

# Cartography for Cultural Tourism Attractions Around Ban Chiang Archaeological Site, Udon Thani, Thailand

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## Abstract

*This research was conducted to develop tourist attractions, particularly cultural tourism sites, in the Ban Chiang Archaeological Site, Udon Thani, Thailand. The objective is to enhance spatial potential by applying Geographic Information Systems (GIS) to map local communities for location determination, planning, and spatial development. The research methodology involved field surveys, recording the coordinates of cultural tourist attractions using the Global Positioning System (GPS), and utilizing GIS for mapping. The findings revealed that cultural tourist attractions in the Ban Chiang Archaeological Site area are categorized into four types: museums, religious sites, accommodations (homestays), and Restaurants/street food. The distribution of most attractions is concentrated within the communities surrounding the Ban Chiang Archaeological Site. In conclusion, this mapping serves as a tool for local residents to plan cultural tourism sites, improve their quality of life, foster love and pride for their homeland, and increase income, leading to future tourism development.*

**Keywords:** Archaeological Site, Ban Chiang, Cartography, Cultural Tourism Attractions, Udon Thani

## 1. Introduction

Cultural tourism serves a pivotal function as an intermediary in the conservation and transmission of cultural knowledge to subsequent generations. This form of tourism not only facilitates the acquisition of knowledge regarding local heritage, artistic expressions, and traditional practices but also contributes to the financial sustenance of local communities while fortifying the national economy [1]. Furthermore, cultural tourism aids in the preservation of historical sites and cultural heritage. The promotion of tourism to these locales facilitates the preservation and rehabilitation of these sites, which is integral to sustaining national identity and regional distinctiveness [2].

Moreover, cultural tourism enhances cross-cultural comprehension through the exchange of experiences and the acquisition of knowledge regarding local traditions. Tourists develop a profound appreciation for cultural diversity, a critical component of the contemporary interconnected

global landscape [3] and [4]. The cultivation of understanding and respect for various cultures contributes to the mitigation of conflicts and promotes global cohesion.

Economically, cultural tourism plays an essential role in local and national development. This type of tourism helps distribute income to communities, particularly in rural areas where cultural resources have not yet been fully developed. Promoting cultural tourism is, therefore, a strategy for sustainable development [5].

Cultural tourism is a vital factor in promoting sustainable economic growth in Thailand. This form of tourism not only offers deep experiences through culture, traditions, and historical landmarks but also acts as a significant driver for the local and national economy. It helps distribute income to local communities, particularly in rural areas where cultural attractions, such as ancient temples, historic houses, and local handicrafts, are located [3] and [4].

Cultural tourism also enhances the competitiveness of the tourism industry internationally by offering unique attractions that appeal to foreign tourists. Thailand is a popular cultural tourism destination, particularly for its art, traditions, and unique handicrafts, which contribute to job creation and income generation in local communities [6].

Moreover, cultural tourism supports the preservation and restoration of cultural and historical resources. Encouraging visits to cultural sites stimulates communities and relevant organizations to prioritize maintaining and restoring these places, especially temples and historical landmarks [7]. In terms of economic development, cultural tourism significantly contributes to increasing national tourism revenue. In 2019, tourism revenue accounted for 17.7% of Thailand's GDP, with cultural tourism being a crucial part of the income generated from international tourists interested in cultural experiences [8]. Investing in the development of cultural tourism sites is thus a significant support for the national economy. Cultural tourism serves a pivotal function in drawing both domestic and international visitors to Thailand. Owing to its rich tapestry of culture, historical significance, and unique regional traditions, Thailand has emerged as a prominent destination for cultural tourism. Visitors to Thailand frequently aspire to engage with local lifestyles, cultivate an appreciation for artistic expression and cultural practices, and partake in traditional festivals that are emblematic of the nation [6].

Furthermore, cultural tourism has significantly influenced the surge in tourist arrivals to Thailand in recent years, especially from European and Asian markets that exhibit a keen interest in cultural heritage sites such as palaces, temples, and renowned historical landmarks, including Wat Phra Kaew, Wat Arun, and Sukhothai Historical Park. This form of tourism not only captivates individuals with an interest in history and the arts but also fosters repeat visitation and generates positive word-of-mouth endorsements, thereby facilitating a sustained increase in tourist numbers [7].

