Cultural Communication Model Via LINE Official Account for Sacred Temple Tourism Enhancement in Nakhon Phanom, Thailand

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Abstract

Digital communication technologies have transformed tourism promotion, necessitating new cultural communication models for temple tourism in post-pandemic era. The purposes of this research aimed to 1) Develop the cultural meaning and communication model 2) Evaluate the suitability of the model 3) Determine tourists' satisfaction toward the use of the model through the Line official account system. This research was the qualitative study divided into 3 phases as follows: 1) Synthesising the model through the document synthesis techniques, 2) Assessing the suitability of the model by 9 experts, and 3) The model was tried out with 492 tourists via Line official account. They were selected using purposive sampling method. The data collection tools included 1) recordings and synthetic document forms, 2) suitability evaluation forms, and 3) satisfaction surveys on the usage system. The results revealed that the cultural meaning and communication model through the Line official account system consisted of five components: 1) Attracting and interesting information, 2) Fundamental and necessary information, 3) A Reliable source of information, 4) Updatable information, and 5) Feedback information. The aforementioned model was found to be highly suitable for use and yielded a high overall level of satisfaction. The tourists' satisfaction with the development of the cultural meaning and communication model through the Line official account system was at a high level.

Keywords: Communication Model, Culture and religion, Tourism Experience, LINE Official Account, Sacred Temples

1. Introduction

In the new era, communication has transcended traditional boundaries, breaking free from the limitations of time and space. The rise of smartphones, social media platforms, and instant messaging apps has facilitated instant and seamless connectivity across the globe. We now have the ability to communicate and engage with individuals and communities from diverse backgrounds, regardless of geographical distances. This newfound connectivity has opened up a world of possibilities and reshaped the dynamics of human interaction. Due to the current situation, there was a shift from traditional classroom learning to online learning. Accordingly, e-learning models started to reform the delivery of instructional content as well as learning activities and to establish new social communication means. This created a new learning environment which had to be investigated in terms of its difference from the traditional one (Assaf&Nehmeh,2022). The information have evolution, driven by the internet and digital technologies, has revolutionized the availability and accessibility of knowledge. With a few clicks or taps, the new generation now has access to an immense wealth of information from

diverse sources, transcending geographical and cultural boundaries. This democratization of information empowers individuals to explore a wide range of topics, engage with different perspectives, and develop a more comprehensive understanding of the world around them. Digital platforms and social media have become critical in providing unprecedented access to cultural and historical narratives, significantly influencing travel choices (Chen et al., 2023). Virtual and augmented reality technologies have made heritage sites more accessible, offering previews that drive physical visitation while mobile applications guide tourists through heritage-rich locations.

Thailand, with its rich Buddhist heritage representing 93.4% of the population and approximately 64 million Buddhists, stands as a prime example of successful cultural tourism integration (Wikipedia, 2024). Cultural heritage tours account for 55.62% of the heritage tourism market, reflecting travelers' increasing desire for meaningful, immersive experiences that offer insights into traditions, arts, and history (Tourism Authority of Thailand, 2024). Online systems play a pivotal role in tourism promotion, revolutionizing the way destinations engage with potential visitors. They provide a range of platforms and services that enable destinations to showcase their attractions, connect with travelers, and facilitate seamless travel experiences. Through websites, mobile apps, social media platforms, and online travel agencies, destinations can reach a global audience, create enticing content, and influence travel decisions. Moreover, the restored format of the tourism industry will differ significantly from those parameters that existed before. There are several reasons for this. Firstly, it is difficult to predict the timing of a coronavirus pandemic, which will differ from country to country in terms of timing and form of completion. Hence the uncertainty and risks of states lifting restrictions on tourism occur; secondly, there has been a climate of anxiety and fear, a high degree of uncertainty that is beyond the control of any individual but has a strong emotional impact on individuals. (Magusovich&Mirgasimoviz,2021)

Moreover, the restored format of the tourism industry will differ significantly from those parameters that existed before. There are several reasons for this. Firstly, it is difficult to predict the timing of a coronavirus pandemic, which will differ from country to country in terms of timing and form of completion. Hence the uncertainty and risks of states lifting restrictions on tourism occur; secondly, there has been a climate of anxiety and fear, a high degree of uncertainty that is beyond the control of any individual but has a strong emotional impact on individuals (Magusovich & Mirgasimoviz, 2021). The pandemic has highlighted the need for innovative digital communication channels that can bridge physical distances while maintaining authentic cultural connections. Research indicates that 78% of tourists show moderate to high involvement in interactive participation with intangible cultural heritage, demonstrating the potential for digital engagement platforms (Applied Mathematics and Nonlinear Sciences, 2023).

However, limited cross-cultural research addresses cultural tourism promotion on social media platforms, particularly regarding sacred heritage sites (Cantoni et al., 2021). Furthermore, insufficient supply of digital talents in cultural tourism development and digital gaps between tourist markets and destinations persist (Zheng et al., 2024). Specifically, comprehensive studies examining instant messaging platform effectiveness for Buddhist temple tourism communication remain scarce, despite the growing integration of digital technologies in heritage tourism promotion. For the reasons mentioned above, the goal is to develop a Model of Cultural Meaning and Communication using the LINE Official Account System. This initiative aims to enhance tourism around holy temples in the Nakhon Phanom area, creating a model that serves as a cultural communication channel aligned with tourism communications.

The objective is to expand the learning space for the digital age and provide a guideline that can be applied to organizing tourism activities in different formats or on various platforms in the future.

