Figure 1 Uses and Gratifications Theoretical Framework

Haythornthwaite proposed expanding the Uses and Gratifications Theory by examining how individuals utilize multiple media forms to maintain and strengthen social relationships, emphasizing that different media can fulfill distinct social needs [8]. Concurrently, research by Papacharissi and Rubin investigated the gratifications users seek from the internet [9], particularly focusing on interactivity, information acquisition, and social connection, thereby demonstrating how UGT can be effectively applied to new digital media environments.

Building upon this theoretical evolution, Li and Bernoff [10] in their work "Social Media and Uses and Gratifications Theory" applied the framework to social media platforms, emphasizing how users seek gratification through self-expression, relationship building, and entertainment on platforms like Facebook and Twitter. Concurrently, research by Katz et al. examined how mobile devices fulfill various needs including instant communication, information access, and mobile entertainment, further demonstrating the theory's adaptability to evolving digital technologies [11].

It is evident that utilizing digital media, whether through the internet, social platforms, or mobile devices, to seek information and fulfill personal needs has become a prevailing trend in modern society. While contemporary human interaction and information dissemination have achieved remarkable efficiency and convenience, this study specifically examines information seeking and communication behaviors through the lens of Uses and Gratifications Theory to assist tourism destinations in their brand positioning strategies.

3. Methodology

This study adopts a qualitative research paradigm to conduct an in-depth

investigation into the specific strategies for applying digital media technologies in the metaverse era to the brand communication of Jingxing tourism destination. Data were collected through content analysis and in-depth interviews and analyzed using Braun and Clarke's six-step thematic analysis approach to ensure both depth and breadth in the research [12].

3.1 In-Depth Interviews

This study employs in-depth interviews to obtain comprehensive and detailed firsthand perspectives from key stakeholders. Interviews were conducted using a predetermined thematic framework while permitting supplementary unplanned questions to clarify responses. The research selected 16 participants from diverse groups as the study sample until data saturation was achieved [13]. All participants are residents of mainland China, representing four distinct categories: government officials (G), business operators (BO), local residents (LR), and tourists (T)—all stakeholders in Jingxing's tourism destination brand communication. The researcher's preliminary fieldwork enabled face-to-face interviews with most participants, while tourist interviews were conducted via telephone. All interviews were conducted in the participants' native languages, either Mandarin Chinese or local dialects.

The interview protocol will address dimensions including awareness of digital media technologies in the metaverse era, user experiences, and perceived benefits. All interviews will be audio-recorded with participant consent and subsequently transcribed into textual data. The transcribed materials will then undergo thematic analysis employing a coding process to identify and extract core themes [14].

The interview protocol will focus on dimensions such as awareness of digital media technologies, user experience, and perceived benefits. All interviews will be audio-recorded with the consent of participants and subsequently transcribed verbatim. Thematic analysis will then be applied to code the transcripts and identify core themes.

3.2 Content Analysis

This study employs content analysis to examine Chinese newspaper coverage on how digital media technologies promote tourism brand communication. The research systematically analyzes the communication channels and content characteristics of digital media technologies facilitating tourism brand development. A total of 10 newspaper articles from various administrative levels were analyzed, with thematic analysis revealing the methods through which digital media technologies in the metaverse era drive brand communication for Jingxing tourism destination.

3.3 Data Analysis

Following data collection, the researchers first systematically established an overall framework for data analysis. The study employed thematic analysis from qualitative research methodology, combined with NVivo software for systematic coding, to progressively distill core findings. Thematic analysis involved repeated reading, categorization, and conceptualization of textual data to identify recurring, meaningful patterns representing central themes [15]. Simultaneously, NVivo coding technology enhanced the standardization and traceability of the coding process through its robust functions for node classification, querying, and visualization. This integrated approach facilitated in-depth exploration of underlying relationships within the data, thereby strengthening the reliability and interpretability of the research outcomes.

This study rigorously adhered to Braun and Clarke's six-step thematic analysis

methodology for systematic data processing [16]. Refer to **Figure 2**.