In 2019, the number of tourists visiting Thailand reached 39.8 million, with cultural tourism being at the heart of the country's tourism industry. Many tourists aim to experience Thai culture by visiting internationally significant cultural sites [9]. Promoting and developing cultural tourism sites is thus crucial to the growth of Thailand's tourism industry, particularly in increasing the number of international tourists seeking unique cultural experiences. Cultural tourism significantly contributes to the preservation and enhancement of

traditional cultural values, particularly those inherent to ethnic minority populations in Tuyen Quang, Vietnam. Initiatives related to cultural tourism are crucial for safeguarding at-risk traditional arts, rituals, and lifestyles. These endeavors not only counteract the homogenizing tendencies associated with globalization but also empower minority communities to proactively manage their cultural heritage [10]. This underscores the critical nature of community-oriented strategies in cultural tourism, ensuring that the authority and decision-making processes of local communities are given precedence.

Despite the significant role of cultural tourism in attracting tourists and generating income for Thailand, there are still challenges related to the management and development of cultural resources, particularly in historically significant and archaeological sites like Ban Chiang, a UNESCO World Heritage site. The increasing number of tourists has led to the degradation of some historical landmarks [4]. Uncontrolled access by tourists can result in the physical deterioration of archaeological sites, causing the loss of their authentic cultural value. The lack of budget for maintenance and development, including in places like Ban Chiang, which suffers from a shortage of financial resources and skilled personnel for site management, is also a major issue [6]. Moreover, inadequate infrastructure to accommodate tourists and the lack of accurate historical information in many areas hinder the promotion of high-quality tourism. The focus on short-term revenue generation often negatively impacts cultural heritage sites, particularly Ban Chiang, where construction and renovation projects do not align with the historical nature of the site. Furthermore, activities aimed at attracting too many tourists may not align with the cultural significance of the archaeological site, diminishing its historical and cultural value [7]. The lack of community involvement in the management and development of tourism, especially in the case of Ban Chiang, where the local community is not fully engaged in planning or tourism development, leads to unsustainable site management and conservation [11].

Cultural tourism mapping is a multifaceted process that involves the use of geographic and cartographic tools to identify, analyze, and visualize cultural assets and attractions within a specific area. This process not only aids in the planning and development of tourism strategies but also enhances the understanding and appreciation of cultural heritage. The integration of cultural mapping into tourism development can significantly contribute to sustainable tourism practices by highlighting both tangible and intangible cultural assets.

Therefore, mapping is highly essential for tourism, as evidenced by related research such as Geographic Information Systems (GIS) play a crucial role in cultural tourism mapping by providing spatial analysis and visualization tools. For instance, in Bangkok, GIS was used to map cultural attractions around Sawaswareesrimaram Temple, identifying four main types of attractions: institutions, palaces and museums, religious places, and Restaurants/street food. This mapping helps local communities plan and develop cultural sites, enhancing tourism and local [12]. Similarly, in Bekasi, GIS was employed to map cultural tourism destinations, such as Kranggan Traditional Village and Juang 45 Museum. This mapping aids in understanding the distribution of cultural attractions and supports the development of tourism policies [13].

Cultural mapping serves as a developmental tool that enhances the image of destinations by making intangible cultural assets visible. In Cuttack, cultural mapping was used to identify areas where the city's cultural image could be enhanced, thereby promoting tourism and improving the quality of life for local residents [14]. And The mapping of cultural assets also supports the creation of sustainable tourism offers by linking tourism with community identity and values. This approach was demonstrated in the CREATOUR project, which used cultural mapping to develop creative tourism offers by capturing the unique cultural narratives of regions [15]. Additionally, Cultural mapping helps in understanding the trends and evolution of cultural tourism, particularly in rural areas. A bibliometric analysis of cultural tourism literature revealed the importance of mapping in identifying influential research topics and guiding future studies [16]. In Italy, cultural mapping was used to analyze the relationship between cultural tourism and territorial dynamics, providing policymakers with insights into local development opportunities [17].

