

# DISTANCE ANALYSIS BETWEEN SERVICE FACILITIES AND TOURISM SITES IN INDONESIA: ARE THERE DIFFERENCES IN DISTANCE CHARACTERISTICS BETWEEN TOURISM CATEGORIES?

Eirinne Carenina de Poere and Dyah Lestari Widaningrum Industrial Engineering Department, Faculty of Engineering, Bina Nusantara University, Jakarta, 11480, Indonesia,

Email: eirinne.poere@binus.ac.id; dwidaningrum@binus.edu

KEYWORDS: Tourism; Facility Location; Distance Analysis; Spatial Pattern; Geographical Information System

**ABSTRACT:** Previous research investigated the proximity patterns of tourism sites and their surrounding various public facilities in the vicinity. The study identified co-location rules between tourism sites and accommodations, food services, shopping, transportation, and other tourism support facilities at a distance of 5 km. This study aims to explore the relationship between the proximity of each tourism site category (cultural tourism, natural tourism, and other tourism) with the category details of tourism supporting facilities. Geographic Information System using QGIS manages and performs the preparation and processing of spatial data. The query function in PostgreSQL searches for various tourism support facilities around tourist attractions on the perimeter of 1, 2, 3, 4, and 5 km. The calculation results produce a probability value of a public facility in one type of tourism site. Are the existing public facilities around the cultural tourism site (tourist village, museum, temple, palace) the same as the public facilities around the natural tourism site (beach, cave, forest)? Whether government, private, or community, tourism providers can use the insights from this research to provide facilities based on the characteristics of the tourism site and the behavior of tourists in traveling. The results of this analysis cannot fully predict the behavior of tourists in their activities because the study only uses current location data. The tourists could need a facility to support tourism activities, but the tourism activity providers have not provided it. Therefore, it is essential to explore tourist perceptions through surveys or using various data from social media.

#### 1. INTRODUCTION

Previous research examined the proximity pattern to tourist sites and the surrounding public facilities. Other researchers have examined public facilities around cultural and natural tourism sites collected using surveys or using various data from social media. This paper presents the analysis underlying various types of accessibility research. The study used local regression analysis to link the experiential and geographic dimensions of access to provide a more nuanced and comprehensive analysis of health facility access [1].

Tourism is being developed as a new economic source in the creative economy sector in Indonesia. Tourism activities do not only occur in tourist sites but also penetrate various fields in the surrounding area. Whether or not the city will grow to provide a range of services, products, and experiences that will support the tourism flows of the destination. This relationship still needs to be studied further. Spatial characteristics affect the relationship between tourism activities, especially in proximity [2]. Based on tourist experiences collected from survey results, a study found a relationship between attractiveness in a destination [2].

Identifiable infrastructure and recreational activity locations can make tourism in an area feasible [9]. The tourism agency can determine an effective strategy for managing and developing a destination area by identifying the main attractions or sites in a tourism show that tourists can be grouped based on their activities to carry out tourism profiles for destination development strategies [3].

This paper aims to determine the pattern of proximity to tourist sites and their supporting facilities, such as cultural tourism, nature tourism, and other tourism. A GIS (Geographical Information System) approach is used to visualize and assess the density of research objects. The co-location pattern mining approach then examines the types of tourism support facilities and the categories of tourist sites that are often encountered together. The author describes several studies that other researchers have carried out. In addition, the authors describe the data used to analyze spatial patterns.

## 2. MATERIALS AND METHOD

Bibliometric analysis was used to see the distribution of the number of publications and citations from various literature. Topics in bibliometric analysis can be described both qualitatively and quantitatively. Bibliometric studies in information science are studies that can reveal patterns of document use, development of literature or sources of information in a subject area. Bibliometrics includes two types of studies, namely descriptive studies and evaluative studies. Descriptive studies analyze the productivity of articles, books, and other formats by looking at authorship patterns. Evaluative studies analyze the use of literature created by counting references or citations in research articles, books, or other formats [4].

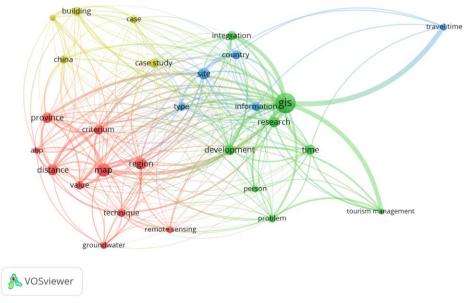


Figure 1 Network Visualization of Research Development Map

Citation analysis is one of the fundamental properties of scientific work. The citation relationship of scientific works is the primary basis of citation analysis. Citation analysis uses various means, including mathematics, statistics, comparison, induction, abstraction, generalization, and logical methods. This method is used to analyze various scientific journals, papers, citation objects, and cited phenomena to determine the inherent characteristics of the bibliometric analysis method. At this stage of analysis, the aim is to analyze the content, patterns, and trends of a collection of documents by measuring the strength of terms and counting the number of keywords that appear simultaneously in the articles under study [5-6].

There are 3,326 keywords, using the minimum number of occurrences of 5 conditions, and the results are found as many as 298 relevant. There are 4 clusters, 25 types of red cluster 1, 26 types of green cluster 2, 25 types of blue cluster 3, and 23 types of yellow cluster 4. The term in the title that is most widely used in program coordination articles is "Geographical Information System", with a total of 111 events.

## 2.1 Spatial Analytics in Tourism Analysis

Based on the draft of the Central Java tourism book, currently, it has 1,024 tourist attractions with details of 341 natural attractions, 158 cultural tours, 295 artificial tours, and 172 other tours. The number of tourists visiting Central Java is calculated based on tourists visiting Tourist Attractions. The number of tourists who came in 2020 was recorded at 8,829,656, with details of 53,399 foreign tourists and 8,776,257 domestic tourists. The top 5 regencies/cities visited by foreign tourists are Magelang Regency (22,227 people), Klaten Regency (22,024 people), Jepara Regency (3,004 people), Magelang City (1,361 people), Surakarta City (1,284). while the top 5 regencies/cities visited by many domestic tourists are Klaten Regency (818,756 people), Semarang Regency (755,616 people), Magelang Regency (9696,193 people), Purbalingga Regency (496,932 people), and Banyumas Regency (442,364 people) [7].

This study uses GIS, where the Geographic Information System (GIS) is a computer-based information system that is used digitally to describe and analyze geographic features depicted on the earth's surface and their occurrences (non-spatial attributes that will be associated with geographic studies) [8]. Geographic Information System produces aspects of spatial data and non-spatial data. Geographical data that has been computerized has an essential role in finding changes in the way of using and knowing information about the earth [9]. GIS is used to help decision-makers solve spatial problems by showing various alternatives in development and planning with modeling that produces a series of potential scenarios [10].

