CARTOGRAPHY FOR SUSTAINABLE TOURISM OF CULTURAL TOURISM ATTRACTIONS AROUND SAWASWAREESRIMARAM TEMPLE, DUSIT DISTRICT, BANGKOK

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Abstract: This research was conducted to develop tourist attractions, especially cultural tourism attractions in the community area around Sawaswareesrimaram Temple, Dusit district, Bangkok. The objective is to develop spatial potential by applying geographic information systems for mapping local communities in location determination, planning, and spatial development. The methodology was obtained from field surveys by recording the coordinates of cultural tourist attractions with Global Positioning System (GPS) and using geographic information systems for mapping. It also adopts the principle of analyzing the density of attractions with Kernel Density. The results reveal that there were 4 types of cultural attractions in Dusit District: Institution, Palace and Museum, Religious places, and Restaurant – Street food. The distribution pattern of most cultural attractions was in the south-western area of the study area, with the density of cultural attractions greater than 1 km^2. Cultural attractions in the form of Restaurant and Street food were found to have a very high density in the Sri Yan area, showing a level greater than 1 km2 along Sam Sen road and Nakhon Chai Si road. As for Thewet district, there was a density level of 0.2-0.6 km2, which were all distributions of street food, dense at the intersection of roads. In summary, the mapping can provide local people with a tool for planning cultural sites, to enhance their livelihoods, love and cherish their homeland, and increase their income, leading to future tourism developments.

Key words: Cartography, Cultural tourism attraction, Sawaswareesrimaram Temple, Dusit, Bangkok

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INTRODUCTION

Cultural tourism is a form of tourism that has been trending in global tourism in recent years and is being seen as a key sector in economic development (Santamaria and Filis, 2019; Ketter, 2021). Due to the modern-day tourists, especially the Millennial generation, also known as Generation Y or Gen Y, are traveling to find answers for their life's destinations. And travel has opened their eyes and gained new experiences in life, so they try to find new challenges in tourism (Ketter, 2019). Therefore, cultural tourism is an important choice for tourists nowadays. As a result, most developing countries that are dependent on tourism as a source of income have developed this form of tourism (Niñerola et al., 2019). It uses low cost and is valuable in that society which can be seen in the form of way of life, architecture, art, tradition, ancient sites, antiques, etc. (Chiao et al., 2018; Carbone et al., 2020; Halim et al., 2022). For this reason, accessibility to cultural attractions should be emphasized as a tool or product, such as a tourist map, that guides tourists to destinations, and is an effective tool and plays an important role in attracting tourists as well (Mülazimoğlu and Başaraner, 2019).

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Thailand is one of the countries that has greatly expanded in tourism (Gong et al., 2018; Koodsela et al., 2019). Thailand's tourism industry is important and plays a key role in the economy that generates income for Thailand as a top priority. However, with the past COVID-2019 epidemic situation, it has caused damage to the Thai economy (Wetchayont and Waiyasusri, 2021), and one of them is in tourism where the epidemic has limited and reduced the role of people traveling both domestically and internationally (Duro et al., 2021; Papajorgji et al., 2021; Wetchayont, 2021). As a result, Thailand has been directly affected and considered a crisis in tourism, that is, the number of foreign tourists arriving in the country has decreased by more than 90%. Tourism businesses such as hotels, resorts, trade and services, and food businesses lost their income and closed (Wetchayont et al., 2021). After that, the public and private sectors helped to solve the problem until it was able to control the COVID-2019 epidemic situation, allowing tourism businesses to come back quickly to support tourism. With Thai tourism potential that has a variety of tourism, such as natural tourist attractions, cultural tourist attractions, and friendly services, caused foreigners and Thai people to travel in Thailand (Kerdpitak, 2022; Leelawat et al., 2022). The important thing is the Thai cultural model that is considered a valuable tourism source of Thailand, allowing Thailand to develop tourist attractions continuously according to the world's popular trend, whether temples; tradition; well-being; product; museum; archaeological site; antiquities; etc (Techakana, 2022). It is a Thai inheritance that is passed down from ancestors who have protected, preserved and inherited, causing the children to be inherited and able to develop the potential to become a business cost to the economy to this day.

However, some Thai cultural tourist attractions have been left without care, especially in the area around Sawaswareesrimaram Temple or Wat Khae Samsen, is an old community that established during the reign of King Nangklao (Rama 3), by Phraya Sawat Waree (Magnate Chim) in 1832. The area is located on the edge of the Samsen Canal, which is an important canal for traveling to the Saen Saep canal in the early Rattanakosin period. The area around Sawaswareesrimaram Temple; in the administrative district of Dusit, Bangkok; there are many potential cultural attractions. But at present, some places lack care, and being used in the wrong type of space, causing bad scenery. In addition, most people in the community have low incomes and bad living, making the system difficult to access. For this reason, the research has been tried to help solve the problem by developing a map of cultural tourist attractions around Sawaswareesrimaram Temple, so that people in the community and foreigners can use it for tourists. Importantly, Tourist Map is an important tool for people in the community to develop their potential by developing into a local guide to help tourists and give information for the tourist attractions in their own community. The people in the community will be aware and concern, love the homeland and cultural heritage that exists in the community, is considered to have a total of people in the community to develop tourism.