While cultural mapping offers numerous benefits, it also presents challenges, such as the need for accurate cartographic skills and the potential for errors in digital mapping applications. Despite these challenges, the use of geovisualization techniques and mobile applications is increasing, offering new opportunities for engaging tourists and enhancing their experiences [18]. Cultural mapping also involves interdisciplinary methodologies that capture both tangible and intangible cultural assets, as seen in American cities like Austin and Minneapolis. This approach highlights the diverse purposes and media used in cultural mapping, from traditional maps to digital platforms [19]. In conclusion, cultural tourism mapping is a powerful tool that supports the

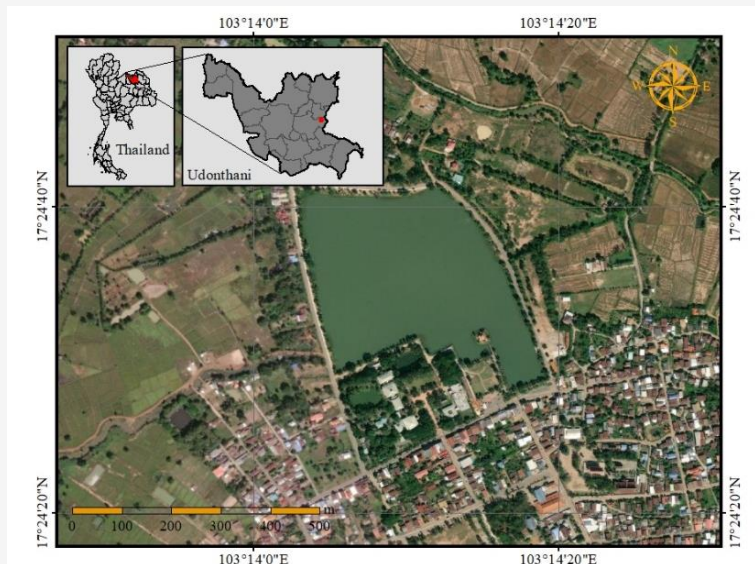
sustainable development of tourism by highlighting cultural assets and enhancing destination marketing. While it offers significant opportunities for tourism development, it also requires careful consideration of cartographic accuracy and the integration of community values. As cultural tourism continues to grow, the role of mapping in capturing and promoting cultural heritage will become increasingly important.

Therefore, the research aims to address the issue by developing a cultural tourism map around the Ban Chiang archaeological site, allowing both local residents and international tourists to use it for convenient travel. The tourism map serves as an essential tool that helps local communities enhance their capabilities by becoming local guides, offering recommendations and providing information about tourist attractions in their area. This initiative fosters awareness and appreciation among community members for their homeland and cultural heritage. Additionally, it is a key aspect of the overall development of tourism within the community.

## 2. Study Area

This research was conducted in the Ban Chiang archaeological site, located in Udon Thani Province, Thailand, covering an area of approximately 0.048 square kilometers. The site is situated between latitude 17°24'25" N and longitude 103°14'29" E (as shown in Figure 1). The Ban Chiang Archaeological Site is a large, prehistoric earthen mound located in an agricultural area in the Ban Chiang Sub-district, Nong Han District of Udon Thani Province in northeast Thailand, within the watershed of the Mekong River.

The Ban Chiang Archaeological Site consists of a large, undisturbed earthen mound which, when excavated, was found to cover a prehistoric habitation site of some of Southeast Asia's earliest farmers. The site, which had been abandoned and buried underground for at least two millennia, has now been substantially and carefully excavated by Thai and international archaeologists. This has revealed an unbroken stratigraphy of human habitation, use, and burial over two thousand years, covering the period when prehistoric humans in this part of the world first settled in villages, took up agriculture and began the production of metal tools. The earliest stratigraphic layers at Ban Chiang date from as early as 1,500 B.C. This long archaeological sequence is divided by archaeologists into Early, Middle and Late Periods all of which are fully represented in the site's excavated stratigraphy and which cover the beginnings of rice cultivation to its full-establishment as the principal agricultural activity of the region [20].



**Figure 1:** Location of Ban Chiang archaeological site

The Ban Chiang Archaeological Site is a prehistoric archaeological site protected by the Act on Ancient Monuments, Antiques, Objects of Art and National Museums, B.E. 2504 (1961) as amended by Act (No.2), B.E. 2535 (1992), enforced by the Fine Arts Department, Ministry of Culture. There are related laws enforced by related government units which give added protection to the property including the Ratchaphatsadu Land Act, B.E. 2518 (1975), the City Planning Act B.E. 2518 (1975), the Enhancement and Conservation of National Environmental Quality Act, B.E. 2535 (1992), the Building Control Act B.E. 2522 (1979) as amended by Act (No. 2) B.E. 2535 (1992), as well as municipal regulations. A master plan, supported with an annual budgetary allocation from the Ministry of Culture is in force for the protection of the property, continued archaeological research, and its development as a public education resource. The Ban Chiang excavation site is protected from damage with a secured shelter. Nearby there is a site museum which contains public education and visitor facilities. There are adequately trained staff working permanently on site and in the museum to monitor the condition of the site and undertake conservation work as required, to facilitate academic research, and to ensure that the property's significance is correctly interpreted to the visiting public [20].