In this study, GIS provides opportunities for applied tourism researchers to understand and define the interaction model between time, space, and tourism activities. This study discusses research that examines the closeness between objects [11]. This study examines tourism sites on cultural, natural, and artificial heritage sites in Central Java Province and DIY Province. The spatial data consists of regional boundaries obtained from the Indonesian Geospatial Information Agency. The location of supporting facilities for tourist sites is obtained from OpenStreetMap Indonesia. QGIS Desktop version. 3.10.0-A software collects, manages, processes, and visualizes spatial data. The heatmap plugin feature in QGIS is used to create a density raster. This density raster visualizes the pattern of object locations, whether they are randomly scattered or tend to cluster. The PostGIS Shapefile

Import/Export Manager export spatial data in PostgreSQL format. Feature class instances are created using the ST\_Distance function in PostgreSQL.

## 3. RESULT AND DISCUSSION

In previous studies, an assessment of the speed of tourist sites has been carried out. The analysis also examines various public facilities that support tourism. The various types of public facilities are one of the 14 factors that influence the characteristics of cultural heritage, namely, the central supporting accommodation and related infrastructure factors. The study continued to determine the relationship between each category of tourist sites with details of the variety of tourist support facilities. The results of spatial data processing using QGIS and query functions in the PostgreSQL program help find tourism-supporting facilities around tourist attractions on the perimeter of 1, 2, 3, 4, and 5 km. Figure 1. shows the results of spatial data processing using QGIS.

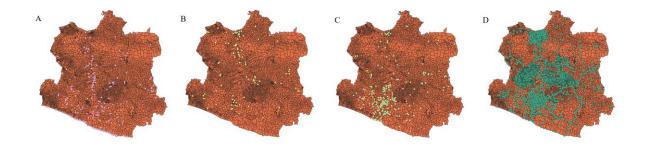


Figure 1. (A) Nature Tourism; (B) Other Tourism Sites; (C) Cultural Tourism; (D) Point of Interest DIY-Central Java

Data processing is continued using Pivot in Microsoft Excel to show many supporting facilities located around natural, cultural, and other tourism sites. Figure 2. to Figure 6. is a graph of the results of the Pivot in Microsoft Excel.

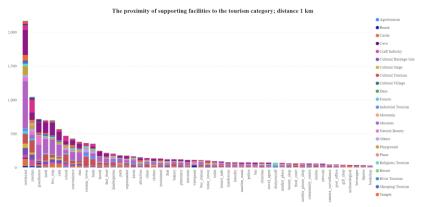


Figure 2. The proximity of supporting facilities to the tourism category; 1 km distance

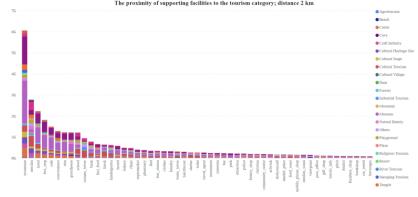


Figure 3. The proximity of supporting facilities to the tourism category; 2 km distance

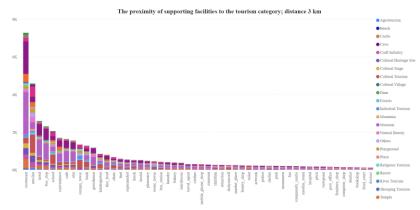


Figure 4. The proximity of supporting facilities to the tourism category; 3 km distance

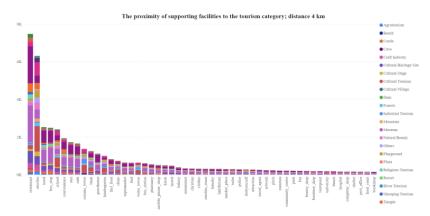


Figure 5. The proximity of supporting facilities to the tourism category; 4 km distance

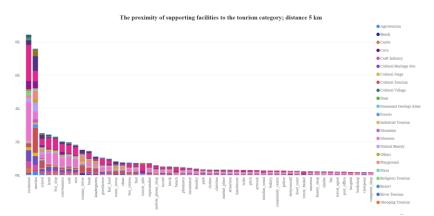


Figure 6. The proximity of supporting facilities to the tourism category; 5 km distance

Previous studies examined the facilities supporting tourism activities. So, this further research will identify whether there is a gap between public facilities supporting the tourism category and the type of tourism. Table 1 is the result of mapping public facilities supporting tourism around the types of tourism from the categories of natural tourism, artificial tourism, and cultural tourism. Each POI around the type of tourism has a different speed with its supporting public facilities. The distance parameter of 1 km to 5 km also determines the proximity.