Cultural Tourism mapping may be defined as the process of collecting, recording, analyzing and synthesizing information to describe cultural resources, the interconnectedness of individual places and patterns of communities, providing an overview of cultural characteristics and livelihoods of communities (Weng et al., 2020). The mapping is also a spatial interpretation of the cultural linkages of each era. It conveys spatial data with GIS systems, photographs, and descriptions of the uniqueness of the place through the perspective of the local community (Yan and Lee, 2015).

For this reason, mapping is very necessary for tourism, as can be seen from related researches as Duxbury et al. (2015) recognized the importance of cultural mapping as it can empower communities, promote local cultural policies, promote intellectual property at the local level, fostering community involvement, and leading to academic models and dissemination of new mapping research with GIS. Martínez-Hernández et al. (2021) developed a digital map of the dynamics of commercial transformation in Madrid, Spain, using geographic tools including Google Street View, ESRI ArcGIS Desktop and ESRI ArcGIS Online Story Maps application. Dmitriyev et al. (2021) developed a zoning map for the development of the tourism industry in the North Kazakhstan region of the Republic of Kazakhstan. Cartography has been brought to organize tourism zones divided into 5 important zones: natural, natural-technical, architectural, historical-revolutionary, and archaeological. Even Agustí (2021) analyzed data from the Instagram application to create a map to analyze the differences in the behavior of tourists in Barcelona by analyzing the density of photographs with kernel density analysis. At present, spatial data analysis principles are used in some places where there are a number of diverse tourist attractions and a high number of tourists. This results in a huge amount of information known as big data.

Therefore, it is necessary to apply global positioning systems (GPS) data to collect data today. Schmücker and Reif (2022) collected data for three holiday destinations in Germany, passive mobile data and passive global positioning systems (GPS) data are compared with reference data from the destinations for twelve weeks in the summer of 2019. Liu et al. (2022) conducted research on destination planning, marketing, and resource management. This study uses open GPS-trajectory data to analyze the microscopic spatio-temporal patterns of tourists' movement behaviors in Mount Huashan in China. And GPS has also been used to collect tourism data in the form of cycling tourism, such as research by Mou, et al. (2022) that studied the behavior of Chinese tourists riding bicycles in the Tibetan Autonomous Region, showing important information to drive the place to be popular in the future and also developing the tourism industry.

However, GIS and remote sensing techniques are still important for analyzing suitable areas and for land use planning management, such as the research of Ayhan et al. (2020). The technique was used to manage land use planning in the Yenice region, in northwestern Turkey, to assess the area's potential and suitability for tourism activities to develop the area to accommodate tourists. Li et al. (2023) applied GIS and remote sensing techniques to Suzhou, China, especially Kernel density analysis showing spatial distribution patterns of sensory experiences of the city.

The result is the level of intensity of tourism activity patterns in various activities. This makes it possible to manage tourism support plans for Suzhou in various zones in accordance with that type of activity efficiently. Wang et al. (2023) used data from observations in the Zhangjiajie area to generate and analyze land-use changes using geo-informatics to see the surrounding effects of building growth. It can be traced that over the past 20 years, forest and agricultural areas

have clearly become tourism construction land. In addition, the geo-informatics technique has also been applied in behavioral research. As Jamhawi et al. (2023)'s research on Tourist Movement Patterns in Madaba, Jordan, reveals tourist behavior patterns in urban cultural attractions, in order to allocate the appropriate route so that tourists can easily access the attractions. Neil et al. (2023) performed a spatial analysis of cultural ecosystem services using data from social media and geo-informatics to examine tourist behavior on the west coast of Ireland. This makes it possible to manage the coastal areas and rural areas of such cities in accordance with the cultural ecosystem. It can be seen that various research focus on collecting geo-informatics data in preparing spatial data for tourism development in important places.

This research was conducted to develop tourist attractions, especially cultural tourist attractions in the area around the Sawaswareesrimaram Temple Community, Dusit, Bangkok. The objective is to develop spatial potential by applying geographic information systems for mapping for local communities in determining location, planning, spatial development, especially tourism in the urban areas surrounding Sawaswareesrimaram Temple. In order to raise the level of local communities, there are tools for planning, especially the cultural attraction map. Using for escorting visiting tourists, it can also be a useful navigation tool for local guides and tourists. The map will be able to enhance the local potential and support the upcoming tourism development in the future.