2. Objectives

The objectives of the research were:

1. To develop cultural meaning and communication model through Line Official Social Accounts.

This objective focuses on creating a comprehensive framework that integrates cultural significance with digital communication strategies. The development process involves synthesizing existing literature on cultural tourism communication, analyzing LINE Official Account features, and designing a model that effectively conveys the cultural and spiritual meanings of sacred temples to diverse tourist audiences while maintaining authenticity and cultural sensitivity.

2. To assess the suitability of cultural meaning and communication model through Line Official Social Accounts.

This objective aims to evaluate the appropriateness and effectiveness of the developed model through expert validation. The assessment involves engaging subject matter experts in tourism, digital communication, and cultural heritage to examine the model's components, theoretical foundations, and practical applications. Evaluation criteria include cultural accuracy, technical compatibility, scalability, and ethical considerations regarding sacred site representation.

3. To study the satisfaction of tourists from using Line Official Social Accounts for sacred temples in Mueang district, Nakhon Phanom province.

This objective seeks to empirically measure tourist satisfaction levels when using the LINE Official Account system for sacred temple tourism. The study examines user satisfaction dimensions including ease of use, information quality, cultural authenticity, and overall experience. Tourist feedback provides insights into the model's real-world effectiveness and validates the digital communication approach's practical value.

3. Literature Review

3.1 Cultural Meaning and Communication Theories

Cultural meaning and communication theories serve as foundational frameworks for understanding how individuals and communities interpret, construct, and transmit cultural significance through various communication channels. Cultural theory seeks to understand the relationships between individuals, environments, institutions and everyday activities, paying close attention to power dynamics in our everyday lives. Within tourism contexts, these theories become particularly relevant as they address how cultural messages are encoded, transmitted, and decoded by different stakeholders, including tourists, local communities, and tourism service providers. The concept of cultural meaning encompasses the symbolic interpretations and shared understandings that emerge from collective experiences within specific cultural contexts (Assmann, 2011). Meaning has a positive impact on tourists' attitudes toward intangible cultural heritage exhibitions by influencing beliefs, and meaning has a positive impact on the subjective norms of tourists' participation and dissemination of information through influencing beliefs. This theoretical perspective emphasizes that cultural communication is not merely about information transfer but involves complex processes of meaning-making that occur within specific socio-cultural frameworks.

In the context of tourism communication, cultural meaning theories highlight the importance of authenticity and cultural sensitivity in message construction. Communication is an act of human connection, but it is culture that drives it. In tourism, the quality of communication is related to the culture and means used. The effectiveness of cultural communication depends on the communicator's understanding of cultural nuances, values, and belief systems that shape how messages are perceived and interpreted by diverse audiences.

3.2 Digital Tourism Communication Models

Digital technologies have fundamentally transformed tourism communication paradigms, creating new opportunities for destination marketing, visitor engagement, and cultural heritage preservation (Buhalis & Leung, 2018). These communication models encompass various technological platforms and frameworks designed to enhance tourist experiences through innovative strategies. Research demonstrates that tourists' TDOC (Tourism Destination Online Communication) perceptions directly affect their behavioural intentions, with tourist satisfaction serving as a mediator in this relationship (Han et al., 2023). Contemporary digital communication models emphasize interactivity, personalization, and real-time engagement while fostering social development and cultural awareness through digital technology participation (Leung et al., 2022; Zhang et al., 2023). These models leverage artificial intelligence, big data analytics, and mobile applications to create immersive, personalized experiences that cater to diverse tourist preferences and behaviors (Sigala, 2020). Furthermore, digital transformation has revolutionized demand-offering interactions in the travel industry, significantly affecting the entire customer journey (Buhalis et al., 2023).

The integration of social media platforms, user-generated content, and interactive technologies has established new mechanisms for destination promotion and tourist engagement (Munar & Gyimóthy, 2013). Social networking platforms have particularly influenced tourist interactions, enabling enhanced cooperation and shared social experiences among travelers (Volpentesta & Felicetti, 2012). However, the effectiveness of digital tourism communication models depends on their ability to bridge technological capabilities with human-centered design principles (Porter & Heppelmann, 2014). Digital technology transcends spatial and temporal limitations, innovating traditional mediums for integrating culture and tourism while transforming production models and dissemination methods (Huang et al., 2023). Consequently, successful digital communication models must consider critical factors including user experience design, accessibility, cultural appropriateness, and technological infrastructure to ensure optimal implementation and user satisfaction (Gupta et al., 2018).

3.3 LINE Official Account Systems in Tourism

LINE Official Account represents a significant advancement in social media-based tourism communication, particularly in Asian markets where LINE has established substantial user bases. LINE app is Japan's no.1 messaging app and social media platform, with over 97 million Japanese users, and LINE has 224 million users worldwide with 169 million based in LINE's four key markets: Indonesia, Japan, Taiwan and Thailand. The platform's integration of messaging, social networking, and business communication features makes it particularly suitable for tourism applications. LINE Official Account systems offer unique advantages for tourism communication through their comprehensive feature sets, including rich media messaging, automated responses, and customer relationship management capabilities. Tourism is a growing business in Thailand, including tourist destinations, accommodation, or services. All mentioned businesses must use a LINE Official Account because it is the primary channel that Thai people use to communicate with each other online. The platform's ability to support multimedia content, interactive messaging, and real-time communication makes it an effective

tool for destination marketing and visitor engagement. The technical capabilities of LINE Official Account systems enable tourism operators to implement sophisticated communication strategies. LINE Official Account allows companies to deliver information directly to users who have added them as friends. It acts as a business profile within LINE, allowing brands to connect and engage with their target audience directly. These systems support various content formats, including text, images, videos, and interactive elements such as rich menus and chatbots, enabling comprehensive tourism information delivery. Social media platforms offer paid marketing opportunities with advanced targeting options allowing marketers to target very specific demographics, and they also support the integration of AI and chatbots that travel companies can use to answer important questions or enable online booking. The integration of artificial intelligence and automated response systems in LINE Official Accounts enables tourism organizations to provide 24/7 customer support and information dissemination, significantly enhancing the tourist experience.