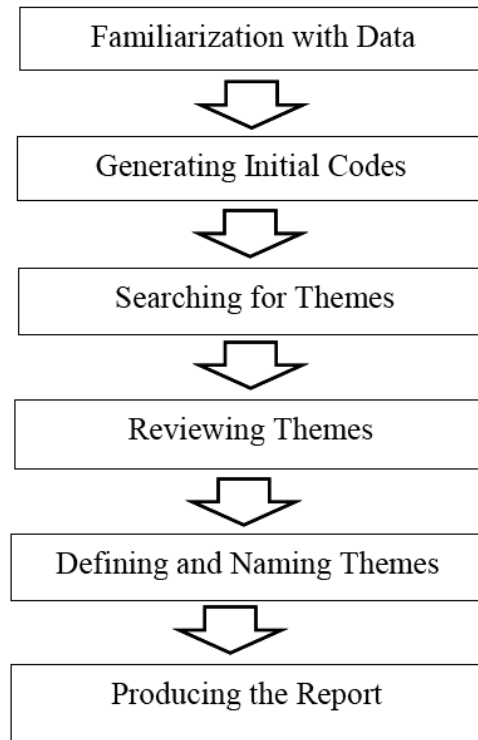


Figure 2 Six-phase Thematic Analysis Process

The analysis strictly followed Braun and Clarke's six-step thematic analysis procedure: First, immersion in the data through repeated reading of raw materials (including interview transcripts and textual documents) to develop comprehensive understanding and preliminary insights. Second, systematic line-by-line or segment-by-segment coding using NVivo software for detailed data annotation. Third, grouping similar or related codes to construct initial themes and sub-themes, ensuring they emerge from inherent data patterns rather than researcher preconceptions, while verifying their authentic representation of the data without forced categorization. Fourth, reviewing and refining themes by checking their coherence with coded extracts, modifying themes that are too broad, narrow, or overlapping. Fifth, developing clear definitions and precise names for each theme to articulate their core characteristics. Finally, organizing themes into a logical structure for reporting, supported by representative data extracts (such as verbatim interview quotes and textual evidence) to substantiate the analytical claims.

4. Results and Discussion

Through in-depth interviews and content analysis, this study systematically investigates the feasibility of utilizing digital media technologies in the metaverse era to drive brand communication for the Jingxing tourism destination. The research findings not only validate the applicability of the theoretical framework but also reveal the complex interplay between technological empowerment and cultural preservation. These insights provide significant implications for the digital transformation of cultural heritage tourism destinations.

4.1 Advantages of Digital Media Technologies in the Metaverse Era

Research findings indicate that digital media technologies in the metaverse

era play a significant role in driving tourism destination brand communication. Content analysis of approximately 10 reports from Chinese newspapers at various administrative levels demonstrates that utilizing digital media technologies for tourism destination brand communication has become an important developmental trend in the contemporary world.

The report of People Daily in the international edition dated April 11, 2022, two articles were first introduced the development of digital tourism in foreign countries in the form of pictures and words, and pointed out:

..... the new model of digital tourism has been accelerated. Tourist attractions in some countries not only use digital technology to put attractions or exhibits online, but also speed up the digital construction of scenic spots themselves, to provide tourists with a richer interactive experience and intelligent services.

-- People's Daily, April 11, 2022, 18th Edition

The report also introduces Egypt's digital technology to move tourist attractions online, allowing visitors to have a different experience. Through the analysis of the reported content, the researchers noticed that respondents mentioned:

"One can explore many attractions and historical sites in Egypt without stepping out, as if being on the spot. This is a completely different experience than before, providing not only a sense of real presence but also a kind of gaming feeling... truly amazing."

— People's Daily, April 11, 2022, 18th Edition (International), Journalist Huang Peizhao

The interviewed individuals in the report used phrases like "exploring without leaving home" and "being on the scene," describing their experiences with digital tourism. The term "exploring without leaving home" reflects the feature of digital media in metaverse times that is not bound by time and space, while "being on the scene" signifies the simulation of a realistic experience by digital media.

