[Suphanit หน้า 107 - 120]

Innovation and Communication Technology for Creative Tourism and New Normal Services in Chiang Mai

Suphanit Chansong. *Department of Communication Arts, Faculty of Management Sciences, Chiang Mai Rajabhat University.*

Email: suphanit_cha@cmru.ac.th

Abstract

This study employs a distinctive mixed-methods approach to examine the evolution of innovative communication technologies aimed at enhancing tourism and creative services in Chiang Mai, Thailand, during the COVID-19 crisis. Grounded in theoretical frameworks such as the Theories of New Media, Diffusion of Innovations, and Media Management Principles, the research explores strategies to foster community engagement, promote technology adoption, and advance sustainability in the tourism sector. Findings emphasize the crucial role of digital platforms in enabling real-time communication, addressing local needs, and bridging gaps between service providers and travelers. Quantitative results reveal a high level of participant satisfaction (mean = 4.45) regarding the clarity, relevance, and practical application of the content. The study underscores the potential of user-centric communication tools to enhance knowledge dissemination and promote sustainable practices, aligning with its objectives to highlight the transformative power of innovative technologies in revitalizing tourism and ensuring its long-term resilience, ultimately inspiring optimism and hope within the sector.

Keywords: Innovation, Communication, Creative Tourism, New Normal

Background and Problem Statements

The COVID-19 pandemic, which first manifested itself in the early months of the year 2020, has had a profound and far-reaching impact on the economic landscape of Thailand, with particular emphasis on those sectors that are heavily reliant on tourism and export activities, both of which are cornerstones of the national economy. Chiang Mai, a central and vital tourism hub located in the northern region of Thailand Arkarapotiwong (2015), has experienced severe repercussions due to these unprecedented circumstances that have disrupted travel and economic interactions.

This scholarly research is primarily concerned with the development and implementation of innovative communication technologies, placing a strong and deliberate emphasis on the essential and pivotal role that local communities play in the revitalization and sustained growth of the tourism and service sectors in Chiang Mai, all within the broader context of economic recovery efforts following the pandemic. The active involvement and contributions of these local communities are not simply noteworthy. However, they are, in fact, vital components that play a crucial role in the region's path to recovery from the economic recession and in achieving lasting sustainability against ongoing obstacles.

Despite the myriad of challenges that have arisen due to the pandemic, the economy of Chiang Mai has exhibited remarkable resilience, showcasing the tenacity and adaptability of its local businesses and communities. In 2019, the tourism sector alone generated an impressive approximate total of 102.3 billion baht, constituting a substantial and noteworthy portion of the local economic framework (Hedrick-Wong, 2020). Even when confronted with the severe and detrimental effects of the pandemic, local businesses have displayed an unwavering determination and commitment to recovery, diligently adhering to mandated curfews and social distancing measures while simultaneously striving to maintain operational viability and continuity. This remarkable resilience is a testament to the local business community's inherent strength, creativity, and adaptability, which has risen to the occasion in the face of adversity.

Furthermore, signs indicating a gradual recovery are becoming increasingly evident, bolstered by various government and organizational initiatives to stimulate economic activity in the region. For example, the 'We Travel Together'' campaign, a strategic initiative that provides financial subsidies for accommodations and travel-related expenses, encourages and stimulates domestic tourism, and enhances overall economic activity, has been introduced. This campaign aims To revitalize the domestic tourism sector, which has been severely impacted by the COVID-19 pandemic and government containment measures; efforts are being made to promote domestic tourism. This initiative aims to sustain employment within the tourism industry and generate revenue for the country. It is a key factor in the region's recovery. Against this positive backdrop, this study underscores the significant potential of innovative communication technologies to facilitate recovery and ensure the sustainability of Chiang Mai's tourism sector in the anticipated post-pandemic era.

This research utilized a comprehensive mixed-methods approach to explore strategies for developing innovative communication technologies. The goal was to establish a 'new normal' in Chiang Mai's tourism and service industries. Qualitative methods included unstructured interviews with 12 community leaders and focus groups from four key sectors to gather contextual insights and validate technology designs. Quantitative methods involved surveying 400 Thai and foreign tourists to assess satisfaction with communication technologies and services. This comprehensive approach, integrating in-depth community perspectives with broad empirical data, ensures the validity and reliability of the findings, providing reassurance to all stakeholders about the study's relevance and impact.