STUDY AREA

This research was conducted in the area of Dusit, Bangkok with an area of approximately 10.665 km2. The area is located between latitudes 13°45' N to 13°48' N, longitudes 100°29'30" E to 100°32'30" E (Figure 1). Dusit is located on the left bank of the Chao Phraya River. North is adjacent to Bang Sue, bounded by the Bang Sue Canal. The east side is adjacent to Phayathai and Ratchathewi. There is a northern railway line as a demarcation line. The south is adjacent to Pathumwan and Pomprapsattruphai, with Khlong Phadung Krung Kasem as the boundary line. And the west is adjacent to the Chao Phraya River.
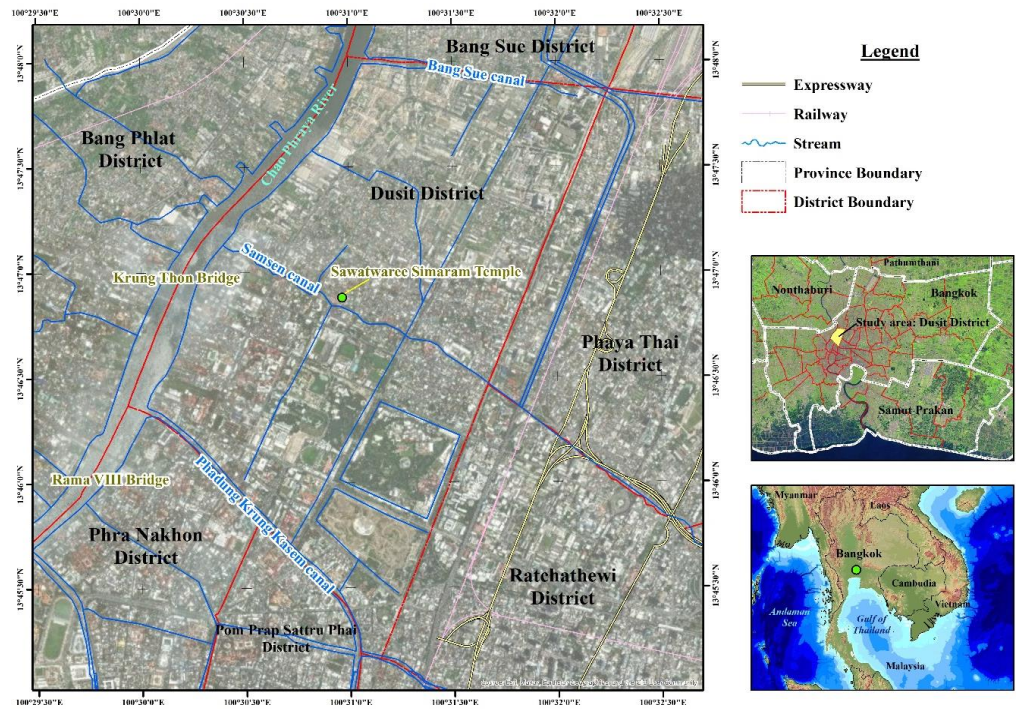

Figure 1. Location of Dusit District, Bangkok, Thailand (Source: collected and processed by authors)

The topography is fluvial landforms, making it an important agricultural area in the past. But nowadays, the land has been urbanized to the point where there are no farmland left. Dusit is now a district full of commercial, residential, military districts, together with being the administrative center of Thailand. Since there are important government offices such as the location of the parliament, royal palaces, various ministries, Dusit has the status of being the administrative center of Thailand. As a result, the area is filled with important historical and cultural sites. Dusit District is sub-divided into 5 sub-districts called "Khwaeng", consisting of Dusit, Wachiraphyban, Suan Chit Lada, Si Yaek Maha Nak, and Thanon Nakhon Chai Si.

MATERIALS AND METHODS

This research has collected information on cultural attractions in the Dusit area, whether it is the tourism infrastructure information of Dusit area. into a digital database in GIS format. The base data is based on Topographic Map scale 1:50000 from the Royal Thai Survey Department, and data from field surveys from measuring and recording the coordinates of cultural attractions with the Global Positioning System (GPS) (Mou et al., 2022; Schmücker and Reif, 2022). Information collected in the field study: community locations, commercial districts, restaurants, religious landmarks, palaces and museums, and government offices. The cartographic method or the purpose of design (choice of the coordinate system and map projection), generalization (reduction of the content according to the selected scale), and visualization (depiction of point, linear and area objects). Spatial and statistical analysis related to mapping uses ArcMap 10.2 software to collect and analyze numerical data, including data editing, validation, and visualization of digital map data.

Data analysis of the location distribution of cultural attractions in Dusit can be analyzed with the Kernel Density (Equation 1). The concept can be analyzed in GIS, which is part of the mathematical functions in ArcMap 10.2. The results will inform the densities of the tourist sites, and guide cultural tourism planning. The Kernel Density (Silverman, 1986; Nistor and Nicula, 2021) is calculated from the following equation:

$$\int_h (x) = \frac{1}{n} \sum_{i=1}^{n} \binom{n}{k} K_h (x - x_1)$$
where is f is density f; K is the kernel -a non-negative function; h > 0 is a smoothing

parameter called the bandwidth; x1, x2, ..., xn is univariate independent and identically distributed sample. The research process consists of the following steps, as shown in Figure 2.

RESULTS AND DISCUSSION

According to field surveys from measuring and recording the coordinates of cultural attractions with GPS from December 15, 2022 to January 13, 2023, the locations and details of cultural attractions of Dusit were collected and recorded, as in Table 1. After that, the location data was imported into the Geographic Information System for mapping and analyzing the data distribution pattern with the Kernel Density principle.

The results of the study of the location of cultural attractions in urban areas surrounding Sawaswareesrimaram Temple, Dusit District, found that there were 4 forms of cultural tourist attractions in Dusit: Institution, Palace and Museum, Religious places, and Restaurant – Street food.