In a newspaper report about Italy, the journalist wrote:

"As tourists stroll through, appreciating Michelangelo's works, they can open a mobile app and engage in a 'cross-time' dialogue with the artificial intelligence version of Michelangelo."

— People's Daily, April 11, 2022, 18th Edition (International), Journalist Xie Yahong

The report highlights the intelligence of digital media. Additionally, it mentions:

"Many exhibitions also feature virtual exhibition halls modeled after real exhibition halls. Visitors can appreciate works of art one by one, just like they would in physical exhibition halls."

— People's Daily, April 11, 2022, 18th Edition (International), Reporter Xie Yahong

This description, along with the discussion in Egypt, conveys the same meaning of "being there" and emphasizes the simulated real effects of digital media.

The reporter, when introducing digital tourism in Germany, also mentioned:

"The Bode Museum, the Berlin National Opera House, the Berlin Philharmonic Orchestra, and other institutions have also launched virtual tours, online opera performances, or concerts. This allows tourists from around the world to explore Germany's natural scenery and experience cultural and artistic events without leaving their homes."

— People's Daily, April 11, 2022, 18th Edition (International), Reporter Zhang Huizhong

The description once again mentions "足不出户" ("travel without leaving home"), aligning with the previous discussion on Egypt, further affirming the characteristic of digital media being unrestricted by time and space, allowing for

digital tourism anytime, anywhere.

As an authoritative media outlet in China, People's Daily's special coverage holds significant symbolic importance. It not only confirms the relevance and timeliness of this research direction but also underscores, from a national media perspective, the value of leveraging digital media technologies to innovate tourism communication models. The successful cases mentioned in the report provide practical references and positive policy signals for Jingxing's tourism destination to adopt metaverse technology in brand communication [17]. This indicates that such an approach aligns with the national strategy of encouraging digital upgrades in tourism and innovating consumption scenarios.

In the report titled “打开旅游的另一番图景” (“Unlocking a New Landscape of Tourism”) about digital tourism in China, the reporter once again mentions:

“At present, immersive tourism without leaving home is becoming the daily choice for many people.”

— People's Daily, April 11, 2022, 18th Edition (International), Reporter Zhuang Xueya

With the aid of digital technology, tourists can reach places that are otherwise inaccessible: swimming with humpback whales in Antarctica, standing at the edge of a volcano to gaze at the magnificent scenery, one moment looking at Angel Falls from high in the sky, the next moment turning into splashes of water rushing downward—4K displays and Dolby panoramic sound technology bring an immersive audio-visual experience, making extraordinary and remote landscapes more accessible than ever before.

After the outbreak of the COVID-19 pandemic, a new trend in the tourism industry is gradually emerging: technology is entering with unprecedented momentum, integrating into digital tourism with technologies like VR (Virtual Reality), AR (Augmented Reality), and MR (Mixed Reality). This not only “heals” travel enthusiasts confined at home but also opens a new window for the tourism industry.

— People's Daily, April 11, 2022, 18th Edition (International), Reporter Zhuang Xueya

It can be observed that different reporters in their coverage of digital tourism in various countries almost all mentioned “travel without leaving home”. Researchers believe that “travel without leaving home” enabling travel without constraints of time and place, is the fundamental feature of digital media. Reporters also use terms like “immersive” and “within reach”, providing powerful evidence of digital media transcending temporal and spatial limitations. The real and novel experiences mentioned in the reports contribute to the positive digital tourism experiences of most interviewees, thanks to the development of digital media technology [18]. In several news reports, journalists focused on the period since the outbreak of the COVID-19 pandemic. It can be inferred that non-digital tourism has been impacted by the pandemic. In contrast, digital tourism, which emerged as a response, can transcend temporal and spatial limitations. It remains unaffected by the pandemic, offering a new perspective for the continued development of the tourism industry, showcasing the resilience and adaptability brought by digital tourism.

Innovate expression techniques and expand communication channels. Encourage and support cultural institutions to develop digital experience projects such as immersive, cloud exhibitions and cloud tourism.