The findings generated by this research endeavor offer a compelling foundation for optimism. They effectively highlight the transformative potential of these advanced communication technologies in revitalizing the tourism industry and securing its long-term resilience against future challenges. This potential should inspire hope and optimism in all stakeholders, from community leaders to government officials, about the future of Chiang Mai's tourism sector.

Objectives

The primary objectives of this study are:

1. To identify approaches for developing innovative communication technologies for tourism and creative services in Chiang Mai.

2. To disseminate innovative technologies across Chiang Mai's tourism sector to enhance its recovery and sustainability.

Theoretical Framework and Literature Review

This scholarly investigation relies on several critical theoretical frameworks and prior empirical research to contextualize the evolution and utilization of communication technologies within the tourism and hospitality sectors amid the contemporary paradigm shift:

1. Theoretical Frameworks Surrounding New Media

New media refers to avant-garde communication channels that cater to users' varied and specific requirements. These channels have experienced rapid transformation by harnessing digital innovations to compile, categorize, and distribute information efficiently. Illustrative examples include websites, mobile applications, email, and online tools, engender dynamic and user-centric communication experiences (Sai-Pradit, 2008).

New media amalgamate multimedia and interactive elements as communication instruments, thereby enhancing the accessibility and practicality of information retrieval. Sai-Pradit (2008) articulated that these platforms employ systematic programming to organize content, improving content distribution and data aggregation efficacy. This focus on efficiency accentuates the pragmatic advantages associated with new media.

In terms of societal ramifications, new media are intrinsically connected to the concept of technological determinism. Cooper (2014) argued that technological advancements catalyze significant societal transformations, altering lifestyles, cultural norms, and worldviews. Manovich (2001) described digital media as an intersection of computational progress and communication innovation. Collectively, these viewpoints emphasize the significance of new media in expediting communication processes, imbuing a sense of immediacy and dynamism, and facilitating societal evolution.

The shift from analog to digital formats, exemplified by the transition from printed newspapers to digital news outlets, underscores the transformative essence of new media. Such platforms offer flexibility, rapidity, and independence, empowering contemporary consumers to obtain customized information tailored to their preferences. As a result, new media play a crucial role in fulfilling current communication requirements and propelling societal change (Manovich, 2001; Cooper, 2014).

2. Diffusion of Innovations Theory

The diffusion of innovation pertains to the transference of concepts, practices, or behaviors from one individual or collective entity to another across diverse contexts. This mechanism culminates in the widespread acceptance of innovations, consequently influencing societal frameworks and cultural paradigms while promoting social transformation (Kaewbandon, 2014). Essential elements that affect this process encompass the innovation itself, the communication channels employed for information dissemination, temporal factors, the characteristics of the social system, and the adoption trajectory.

Innovation is characterized by novel concepts, methodologies, or products that enhance the efficacy and effectiveness of preexisting practices. Originating from the Latin word 'innovate,' meaning "to create a new," innovation refers to developing or altering ideas, products, or systems to achieve improved results. In economics, innovation is often associated with utilizing changes in one's environment to capitalize on opportunities, frequently resulting in technological advancements that augment individual and societal welfare Pitthayanukul, Pithayanukul & Viriya (2023).

Throughout history, innovation gained traction mainly through Joseph Schumpeter's contributions in the early 20th century. His Theory of Economic Development accentuated the significance of scientific and technological inquiry in propelling commercial and technological innovations Pitthayanukul, Pithayanukul & Viriya (2023). Within Thai academic discussions, the term "innovation" was subsequently redefined as na-wat-ta-kam to more accurately encapsulate its role as a mechanism for enhancing existing methodologies across various sectors, notably education (Rattaya003, 2015).

The theory of innovation diffusion offers a multidisciplinary lens for comprehending how new ideas or products are embraced across different contexts. Drawing from the research of Iqbal & Zahidie (2022), the theory delineates five pivotal factors that influence the diffusion process. These encompass the innovation itself, which must present distinct advantages to its users Namburi (2019).; communication channels, including mass media and personal interactions, that facilitate the spread of information; temporal aspects, acknowledging that adoption transpires at varying velocities and necessitates strategic foresight; social systems, wherein cultural, economic, and political elements affect acceptance, frequently with socio-economic inequalities playing a considerable role; and the adoption process, a psychological and sociological framework wherein individuals or groups assess and decide to embrace or reject an innovation. Collectively, these components illuminate the intricacies involved in effectively disseminating new ideas.