Within the current framework of the reform of national administration which aims to decentralize government functions and responsibilities, it is expected that local, regional, and national committees for the protection of World Heritage will be established. These committees will enhance collaboration with universities and non-

governmental professional organizations which work to conserve heritage sites. At Ban Chiang, the on-site museum will continue to be enhanced and upgraded into a learning centre for both public education and archaeological research. The Fine Arts Department aims to disseminate knowledge of the outstanding universal value of the property and its significance to the understanding of the prehistory of Southeast Asia through the organization of research seminars and other educational activities, aimed at the international community of scholars as well as the Thai public in general. In the long-term management of Ban Chiang, the traditional agrarian character of the property's setting will be maintained. There will also be additional archaeological surveys conducted in and adjacent to the property in order to identify, protect, and research associated prehistoric sites.

### 3. Methodology

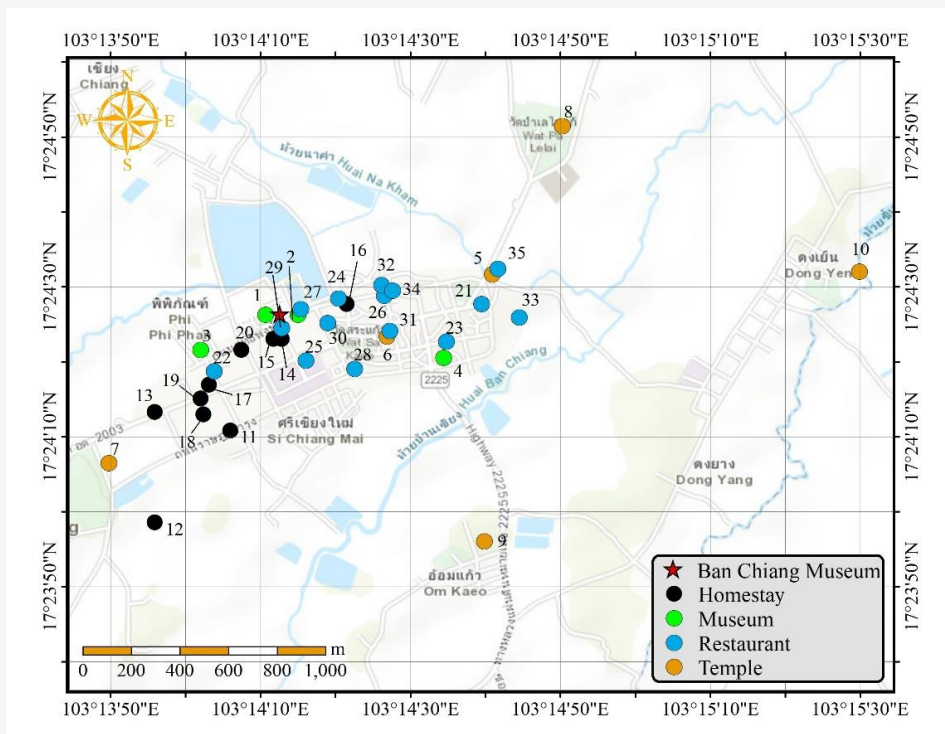
This research collected data on cultural tourism sites within The Ban Chiang Archaeological Site and integrated it into a digital database using GIS. The data was obtained through field surveys, which involved measuring and recording the coordinates of cultural tourism sites using the Global Positioning System (GPS). The field study data included locations of museums, religious landmarks, Restaurants, and accommodations. The cartographic methods or design process (selection of coordinate systems and map projections), generalization (simplification of content according to the chosen scale), and visualization (representation of point, line, and area objects) were applied. Spatial and statistical analyses related to mapping, including data

correction, validation, and digital map visualization, were also conducted.