3.4 Sacred Temple Tourism Experiences

Sacred temple tourism represents a unique intersection of spiritual pilgrimage, cultural heritage preservation, and tourism development. Sacred places are visited by different people and for very different reasons, ranging from the faithful and those who seek to have a transcendental experience to those who are drawn there by factors as diverse as nature or art. The complexity of sacred temple tourism experiences requires specialized communication approaches that respect religious sensitivities while providing meaningful cultural interpretation. The digital transformation of sacred temple tourism has introduced new possibilities for enhancing visitor experiences while preserving cultural authenticity. Digital representation of Indian temples through metaverse could significantly impact cultural preservation, tourism, education, and accessibility. By creating immersive virtual experiences, metaverse can bring temple heritage to life, allowing users worldwide to explore these sacred sites without physical travel. These technological interventions must balance innovation with cultural respect and religious appropriateness. Temple tourism involves not just physically visiting these sacred places but understanding their cultural and spiritual significance. Technology like online time slots, digital queue management, and smart crowd control can make darshan fairer, while virtual guides explaining the significance of rituals in real time help devotees understand what they are witnessing and why it matters. The integration of digital communication technologies in sacred temple tourism requires careful consideration of religious protocols, cultural sensitivities, and visitor expectations.

The communication challenges in sacred temple tourism stem from the need to convey complex religious and cultural meanings to diverse audiences with varying levels of cultural knowledge and spiritual interest. Smart tourism allows larger, coordinated efforts for Innovation, quality of life and sustainable tourism through rich data infrastructure within the ambit of specific destinations. Within a context, personalisation and real-time monitoring can occur where sentiments are positive or highly positive for that matter. Effective communication systems must accommodate both spiritual seekers and cultural tourists while maintaining the sanctity and authenticity of the religious experience.

3.5 Theoretical Framework Development

The development of comprehensive theoretical frameworks for cultural tourism communication requires integration of multiple disciplinary perspectives, including communication theory, cultural studies, tourism research, and digital technology studies. Cultural tourism is being transformed through the adoption of new technologies. For instance, cultural attractions such as museums are now using augmented and virtual reality to enhance the visitor experience. These frameworks must address the complex relationships between

technology, culture, communication, and tourism experiences. Digital economy promotes efficiency through data technology to predict how climate changes affect tourism destinations and provides response guidelines for public services, tourism transportation, and resource protection through a big data monitoring platform to enhance external response capabilities. Theoretical frameworks for digital cultural tourism communication must consider the multidimensional nature of tourism experiences, incorporating technological capabilities, cultural authenticity, visitor satisfaction, and sustainable development principles. The integration of digital communication technologies in cultural tourism requires theoretical frameworks that address both technological and humanistic considerations. Virtual technologies, such as AR, VR, and mobile augmented reality (MAR), are now widely used in cultural heritage tourism, with the potential to protect cultural heritages and enhance the potential of heritage management, thereby contributing to cultural communication. These frameworks must provide guidance for balancing technological innovation with cultural preservation and visitor experience enhancement. Contemporary theoretical frameworks emphasize the importance of stakeholder engagement, community participation, and collaborative approaches to cultural tourism development. The interactive network platform empowers local communities and encourages local inhabitants and tourists to communicate, which promotes the healthy growth of resident-tourism relationships. Effective theoretical frameworks must account for the diverse needs and perspectives of all stakeholders involved in cultural tourism communication processes.

3.6 Synthesis and Research Gaps

The literature review reveals significant developments in cultural tourism communication, particularly in the application of digital technologies and social media platforms. However, several research gaps remain that warrant further investigation. The integration of cultural meaning theories with digital communication technologies requires more comprehensive theoretical frameworks that can guide practical applications while preserving cultural authenticity and enhancing visitor experiences. The specific application of LINE Official Account systems in sacred temple tourism represents an underexplored area of research. While general studies on social media marketing in tourism exist, the unique characteristics of LINE's communication ecosystem and its applicability to religious and cultural tourism contexts require specialized investigation. Future research should focus on developing context-specific communication models that leverage the unique capabilities of LINE Official Account systems while respecting cultural and religious sensitivities. The measurement and evaluation of communication effectiveness in digital cultural tourism platforms present ongoing challenges. Current literature lacks comprehensive frameworks for assessing the impact of digital communication interventions on tourist satisfaction, cultural understanding, and sustainable tourism development. Future research should develop robust evaluation methodologies that can capture both quantitative and qualitative dimensions of communication effectiveness in cultural tourism contexts.

4. Methods and Materials

4.1 Target Sample

The target population for this study comprised tourists who accessed the LINE Official Account of sacred temples (Wat Sak Sit) in Mueang District, Nakhon Phanom Province during the three-month data collection period from October to December 2023. The population was specifically characterized by their geographic engagement within Mueang District, active utilization of the LINE Official Account system, and demonstrated interest in sacred temple tourism activities.

A purposive sampling method was employed to select participants who met specific criteria essential for achieving the research objectives. This non-probability sampling technique was chosen to ensure that all participants had direct experience with the LINE Official Account system and could provide meaningful insights regarding their satisfaction with the digital communication platform for sacred temple tourism. The sample size of 492 participants was systematically determined using the formula for finite population sampling, establishing a 95% confidence level with a 5% margin of error. The calculation incorporated an expected response rate of 80% and was based on monthly visitor statistics obtained from the Tourism Authority of Thailand for religious tourism activities in Nakhon Phanom Province. This sample size ensures adequate statistical power for analyzing tourist satisfaction patterns while maintaining representativeness of the target population engaged in digital-enhanced sacred temple tourism experiences.