The distribution pattern of most cultural attractions was mainly in the south-western area of the study area, which was in the Wachira Phayaban Sub-district and Dusit Sub-district. It consists of the Palace and Museum, and Religious places (Figure 3). By analyzing the density of cultural attractions per study area with the Kernel Density, the following results were obtained: The density level of cultural attractions more than 1 km^2 appeared in the southwest and south of the study area in the areas of Wachira Phayaban Sub-district and Dusit Sub-district. The northern of the study area has a density level of only 0.2-0.6 km^2, which is the area of Thanon Nakhon Chai Si Sub-district. The density map of cultural attractions from the Kernel Density analysis is shown in Figure 4. This research mapped out the distribution of cultural attractions, categorized as follows. There are only 2 institutional style cultural attractions in Dusit District: The National Library and Sappaya-Sapasathan (The Parliament Complex).

Figure 2. Flowchart of methodology

Table 1 Coordinates of cultural attractions in Dusit District, surveyed between 15.12. 2022 to 13.01.2023

No.	Northing	Easting	Location	Category
1	13.7952	100.5189	Sappaya-Sapasathan (The Parliament Complex)	Institution
2	13.7715	100.5050	The National Library	Institution
3	13.7691	100.5119	Equestrian Statue Plaza	Palace and Museum
4	13.7705	100.5128	Dusit Palace Plaza	Palace and Museum
5	13.7679	100.5106	Parutsakawan Palace	Palace and Museum
6	13.7655	100.5090	Chankasem Palace	Palace and Museum
7	13.7630	100.5135	Prince of Chumphon Palace	Palace and Museum
8	13.7751	100.5080	Sai Suddha Nobhadol Building	Palace and Museum
9	13.7809	100.5087	Vajiranusorn Building	Palace and Museum
10	13.7632	100.5176	King Rama IX Memorial Park	Palace and Museum
11	13.7725	100.5015	Golden Teak Museum	Palace and Museum
12	13.7655	100.5113	Anti Corruption Museum	Palace and Museum
13	13.7925	100.5134	Singha Museum	Palace and Museum
14	13.7990	100.5249	Prajadhipok Residence Museum	Palace and Museum
15	13.7963	100.5179	Parliamentary Museum	Palace and Museum
16	13.7772	100.5116	Thai Newspaper Museum	Palace and Museum
17	13.7670	100.5134	Phra Anuson Museum	Palace and Museum
18	13.7759	100.5043	Museum of Maha Rachanuson Rama IV	Palace and Museum
19	13.7932	100.5288	Department of Military Communications Museum	Palace and Museum
20	13.7921	100.5307	Department of Army Transportation Museum	Palace and Museum
21	13.7939	100.5297	The Royal Thai Army Ordnance Corps Museum	Palace and Museum
22	13.7777	100.5055	St. Francis Xavier Church	Religious places
23	13.7770	100.5035	Immaculate Conception Church	Religious places
24	13.7761	100.5029	Rachathiwat Temple	Religious places
25	13.7724	100.5019	Devaraj Kunchon Temple	Religious places
26	13.7837	100.5216	Noi Noppakun Temple	Religious places
27	13.7803	100.5051	Rajphatikaram Temple	Religious places
28	13.7919	100.5135	Chan Samoson Temple	Religious places
29	13.7810	100.5155	Sawatwaree Simaram Temple	Religious places
30	13.7664	100.5145	Benchamabophit Dusitwanaram Temple	Religious places
31	13.7797	100.5040	Chao Mae Thapthim Shrine	Religious places