-- Liu Wanming, director of the National Museum of China

Some scenic spots use technology to create immersive performances to allow visitors to have a unique experience, which is one of the directions worth further

innovations, the next step can be to integrate more traditional art forms, through 'art + technology' to create more audio-visual highlights."

-- National first-class actress Liu Lili

The above-mentioned reports emphasize the need to strengthen the application of digital technology in tourism marketing and related areas, aiming to propel new developments in the tourism sector. Representatives also discuss the incorporation of digital media technologies such as "immersive" and "being there" experiences as innovative approaches in tourism marketing.

Another national newspaper, The Economic Times, reported on April 23, 2020:

Digital tourism has become an important part of promoting the recovery of the tourism industry, promoting the expansion and improvement of consumption quality, and is also an important starting point to further promote the high-quality development of tourism.

-- China Economic Times, April 23, 2020

It can be observed that from an economic perspective, Economic Times has analyzed that digital media is becoming a significant driving force for tourism development in countries along the Belt and Road. Emerging payment and booking methods led by digital technology can meet the diversified new consumption demands of tourists. This is attributed to the convenient operation and transcending of time and space characteristics of digital media.

4.2 A coupling relationship exists between the technological features of digital media and the deep-seated needs of users

Through in-depth interviews with four stakeholder groups, the researchers confirmed a high degree of alignment between user needs and technological functionalities, which provides a fundamental basis for strategy formulation. The analysis of the interviews revealed that although the four groups offered diverse perspectives, they all exhibited a positive and open attitude toward leveraging the metaverse to enhance the communication of Jingxing's tourism brand.

Informant G-2 mentioned it in the interview, using an old saying "far away in the horizon, close at hand" to describe the characteristics of digital media communication.

"Digital media can also transcend the limitations of time and space, we used to say, 'far away in the horizon, close at hand' 'now digital media can help us achieve, any time, any place can achieve communication, information release and search has become accessible....." (G-2)

The interactivity and immersive features of digital media technologies provide users with a highly engaging experience, transforming them from passive recipients of information into active participants and co-creators of content [19]. This shift is evident not only in users' real-time interactions with the virtual environment but also profoundly influences the construction of their relationship with the brand. As Informant BO-3 stated during the interview:

"I also particularly like the interactivity of digital media platforms. I can express my own. Views and opinions on the platform and communicate and discuss with other users." (BO-3)

The same feeling was shared by informant T-1, a travel blogger who regularly engages with fans on digital media platforms, who said:

"..... digital media platforms are highly interactive. I can interact with followers in real time, answer their questions, and address their concerns. This interactivity not only helps to build a connection between me and my followers, but also allows me to better understand their needs and interests." (T-1)

As a local resident, the informant LR-1 has only a high school education, and he said in the interview:

“The use of digital media, especially some mobile phone apps, is basically not difficult, very simple, as long as there is a basic understanding of it can be used, and it is easy to learn.” (LR-1)

The same sentiment was shared by informant LR-4, who at 61 was the oldest respondent of all informants and said:

“My grandson is only ten years old, and he can play mobile phones smoothly. Many things are taught by his grandson. Whether it is shopping, entertainment, travel, etc., young people are operating through mobile phones.” (LR-4)

From the perspective of Uses and Gratifications Theory (UGT), the interactive features of digital media technologies deliver exceptional user experiences by precisely addressing users' diverse and profound psychological and social needs. Interactive technologies enable users to shift from passive recipients to active participants, allowing them to explore and influence virtual environments through avatars [20]. This satisfies cognitive needs such as knowledge acquisition and cultural exploration, as well as personal integrative needs including self-expression and achievement. The high degree of alignment between technological capabilities and user needs makes media usage more purposeful and fulfilling, thereby driving a paradigm shift in brand communication toward user-directed, emotionally resonant, and community-driven engagement.