4.2 Research instrumentations and validation assessment

1. Recordings and document analysis forms were employed for the recording and analyzing documents in relation to principles, theories, and relevant research studies.

2. Evaluation forms were developed by the researcher as a tool for assessing suitability using a 5-level rating scale, consisting of 15 items. The assessment of Index of item objective congruence (IOC) was assessed and carried out with a value of 0.90.

3. Tourist satisfaction surveys were conducted to assess the experience of using the official Line account of sacred temples (Wat Sak Sit) in Mueang District, Nakhon Phanom. These assessment surveys were developed by the researchers and constructed using a 5-level rating scale. The survey contained 11 items. An assessment of the Index of Item Objective Congruence (IOC) was conducted and yielded a value of 0.80.

4.3 Data collection

1. The synthesis of cultural meaning and communication model through Line official accounts involved working through the data synthesis by conducting narrative analysis and summarizing information related to relevant theoretical principles. Various aspects were separated into focal points, including the components of cultural meaning and communication processes, activities promoting tourism of sacred temples which located in Mueang district at Nakhon Phanom, and efforts to elevate and cultural tourism. This involved studying research works and projects both domestically and internationally and summarizing through analysis tables and interpretive summaries. Data collection took place from May to June 2023.

2. The evaluation forms as a tool for assessing suitability and appropriateness of cultural meaning and communication model through Line official accounts were carried out by the researchers through electronic mail correspondence. This involved dispatching documents, including cover letters asking experts' permission in assessing item objective congruence (IOC) and suitability, along with the distribution of evaluation forms. Experts were then prompted to respond for all aforementioned evaluation forms and submit electronically. A total of 9 experts participated, and the data collection took place from July 2023.

3. The tourism satisfaction survey when experiencing with Line official account of sacred temples (Wat Sak Sit) in Mueang district, Nakhon Phanom was conducted by the researchers who gathered information from a target group of 492 individuals, who are tourists accessing and using the aforementioned Line official account, during the period of October to December 2023. This data was obtained through purposive sampling method, and the analyzed results were summarized and concluded in January 2023.

4.4 Data analysis

1. Recordings and document analysis forms were analyzed in segments according to specific points, including components of cultural meaning and communication processes, activities promoting tourism at sacred temples in Nakhon Phanom province, and efforts to enhance the standard of cultural tourism. Data were recorded and summarized in tables as frequency values. Data analysis was conducted through narrative and interpretive summarization.

2. The evaluation forms in assessing the suitability of cultural meaning and communication model through Line official accounts underwent quantitative data analysis using descriptive statistics, including the mean and standard deviation (SD). For qualitative data, the data were analyzed by summarizing interpretations from the information obtained from assessments and additional recommendations and suggestions.

3. The obtained quantitative data from the satisfaction survey for using Line official account of the sacred temples in Nakhon Phanom province were computed and summarized for the mean and standard deviation (SD). Qualitative data was then subjected to axial coding analysis, incorporating all assessment forms as well as additional suggestions and feedback from the satisfaction survey.

4.5 The operational definitions of terms

The cultural meaning and communication model refers to components and activities that demonstrate the process of conveying meaning related to cultural beliefs in a particular context of certain areas or locations.

Line official account system refers to an information communication system accessible through Line official social program and application. It can accommodate access from a large number of users, with an automated response system for rapid communication. Additionally, it presents multimedia data to users which allow them to learn various things stored in the system without time and location constraints.

Cultural tourism refers to tourism in areas or regions with significant cultural characteristics, where storytelling is used to develop social and human development narratives that allows people to learn about local lifestyles, beliefs, and traditions

5. Results

The findings summarized according to the research objectives, were as follows:

The results of analyzing the cultural meaning and communication model through Line official account consisted of five components: 1) Attracting and interesting information 2) Fundamental and necessary information, 3) A Reliable source of information, 4) Updatable information, and 5) Feedback information, as illustrated in Figure1
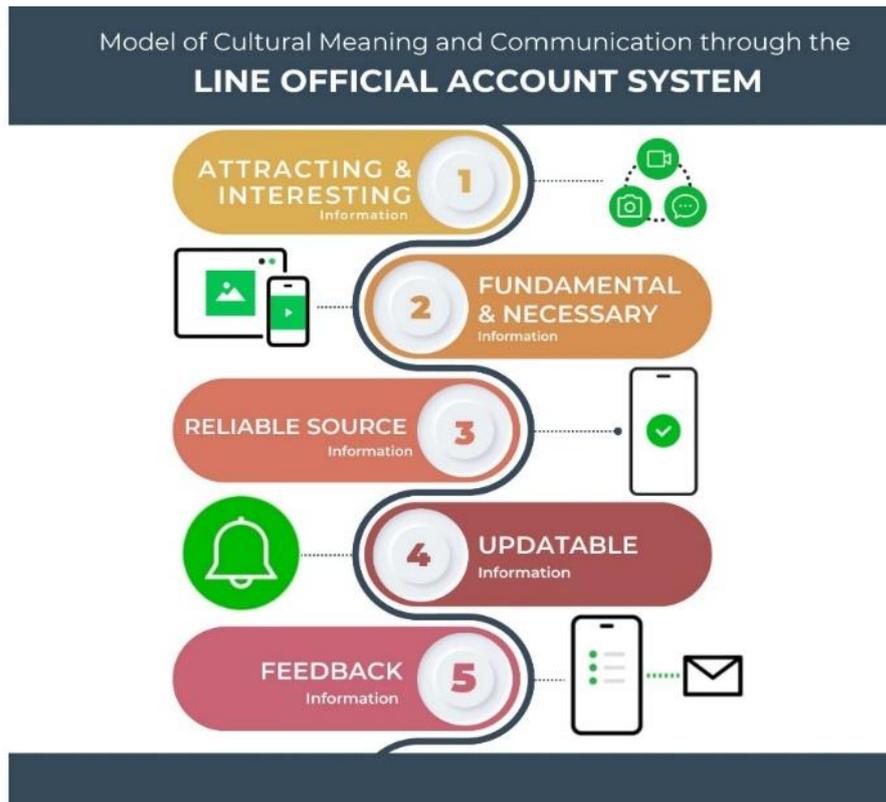
Figure 1: Synthesized results of the cultural meaning and communication model through Line Official Account