**Table 1.** Tourism Support Facilities – Natural Tourism for Each Tourism Type

Type of Tourism	Table 1. Tourism Support Facilities – Natural Tourism for Each Tourism Type  Distance								
Site	Support Facility	1 km	2 km	3 km	4 km	5 km			
	Food Service Facility	• (20), • (4), • (1)	• (10), • (1), • (1)	• (17), • (2), • (1)	• (13), • (3), • (7), • (1), •	• (16), Cafe (3), • (6), • (2)			
	Accomodation Facility		• (1), • (25)	<ul><li>(2), </li><li>(6)</li></ul>	(1), • (2) • (5), • (6)	• (4), • (4), • (1)			
Waterfall	Transportation Facility		• (1)	• (1)		• (2)			
	Shopping Facility			• (2), • (1), • (1)	• (6)	• (1), • (5), • (1), • (1) • (10), • (66), • (10), • (4), •			
	Other Tourism Facilities		• (17), • (3), • (1), • (3), • (1), • (1), • (16)	• (31), • (4), • (5), • (1), • (3), • (1), • (1)	• (39), • (3), • (3), • (3), • (6), • (1), • (3), • (7)	(3), • (3), • (2), • (1), • (4), • (9), • (1)			
	Food Service Facility Accomodation Facility	• (7), • (2) • (4), • (41), • (1)	• (4) • (2), • (1)	• (1)	• (3), • (2), • (2)	• (2), • (1), • (1), • (1), • (1) • (1)			
Dam Cave	Transportation Facility	(1), (12), (1)	(=), (-)		• (1)	• (1)			
	Shopping Facility		• (1) • (1), • (1), • (1), • (1), • (1),		• (1)	• (3) • (4), • (9), • (1), • (1), •			
	Other Tourism Facilities  Food Service Facility	• (2), • (1) • (12)	• (1), • (1), • (1), • (1), • (1), • (1), • (1)	• (5), • (1), • (1), • (1), • (1) • (9), • (1), • (1), • (2)	• (5), • (2), • (1), • (2) • (17), • (2), • (2), • (4), •	(1), • (1			
	Accomodation Facility	• (2), • (16), • (1)	• (1), • (47)	• (3), • (3), • (1)	(1), • (1) • (2), • (8)	(1) • (5), • (3)			
	Transportation Facility	(2), (10), (1)	(1), (47)	(3), (3), (1)	(2), (8)	• (3), • (3)			
Cave	Shopping Facility		• (1), • (1)	<ul><li>(8), ● (3)</li></ul>	<ul><li>(2), • (1), • (1)</li></ul>	• (3), • (1), • (1)			
	Other Tourism Facilities	• (1), • (1), • (8), • (2)	(1), (2), (2), (3), (1), (1), (12), (1), (1)	<b>o</b> (6), <b>o</b> (6), <b>o</b> (4), <b>o</b> (4), <b>o</b> (1), <b>o</b> (1), <b>o</b> (2), <b>o</b> (1)	(7), • (4), • (2)	(2), (1), (2), (14), (2), (11), (9), (11)			
	Food Service Facility	• (2), • (1)	• (11), • (3) • (1), • (2), • (1)	<b>•</b> (6), <b>•</b> (3), <b>•</b> (1), <b>•</b> (1), <b>•</b> (1)	• (17), • (5), • (3), • (4), • (1), • (1)	• (15), • (5), • (4), • (1)			
	Accomodation Facility	• (1)	• (1)	• (3)	• (1)	• (3), • (1), • (1)			
Mountain	Transportation Facility		• (1), • (1)	- (1) - (1) - (2)	• (1)	• (1)			
	Shopping Facility		• (4), • (1), • (1)	• (1), • (1), • (1)	• (3), • (3), • (1)	• (1), • (3), • (1) • (2), • (75), • (3), • (3), •			
	Other Tourism Facilities	• (39), • (5), • (4), • (1), •	(3), (10), (3), (2), (3), (2), (2), (1), (1)	(33), • (1), • (2), • (3), • (5), • (5), • (1), • (1) • (34), • (12), • (8), • (3), •	(43), (3), (1), (1), (2), (5) (2), (5)	(6), • (3), • (2), • (3), • (4), • (1) • (35), • (11), • (29), • (9), •			
	Food Service Facility	(1)	(42), • (13), • (13), • (7), • (25), • (19), • (2)	(5), • (7)	(24), (16), (7), (7), (7), (1), (1), (4)	(3), • (4), • (1)			
Forest	Accomodation Facility	• (12), • (1)	• (36), • (6)	• (15), • (1), • (5), • (1)	• (12), • (2), • (1)	• (11), • (1)			
	Transportation Facility	• (6), • (1), • (1)	• (7), • (4), • (2), • (1)	• (17), • (5), • (2) • (7), • (6), • (6), • (5), • (1),	• (2), • (10), • (1) • (6), • (8), • (2), • (1), •	• (3), • (12), • (2) • (4), • (5), • (1), • (1), •			
	Shopping Facility	• (5), • (2)	• (5), • (5), • (4), • (7), • (2)	<ul><li>(1), • (2), • (1), • (1)</li></ul>	(2), • (1)	(2), • (1), • (2), • (1)			
	Other Tourism Facilities	(8), (4), (1), (2), (2), (2), (2), (2), (2), (3), (1)	(6), (22), (13), (14), (7), (6), (7), (3), (2), (2), (2), (1), (1)	(77), • (58), • (3), • (30), • (14), • (15), • (12), • (5), • (4), • (4), • (1), • (1), • (1)	• (88), • (18) • (25), • (11), • (6), • (31), • (5), • (3), • (2), • (3)	• (10), • (54), • (31), • (16), • (36), • (3), • (2), • (4), • (2), • (4), • (1), • (1)			
	Food Service Facility	<b>•</b> (56), <b>•</b> (7), <b>•</b> (4), <b>•</b> (1), <b>•</b> (3)	● (93), ● (24), ● (12), ● (7), ● (1), ● (1)	• (125), • (17), • (15), • (1), • (4), • (3), • (2)	(174), (43), (42), (14), (8), (1), (1)	(230), (39), (63), (21), (6), (6), (12), (1)			
	Accomodation Facility Transportation Facility	• (11), • (136) • (4), • (1)	• (26), • (114), • (5), • (1) • (12), • (5), • (1)	• (17), • (126), • (3), • (1) • (12), • (15), • (1)	• (47), • (45), • (3), • (1) • (33), • (10), • (4)	• (53, • (68), • (13), • (2) • (29), • (11), • (2)			
Natural Beauty	Shopping Facility	• (4), • (2)	• (6), • (3), • (1), • (2), • (1)		• (12), • (14), • (5), • (3), • (1), • (2), • (1), • (1)	• (10), • (8), • (4), • (5), • (5), • (5), • (10), • (1), • (1), • (1), • (3), • (1)			
	Other Tourism Facilities	• (12), • (16), • (1), • (1), • (1), • (1), • (2), • (2), • (2), • (3), • (3), • (28), • (2), • (3)		• (76), • (6), • (39), • (3), • (8), • (15), • (4), • (9), • (6), • (11), • (4), • (3), • (2), • (1)	(104), (28), (17), (10), (16), (11), (8), (9), (6), (3), (2), (46), (3), (1), (3)	• (41), • (132), • (18), • (23), • (16), • (9), • (26), • (4), • (7), • (7), • (10), • (6), • (36), • (1), • (4), • (1)			
	Food Service Facility	• (16), • (1), • (2)	• (16), • (2), • (1)	• (21), • (3), • (3), • (3), • (1)	• (29), • (10), • (5), • (8), • (2), • (2), • (1)	• (30), • (5), • (20), • (1), • (1), • (8)			
	Accomodation Facility	<ul><li>(3), </li><li>(16), </li><li>(7)</li></ul>	<ul><li>(2), </li><li>(8), </li><li>(4)</li></ul>	• (3), • (8), • (5)	<ul><li>(14), </li><li>(8), </li><li>(2)</li></ul>	<ul><li>(16), </li><li>(5), </li><li>(5)</li></ul>			
	Transportation Facility	• (2)	• (3)	<ul><li>(5), </li><li>(4), </li><li>(2)</li></ul>	<ul><li>(6), ● (8), ● (2)</li></ul>	• (2), • (7), • (4) • (2), • (6), • (2), • (1), •			
Beach	Shopping Facility	• (2), • (2)	• (3), • (1)	<b>•</b> (1), <b>•</b> (1), <b>•</b> (1)	• (3), • (5), • (1), • (1), • (1), • (1), • (2), • (1)	(4), • (4), • (1), • (1), • (1), • (2)			
	Other Tourism Facilities	• (1), • (1), • (2), • (16), • (1)	• (2), • (2), • (1), • (1), • (1), • (3), • (19)	$(5), \bullet (1), \circ (1), \bullet (1), \bullet (1)$	• (3), • (1), • (23), • (3), • (2), • (13), • (1), • (2), • (14), • (1)	• (1), • (10), • (33), • (10), • (19), • (3), • (8), • (3), • (14), • (2)			
	Food Service Facility	• (20), • (14), • (5), • (3) • (1) • (12)	• (54), • (7), (• (25), • (6), • (3). • (8), • (2)	• (69), • (18), • (19), • (21), • (8), • (7)	• (113), • (42), • (35), • (22), • (9), • (2), • (8)	• (174), • (42), • (56), • (27), • (3), • (2), • (1), • (2)			
	Accomodation Facility	• (6), • (1), • (3)	• (38), • (2), • (3)	• (24), • (4)	• (24), • (3), • (3), • (1)	• (38), • (9), • (6)			
	Transportation Facility		• (10), • (9), • (2), • (1)	• (7), • (11), • (1)	• (18), • (12), • (1)	• (18), • (16), • (4)			
Water Tourism	Shopping Facility	<b>●</b> (2), <b>●</b> (1)		• (9), • (7), • (1), • (3), • (2), • (2), • (1)	• (10), • (14), • (2), • (6), •	• (12), • (11), • (7), • (4), • (1), • (3), • (4), • (2), • (1), • (1), • (1)			
	Other Tourism Facilities	• (7), • (35), • (4), • (7), • (2), • (3), • (1), • (1), • (1),	• (6), • (89), • (18), • (11), • (4), • (6), • (1), • (23), • (4), • (1), • (3), • (1), • (1)	* (115), * (16), * (19), * (10), * (5), * (6), * (3), * (5), * (6), * (3), * (5), * (6), * (3), * (1), * (1)		• (40), • (153), • (28), • (8), • (11), • (11), • (8), • (5), • (7), • (8), • (4), • (1), • (2), • (1), • (1)			
	Food Service Facility	• (13), • (3), • (1)	• (12), • (3), • (4)	• (5), • (3), • (2), • (2)	• (2), • (2), • (1) • (17), • (6), • (2), • (4)	• (28), • (2), • (12), • (10), •			
	Accomodation Facility	• (1)	• (2)	- (2), - (2), - (2), - (2)	• (3), • (1), • (2)	(2) • (1), • (1), • (1)			
River Tourism	Transportation Facility	(1)	• (2) • (1), • (1), • (1)		• (1) (2)	• (1), • (1), • (1)			
Aiver rourisin	Shopping Facility	• (1)	• (1)	• (2), • (1)	• (1), • (1), • (1), • (1)	• (1), • (1), • (1), • (3), • (1), • (1)			
	Other Tourism Facilities	• (2), • (3), • (4)	• (4), • (5), • (2), • (1), • (5), • (1)	• (3), • (1), • (2), • (3)	• (3), • (1), • (3), • (5), • (1), • (3), • (1), • (4)	• (1), • (6), • (2), • (4), • (2), • (3), • (1), • (1)			
	Food Service Facility			• (1), • (1)	• (2), • (1), • (2)	• (15), • (3), • (3), • (8), • (2), • (2), • (1)			
	Accomodation Facility	• (1)				• (3)			
Agrotourism	Transportation Facility				• (1)	• (2), • (3), • (3), • (2), •			
	Shopping Facility				• (1) • (1), • (1), • (3), • (1), •	(1), • (1), • (1), • (1) • (6), • (15), • (4), • (1), •			
	Other Tourism Facilities			• (3), • (1), • (1)	(1), • (1), • (3), • (1), • (1), • (1), • (2)	(3), • (3), • (1), • (2), • (1), • (1)			