4.3 Digital Media Communication Strategies for the Jingxing Tourism Destination Brand

Building upon the preceding analysis of digital media technology characteristics, combined with the current development status of Jingxing tourism destination and the theoretical support of Uses and Gratifications Theory, this study proposes the following concrete strategies. These aim to systematically construct digital media communication strategies for Jingxing's tourism destination brand in the metaverse era through digital media technology innovation.

4.3.1 Construct Immersive Narrative Experiences to Meet Deep-Seated Cognitive and Emotional Needs

Building on the analysis of digital media technology features, Jingxing's current tourism development context, and the theoretical framework of Uses and Gratifications Theory, this study proposes targeted strategies to systematically develop digital media communication approaches for Jingxing's destination brand in the metaverse era. To address the existing limitations of superficial cultural representation and shallow visitor experiences, we recommend leveraging the immersive nature of metaverse technologies through creating multidimensional, narrative-driven digital experiences. This includes developing VR storylines based on core cultural IPs like the Ancient Qin Post Road and Jingxing Kiln, where users as virtual avatars can role-play as historical figures to deeply engage with cultural contexts, while implementing AR-enhanced guided tours at physical sites that overlay historical information and interactive virtual elements to bridge physical and digital narratives.

4.3.2 Establish an Interactive Co-Creation Platform to Activate Users' Social and Self-Actualization Needs

To transform the current one-way communication model, it is crucial to establish a highly interactive and co-creative digital communication platform that enables users to become active participants in brand building. Firstly, a Jingxing digital media

community should be developed, providing user-friendly creation tools that allow users to design virtual avatars, produce and share tour videos, and create virtual attractions. An integrated reward system featuring points accumulation and digital rights exchange would incentivize sustained creation and sharing, thereby addressing users' personal and social integration needs. Secondly, limited-edition digital collectibles centered on Jingxing's intangible cultural heritage and distinctive cultural assets should be launched. These digital assets would be obtainable through online activities, virtual mission completion, or offline consumption, serving not only as unique digital identity symbols but also as novel social currency that enhances brand community cohesion and facilitates viral communication [21].

4.3.3 Integrate Technology Ecosystem and Multi-Channel Distribution to Achieve Omnichannel Communication and Precision Reach

To ensure seamless experiences and broad dissemination, it is imperative to integrate diverse technologies and optimize content distribution. First, establish a comprehensive technical support system by adopting integrated "VR + AR + Brand" solutions instead of isolated technological applications: VR creates deeply immersive scenarios while AR enhances on-site experiences, collectively strengthening brand promotion. Second, implement cross-platform precision content distribution by deploying core digital experiences through dedicated mini-programs or apps, while simultaneously delivering lightweight content to youth-oriented social platforms like Tik Tok, Weibo, and REDnote. Through thematic marketing campaigns and experiential live streams, this strategy guides cross-platform traffic convergence to maximize brand exposure and user conversion.

4.3.4 Establish a Sustainable Operation Model to Ensure Long-Term Brand Value Appreciation

Digital media communication should not be implemented as a one-off project but requires long-term operation to consistently generate value [22]. First, establish a cyclical model of "online engagement-offline experience-online reinforcement." Online digital experiences should incorporate incentive mechanisms to encourage users to visit physical locations for verification and consumption, while offline experiences need to feature AR check-in points and UGC collection activities that motivate users to return to digital platforms for content sharing - thereby creating a mutually reinforcing loop between virtual and physical engagement. Furthermore, it is essential to form a Jingxing Brand Digital Innovation Alliance, uniting cultural tourism authorities, technology companies, cultural institutions, local businesses, and user representatives to collectively oversee content updates, technical maintenance, activity planning, and commercial development. This collaborative framework ensures cultural authenticity, technological innovation, and operational sustainability, ultimately achieving continuous appreciation of Jingxing's tourism brand equity.

Through the systematic implementation of the aforementioned strategies, Jingxing's tourism brand communication will achieve a paradigm shift from information dissemination to experiential empowerment, and from one-way broadcasting to symbiotic co-creation. This transformation will ultimately establish a distinctive and dynamic digital brand ecosystem for Jingxing tourism destination in the metaverse era.