Model of Cultural Meaning and Communication through the Line Official account system.

1. Attracting and interesting information is synthesized data that utilizes keywords to capture interest. It includes visual and video content that can be linked to what tourists' desire, along with the use of easily understandable and contemporary language to facilitate communication accessible to all target groups.

2. Fundamental and necessary information comprises of visual and video content, text, and explanations that provide tourists with various information on the target travelling area, enabling them to plan their travels. This includes information on temple locations, transportation details, accommodation options, restaurant information, and etc.

3. A Reliable source of information is data that can identify credible and trustworthy sources of information and narrations that can verify facts in the target area.

4. Updatable information is a management system overseen by data administrators, allowing data to be continually improved to stay current and updated with various events and can be edited at any time.

5. Feedback information is a channel used to communicate among users, allowing them to express their opinions, ask questions, provide suggestions, and contribute ideas for continuous system improvement.
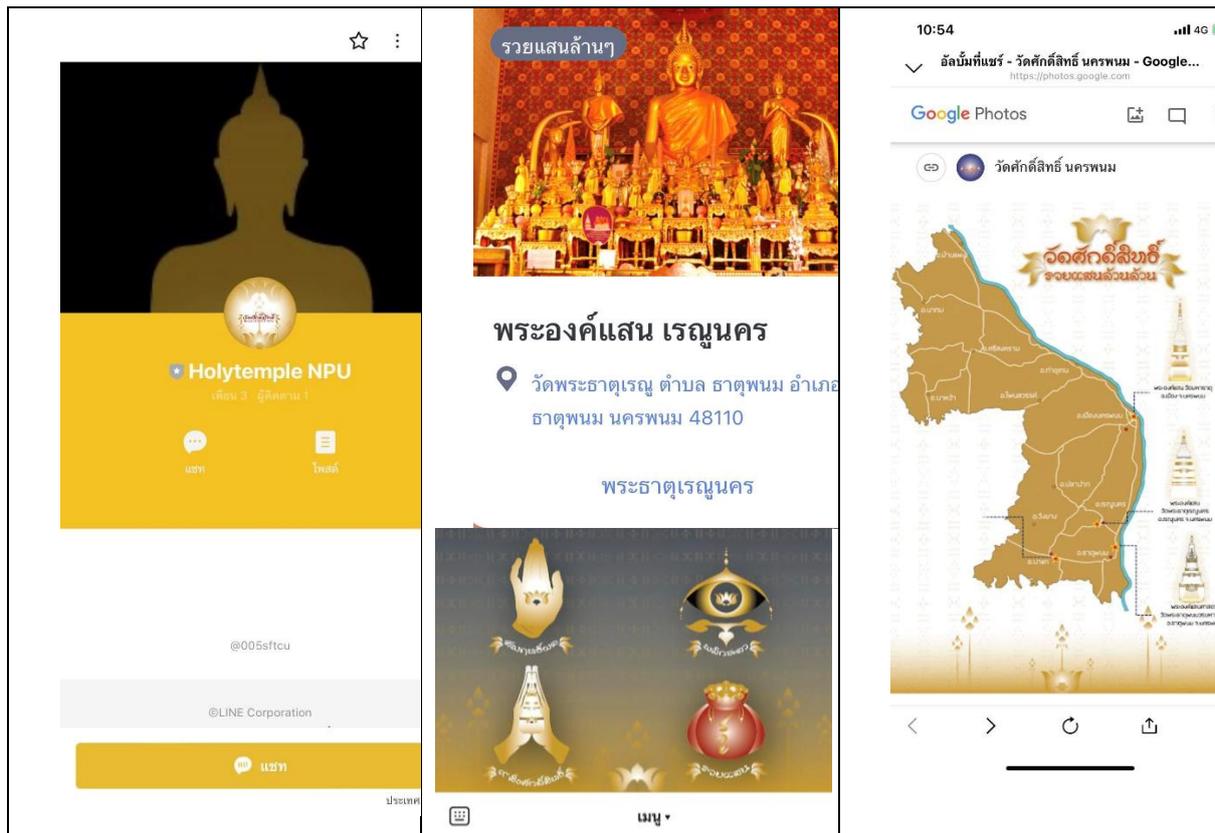
Figure 2: The Line official account system of sacred temples (Wat Sak Sit) in Mueang district, Nakhon Phanom

The evaluation result of the suitability of the cultural meaning and communication model through the Line official account system of sacred temples (Wat Sak Sit) in Mueang district, Nakhon Phanom: conducted by 9 experts, it was found that the overall suitability was high, as shown in Table 1.