**4. Results and Discussion**

From the field survey conducted between April 2, 2023, and June 30, 2023 by measuring and recording the coordinates of cultural tourism sites using the GPS system, the locations and details of cultural tourism sites within The Ban Chiang Archaeological Site were collected and documented. The study of the locations of cultural tourist attractions within The Ban Chiang Archaeological Site revealed that there are four types of cultural attractions in the area: museums, religious places, accommodations, and Restaurants/street food. The distribution pattern of most cultural attractions is concentrated in communities near the Ban Chiang Archaeological

Site, consisting of 10 museums and religious places, 10 accommodations (Homestay), and 15 Restaurants/street food vendors (Figure 2). The Ban Chiang Archaeological Site is a prehistoric human habitation and burial site. It is considered by scholars to be the most important prehistoric settlement so far discovered in Southeast Asia, marking the beginning and showing the development of the wet-rice culture typical of the region. The site has been dated by scientific chronometric means (C-14 and thermo luminescence) which have established that the site was continuously occupied from 1495BC until c. 900BC., making it the earliest scientifically-dated prehistoric farming and habitation site in Southeast Asia known at the time of inscription onto the World Heritage List.



- |  |   |   |
|--|---|---|
| 1 Ban Chiang National Museum             | 13 Hug Ban Chiang Resort                | 25 Kuay Tiew Ruea Mueang Non Ban Chiang |
| 2 Thai Phuan Ban Chiang Museum           | 14 Ban Rueang Phiman                    | 26 Huan Ya Jaew Hon – Tam Sang          |
| 3 Learning Center, Painted Pottery Group | 15 Ruean Prakai                         | 27 Chanon Bistro                        |
| 4 Tai Poan House                         | 16 R. Home Stay                         | 28 Pa Nittaya Kaeng Sen                 |
| 5 Wat Pho Si Nai                         | 17 Homestay Lee Home House              | 29 Khrua FA NAO                         |
| 6 Wat Sa Kaeo                            | 18 Ban Chiang Homestay Huan Yai Phakorn | 30 Kuay Jab Yuan Ban Chiang             |
| 7 Wat Pa Thep Prathanporn                | 19 Huan Suan Nok                        | 31 Yai Rin Na Som Tum Kai Thot          |
| 8 Wat Pa Lelai                           | 20 Huan Kamnan                          | 32 Jaew Hon Huan Ya Restaurant          |
| 9 Wat Thammarangsi                       | 21 Petchara Restaurant                  | 33 Som Tum Yai Wang Restaurant          |
| 10 Wat Amphawan                          | 22 Lab Ped Ban Chiang                   | 34 Khao Pad Kha Jaew Hom Wan Ban Chiang |
| 11 Homestay Winery                       | 23 Krua Yai Noi                         | 35 Mookata Kanlaya Nuea Yang            |
| 12 Huan Plaina @ Ban Chiang              | 24 Bins Restaurant                      |   |

**Figure 2:** Locations of museums, temples, accommodations, and Restaurants around Ban Chiang Archaeological Site

The Ban Chiang cultural complex is well-defined and distinctive from anything that preceded it. Through it can trace the spread and development of prehistoric society and its development into the settled agricultural civilizations which came to characterize the region throughout history which still continue up to the present day. Advances in the fields of agriculture, animal domestication, ceramic and metal technology are all evident in the archaeological record of the site. Also evident is an increasing economic prosperity and social complexity of the successive communities at Ban Chiang, made possible by their developing cultural practices, as revealed through the many burials, rich in ceramic and metal grave goods, uncovered at the site.

The Ban Chiang Archaeological Site is also the richest in Southeast Asia in the number and variety of artifacts recovered from the site. As such, the property has been extensively studied by scholars as the archaeological “type-site” for the beginnings of settled agricultural communities and their associated technologies in the region.

The significant cultural attractions related to the Ban Chiang Archaeological Site include Ban Chiang National Museum, which was established as a center for the exhibition and preservation of artifacts discovered from the Ban Chiang Archaeological Site. This site is considered one of the most important archaeological locations in Thailand. The key discovery at Ban Chiang occurred in 1966 when pottery with unique patterns was unearthed, leading to significant archaeological studies.

The museum is divided into two main sections: the exhibition building and the archaeological excavation area. The exhibition showcases various artifacts found at Ban Chiang, including pottery, bronze tools, jewelry, and ancient human skeletons, reflecting the lifestyle of prehistoric humans. The archaeological excavation area allows visitors to observe archaeological processes up close. Visiting the museum provides a deep understanding of Ban Chiang's long history, from prehistoric times when humans began farming, using bronze tools, and developing pottery technology.