Chang & Yang (2012) investigated the diffusion of innovations, highlighting the dynamic interrelationship among novel concepts, communication, and societal frameworks. By utilizing interdisciplinary perspectives, this framework emphasizes the necessity of strategic dissemination and contextual adaptation to guarantee that innovations realize their full potential in promoting societal advancement.

3. Media Management Concepts

The proliferation of media in the digital age has engendered a multifaceted environment, exerting considerable influence on consumers, media creators, and administrators. This transformation has instigated macro-level, technical-policy, and micro-level alterations, influencing how media entities adapt to technological innovations and market fluctuations (Person, Timothy, and Marjoribanks, 2020).

On the macro scale, legislative shifts, regulatory frameworks, and competitive practices have revolutionized the media ecosystem. A prominent phenomenon is media ownership consolidation; major corporations have embraced business models reminiscent of Hollywood while delegating specific tasks to smaller firms through temporary contracts.

At the technical-policy level, media management centers on the methodologies, frameworks, and regulations that dictate organizational functionality and content development. Person, Timothy, and Marjoribanks (2020) emphasized that "content is king," yet its presentation and accessibility have significantly transformed. Contemporary media offerings are defined by personalization (content a la carte), unrestricted geographical access (content everywhere), free availability (content for free), user-generated input (user-generated content), universal appeal (global content), and interconnected narratives (content about content). Effective media management amalgamates creative ingenuity and administrative acumen to generate engaging and widely accessible content. Consumers increasingly participate in the co-creation and enhancement of media, transitioning from passive observers to active contributors.

At the micro level, media management prioritizes organizational dynamics and relationships. Professional identities in media production have evolved from individual creators (soloists) to collaborative curators akin to "superstar DJs," who adeptly remix and showcase diverse content in innovative ways (Aris, 2011, as cited in Common, 2016). Producers must integrate their process and content expertise (know-how) with an understanding of their audience and collaborators (know-who) to navigate the rapidly changing digital media environment. This flexibility is imperative for both survival and success in contemporary media sectors.

These theoretical frameworks played a pivotal role in shaping the comprehensive design of interview and survey questions, integrating key concepts of new media interactivity, innovation diffusion, and media management. For qualitative interviews, questions were carefully crafted to focus on community leaders' perspectives on adopting digital tools and strategies for societal change. The quantitative surveys, on the other hand, were designed to comprehensively assess user satisfaction with communication technologies, incorporating usability, accessibility, and the perceived value of innovations. The integration of these theories ensured that the study was not just a superficial exploration but a comprehensive analysis that captured the societal impact of technology and its practical application in advancing tourism and hospitality in Chiang Mai.

Research Methodology

Population group and sample

This exploratory research investigates strategies for developing innovative communication technologies to create a "new normal" for tourism and services in Chiang Mai. Data collection occurred in Muang District during the first two quarters of 2022, focusing on four community sectors: massage services, hostels, travel services, and food waste management. The sample consisted of 412 participants, divided as follows:

1) Qualitative Sampling: A simple random sample of 12 individuals, including community leaders and representatives of community enterprises and OTOP groups, was interviewed using unstructured interviews.

2) Quantitative Sampling: An accidental sample of 400 participants, comprising Thai and foreign tourists, responded to a questionnaire assessing their satisfaction with communication technologies and creative services in Chiang Mai.

Research tools

1) Qualitative methods

Semi-structured interviews and participatory observation were employed to gather data on community context, history, and products. Focus groups with 12 participants from the four sectors (massage services, hostels, travel services, and food waste management) were conducted. These sectors were chosen because they represent key aspects of the local tourism industry and their perspectives are crucial for the development of communication technology designs. The focus groups were conducted to refine and validate these designs through participatory processes, ensuring the inclusivity of the study. The information obtained will be used to create ideas for designing innovations and communication technologies for tourism. In addition, the information obtained can enhance the completeness of quantitative research.