4.4 Discussion of Theoretical and Practical Findings

The findings and discussion of this study deepen the understanding of the value of digital media technologies in cultural tourism brand communication during the

metaverse era. Theoretically, this research successfully applies the classic "Uses and Gratifications Theory" to the cutting-edge context of the metaverse, demonstrating its enduring vitality in explaining user motivations for adopting complex new media technologies. More importantly, it reveals that the metaverse is not merely a stack of technologies, but rather a complex socio-technical system centered around fulfilling profound human needs. The effectiveness of technology directly depends on its precision in addressing users' cognitive, emotional, personal, and social requirements. The study expands the scope of the Uses and Gratifications Theory by extending it from traditional media platforms to immersive digital environments, providing new theoretical perspectives for understanding the psychological mechanisms behind human-computer interaction. Simultaneously, this establishes a foundation for future exploration of the applicability of other classic communication theories in the metaverse era.

At the practical level, this study provides a clear transformation pathway for cultural heritage tourism destinations like Jingxing. The discussion suggests the innovativeness of this strategy lies in its systematic approach to addressing several specific challenges in Jingxing's current brand communication: it fulfills deep cognitive and emotional needs through constructing immersive narrative experiences; activates users' social and self-actualization requirements by establishing interactive co-creation platforms; transcends superficial digitalization barriers through technological integration; and reverses passive one-way communication through community collaboration. This approach aims to transform Jingxing from a geographical destination into a cultural IP and emotional connection space that transcends physical boundaries and maintains persistent presence. This representing a crucial research gap addressed by this study.

5. Limitations and Future Directions

This study also has certain limitations. The research findings are primarily based on textual analysis of qualitative interviews, which, while providing sufficient depth, involve a limited sample size. The generalizability of these findings requires further validation through large-sample questionnaire surveys for quantitative verification. Additionally, the case study focused solely on Jingxing as a representative area. Although it possesses typical characteristics, it may not fully reflect situations across different regional contexts. Future research could incorporate more diverse case studies for comparative analysis.

Building upon this foundation, future research could develop in the following directions: First, conducting user behavior data analysis on Jingxing's established tourism digital media platform to precisely examine the effectiveness of different functional modules in satisfying various user needs. Second, implementing cross-case comparative studies to explore the applicability and differentiation of this strategy when implemented across different types of tourism destinations.

6. Conclusion

This study demonstrates the significant potential and feasibility of innovating Jingxing's tourism brand communication strategies through digital media technologies in the metaverse era. The proposed strategy represents a paradigm shift from "information dissemination" to "experience creation," and from "serving tourists" to "co-building communities." It provides both theoretical guidance and practical frameworks not only for Jingxing but also for numerous tourism destinations facing

similar challenges, offering forward-looking solutions for their digital transformation.

Author contributions: Conceptualization, RL; methodology, SMR; formal analysis, RL; investigation, RL; data curation, RL; writing—original draft preparation, RL; writing—review and editing, RL; SMR and NA; All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Conflict of interest: The authors declare no conflict of interest.