Ban Chiang National Museum not only serves as an exhibition center for archaeological importance but also as a learning hub that allows both locals and foreigners to appreciate Thailand's cultural heritage. Additionally, there is the Thai Phuan Ban Chiang Museum, which displays exhibitions about the way of life of the Thai Phuan people, an ethnic group originally from the town of Phuan (now in Xieng Khouang Province, Laos). The Phuan people migrated to northeastern Thailand, including Ban

Chiang in Nong Han District, Udon Thani, due to wars and political changes in Laos during the late Ayutthaya and early Rattanakosin periods. Many Phuan people were relocated to Siam during the Lao-Vietnamese wars, while some migrated in search of stability and new farmland.

When the Phuan people settled in Ban Chiang, they brought with them their culture, traditions, and language. The Thai Phuan people have distinctive cultural traits, visible in religious practices, the preservation of traditional customs, clothing, and their lifestyle, such as weaving and farming. The construction of temples also reflects the cultural influence of the Phuan. The Thai Phuan community in Ban Chiang has maintained its culture and identity, making Ban Chiang not only a significant archaeological site but also a center of Phuan culture in Thailand. Visitors can learn about the lifestyle, culture, and historical heritage of the Phuan community. Moreover, traditional Phuan houses can be viewed at Tai Poan House, allowing tourists to experience cultural tourism firsthand.

To enhance cultural tourism further, the area around the Ban Chiang Archaeological Site features homestays where tourists can stay temporarily. Most of these accommodations are traditional Thai Phuan houses, which the local community has preserved. There are 10 homestays available, along with 15 Restaurants and street food vendors offering local Thai Phuan dishes and popular modern foods, such as noodles and barbecue (as shown in Table 1). Another important attraction near the Ban Chiang Archaeological Site is the Learning Center, Painted Pottery Group, a key institution in preserving and promoting the pottery craft of the Ban Chiang community, known globally for its archaeological significance. The pottery found at Ban Chiang has unique patterns, showcasing the local community's artistic expertise in pottery-making since ancient times. The learning center was established through collaboration between the Ban Chiang community and Suan Sunandha Rajabhat University to promote the preservation and dissemination of traditional pottery-making techniques to future generations. It also offers locals and tourists the opportunity to learn and practice pottery-making and painting, guided by skilled local artisans.

The activities at the center not only teach artistic skills but also connect to the history and culture of Ban Chiang. Participants learn about the significance of pottery in the archaeological and historical context. The patterns on the pottery hold symbolic meanings, reflecting the lifestyle, beliefs, and artistry of ancient people.

**Table 1:** Locations of cultural attractions in Ban Chiang archaeological site

No.	Name	Latitude	Longitude	Category
1	Ban Chiang National Museum	17.4073	103.2363	Museum
2	Thai Phuan Ban Chiang Museum	17.4073	103.2375	Museum
3	Learning Center, Painted Pottery Group	17.4060	103.2339	Museum
4	Tai Poan House	17.4057	103.2429	Museum
5	Wat Pho Si Nai	17.4088	103.2447	Temple
6	Wat Sa Kao	17.4065	103.2408	Temple
7	Wat Pa Thep Prathanporn	17.4018	103.2305	Temple
8	Wat Pa Lelai	17.4143	103.2473	Temple
9	Wat Thammarangsi	17.3989	103.2444	Temple
10	Wat Amphawan	17.4089	103.2583	Temple
11	Homestay Winery	17.4030	103.2350	Homestay
12	Huan Plaina @ Ban Chiang	17.3996	103.2322	Homestay
13	Hug Ban Chiang Resort	17.4037	103.2322	Homestay
14	Ban Rueang Phiman	17.4064	103.2369	Homestay
15	Ruean Prakai	17.4064	103.2366	Homestay
16	R. Homestay	17.4077	103.2393	Homestay
17	Homestay Lee Home House	17.4047	103.2342	Homestay
18	Ban Chiang Homestay Huan Yai Phakorn	17.4036	103.2340	Homestay
19	Huan Suan Nok	17.4042	103.2339	Homestay
20	Huan Kamnan	17.4060	103.2354	Homestay
21	Petchara Restaurant	17.4077	103.2443	Restaurant
22	Lab Ped Ban Chiang	17.4052	103.2344	Restaurant
23	Krua Yai Noi	17.4063	103.2430	Restaurant
24	Bins Resturant	17.4079	103.2390	Restaurant
25	Kuay Tiew Ruea Mueang Non Ban Chiang	17.4056	103.2378	Restaurant
26	Huan Ya Jaew Hon – Tam Sang	17.4080	103.2407	Restaurant
27	Chanon Bistro	17.4075	103.2376	Restaurant
28	Pa Nittaya Kaeng Sen	17.4053	103.2396	Restaurant
29	Khrua FA NAO	17.4068	103.2369	Restaurant
30	Kuay Jab Yuan Ban Chiang	17.4070	103.2386	Restaurant
31	Yai Rin Na Som Tum Kai Thot	17.4067	103.2409	Restaurant
32	Jaew Hon Huan Ya Resturant	17.4084	103.2406	Restaurant
33	Som Tum Yai Wang Resturant	17.4072	103.2457	Restaurant
34	Khao Pad Kha Jaew Hom Wan Ban Chiang	17.4082	103.2410	Restaurant
35	Mookata Kanlaya Nuea Yang	17.4090	103.2449	Restaurant