Table 1: Evaluation Results of the Suitability of the Cultural Meaning and Communication Model through the Line official account systems

Components	M	SD	Results
1. Attracting and interesting information			
1.1 Images of locations displayed in the Rich Menu.	4.78	0.44	Highest level
1.2 Automated text in the Greeting Message.	4.56	0.73	Highest level
1.3 Instructions for accessing information in the Rich Menu.	4.44	0.73	High level
1.4 Channels for inquiring about additional information in the Chat Bot.	4.44	0.88	High level
Total	4.55	0.15	Highest level
2. Fundamental and necessary information			
2.1 Images of locations in the Card Message.	4.67	0.50	Highest level
2.2 Information presentation videos in the Rich Video.	4.00	0.71	Moderate level
2.3 Descriptive data/instructions in the Rich Message.	3.89	0.78	Moderate level
2.4 Route information displayed on Google Maps via Card Message.	4.78	0.44	Highest level
Total	4.33	0.45	High level
3. A Reliable source of information			
3.1 Source identification information in the Card Message.	4.44	0.73	High level
3.2 Community-linked information about target locations.	5.00	0.00	Highest level
Total	4.72	0.39	Highest level
4. Updatable information			
4.1 System Update for Line Administrator	4.89	0.33	Highest level
4.2 Real-time data updates with no limitations.	4.89	0.33	Highest level
Total	4.89	0.00	Highest level
5. Feedback information			
5.1 Auto Reply Message Generation System	4.44	0.73	High level
5.2 Automatic Categorization of Reply Data using *Tag User*	4.56	0.53	Highest level
5.3 User Profile Recording to Avoid Redundant Inquiries with *Note User*	4.11	0.78	High level
Total	4.37	0.23	High level
Overall Average of All Components	**4.57**	**0.16**	Highest level

Regardless of Table 1, the evaluation result of the cultural meaning and communication model through the Line official account of sacred temples (Wat Sak Sit) in Mueang district, Nakhon Phanom revealed that the overall assessment by experts was at the highest level M = 4.57, SD 0.16. Upon examining each component, detailed analysis reveals distinct patterns across all five components.

Component 1: Attracting and Interesting Information achieved the highest level of suitability (M = 4.55, SD = 0.15), with particular strength in location imagery displayed in the Rich Menu (M = 4.78, SD = 0.44). The automated greeting messages and instructional content received high ratings, indicating that the system successfully captures initial user attention and provides clear navigation guidance. However, the chatbot inquiry channels scored slightly lower (M = 4.44, SD = 0.88), suggesting room for improvement in interactive communication features.

Component 2: Fundamental and Necessary Information received high-level ratings (M = 4.33, SD = 0.45), with route information via Google Maps integration achieving the highest scores (M = 4.78, SD = 0.44). However, experts provided additional suggestions regarding rich video content presenting historical narratives and information, recommending more academically referenced sources for users who seek to trace information origins. The descriptive data and instructional content in Rich Messages received moderate ratings (M = 3.89, SD = 0.78), indicating the need for enhanced content depth and scholarly rigor.

Component 3: Reliable Source of Information demonstrated exceptional performance (M = 4.72, SD = 0.39), particularly in community-linked information about target locations, which achieved perfect scores (M = 5.00, SD = 0.00) from all experts. This unanimous rating underscores the critical importance of establishing credible information sources and maintaining strong community connections for authentic cultural representation.

Component 4: Updatable Information received the highest evaluation scores among all components (M = 4.89, SD = 0.00), with both system updates for LINE administrators and real-time data capabilities achieving near-perfect ratings (M = 4.89, SD = 0.33). This exceptional performance reflects the system's technical advantages in content management flexibility and administrative efficiency.

Component 5: Feedback Information achieved high suitability levels (M = 4.37, SD = 0.23), with automatic categorization of reply data using Tag User functionality receiving the highest scores (M = 4.56, SD = 0.53). The user profile recording system to avoid redundant inquiries received the lowest ratings within this component (M = 4.11, SD = 0.78), indicating potential areas for system optimization in user data management.

The results on satisfaction with the usage of the Line official account of sacred temples (Wat Sak Sit) in Mueang district, Nakhon Phanom showed that overall satisfaction level was high M = 4.50, SD 0.70.

Table 2: Mean and Standard Deviation of the Satisfaction Survey for Using the Line Official account of sacred temples (Wat Sak Sit) in Nakhon Phanom

Line official account of sacred temples (Wat Sak Sit) in Mueang district, Nakhon Phanom	M	SD	Results
1. The system is Easy-to-use system and has no complexity.	4.44	0.68	High level
2. The system can navigate accurately and precisely.	4.49	0.65	High level
3. The system is appealing and pleasing.	4.43	0.78	High level
4. The system can be used continuously.	4.24	0.88	High level
5. The system displays interesting information.	4.48	0.73	High level
6. The system is current and up-to-date.	4.51	0.71	Highest level
7. The system displays results quickly and accurately.	4.55	0.64	Highest level
8. The system interacts effectively to convey meaningful messages.	4.58	0.69	Highest level
9. The system can promote tourism according to demand.	4.61	0.66	Highest level
10. The system can efficiently present cultural information.	4.63	0.64	Highest level
11. The system is beneficial for tourists.	4.58	0.68	Highest level
Total	**4.50**	**0.70**	**High level**

From Table 2, the overall satisfaction with the Line official account of the sacred temples in Nakhon Phanom was high (M = 4.50, SD 0.70). Considering system usage from the survey items, respondents were most satisfied with the system's effective and efficient presentation of cultural information, with the highest average (M = 4.63, SD 0.64), and least satisfied with the system's continuous usability, with a high average (M = 4.24, SD 0.88).