The National Library was founded in 1905. When The King Rama V returned to Bangkok from a visit to Europe, he had the idea that Siam does not yet have a library for the city. It was established for the collection, storage, preservation and administration of all national intellectual property. It contains a collection of Thai manuscripts, stone inscriptions, palm leaves, Thai literature and publications, as well as audio-visual objects. And, today it still stores digital resources for the benefit of the general public. Sappaya-Sapasathan or The Parliament Complex is the new parliament of Thailand which is under construction. Upon completion, the National Assembly will be the largest parliament building in the world replacing the Romanian Parliament, with an indoor area of 365,000 m^2. This building has outstanding architectural features according to the Trailokya, in addition to showing the spiritual identity of Thailand. It also has a meaning for the person who comes to the council to feel the concept of karma. The highlight of this place is also the glass wall surrounding the golden pagoda
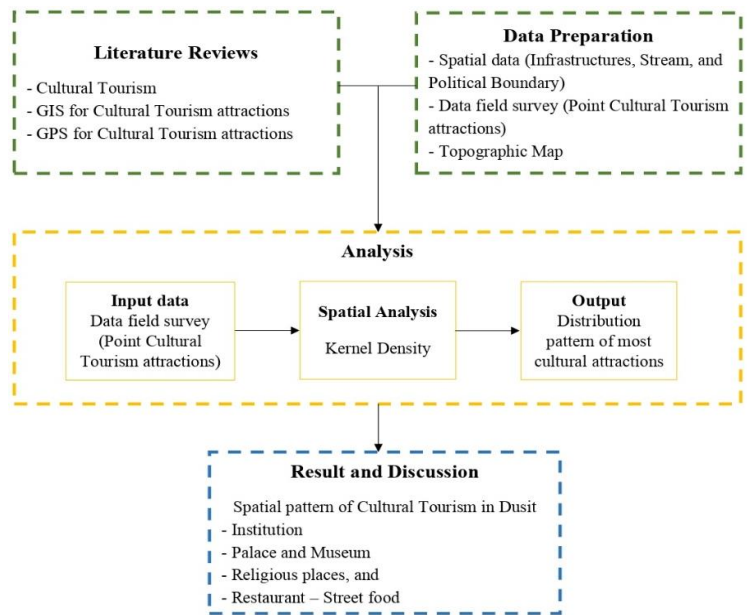
and the Thai National Museum, which in the future will be a new tourist attraction. Cultural attractions in the form of Palaces and Museums consist of 7 Palaces, 11 Museums and 1 Park. Dusit has been the central administrative district of Thailand since 1782 since the establishment of the Rattanakosin period. As a result, there are quite a lot of palaces scattered in this area, where the palace is the residence of the King, the Viceroy, the royal family since the early Rattanakosin period, some of which have become a museum for learning history. The important palaces that are cultural tourist attractions are as follows: Equestrian Statue Plaza, Dusit Palace Plaza, Parutsakawan Palace, Chankasem Palace, Prince of Chumphon Palace, Sai Suddha Nobhadol Building, and Vajiranusorn Building. The 11 museums are mostly located in the western part of the study area in Wachira Phayaban Sub-district and Thanon Nakhon Chai Si Sub-district.
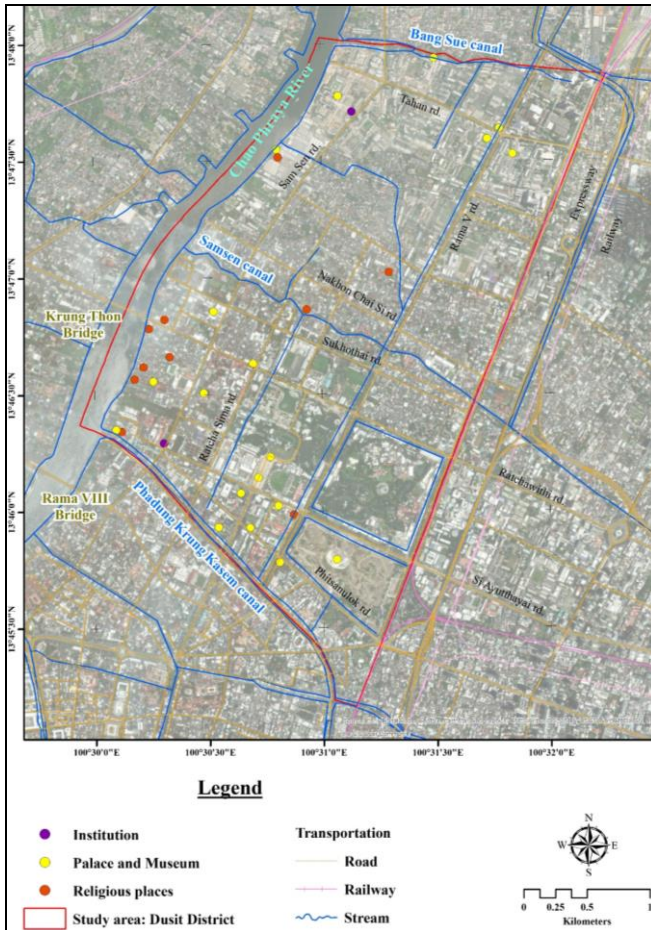

Figure 3. Map of Institution, Palace and Museum, and religious places in Dusit District, Thailand (Source: collected and processed by authors)
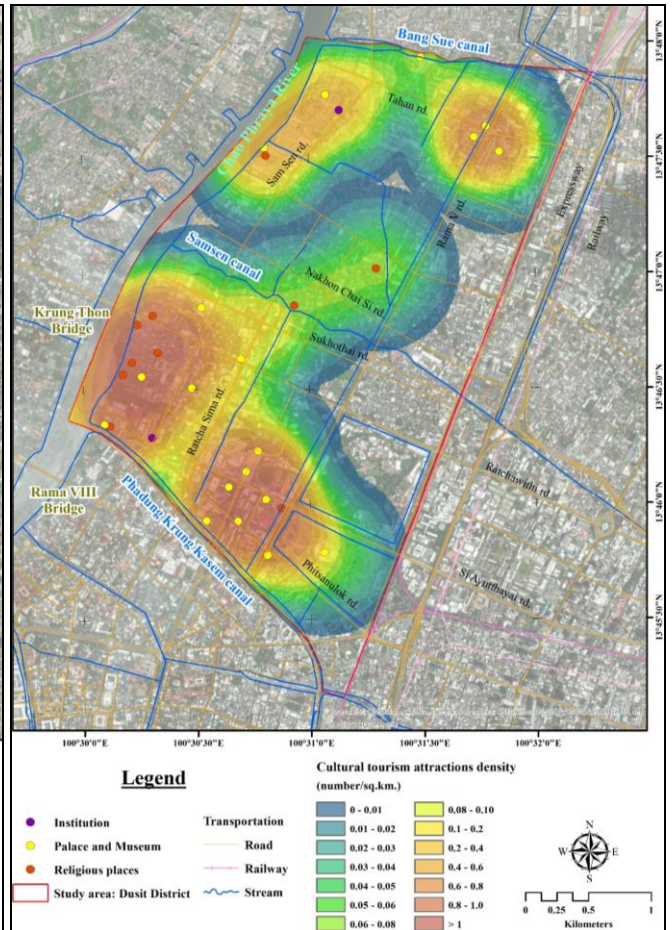
Figure 4. Cultural Attractions Density Map in Dusit District, Thailand (Source: collected and processed by authors)