The Learning Center, Painted Pottery Group also plays a role in generating income for the community by selling pottery products made by group members, promoting the local economy and supporting cultural tourism. Visitors can view and purchase beautifully patterned and culturally valuable pottery.

Additionally, there are three temples located near the Ban Chiang Archaeological Site, including Wat Pa Lelai, which has long been a religious and cultural center in the Ban Chiang community. This temple not only plays a religious role but also serves as a venue for cultural activities and annual festivals, such as merit-making ceremonies and religious celebrations. The temple's architecture remains simple, in line with rural temples in northeastern Thailand, featuring an ordination hall and significant Buddha images, including the Pa Lelai Buddha image, the temple's symbol with religious importance. The temple also features a stupa and other structures used for religious ceremonies, making it a focal point for the local community. Its location near the Ban Chiang Archaeological Site ties it closely to the history of the Ban Chiang community. The temple is a popular stop for tourists visiting the archaeological site, as it is an important cultural and religious location in the area. Wat Thammarangsi is a monastery under the Mahanikaya sect, established in 1927. It serves as a center for learning and transmitting Buddhist teachings and is a place for meditation and spiritual practices for the local community, and Wat Amphawan, another monastery under the Mahanikaya sect, was established in 1872. This temple is where the local community performs various religious activities, including offering alms, listening to sermons, and engaging in important Buddhist ceremonies. The temple also hosts significant local festivals, such as the annual merit-making ceremony and the Kathina ceremony.

## 5. Conclusion

Cultural attractions within the Ban Chiang Archaeological Site have been collected and analyzed using spatial data with GIS. It has been observed that the majority of these attractions are concentrated around the surrounding communities of the Ban Chiang Archaeological Site. The reason for the distribution of cultural attractions in the Ban Chiang Archaeological Site area is due to the migration of the Phuan people to Ban Chiang, which was mainly caused by wars and political changes in the Lao region during the late Ayutthaya and early Rattanakosin periods. Later, in 1966, unique patterned pottery was discovered at this site, which became a significant subject of archaeological study. In 1992, Ban Chiang was registered as a UNESCO World Heritage Site, leading to an increase in the

population, particularly of Phuan people, settling in the area. In conclusion, this research has created a map for the local community within the Ban Chiang Archaeological Site to help the community utilize this map for spatial development planning. The local community will have tools for planning cultural attractions to improve their livelihoods, foster love and pride for their homeland, and increase the income of local residents, which will ultimately lead to future tourism development.