High-performing aspects included the system's ability to promote tourism according to demand (M = 4.61, SD = 0.66), indicating that tourists found the platform highly effective in meeting their specific tourism needs and expectations. The system's interactive communication effectiveness in conveying meaningful messages achieved high satisfaction (M = 4.58, SD = 0.69), demonstrating successful cultural communication through digital channels. Additionally, tourists perceived significant benefits from using the system (M = 4.58, SD = 0.68), validating the platform's practical value for sacred temple tourism experiences.

Technical performance indicators showed strong satisfaction levels, with the system displaying results quickly and accurately (M = 4.55, SD = 0.64), and maintaining current and up-to-date information (M = 4.51, SD = 0.71). These ratings reflect the system's technical reliability and information currency, which are crucial factors for tourist satisfaction in digital tourism platforms.

User experience factors demonstrated consistently high satisfaction, with tourists rating the system's navigation accuracy and precision highly (M = 4.49, SD = 0.65), and finding the information displayed interesting and engaging (M = 4.48, SD = 0.73). The system's ease of use and lack of complexity received positive feedback (M = 4.44, SD = 0.68), while its visual appeal and attractiveness achieved satisfactory ratings (M = 4.43, SD = 0.78).

Areas for improvement were identified in continuous system usability (M = 4.24, SD = 0.88), which showed the highest standard deviation among all items, indicating varied user experiences in long-term system engagement. This finding suggests that while the system performs well for immediate tourism needs, sustained user interaction and repeated usage patterns may require enhancement through improved user interface design, system stability,

and engagement retention strategies. The consistently high satisfaction scores across all measured dimensions validate the effectiveness of the cultural meaning and communication model in enhancing sacred temple tourism experiences while maintaining user engagement and cultural authenticity through digital technology integration.

6. Discussion

1. The synthesized result of the cultural meaning and communication model through the Line official account of the sacred temples in Nakhon Phanom revealed five components: 1) Attracting and interesting information, 2) Fundamental and necessary information, 3) A Reliable source of information, 4) Updatable information, and 5) Feedback information. Each component could be enhanced by utilizing the capabilities of the Line official account program. For instance, Component 1, Attracting and Interesting Information, means utilizing organized data and text design processes to attract user engagement right from the outset. This was supported by researchers such as Dorcic Komsic J and Markovic, S. (2019), who demonstrated learning trends in the latest development of mobile applications for tourism, suggesting the integration of new technologies or techniques for novel presentation formats. Augmented reality presentations were proposed as a means to increase interest and attract tourists, facilitating decision-making before visiting actual locations. This integration aligns with Component 2, Fundamental and Necessary Information, which provided supplementary information to assist tourists in making informed travel decisions in the area. When considering Component 3: A Reliable source of information. his implies that all presented data should be reliable and referenced, accurate, and complete information that can be attributed to real-world data sources. It should also be connected to the actual location's system and accessible to relevant administrators.

This is consistent with Pu Liu and Yuan Liu's (2016) study on Smart Tourism via Smart Phone, where their findings claimed that integrating navigation systems could connect to map programs, pinpoint locations, provide distance information from searched or planned points, and continuously update information automatically as positions change. Additionally, it includes providing additional information in case of issues at tourist sites, with a need for specifying data sources to link communication channels for assisting tourists at all times. Component 4 entails updatable information, meaning information presented in the system should be continuously developable and improvable by service providers who can access and amend it. This aligns with Shoval and Ahas's (2016) presentation of how tourism service providers gain advantages from drawing in specific customers through personalized offerings, actively managing real-time data transfers and analysis, and collecting valuable tourist insights regarding experiences and emotions at the destination. For component 5: feedback information, in this context, it pertains to data within the system that allows service users to reflect on outcomes, provide suggestions for improvement, or pose questions. These questions can then be utilized as part of an automated Q&A system for other tourists who might face similar issues. Therefore, this data is crucial in promoting better and efficient system improvements in which this is in line with LI Yunpeng, Clark HU, Huang Chao, and Duan Liqiong's (2014) study on the concept of smart tourism under the context of tourism information service. The study concludes that tourism information services should focus on tourists' needs as a priority, study these needs to determine service directions, and continuously study satisfaction levels to guide the development and improvement of organizational tourism services efficiently. This approach aims to reduce recurring service problems and strategically utilize feedback data to promote the continuous emergence of new service formats in the future.

2. The evaluation result of the suitability of cultural meaning and communication model through Line official accounts in Nakhon Phanom indicated that overall, the level of suitability appeared to be the highest, particularly, the fourth aspect where the data in the system can be able to updated which is deemed highly suitable. This is primarily due to the development of Line official systems, which feature an easy-to-manage for the Line administrator system that allows for the straightforward addition or increase of numbers of administrators in the particular area as well. The aforementioned administrator interface system is user-friendly and efficient, accessible via mobile devices or computers, facilitating rapid data updates and timely monitoring of update times. This aligns with the findings of Koo et al. (2013) in their study on Smart Tourism of Korea: A Case Study. They concluded that technology systems for tourism management should seamlessly link multiple accessible platforms. They emphasized that user needs, behaviors, and satisfaction may vary depending on the tourism channel, which evolves with the globalized time and event. Therefore, contemporary, or trendy platforms capable of updating data should be utilized. Furthermore, the system should facilitate travel experiences and tourist engagement. More so, the application should have the capability to gather input from users or tourists and determine the most suitable route from their current location to the desired destination, opting for the shortest available path. However, this claim correlates with Shen et al. (2016) Zhao et al. (2014) who leveraged the wealth of user-generated location content in location-based social networks to provide tourists with the most pertinent and personalized recommendations for local venues.