Type of Tourism	Support Facility	Distance							
Site		1 km	2 km	3 km	4 km	5 km			
	Food Service Facility			• (5), • (1)	• (1)	• (2)			
	Accomodation Facility			• (1)	<ul><li>(2), </li><li>(1)</li></ul>	• (1)			
Tample	Transportation Facility					• (1)			
	Shopping Facility				• (1)				
	Other Tourism Facilities			<ul><li>(1), ● (1)</li></ul>	• (1), • (1)				
	Food Service Facility				• (1)	• (2)			
	Accomodation Facility								
Tourist Village	Transportation Facility								
	Shopping Facility								
	Other Tourism Facilities	• (1)			• (1)	• (1), • (2)			
	Food Service Facility					• (1)			
Natural	Accomodation Facility								
Geological	Transportation Facility								
Phenomena	Shopping Facility								
	Other Tourism Facilities					• (1)			
	Food Service Facility					• (1)			
Wildlife	Accomodation Facility								
Conservation	Transportation Facility					• (2), • (3)			
Conscivation	Shopping Facility								
	Other Tourism Facilities					• (3), • (2)			

**Table 2.** Tourism Support Facilities – Other Tourism Sites for Each Tourism Type

Type of Tourism	Distance								
Site	Support Facility	1 km	2 km	3 km	4 km	5 km			
	Food Service Facility	• (5), • (1), • (1)	• (1), • (1), • (2), • (1), • (5)	• (3), • (3), • (1), • (7), • (13), • (5), • (43)	• (6), • (2), • (3), • (13), • (14), • (4), • (72)	• (2), • (2), • (1), • (19), • (10), • (7), • (64)			
	Accomodation Facility	• (1)	• (1)	<ul><li>(5), </li><li>(4), </li><li>(34)</li></ul>	<ul><li>(17), • (13), • (24), • (1)</li></ul>	<ul><li>(6), </li><li>(5), </li><li>(13)</li></ul>			
	Transportation Facility	• (1)	<ul><li>(64), • (63), • (9), • (3)</li></ul>	• (21)	<ul><li>(3), • (18), • (1)</li></ul>	• (4), • (27)			
Agrotourism	Shopping Facility	<b>•</b> (1), <b>•</b> (1), <b>•</b> (1)	<b>•</b> (1), <b>•</b> (1), <b>•</b> (1), <b>•</b> (1)	<b>•</b> (1), <b>•</b> (4), <b>•</b> (1), <b>•</b> (4), <b>•</b> (1)	• (2), • (2), • (2), • (2), • (8), • (1)	<b>•</b> (1), <b>•</b> (1), <b>•</b> (5), <b>•</b> (4)			
	Other Tourism Facilities	• (1), • (1), • (1), • (1), • (14), • (4)	• (2), • (1), • (9), • (6), • (2), • (1), • (1), • (3), • (10), • (4)	• (1), • (9), • (13), • (3), • (6), • (1), • (2), • (5), • (1), • (3), • (30), • (9), • (2)	• (5), • (10), • (4), • (6), • (1), • (2), • (6), • (3)] • (2), • (3), • (6), • (27), • (3), • (2), • (1)	• (1), • (3), • (12), • (5), • (7), • (10), • (9), • (9), • (2), • (54), • (1), • (1)			
	Food Service Facility	• (1)	<b>•</b> (1), <b>•</b> (2), <b>•</b> (1), <b>•</b> (6)	• (2), • (7), • (2), • (23)	• (3), • (4), • (3), • (1), • (13)	• (1), • (17), • (6), • (5), • (42)			
	Accomodation Facility		• (1)	<ul><li>(1), ● (7)</li></ul>	<ul><li>(1), ● (3)</li></ul>	<ul><li>(1), </li><li>(2), </li><li>(6)</li></ul>			
Plaza	Transportation Facility			• (1), • (4)	<ul><li>(1), </li><li>(6)</li></ul>	• (7)			
1 111211	Shopping Facility	<ul><li>(1), • (1), • (1)</li></ul>	• (2), • (1)	• (2), • (5)	<ul><li>(1), • (3), • (2), • (5)</li></ul>	• (2), • (1), • (3), • (2), • (8)			
	Other Tourism Facilities	• (1), • (1), • (1), • (3), • (2), • (4), • (1)	• (2), • (10), • (1), • (4), • (1), • (5), • (1), • (2), • (11)	• (2), • (5), • (3), • (2), • (3), • (1), • (2), • (1), • (24), • (1)	• (11), • (2), • (1), • (2), • (1), • (1), • (3), • (27), • (1)	• (15), • (7), • (3), • (1), • (4), • (2), • (1), • (1), • (28), • (1)			
	Food Service Facility	• (3), • (2)	• (3), • (2), • (1), • (9)	• (5)	• (1), • (4), • (4)	• (4), • (3), • (2), • (5)			
	Accomodation Facility		• (2)		• (2)	• (2)			
	Transportation Facility			• (1)		• (1)			
Craft Industry	Shopping Facility	<ul><li>(1), ● (1)</li></ul>	<ul><li>(1), ● (3), ● (1)</li></ul>	<ul><li>(6), </li><li>(2)</li></ul>	• (2), • (3), • (3)	• (6)			
	Other Tourism Facilities	<ul><li>(7), ● (1), ● (2), ● (28)</li></ul>	• (2), • (1), • (3), • (6), • (4), • (3), • (4), • (34), • (2)	• (1), • (6), • (1), • (8), • (2), • (4), • (3), • (46)	<b>●</b> (7), <b>●</b> (1), <b>●</b> (63), <b>●</b> (1)	• (2), • (6), • (20), • (2), • (2), • (2), • (11), • (6), • (3), • (55)			
	Food Service Facility	• (1), • (2), • (2), • (1), • (9)	<b>•</b> (1), <b>•</b> (2), <b>•</b> (4), <b>•</b> (2), <b>•</b> (8)	• (2), • (1), • (12) • (20), • (11), • (3), • (94)	• (35), • (9), • (3), • (54) • (35), • (16), • (10), • (204)	• (6), • (6), • (2), • (35) • (17), • (20), • (9), • (143)			
	Accomodation Facility	• (3)	<ul><li>(1), ● (5)</li></ul>	• (3), • (4), • (31), • (1)	<ul><li>(29), </li><li>(18), </li><li>(73)</li></ul>	<ul><li>(18), • (14), • (71), • (5)</li></ul>			