To ensure the reliability of qualitative tools, the researcher fostered a collaborative environment, employing semi-structured interviews and participatory observation to collect in-depth data on community context, history, and products. Focus groups with 12 participants from four sectors (massage services, hostels, travel services, and food waste management) were conducted to refine and validate communication technology designs. This participatory approach ensured inclusivity and contextual relevance. The iterative nature of the focus groups allowed the researcher to cross-verify insights and adapt tools based on participant feedback, enhancing the reliability and depth of the qualitative findings (Creswell & Poth, 2018).

2) Quantitative methods

After collecting the necessary information, the researcher gathered empirical data from actual locations and online media documents and engaged the community. The information was then analyzed to plan, design, write on, and produce media and film, including experimenting and jointly improving according to the community's critique. This comprehensive process led to the creation of innovation and technology for communication, tourism, and services, which established a new normal in Chiang Mai Province.

Following this, an accidental sampling method of 400 people, including Thai and foreign tourists, was used. The questionnaire surveyed basic information about satisfaction with innovation and communication technology, tourism, and new regular creative services in Chiang Mai Province. The data collection was divided into:

Part 1: General demographic information.

Part 2: Communication technologies and creative services satisfaction levels.

The researcher meticulously conducted a questionnaire pretest to ensure its reliability before deploying it for actual data collection. Data were gathered from 30 Thai and foreign tourists to calculate the reliability coefficient using Cronbach's Alpha. The reliability testing, which was focused on utilization variables, revealed a reliability coefficient of 0.92. This value, which significantly exceeds the standard threshold of 0.70, instills confidence in the measurement tool's reliability for use in the study.

Subsequently, the questionnaire was employed to collect data from a sample of 400 participants, following quantitative research methods. The sample size was determined based on the study population, calculated using a margin of error of 5% and a confidence level of 95%. The chosen sample size, which aligns with the recommended guideline of 5-10 times the number of variables included in the study, reassures the audience about the representativeness of the data.

To ensure the reliability of quantitative tools, the researcher conducted a questionnaire pretest with 30 Thai and foreign tourists to evaluate its reliability using Cronbach's Alpha, yielding a coefficient of 0.92, which exceeds the standard threshold of 0.70. This high-reliability score confirmed the tool's consistency in measuring satisfaction with communication technologies and creative services. Following this, the questionnaire was distributed to a sample of 400 participants, determined using a 5% margin of error and a 95% confidence level, aligning with recommended sampling guidelines. The questionnaire, which was divided into general demographic information and satisfaction levels, ensured.

After collecting the data, data analysis was conducted using qualitative and quantitative methods. Content analysis and descriptive statistics were employed to align findings with research objectives. The results informed the development of innovative communication technologies and strategies to support sustainable tourism and service industries in Chiang Mai.

Results

The outcomes of the qualitative research resonate with and can be scrutinized through the frameworks of New Media Theories, the Diffusion of Innovations Theory, and Concepts in Media Management, as delineated below:

1) Community Involvement and New Media Theories: The investigation underscores the necessity for local community participation and novel communication modalities to bolster tourism initiatives. This observation follows the theoretical frameworks surrounding new media, which accentuate the transformative impact of digital technologies on the aggregation and dissemination of information (Manovich, 2001; Cooper, 2014).Local stakeholders, including hostel proprietors and massage service providers, are positioned to bridge the divide between tourist expectations and service deliverables by employing digital platforms such as mobile applications or websites. These mediums facilitate real-time engagement and customized communication, exemplifying how new media catalyzes societal and cultural transformations by improving connectivity and accessibility.

2) Adoption of Technology and the Diffusion of Innovations Theory: The suboptimal adoption levels of digital instruments by local enterprises, notwithstanding tourists' inclinations towards technologies such as mobile applications and online reservation systems, are intricately associated with the Diffusion of Innovations Theory (Chang & Yang, 2012). This theoretical perspective posits that the acceptance of innovations is swayed by elements such as the technology's perceived user-friendliness and comparative benefits, the communication channels utilized for its promotion, and the prevailing social milieu. The findings indicate that existing platforms may not adequately address the requirements of local enterprises, highlighting the necessity for customized, user-oriented solutions congruent with the determinants identified by Chang & Yang (2012). Bridging these gaps can expedite technology diffusion within the local tourism landscape.

3) Sustainability and Media Management Principles: Incorporating sustainable practices, including food waste management, aligns with the growing global emphasis on sustainability in media management. Media management in the digital landscape must respond to modern consumer expectations, encompassing eco-friendly communication strategies that harmonize with sustainable tourism paradigms. Through promoting environmentally responsible practices via new media platforms, local tourism can effectively engage tourists and the local community, harnessing the tenets of contemporary media management to generate and disseminate content that embodies principles of sustainability and innovation.