References

1. Buhalis D, Leung D, Lin M. Metaverse as a disruptive technology revolutionising tourism management and marketing. *Tourism Management*. 2023, 97:104724. <https://doi.org/10.1016/j.tourman.2023.104724>.
2. Uddin M, Obaidat M, Manickam S, Laghari S U A, Dandoush A, Ullah H, et al. Exploring the convergence of Metaverse, Blockchain, and AI: A comprehensive survey of enabling technologies, applications, challenges, and future directions. *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*. 2024, 14(6): e1556. <https://doi.org/10.1002/widm.1556>
3. Cheng M. Social media and tourism geographies: Mapping future research agenda. *Tourism Geographies*. 2025, 27(3–4), 579–588. <https://doi.org/10.1080/14616688.2024.2304782>.
4. Kostadimas, D., Kasapakis, V., & Kotis, K. (2025). A systematic review on the combination of VR, IoT and AI technologies, and their integration in applications. *Future Internet*, 17(4), 163. <https://doi.org/10.3390/fi17040163>
5. Kyriltsias C, & Michael-Grigoriou D. Social interaction with agents and avatars in immersive virtual environments: A survey. *Frontiers in Virtual Reality*. 2022, 2: 786665. <https://doi.org/10.3389/frvir.2021.786665>
6. Wibowo A A. Publication trends related to Uses and Gratification Theory on social media. *International journal of communication and society*. 2022, 4(2): 258–266. <https://doi.org/10.31763/ijcs.v4i2.789>
7. Chen S. From Spectator to Participant: How New Media Ignites the Innovative Potential of Public Design Participation. *Spectator*. 2023, 4(3). <https://doi.org/10.54097/hiaad.v4i3.07>
8. Haythornthwaite C. Social networks and Internet connectivity effects. *Information, Community & Society*. 2005, 8(2): 125–147. <https://doi.org/10.1080/13691180500146185>
9. Papacharissi Z. Uses and Gratifications. In *An integrated approach to communication theory and research*, 2nd ed. Routledge; 2014. pp.166.
10. Zhang J, Shabbir R, & Abro M. Role of social media in pre-purchase consumer information search: A uses and gratifications perspective. *Mediterranean Journal of Social Sciences*. 2015, 6(1): 11–22. <https://doi.org/10.5901/mjss.2015.v6n1p11>
11. Katz V S, & Gonzalez C. Toward meaningful connectivity: Using multilevel communication research to reframe digital inequality. *Journal of communication*. 2016, 66(2): 236–249. <https://doi.org/10.1111/jcom.12214>
12. Majumdar A. Thematic analysis in qualitative research. In: *Qualitative techniques for workplace data analysis*. 2019. Pp. 197–220. <https://doi.org/10.4018/978-1-5225-5366-3.ch009>
13. Braun V, Clarke V. To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative research in sport, exercise and health*. 2021, 13(2): 201–216. <https://doi.org/10.1080/2159676X.2019.1704846>
14. Castleberry A, Nolen A. Thematic analysis of qualitative research data: Is it as easy as it sounds? *Currents in pharmacy teaching and learning*. 2018, 10(6): 807–815. <https://doi.org/10.1016/j.cptl.2018.03.019>
15. Ahmed S K, Mohammed R A, Nashwan A J, et al. Using thematic analysis in qualitative research. *Journal of Medicine, Surgery, and Public Health*. 2025, 6: 100198. <https://doi.org/10.1016/j.glmedi.2025.100198>
16. Naeem M, Ozuem W, Howell K, Ranfagni S. A step-by-step process of thematic analysis to develop a conceptual model in qualitative research. *International journal of qualitative methods*. 2023, 22: 16094069231205789. <https://doi.org/10.1177/16094069231205789>
17. Chakraborty U, & Biswal S K. Diffusion of innovation in direct-to-avatar (D2A): A study of immersive communication and branding in the metaverse. *Computers in Human Behavior*. 2024, 158: 108318. <https://doi.org/10.1016/j.chb.2024.108318>
18. Pencarelli T. The digital revolution in the travel and tourism industry. *Information technology & tourism*. 2020, 22(3): 455–476. <https://doi.org/10.1007/s40558-019-00160-3>
19. Takala G B. The interactive creativity of the digital era: Exploring how media art redefines the relationship between audience

- and artwork. *Studies in Art and Architecture*. 2023, 2(3): 28–44. <https://doi.org/10.56397/SAA.2023.09.04>
20. Kyrilitsias C, Michael-Grigoriou D. Social interaction with agents and avatars in immersive virtual environments: A survey. *Frontiers in Virtual Reality*. 2022, 2: 786665. <https://doi.org/10.3389/frvir.2021.786665>
21. Yli-Junnila, N. (2025). The role of visual communication in community identity. 2025, 6(04): <https://urn.fi/URN:NBN:fi:amk-2025060319609>
22. Chandratreya A. Digital transformation strategy and management. *Interantional Journal of Scientific Research in Engineering and Management*. 2024, 8(10): 58. <https://doi.org/10.55041/IJSREM38058>