	Transportation Facility	• (12)	• (25), • (1)	• (10), • (30), • (1)	• (8), • (48)	• (24), • (44), • (2), • (2)			
Zoo	Shopping Facility		<b>●</b> (1), <b>●</b> (1), <b>●</b> (1), <b>●</b> (2)	• (5), • (4), • (5), • (3), • (1), • (1), • (1), • (3), • (7),	• (10), • (4), • (2), • (4), • (3), • (2), • (8), • (4), • (2), • (12), • (1)	• (4), • (2), • (1), • (1), • (6), • (4), • (1), • (9), • (1)			
	Other Tourism Facilities	• (1), • (3), • (1), • (2), • (1)	• (4), • (2), • (2), • (4), • (1), • (1), • (1), • (5)	(1), (1), (16), (8), (9), (3), (2), (2), (1), (8), (16), (1), (1)	• (6), • (35), • (24), • (1), • (7), • (2), Doctor (5), • (6), • (2), • (9), • (6), • (17), • (1), • (38), • (12)	• (1), • (4), • (29), • (16), • (10), • (1), • (5), • (3), • (7), • (7), • (6), • (6) • (28), • (4), • (1)			
	Food Service Facility	• (5), • (15), • (3), • (34)	• (3), • (9), • (27), • (10), • (4), • (43)	• (2), • (1), • (15) • (32), • (8), • (4), • (35)	• (1), • (1), • (6) • (26), • (16), • (10), • (48)	• (3), • (4), • (3), • (1), • (11)			
	Accomodation Facility	<ul><li>(3), </li><li>(2), </li><li>(11)</li></ul>	• (33)	<ul><li>(1), </li><li>(2), </li><li>(18)</li></ul>	<b>•</b> (3), <b>•</b> (3), <b>•</b> (14), <b>•</b> (1)	<ul><li>(4), ● (4), ● (1)</li></ul>			
	Transportation Facility	<ul><li>(3), </li><li>(3), </li><li>(1)</li></ul>	<ul><li>(10), </li><li>(7)</li></ul>	• (16), • (11), • (1)	• (11), • (1), • (1)	<b>●</b> (7), <b>●</b> (1), <b>●</b> (1)			
Others	Shopping Facility	• (1), • (1), • (2), • (1), • (1), • (6), • (6), • (1)	• (2), • (1), • (1), • (4), • (2), • (5), • (2), • (1), • (11), • (2), • (7), • (2)	• (8), • (2), • (6), • (3)	• (7), • (4), • (2), • (7), • (7), • (2)	• (2), • (1), • (1), • (1), • (3), • (1)			
	Other Tourism Facilities	• (1), • (30), • (2), • (8), • (1), • (9), • (9), • (5), • (2), • (21), • (1)	• (1), • (8), • (61), • (18), • (2), • (16), • (5), • (14), • (6), • (2), • (41), • (9)	• (4), • (7), • (59), • (2), • (32), • (1), • (1), • (20), • (9), • (2), • (12), • (54), • (7), • (1)	• (7), • (7), • (49), • (52), • (1), • (14), • (1), • (6), • (7), • (2), • (62), • (1)	• (5), • (10), • (51), • (47), • (15), • (1), • (5), • (2), • (57), • (1), • (2)			
	Food Service Facility	• (1)	• (4), • (5)	<ul><li>(1), ○ (1), ○ (7), ○ (8)</li></ul>	<ul><li>(1) • (13), • (3), • (8)</li></ul>	<ul><li>(1), ● (4), ● (3)</li></ul>			
		<ul><li>(2), </li><li>(1)</li></ul>		• (3)	• (3)	• (1)			
Resort	Transportation Facility					• (2)			
	Shopping Facility	• (1)	<ul><li>(1), ● (2)</li></ul>	• (1), • (4)		<ul><li>(1), ● (1)</li></ul>			
	Other Tourism Facilities	<b>•</b> (5), <b>•</b> (3), <b>•</b> (1)	• (2), • (14), • (2), • (3), • (1), • (5), • (4)	• (12), • (5), • (5), • (9), • (6), • (2), • (8)	• (3), • (6), • (6), • (62, • (3), • (1)	• (7), • (6), • (18), • (8), • (3), • (3), • (7)			
	Food Service Facility	• (6), • (1), • (26), • (17), • (3), • (127)	• (7), • (3), • (1), • (29), • (35), • (27), • (3), • (142)	• (8), • (4), • (2), • (51), • (65), • (29), • (7), • (158)	• (3), • (5), • (3), • (47), • (59), • (13), • (7), • (136)	• (16), • (6), • (3), • (40), • (83), • (32), • (22), • (179)			
	Accomodation Facility	<ul><li>(7), ● (10)</li></ul>	<ul><li>(25), </li><li>(8), </li><li>(66), </li><li>(1)</li></ul>	<ul><li>(13), • (17), • (50), • (1)</li></ul>	<ul> <li>(16), </li> <li>(18), </li> <li>(62), </li> <li>(2)</li> </ul>	<ul><li>(29), • (12), • (93), • (3)</li></ul>			
	Transportation Facility	<ul><li>(6), • (17), • (1)</li></ul>	• (26), • (36), • (2)	• (19), • (48), • (1)	• (31), • (62), • (4)	• (22), • (41), • (4)			
Playground	Shopping Facility	• (8), • (1), • (4), • (2), • (1), • (1), • (3), • (3)	• (3), • (6), • (3), • (2), • (1), • (7), • (1), • (1), • (14)	• (6), • (1), • (5), • (1), • (3), • (2), • (12), • (2), • (1), • (13), • (5)	• (5), • (2), • (1), • (4), • (2), • (9), • (1), • (1), • (7), • (2), • (13), • (3)				
	Other Tourism Facilities	• (1), • (22), • (17), • (16), • (1), • (3), • (6), • (1), • (3), • (6), • (1), • (3), • (2), • (7), • (1), • (21), • (1)	• (4), • (44), • (40), • (2), • (19), • (1), • (11), • (3), • (4), • (1), • (11), • (8), • (76), • (1), • (41	• (1), • (8), • (30), • (73), • (2), • (36), • (2), • (2), • (2), • (24), • (3), • (2), • (3), • (16), • (4), • (86), • (3), • (1)	• (2), • (3), • (36), • (77), • (3), • (53), • (1), • (4), • (34), • (3), • (3), • (8), • (13), • (), • (4), • (127), • (11).	• (7), • (35), • (88), • (3), • (51), • (1), • (1), • (26), • (7), • (17), • (3), • (4), • (138) • (24), • (1)			