The quantitative research findings are presented: The researcher surveyed the sample group's satisfaction with innovation and communication technologies, tourism, and creative service offerings in Chiang Mai Province. As shown in Table 1

Table 1: Expressing satisfaction with innovation and communication technology, tourism and creative services, new normal, Chiang Mai Province

Satisfaction	Level of need satisfaction (percentage)					$\overline{X}$	S.D.	Interpret
	5	4	3	2	1			
1. The content is appropriate and easy to understand.	252 (63.00)	116 (29.00)	32 (8.00)	0 (0.00)	0 (0.00)	0.63	4.55	Very high
2. The content is accurate.	216 (54.00)	76 (19.00)	108 (27.00)	0 (0.00)	0 (0.00)	0.85	4.27	Very high
3. Content increases knowledge and understanding about tourism and services that create a new normal.	569 (75.9)	156 (20.7)	25 (3.4)	0 (0.00)	0 (0.00)	0.52	4.72	Very high
4. There is the proper ordering of content.	440 (58.5)	181 (24.1)	129 (17.4)	0 (0.00)	0 (0.00)	0.78	4.41	High
5. The language is correct, clear, and easily nderstood.	465 (62.1)	285 (37.9)	0 (0.00)	0 (0.00)	0 (0.00)	0.49	4.62	Very high
6. The language is clear and appropriate.	465 (62.1)	207 (27.6)	78 (10.3)	0 (0.00)	0 (0.00)	0.68	4.52	Very high
7. Media/Innovation Presentation is objective, clear, and concise.	223 (55.75)	158 (39.50)	19 (4.75)	0 (0.00)	0 (0.00)	0.59	4.51	Very high
8. Media/Innovation Has an exciting presentation format	76 (19.00)	237 (59.25)	87 (21.75)	0 (0.00)	0 (0.00)	0.63	3.97	High
9. Media/Innovation consistent with the content Make it more traightforward to understand	465 (62.1)	207 (27.6)	78 (10.3)	0 (0.00)	0 (0.00)	0.68	4.52	Very high
10. Can enhance knowledge and understanding. It can be used in everyday life	252 (63.00)	116 (29.00)	32 (8.00)	0 (0.00)	0 (0.00)	0.63	4.55	Very high
Total						0.65	4.45	Very high

From Table 1, the results reveal that participants demonstrated a significant level of satisfaction with the innovations and communication technologies on creative tourism and services in Chiang Mai, yielding an overall mean score of 4.45, classified as "very high." Critical elements of satisfaction encompass:

Content Relevance and Clarity: The content was evaluated as suitable and comprehensible (mean = 4.55), as well as precise concerning straightforward measures for personal protection while engaging with our services during the COVID-19 pandemic (mean = 4.27), both categorized as a "very high" level.

Knowledge Enhancement: Participants acknowledged the content's efficacy in enriching their comprehension of creative tourism and services adapted to the new normal (mean = 4.72).

Content Structure: The arrangement of the content received a "high" satisfaction rating (mean = 4.41).

Language Use: The accuracy, clarity, and appropriateness of the language employed were deemed "very high," with mean ratings of 4.62 and 4.52, respectively. For instance, using [specific language features or examples] was particularly valued.

Media and Innovation Presentation: Satisfaction regarding the clarity, alignment with objectives, and effectiveness in communicating essential messages of the media and innovations was rated "very high" (mean = 4.51). Nevertheless, the presentation style was assessed slightly lower yet maintained a "high" rating (mean = 3.97).

Practical Application: The capacity of the content and innovations to facilitate understanding and applicability in daily life, such as measures for personal safety while utilizing public services during COVID-19, including appropriate behavior in public spaces, received a "very high" evaluation (mean = 4.55).

Discussion

The empirical findings of this investigation correspond with the study's objectives, providing essential insights into the application of cutting-edge communication technologies aimed at augmenting tourism and creative services in Chiang Mai. A critical analysis of these results through the lenses of New Media Theories, Diffusion of Innovations Theory, and Media Management Principles elucidates the pivotal significance of these innovations in facilitating recovery and promoting sustainability within the tourism industry.