These findings align with the Technology Acceptance Model (TAM) by Davis (1989), which emphasizes that perceived usefulness and ease of use are critical determinants of technology adoption. The high suitability ratings for updatable information reflect TAM's core principle that systems demonstrating clear utility and user-friendly interfaces achieve greater acceptance. Additionally, the results support Diffusion of Innovation Theory (Rogers, 2003), particularly the concepts of relative advantage and compatibility, where LINE Official Account's superior update capabilities and seamless integration with existing tourism practices facilitate rapid adoption among stakeholders.

3. The findings on satisfaction with the cultural meaning communication model through Line Official accounts in Nakhon Phanom, found that tourists are highly satisfied, with the ease of system usage being the most significant factor. This aligns with the research of Pandey S et al. (2019), which highlights the key factors in creating online systems that support ease of access and use. Simply saying, the functions of WeChat Official Account are easy to operate for users, eliminating the need for extensive learning. Additionally, users can conveniently access WeChat Official Account at anytime and anywhere, reflecting the digital lifestyle where satisfaction is derived from accessing information through convenient and user-friendly information systems or applications. This corresponds with the research of Muangmool et al. (2023) on Augmented Reality Mobile Application: A New Media of Thai Buddhist Temple History Learning. The study concluded that the digital era has transformed youth learning experiences, where content transformation into models, audio, images, and videos can effectively convey historical narratives and information. Such applications are characterized by functionalities designed to facilitate interactive data presentation to enhance understanding, alongside providing spaces for virtual participation, enriching users' knowledge of local culture, archaeological sites, and unique cultural heritage. This contributes to the sustainable development of cultural tourism.

Comparative Analysis with Existing Literature The high satisfaction scores (M = 4.50, SD = 0.70) in this study align remarkably with Buhalis and Leung's (2018) findings on smart tourism platforms, which reported similar satisfaction levels when digital systems effectively integrate cultural content with user-friendly interfaces. However, our results contradict some findings from Chen et al. (2020), who reported lower satisfaction scores for cultural tourism applications due to complexity issues. The superior performance of LINE Official Account system may be attributed to its inherent simplicity and widespread familiarity among Asian users, supporting the cultural context consideration emphasized by Hofstede's cultural dimensions theory.

Research Objectives Achievement The findings directly address all three research objectives. First, the successful development of the cultural meaning and communication model is validated through expert approval (M = 4.57, SD = 0.16). Second, the model's suitability is confirmed through comprehensive expert evaluation across five components. Third, tourist satisfaction is empirically demonstrated with consistently high ratings across all measured dimensions. These results collectively answer the implicit research questions regarding model development feasibility, expert validation, and user acceptance in sacred temple tourism contexts. Impact Assessment and Limitations The study's impact extends beyond academic contribution to practical tourism management, demonstrating how digital communication models can enhance cultural heritage preservation while improving tourist experiences. However, several limitations must be acknowledged. The study's geographic specificity to Nakhon Phanom may limit generalizability to other cultural tourism destinations. Additionally, the three-month data collection period may not capture seasonal variations in tourist satisfaction. The purposive sampling method, while appropriate for this study's objectives, may introduce selection bias. Furthermore, the focus on LINE Official Account system may not reflect satisfaction levels with other digital platforms, potentially limiting the model's applicability across diverse technological ecosystems.

7. Conclusion and Suggestions

This study successfully developed and validated a cultural meaning and communication model through LINE Official Account systems for sacred temple tourism in Nakhon Phanom. The model comprises five essential components: attracting information, fundamental information, reliable sources, updatable content, and feedback mechanisms, achieving high expert validation (M = 4.57, SD = 0.16) and tourist satisfaction (M = 4.50, SD = 0.70). The updatable information component received the highest suitability ratings, while cultural information presentation achieved maximum tourist satisfaction, demonstrating the model's effectiveness in enhancing digital cultural tourism experiences.

Tourism authorities should implement comprehensive digital communication strategies integrating LINE Official Account systems with enhanced academic content referencing for historical narratives. Temple administrators need training in digital platform management to optimize real-time content updates and visitor engagement. Tourism marketers should leverage the model's interactive features to create personalized cultural experiences while maintaining religious sensitivity and cultural authenticity. The study advances cultural tourism communication theory by integrating Technology Acceptance Model (TAM) principles with cultural meaning transmission frameworks. The research establishes a theoretical foundation for digital heritage communication, bridging traditional cultural preservation methods with contemporary technological applications. This contributes to smart tourism literature by demonstrating how social media platforms can effectively convey complex cultural meanings while maintaining visitor satisfaction.

Future studies should explore the model's applicability across diverse cultural contexts and alternative digital platforms beyond LINE Official Account systems. Longitudinal research examining seasonal variations in tourist satisfaction and long-term cultural impact assessment are recommended. Additionally, investigation into virtual reality integration and artificial intelligence applications for enhanced cultural communication presents promising research opportunities. Cross-cultural comparative studies examining the model's effectiveness in different Asian tourism markets would further validate its theoretical and practical contributions to sustainable cultural tourism development.

8. Recommendations

For practical application, the cultural meaning and communication model developed through LINE official accounts is valuable information for promoting useful communication. In addition, the components of this model can be adapted to effectively present tourism-related information and related content in the social and cultural learning area of schools. For future research directions, this communication model has the potential to be integrated with virtual reality technology programs. It can also be used as a framework for developing tourism routes and models in other cultural areas to expand its usefulness beyond the original context or to further develop in other platforms.

9. Acknowledgement

10. Author Contributions

Suwisa Jarutkamolpong : Contributed to the manuscript review and editing, conceptualization, research implementation and data verification, software design and development, visualization creation, and formal analysis. Both authors have read and agreed to the published version of the manuscript.
Athirhat Nunkuntee : Responsible for the original draft writing, research framework design, data curation, research resource management, and validation processes.

11. Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this study.

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