Type of Tourism	Support Facility	Distance							
Site	Support Facility	1 km	2 km	3 km	4 km	5 km			
	Food Service Facility	• (1), • (8), • (12), • (8), •	• (5), • (12), • (34), • (8), •	<ul><li>(8), (19), (68), (14),</li></ul>		• (2), • (1), • (34), • (61), •			
	•	(2), • (46)	(2), • (58)	(2), • (79)	(18), • (5), • (100)	(25), • (16), • (117)			
	Accomodation Facility	<b>●</b> (1), <b>●</b> (9), <b>●</b> (1)	<ul><li>(1), ● (24)</li></ul>	<ul><li>(1), </li><li>(2), </li><li>(29)</li></ul>	• (5), • (4), • (25)	<ul><li>(9), </li><li>(7), </li><li>(33), </li><li>(4)</li></ul>			
	Transportation Facility	<ul><li>(8), </li><li>(3), </li><li>(2)</li></ul>	• (13), • (3), • (4)	• (20), • (13), • (3)	• (17), • (20), • (6)	• (20), • (34), • (5), • (1)			
Water Tourism	Shopping Facility	• (5), • (2), • (1), • (1), • (3), • (1), • (1), • (1), • (5)	• (2), • (2), • (4), • (2), • (1), • (8), • (1), • (8), • (1)	<b>•</b> (2), <b>•</b> (14), <b>•</b> (20), <b>•</b> (1)	• (5), • (2), • (3), • (4), • (3), • (3), • (11), • (1), • (3), • (1), • (18), • (3)	(16), • (1), • (2), • (2), • (16), • (1), • (13), • (2)			
	Other Tourism Facilities	(14), • (32), • (8), • (7), • (5), • (2), • (1), • (4), • (37), • (1), • (1)	• (6), • (22), • (65), • (2), • (27), • (23), • (4), • (2), • (5), • (5), • (59), • (1)	• (2), • (20), • (111), • (1), • (52), • (35), • (4), • (5), • (3), • (10), • (8), • (79), • (7), • (1)		• (5), • (33), • (74), • (1), • (82), • (2), • (53), • (10), • (10), • (1), • (16), • (7), • (98), • (2), • (5)			
	Food Service Facility	• (2), • (2), • (1), • (10), • (7), • (3), • (1), • (37)	• (6), • (9), • (1), • (47), • (33), • (15), • (142)	• (9), • (10), • (2), • (50), • (31), • (1), • (185)	• (9), • (3), • (2), • (43), • (47), • (27), • (1), • (231)	• (4), • (3), • (2), • (48), • (19), • (22), • (1), • (163)			
	Accomodation Facility	• (6), • (6), • (6), • (1)	<ul> <li>(26), </li> <li>(19), </li> <li>(67), </li> <li>(1)</li> </ul>	<ul> <li>(30), </li> <li>(13), </li> <li>(82), </li> <li>(1)</li> </ul>	<ul> <li>(18), </li> <li>(11), </li> <li>(51), </li> <li>(1)</li> </ul>	<ul><li>(15), </li><li>(7), </li><li>(43)</li></ul>			
	Transportation Facility	<ul><li>(1), • (15)</li></ul>	<ul><li>(2),</li><li>(45)</li></ul>	• (15), • (74)	<ul><li>(12), • (69), • (1)</li></ul>	• (10), • (41), • (2), • (1)			
Educational Tourism	Shopping Facility	• (1), • (5)	• (1), • (3), • (1), • (1), • (8), • (1)	• (6), • (1), • (4), • (3), • (3), • (1), • (1), • (2), • (2), • (2), • (12)					
	Other Tourism Facilities	• (10), • (2), • (1), • (1), • (3), • (1), • (1), • (1)	• (7), • (34), • (11), • (7), • (2), • (1), • (4), • (1), • (5), • (7), • (7), • (5), • (14), • (3), • (1)	a (15) a (1) a (5) a (17) a	$(3), \bullet (2), \bullet (9), \bullet (5), \bullet (5), \bullet$	• (1), • (2), • (28), • (17), • (3), • (6), • (1), • (6), • (6), • (4), • (3), • (13), • (2)			
	Food Service Facility	• (1), • (1), • (4), • (4), • (2), • (3), • (35)	• (5), • (2), • (7), • (33), • (5), • (4), • (33)	• (5), • (4), • (4), • (19), • (31), • (16), • (3), • (120)	• (7), • (2), • (1), • (37), • (54), • (17), • (6), • (114)	• (5), • (3), • (12, • (24), • (31), • (17), • (16), • (102)			
	Accomodation Facility	<b>•</b> (2), <b>•</b> (1), <b>•</b> (4)	<b>•</b> (6), <b>•</b> (3), <b>•</b> (21)	• (23), • (11), • (63), • (1)	• (11), • (18), • (50)	<b>•</b> (14), <b>•</b> (7), <b>•</b> (39), <b>•</b> (4)			
Industrial Tourism	Transportation Facility	• (6), • (1), • (2)	• (11), • (12), • (1)	• (8), • (16), • (1), • (1)	• (13), • (24), • (3)	• (19), • (26), • (1)			
	Shopping Facility	• (2), • (1), • (1), • (2), • (3), • (1), • (2), • (1), • (2)	• (1), • (4), • (1), • (3), • (7), • (1), • (10), • (3)	• (7), • (5), • (4), • (2), • (3), • (9), • (1), • (2), • (1), • (17), • (3)	• (3), • (3), • (2), • (2), • (3), • (13), • (2), • (3), • (1), • (4), • (7), • (2)	• (7), • (2), • (7), • (2), • (1). • (8), • (13), • (3)			
	Other Tourism Facilities		• (1), • (3), • (12), • (37), • (1), • (27), • (14), • (2), • (1), • (7), • (1), • (16), • (2)		(3), • (10), • (6), ∘ (12), •	• (6), • (19), • (80), • (50), • (2), • (1), • (27), • (1), • (2), • (21), • (61), • (45), • (			