Most of the cultural tourist attractions in the form of religious places are located along the Chao Phraya River and major canals, with a total of 10 locations. Two Christian churches: St. Francis Xavier Church and Immaculate Conception Church. Located on the west side of Dusit District, next to the Chao Phraya River, St. Francis Xavier Church is a temple of the Vietnamese people who came to live in Siam since the reign of King Rama IV. There is a statue of Jesus healing the blind at the front of the temple. It is a statue that King Rama V brought from Italy on his first visit to Europe in 1897. The Immaculate Conception Church is a Roman Catholic church. It consists of the original building, which is a brick and cement building, with Thai-style gable roof. It is currently renovated into a museum. The Conception Church is unique in its architecture than other churches, with Thai-Dutch style. There are 8 tourist attractions related to Buddhism. Most of them are old temples in the early Rattanakosin period as follows: Benchamabophit Dusitwanaram Temple. It is an important royal temple, the temple of King Rama V, and he entered the temple as a monk. The outstanding architecture of this temple is that it is made of pure white marble. Sawatwaree Simaram Temple is located along Khlong Sam Saen in the middle of Dusit District, built in 1832. The surrounding area is an ancient community in the early Rattanakosin period. Such temples still retain the identity of the architecture of the early Rattanakosin period as well. Rachathiwat Temple is located along the Chao Phraya River next to Tha Wasukri. It is the first temple where the Dhammayuttika Nikaya was established. This temple is very unique, whether it is a sermon hall built entirely of golden teak, Fresco painting about Vessantara Jataka, and there is also an important palace such as Phaya Thai Palace and the palace of King Rama IV. Devaraj Kunchon Temple is a temple located on the banks of the Chao Phraya River and the Phadung Krung Kasem canal.

The temple has beautiful frescoes and is in a well-preserved condition, decorated mainly in marine blue. Inside the temple is also home to the Golden Teak Museum. Noi Noppakun Temple is a temple with a beautiful church. Inside is enshrined the principal Buddha image in the Subduing Mara posture and murals depicting the life of the Lord Buddha. Rajphatikaram Temple is a temple located along the Krung Thon Bridge on the banks of the Chao Phraya River. It is a

temple with an ubosot that combines Thai and Vietnamese art. And, there are very outstanding and exquisite frescoes. The wall painting is about Phra Mahachanok, which was the previous incarnation of the Lord Buddha, also a painting depicting contemporary morality and the cosmic landscape in the Buddhist perspective behind the main Buddha image. Chan Samoson Temple houses several sacred Buddha images within the temple. And the last place, Chao Mae Thapthim Shrine, is a shrine that has existed since the Ayutthaya period. It is the settlement of the Hainan Chinese who emigrated from the war to live in Thai territory. This is a sacred place where merchants, businessmen come to pray for successful trade and business.

In addition to the cultural attractions in Dusit that take the form of Institution, Palace and Museum, and Religious places, there is also another form that is currently very popular, which is a cultural attraction in the form of Restaurant and Street food. Especially the charm of street food, which is considered a highlight of Thailand and is the destination of foreign tourists who want to experience the atmosphere and try the taste of Thai street food. With the highlight of the Thai street food that is easily accessible wherever you go in Bangkok, you can see a variety of styles, delicious taste, and you can eat at the shop or take away conveniently. Thailand has a variety of raw materials sources for cooking, together with the eating culture of different nations in local, ethnic groups, and foreigners to be Thai Street food, and traders also develop new cooking techniques. In this research, a field survey was conducted with GPS to collect restaurant and street food locations in Dusit District. The results of the study revealed that there are 49 restaurants and street food in Dusit District, divided into 10 restaurants, 12 cafés, and 27 street food (Figure 5). It can be seen that most of the distribution of such locations appears along the main roads, namely Sam Sen road, Nakhon Chai Si road, and Sukhothai road. In particular, Sam Sen road appears concentrated on the south side of the study area, and the other is at the intersection of Sam Sen road and Nakhon Chai Si road, which is an important community and commercial area, Thewet and Sri Yan. Thewet is an old community area since the Ayutthaya period. Later in the reign of King Rama IV of Rattanakosin, Phadung Krung Kasem Canal was dug parallel to the old moat canal (Klong Rob Krung). The purpose of digging the canal was to expand the territory of the city. As Khlong Phadung Krung Kasem passes through Thewet area, causing more people to settle, and nowadays it becomes an important Restaurant and Street food area. Sri Yan is a commercial district located at Sri Yan intersection, at the intersection of Samsen Road and Nakhon Chai Si Road, in the area of Dusit