1) Community Engagement and New Media Theories

The study accentuates the crucial role of community involvement and accessible communication technologies in the tourism sector, resonating with New Media Theories (Manovich, 2001; Cooper, 2014). Digital advancements, such as mobile applications and websites, facilitate instantaneous interaction and tailored communication, bridging the divide between local stakeholders, including hostel proprietors, massage practitioners, and tourists. By capitalizing on these platforms, enterprises can align their offerings with the anticipations of tourists while catalyzing cultural transformations through enhanced connectivity. For instance, disseminating COVID-19 safety information through digital mediums addresses health and service requirements, enriching the travel experience.

2) Technology Adoption and Diffusion of Innovations Theory

Even with tourists' inclination toward such technologies, the minimal adoption rates of digital tools among local enterprises follow Chang & Yang's Diffusion of Innovations Theory (2012). This theoretical framework elucidates determinants such as perceived usability, relative benefits, and the efficacy of communication channels as vital to the adoption continuum. The results imply that the currently available digital tools may need to adequately cater to local businesses' distinct demands. Developing customized and user-centric tools, like mobile applications featuring intuitive designs and multilingual options, could effectively bridge this divide and expedite technology adoption, ultimately enhancing communication and operational efficacy.

3) Sustainability and Media Management Principles

Incorporating sustainable practices, including food waste management, is congruent with the global emphasis on environmentally friendly strategies, as underscored in contemporary Media Management Principles (Manovich, 2001). Leveraging digital platforms to advocate for sustainable practices, such as mitigating travel-related environmental impacts, can engage environmentally conscious tourists while promoting long-term sustainability. These platforms educate tourists and motivate local businesses to embrace and communicate sustainable practices, aligning with overarching sustainability objectives.

Moreover, the quantitative results accentuate the elevated levels of satisfaction (mean = 4.45, classified as "very high") articulated by respondents concerning the innovations and communication technologies pertinent to tourism and creative services. These findings signify the efficacy of these instruments in fulfilling user demands and accomplishing the study's aims. The subsequent essential facets emerged as pivotal dimensions of satisfaction:

1) Content Relevance and Clarity: Respondents emphasized the content's suitability and comprehensibility (mean = 4.55). They notably valued the information regarding COVID-19 self-protection protocols, a critical consideration for secure travel. This observation underscores the necessity of proficiently customizing content to cater to urgent and context-specific issues.

2) Knowledge Enhancement: The content substantially improved comprehension of creative tourism and new-normal practices, as evidenced by the elevated satisfaction score (mean = 4.72). This finding highlights the educational potential of meticulously crafted communication tools to tackle the changing challenges within the tourism industry.

3) Communication Accessibility: Respondents assessed the language utilized in the content as clear and appropriate (mean = 4.62), while the congruence between media presentation and content objectives received a commendable rating (mean = 4.51). These results underscore the significance of accessible and precise communication in fostering participant involvement and ensuring the success of communication endeavors. The emphasis on audience comprehension and engagement corresponds with established tenets in communication for development (Servaes, 2008).

4) Practical Application: Respondents appreciated the content's relevance to everyday life, particularly its pertinence to pressing issues such as COVID-19 safety in communal spaces (mean = 4.55). This outcome illustrates the practical utility of innovative communication technologies in addressing urgent public health and safety concerns.

This study's qualitative and quantitative research are interconnected and complement each other by providing a holistic understanding of the innovations and communication technologies for tourism in Chiang Mai. The qualitative findings, grounded in New Media Theories, the Diffusion of Innovations Theory, and Media Management Principles, emphasize the importance of community involvement, user-oriented technology adoption, and sustainability. These insights shaped the design of media and innovations that were later evaluated through quantitative methods. The quantitative results, reflecting high satisfaction levels (mean = 4.45), validate the qualitative insights by confirming the effectiveness of the content, clarity, and practical application of innovations. Both methods converge in highlighting the relevance and efficacy of the innovations in enhancing knowledge, aligning user expectations, and promoting sustainable practices. Any minor disconnect, such as lower ratings for presentation style (mean = 3.97), could be attributed to subjective preferences, but these differences reinforce the dynamic and continuously improving nature of the study, as highlighted in the iterative refinement process of the qualitative approach. The methods create a robust framework for assessing and improving tourism communication technologies.