 Table 3. Tourism Support Facilities – Culture Tourism for Each Tourism Type

Type of Tourism	G . F . 714	Distance							
Site	Support Facility	1 km	2 km	3 km	4 km	5 km			
	Food Service Facility			• (2)					
Agrotourism	Accomodation Facility								
	Transportation Facility								
	Shopping Facility								
	Other Tourism Facilities		• (1)	<ul><li>(4), ● (6), ● (1)</li></ul>	<ul><li>(8), ● (1), ● (1)</li></ul>	• (8)			
	Food Service Facility	<ul><li>(1),</li><li>(4)</li></ul>	• (2)	• (1), • (1)	• (2),	• (4), • (1)			
	Accomodation Facility								
Plaza	Transportation Facility	• (1)				• (1)			
	Shopping Facility			• (1)					
	Other Tourism Facilities	<ul><li>(1),</li><li>(1)</li></ul>	<ul><li>(2), ● (1)</li></ul>		• (1)	• (1)			
	Food Commiss Fooility	• (3), • (3), • (33), • (12), •	<ul><li>(10),</li><li>(1),</li><li>(16),</li><li>(103),</li></ul>	• (12), • (2), • (2), • (24), •	• (14), • (1), • (2), • (47), •	• (12), • (5), • (4), • (60), •			
	Food Service Facility	(10), • (79)	• (48), • (3), • (248)	(184), • (76), • (9), • (422)	(214), • (82), • (4), • (456)	(190), • (82), • (13), • (504)			
	Accomodation Facility	<ul><li>(20), • (15), • (1)</li></ul>	• (23), • (4), • (10)	<ul><li>(23), </li><li>(6), </li><li>(33)</li></ul>	• (24), • (6), • (62), • (1)	• (20), • (13), • (61), • (1)			
	Transportation Facility	<ul><li>(4), </li><li>(3), </li><li>(1)</li></ul>	<ul><li>(15), • (13), • (5)</li></ul>	<ul><li>(20), • (20), • (9)</li></ul>	<ul><li>(34), • (36), • (6)</li></ul>	• (34), • (42), • (4)			
Tample	Shopping Facility	<b>•</b> (1), <b>•</b> (2), <b>•</b> (6), <b>•</b> (7), <b>•</b> (5)	• (2), • (3), • (16), • (14), • (4), • (9)	• (1), • (10), • (30), • (14), • (2), • (12), • (5)	• (3), • (3), • (10), • (17), • (53), • (1), • (5), • (21), • (4)	• (4), • (3), • (5), • (15), • (27), • (1), • (18), • (4), • (7), • (2), • (23), • (5)			
	Other Tourism Facilities	• (4), • (4), • (1), • (3), • (15), • (2), • (3), • (2), • (13), • (6)	(1), (12), (16), (12), (17), (17), (18), (19),	• (2), • (17), • (21), • (7), • (20), • (1), • (20), • (16), • (4), • (82), • (15)	• (1), • (3), • (28), • (18), • (1), • (6), • (1), • (23), • (7), • (23), • (30), • (3), • (90), • (1), • (6)				
	Food Service Facility	• (1)	• (1), • (1), • (1)	• (2), • (3), • (3)	• (1), • (1), • (2)	• (1), • (1), • (12)			
	Accomodation Facility	• (151), • (71), • (161), • (2)	• (1), • (1)	• (1)					
	Transportation Facility	• (3), • (192)							
Cultural Village	Shopping Facility	• (1)	• (31), • (5), • (19), • (11). • (5), • (15), • (14), • (5), • (21), • (1), • (4), • (5), • (85), • (9)	• (1)		• (1), • (1), • (4), • (2), • (2)			
	Other Tourism Facilities	• (1), • (15), • (62), • (31), • (14), • (3), • (6), • (19), • (2), • (20), • (30), • (22), • (5), • (15), • (48), • (18), • (11), • (1)	∘ (1), ∘ (1), ∘ (3)	<ul><li>(1), • (1), • (1), • (4)</li></ul>	<ul><li>(1), • (3), • (1), • (2)</li></ul>	• (2), • (2), • (1), • (5), • (2), • (1), • (1), • (2),			
	Food Service Facility	• (21), • (21), • (11), • (127), • (71), • (42), • (3), • (372)	• (81), • (58), • (23), • (314), • (235), • (124), • (6), • (1331)	• (331), • (199), • (8), • (1740)	• (94), • (63), • (27), • (427), • (387), • (184), • (12), • (1966)	(485), • (452), • (224), • (18), • (2151)			
	Accomodation Facility		• (300), • (150), • (459), • (6)	• (249), • (146), • (603), • (10)	• (394), • (128), • (655), • (5)	• (390), • (139), • (640), • (8)			
	Transportation Facility		<ul><li>(37), • (478), • (3)</li></ul>	<ul><li>(55), • (593), • (4), • (5)</li></ul>	<ul><li>(101), • (636), • (5), • (10)</li></ul>	• (182), • (632), • (11), • (3)			
Tourist Village	Shopping Facility	• (5), • (2), • (3), • (1), • (1), • (7), • (1), • (9), • (1), • (35), • (2)		• (52), • (7), • (26), • (23), • (35), • (19), • (5), • (42), • (9), • (8), • (11), • (110), • (10)	(7), • (42), • (18), • (3), • (52), • (14), • (12), • (18), • (156), • (4)	• (42), • (13), • (49), • (46), • (5), • (37), • (16), • (6), • (66), • (25), • (10), • (13), • (209), • (13)			
	Other Tourism Facilities		• (3), • (43), • (277), • (80), • (60), • (5), • (19), • (66), • (7), • (27), • (67), • (65), • (8), • (41), • (151), • (65), • (30), • (2)	• (6), • (52), • (347), • (145), • (82), • (7), • (23), • (101), • (34), • (37), • (70), • (87), • (6), • (58), • (223), • (74), • (51), • (8)	<ul> <li>(128), ● (343), ● (65), ●</li> </ul>	• (18), • (88), • (496), • (278), • (5), • (71), • (17), • (19), • (146), • (45), • (73), • (74), • (116), • (8), • (87), • (359), • (41), • (39), • (5)			