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## References

- [1] Richards, G., (2018). Cultural Tourism: A Review of Recent Research and Trends. *Journal of Hospitality and Tourism Management*, Vol. 36, 12-21. <https://doi.org/10.1016/j.jhtm.2018.03.005>.
- [2] Timothy, D. J. and Boyd, S. W., (2006). Heritage Tourism in the 21st Century: Valued Traditions and New Perspectives. *Journal of Heritage Tourism*, Vol. 1(1), 1-16. <https://doi.org/10.1080/017438730608668462>.
- [3] Ioan-Franc, V. and Iştoac, E. M., (2007). Cultural Tourism and Sustainable Development. *Romanian Journal of Economic Forecasting*, Vol. 1, 89-96. [https://ipe.ro/rjef/rjef1\\_07/rjef1\\_07\\_7.pdf](https://ipe.ro/rjef/rjef1_07/rjef1_07_7.pdf).
- [4] UNESCO, (2020). *Cultural Tourism and Sustainable Development*. United Nations Educational, Scientific and Cultural Organization. [Online]. Available: <https://unesdoc.unesco.org/ark:/48223/pf0000126698>. [Accessed: Jul. 5, 2024].
- [5] Smith, M. K., (2015). *Issues in Cultural Tourism Studies*. Routledge. Psychology Press.
- [6] Ribes, J. F. P. and Baidal, J. I., (2018). Smart Sustainability: A New Perspective in the Sustainable Tourism Debate. *Investigaciones Regionales-Journal of Regional Research*. Vol. 42, 151-170.
- [7] Tourism Authority of Thailand, (2020). *Cultural Tourism Strategy*. Bangkok: Tourism Authority of Thailand.

- [8] Ministry of Tourism and Sports, (2019). *Tourism Economic Analysis Report*. Bangkok: Ministry of Tourism and Sports.
- [9] Ministry of Tourism and Sports, (2019). *Thailand Tourism Situation Report 2019*. Bangkok: Ministry of Tourism and Sports.
- [10] Tuyen, Q. D., (2023). *Heritage Conservation and Tourism Development at Cham Sacred Sites in Vietnam: Living Heritage Has a Heart*. Springer Nature.
- [11] Ministry of Culture, (2019). *Conservation and Development of Cultural Heritage Sites: A Case Study of Ban Chiang Archaeological Site*. Bangkok: Ministry of Culture.
- [12] Waiyausuri, K., Kulpanich, N., Worachairungreung, M., Sae-Ngow, P., Ngansakul, P. and Suwanmajo, D., (2023). Cartography for Sustainable Tourism of Cultural Tourism Attractions around Sawaswareesrimaram Temple, Dusit District, Bangkok. *GeoJournal of Tourism and Geosites*, Vol. 47(2), 468-475. <https://doi.org/10.30892/gtg.47213-1045>.
- [13] Octavanny, V. and Kurniasari, K. K., (2022). Cultural Tourism Products Mapping Using Geographic Information Systems in Bekasi. *Jurnal Pariwisata Pesona*, Vol. 7(2), 240-251. <https://jurnal.unmer.ac.id/index.php/jpp/article/view/7975>.
- [14] Mohanty, S., Mishra, S. and Mohanty, S., (2019). Cultural Mapping-A Developmental Tool for Enhancing the Destination's Image. Case Study of Cuttack. *Journal of Environmental Management and Tourism*. Vol. 10(1), 39-52. [https://doi.org/10.14505/jemt.v10.1\(33\).05](https://doi.org/10.14505/jemt.v10.1(33).05).
- [15] Cabeça, S. M., Gonçalves, A. R., Marques, J. F. and Tavares, M., (2019). Mapping Intangibilities in Creative Tourism Territories through Tangible Objects: A Methodological Approach for Developing Creative Tourism Offers. *Tourism & Management Studies*, Vol.15(1), 42-49. <https://doi.org/10.18089/tms.2019.15SI05>.
- [16] Seočanac, M., Đorđević, N. and Pantović, D., (2024). Cultural Tourism in Rural Areas: Mapping Research Trends through Bibliometric and Content Analysis. *Economics of Agriculture*. Vol. 71(1), 205-224. <https://doi.org/10.59267/ekoPolj2401205S>.
- [17] Petrei, F., Cavallo, L. and Santoro, M. T., (2020). Cultural Tourism: An Integrated Analysis Based on Official Data. *Quality & Quantity*. Vol. 54, 1705-1724. <https://doi.org/10.1007/s11135-019-00929-y>.
- [18] Kowalczyk, A., (2018). The Use of Cartography and Geovisualization Methods in Cultural Tourism. (Wykorzystanie metod kartografii i geowizualizacji w turystyce kulturowej). *Turystyka Kulturowa*, Vol. 5, 80-106.
- [19] Redaelli, E. and Redaelli, E., (2019). Cultural Mapping: Location The Arts in A Place. Connecting Arts and Place: Cultural Policy and American Cities, 49-84. <https://doi.org/10.1007/978-3-030-05339-03>.