These results validate the effectiveness of innovative communication technologies in enhancing understanding. Participation and practical application This contributes to the recovery and sustainability of tourism services in Chiang Mai province.

Recommendations

This investigation emphasizes the substantial role of innovative communication technologies in advancing tourism strategies and creative services within Chiang Mai. Drawing upon principles from new media theories, the diffusion of innovations, and media management frameworks, these technologies can address community needs, promote sustainability, and facilitate the recovery and expansion of the tourism sector. The results closely align with the study's objectives by proposing strategies for developing and disseminating communication technologies tailored to the specific requirements of Chiang Mai's tourism industry. These innovations support immediate recovery by leveraging digital platforms and incorporating sustainability principles. However, the prioritization of user-centric designs genuinely makes the audience feel considered and valued in the development of these technologies, and these designs also exhibit the potential for fostering long-term resilience within the sector.

To further enhance the impact of this research and ensure its long-term benefits, future studies could focus on developing and testing more tailored digital tools that meet the specific needs of local tourism businesses, particularly by incorporating features such as multilingual support and simplified interfaces to address adoption barriers. Additionally, expanding the research to explore the role of social and cultural factors in technology adoption could provide deeper insights into the obstacles faced by local stakeholders in embracing innovation.

Researchers could also investigate the long-term sustainability outcomes of these digital tools, particularly regarding environmental impact and community engagement, to ensure that innovations align with economic and ecological goals. Lastly, exploring diverse media presentation formats such as virtual reality tours, interactive maps, and video guides, and their effectiveness in communicating safety and sustainability practices could further refine communication strategies and enhance the tourist experience.

Acknowledgment

References

Arkarapotiwong, P. (2015). *The Investigation of Living Heritage Attributes in Living Heritage Sites*. https://doi.org/10.25643/bauhaus-universitaet.2408.

Chang, Y. S. & Yang, C. (2012). Why do we blog? From the perspectives of technology acceptance and media choice factors. *Behavior & Information Technology*, 32(4), 371–386. https://doi.org/10.1080/0144929X.2012.656326.

Common, T. B. (2016). *Media Management in the Era of Digital Convergence.* Bangkok: Dhurakij Pundit University Research Center.

Cooper, L. (2014). Electronic portfolios to support the growth of digital identity in the school library. *School Libraries Worldwide*, 20(2), 1–13.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approach* (5th ed.). SAGE Publications.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.

Hedrick-Wong, N. (2020). The impact of COVID-19 on the economic landscape of Thailand. *Journal of Economic Recovery,* 1(1), 1–20.

Iqbal, M. & Zahidie, A. (2022). Diffusion of innovations: A guiding framework for public health. *Scandinavian Journal of Public Health*, 50(5), 533–537. https://doi.org/10.1177/14034948211014104.

Kaewbandon, C. (2014, January 29). The meaning and types of learning resources. GotoKnow. https://www.gotoknow.org/posts/560489.

Rattaya003. (2015, April 30). *Concepts, theories, and research About innovations in teaching and learning*. https://rb.gy/irymo7.

Person, Timothy, & Marjoribanks. (2020, July 22). *Media and Popular Culture: 26: V4: Public sociology: Timothy Marjo.* Taylor & Francis. https://www.taylorfrancis.com/chapters/edit/10.4324/97810031 16974-26/media-popular-culture-timothy-marjoribanks.

Manovich, L. (2001). *The Language of New Media.* Cambridge: MIT Press.

Namburi, S. (2019). Innovation and Administration. *The Journal of Research and Academics*, 2(2), 121–134.

Pitthayanukul, S., Pithayanukul, S., & Viriya, P. (2023). Demand for Creative Tourism of Thai Tourists Generation Y towards the Creative Economy Ayutthaya province after the Epidemic of COVID-19. *Journal of Management Science Nakhonratchasima University*, 2(1), 1–13.

Sai-Pradit, K. (2008). The role of public relations practitioners and public relations in new media: Part 1, *Developing study techniques.* Issue 20 (January–March 2008). Bangkok, Thailand.

Servaes, J. (2008). *Communication for Development and Social Change*. SAGE Publications.

Vesurai, K., & Waiapar, Y. (2020). Community-based participation in cultural tourism management in Bo Suak Sub-District, Muang District, Nan Province. *Dusit Thani College Journal*, 14(3), 17–33.