Table 2. Coordinates of cultural attractions in the form of restaurants and street food in Dusit District, surveyed between December 15, 2022 to January 13, 2023

No.	Northing	Easting	Location	Category
1	13.7892	100.5160	Krua Kun Ya Dusit	Restaurant
2	13.7833	100.5151	Jungle Curry Si Yan	Restaurant
3	13.7762	100.5208	Cut Raw & Grilled	Restaurant
4	13.7820	100.5053	Chon Thai Restaurant	Restaurant
5	13.7743	100.5070	Krua Apsorn	Restaurant
6	13.7767	100.5162	Krua O Wee	Restaurant
7	13.7838	100.5150	Home Restaurant	Restaurant
8	13.7895	100.5105	Rim Chon Restaurant	Restaurant
9	13.7613	100.5158	Suan Son Restaurant	Restaurant
10	13.7788	100.5079	Kab Kao Kab Pla	Restaurant
11	13.7772	100.5111	Home Bakery	Café
12	13.7867	100.5111	Sriyan Tearoom	Café
13	13.7843	100.5134	Panettone	Café
14	13.7841	100.5139	Crazy Snacks Si Yan	Café
15	13.7793	100.5098	Thamadum Thammada	Café
16	13.7734	100.5199	Kumo café	Café
17	13.7613	100.5156	Under the same roof	Café
18	13.7586	100.5150	Double Pitcher	Café
19	13.7900	100.5149	Broorown café	Café
20	13.7861	100.5102	RareBKK	Café
21	13.7612	100.5157	Amornpiman	Café
22	13.7892	100.5184	Midnight Moon	Café
23	13.7561	100.5180	Fu Fresh Chili Fish Noodles	Street food
24	13.7595	100.5144	Hainanese Kanom Jeen Je Wa-Je Yong	Street food
25	13.7792	100.5221	Beef Kaolao Ratchawat	Street food
26	13.7798	100.5144	Beef Noodle Dusit Borikan	Street food
27	13.7852	100.5130	Meatball Si Yan	Street food
28	13.7757	100.5250	Waree Pork Satay Dusit	Street food
29	13.7783	100.5065	Fried pork Mettha	Street food
30	13.7843	100.5140	Yum Naem Kao Tod Pee Or Si Yan	Street food
31	13.7778	100.5257	Rice gruel Ratchawat	Street food
32	13.7841	100.5117	Rad Nha Nai Hor	Street food
33	13.7748	100.5230	Mee Krob Wilaikul	Street food
34	13.7801	100.5128	Krisna Fish Noodle	Street food
35	13.7843	100.5139	Pad Thai Supaporn	Street food
36	13.7792	100.5231	Chicken Noodle Ratchawat	Street food
37	13.7866	100.5130	Chinese chives dessert Phra Market	Street food
38	13.7791	100.5230	Rice porridge Siladol	Street food
39	13.7864	100.5126	Pork Larb Si Yan	Street food
40	13.7863	100.5126	Rice gruel Je Muk	Street food
41	13.7891	100.5152	Tom Yam Noodle Lord Kun	Street food
42	13.7877	100.5135	Southern Thai Curry Je Maam Grade A	Street food
43	13.7698	100.5042	Suki Thewes	Street food
44	13.7851	100.5125	Crepes Thewes	Street food
45	13.7895	100.5149	Oun Nooddle	Street food
46	13.7894	100.5150	Rice Fish gruel Bang Krabue	Street food
47	13.7769	100.5076	Aunt Nid Noodle	Street food
48	13.7749	100.5056	Rad Nha Wat Racha	Street food
49	13.7763	100.5076	Aunt Somjid Noddle	Street food

District. Before World War 2, it was an area where Thai and Chinese settlers came to live in the community and built a trading point to exchange products. Until today it is an area with many shops, restaurants, lining both sides of the road and within the Sri Yan market. The Kernel Density study of the restaurant and street food locations yields the following results: Sri Yan district has a very high density level with more than 1 km2 along Sam Sen road and Nakhon Chai Si road. Thewet district, the density level is only 0.2-0.6 km^2, but it appears at the intersection of Sam Sen road and Ratchawithi road where the density level is similar to that of Sri Yan. Because the area is home to Suan Sunandha Rajabhat University, Dusit University, Navamindradhiraj University, and Vajira Hospital, where students, staffs, and patients use the facility, this causes street food to have a high level of density. Another area to the east of Nakhon Chai Si road is also experiencing high levels of street food (Figure 6). The details of Restaurant and Street food are shown in Table 2.
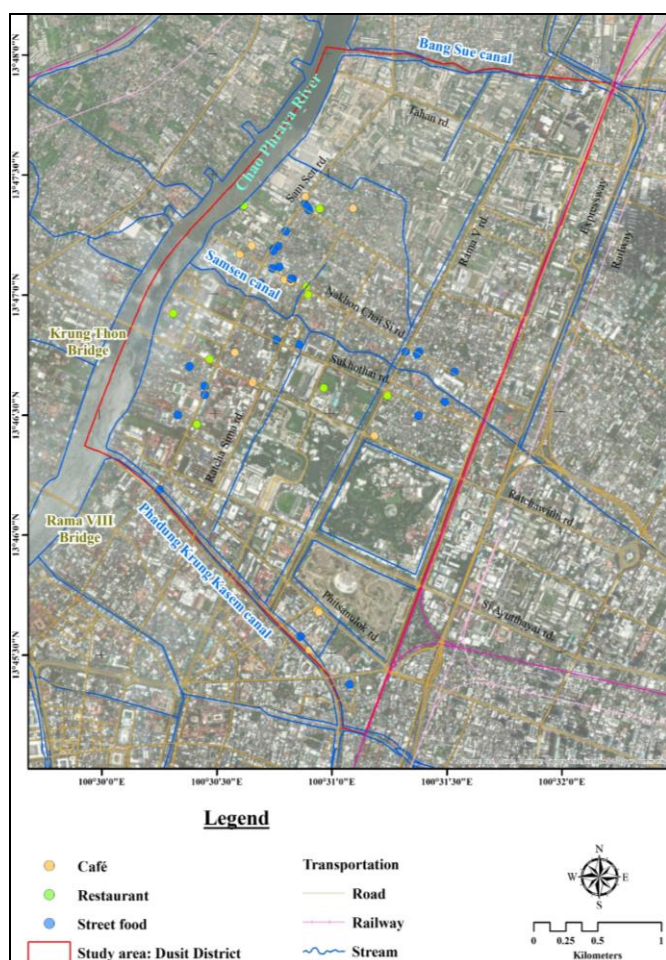
Figure 5. Map of Restaurant and Street food in Dusit District, Thailand (Source: collected and processed by authors)
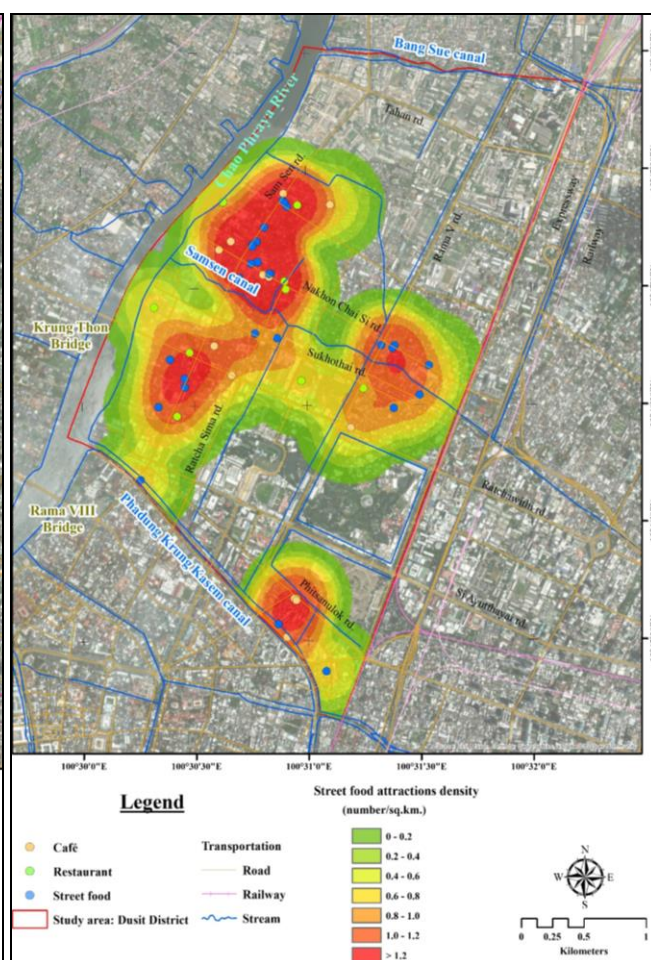
Figure 6. Restaurant and Street food Density Map in Dusit District, Thailand (Source: collected and processed by authors)

CONCLUSION

The cultural attractions of Dusit District were collected and analyzed spatial data with GIS, by simulating the density of tourist attractions with the Kernel Density. It can be seen that most of the density of such places are in the west along the coastline of the Chao Phraya River. Kernel Density analysis shows the efficiency of the research results very well.

The reason for the distribution of the cultural attractions of Dusit District is in such areas, because in the early Rattanakosin period there was an expansion of government offices and residences of the royal family from Phra Nakhon District which was on the south side of study area to Dusit area.

And at present, it has been transformed into a museum for studying history of the Thai nation. Most restaurants and street food attractions are located at the intersection of important roads such as Sam Sen road and Ratchawithi road, Sam Sen road and Nakhon Chai Si road, and Phitsanulok road. In conclusion, this research has created a map for local communities in Dusit area, especially tourism in the urban areas surrounding Sawaswareesrimaram Temple to raise the community for use in spatial development planning. Local communities have tools for planning cultural attractions to enhance livelihoods, love and cherish their homeland, and increase income for people in local communities, leading to the development of tourism that is going to happen in the future.

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