Type of Tourism	Support Facility	11	21	Distance	41	51
Site	Food Service Facility	1 km • (21), • (21), • (11), • (127),	2 km • (17), • (14), • (3), • (76), •	3 km • (13), • (6), • (3), • (52), •	4 km • (2), • (2), • (3), • (23), •	5 km • (4), • (2), • (1), • (47), •
	•	• (71), • (42), • (3), • (372)	(43), • (33), • (263)	(41), • (16), • (1), • (249)	(41), • (6), • (100)	(18), • (19), • (3), • (174)
	Accomodation Facility Transportation Facility	• (11), • (13), • (10) • (2), • (27)	• (67), • (41), • (111), • (2) • (6), • (73)	• (36), • (12), • (91) • (3), • (71)	• (18), • (1), • (47), • (2) • (21), • (81), • (1)	• (188), • (10), • (38) • (16), • (53), • (3), • (1)
Cultural Stage	Shopping Facility	• (1), • (1), • (2), • (2), • (7)	• (2), • (4), • (1), • (4), • (1), • (9), • (2)	• (9), • (2), • (4), • (5), • (6), • (1), • (8), • (1), • (2), • (2), • (16)	• (2), • (4), • (2), • (2), • (3), • (2), • (30, • (12)	• (7), • (9), • (2), • (4), • (2), • (9)
	Other Tourism Facilities	• (1), • (11), • (4), • (3), • (7), • (1), • (6), • (3), • (1)	• (9), • (57), • (11), • (14), • (2), • (4), • (5), • (9), • (14), • (18), • (1), • (12), • (36), • (9), • (1)	• (5), • (58), • (26), • (19), • (4), • (15), • (4), • (2), • (10), • (18), • (1), • (4), • (46), • (14), • (1), • (1)	• (9), • (40), • (18), • (3), • (2), • (8), • (4), • (4), • (5), • (5), • (8), • (59)	• (3), • (4), • (37), • (15), • (3), • (1), • (6), • (7), • (3), • (42), • (2)
	Food Service Facility	• (1), • (2)	• (4), • (1)	• (12), • (4)	• (6), • (6)	<ul><li>(1), • (1), • (1)</li></ul>
Cave	Accomodation Facility Transportation Facility				• (2), • (1) • (2), • (1)	
Cave	Shopping Facility				• (1)	
	Other Tourism Facilities		• (1), • (2), • (1)	• (1), • (1)	• (1), • (1), • (1), • (1)	• (2), • (1), • (1)
	Food Service Facility	• (2), • (5), • (15), • (11), • (5), • (1), • (42)	• (8), • (4), • (3), • (46), • (35), • (18), • (1), • (160)	• (11), • (6), • (4), • (33), • (33), • (18), • (195)	• (13), • (5), • (3), • (60), • (66), • (27), • (1), • (311)	• (13), • (17), • (3), • (102), • (64), • (43), • (13), • (367)
	Accomodation Facility	• (13), • (12), • (20)	• (15), • (9), • (47)	• (29), • (12), • (85), • (2)	• (33), • (10), • (90), • (2)	• (45), • (34), • (117), • (2)
Craft Industry	Transportation Facility Shopping Facility	• (3), • (27) • (2), • (1), • (1), • (6)	• (11), • (71) • (8), • (1), • (4), • (2). • (1), • (2), • (1), • (1), • (4), • (3), • (1), • (5), • (1)	• (5), • (73), • (2) • (3), • (1), • (2), • (6). • (5), • (1), • (4), • (1), • (2), • (3), • (17), • (1)	• (22), • (112), • (2), • (1) • (3), • (3), • (4), • (10), • (5), • (9), • (1), • (2), • (2), • (11), • (1)	• (31), • (129), • (1), • (1) • (14), • (2), • (9), • (5). • (1), • (4), • (3), • (1), • (10), • (4), • (30), • (1)
	Other Tourism Facilities	• (1), • (10), • (1), • (1), • (3), • (3), • (2), • (2), • (4), • (3), • (2)	• (1), • (5), • (39), • (12), • (1), • (7), • (1), • (4), • (7), • (1), • (5), • (7), • (11), • (5), • (13), • (2), • (3), • (1)	• (3), • (35), • (21), • (7), • (2), • (16), • (3), • (2), • (8), • (11), • (1), • (3), • (24), • (12), • (1), • (1)	• (11), • (68), • (24), • (11), • (4). • (3), • (16), • (3), • (11), • (8), • (15), • (2), • (9), • (26), • (10), • (6)	• (1), • (9), • (78), • (35), • (7), • (1), • (2), • (14), • (7), • (24), • (12), • (17), • (2), • (10), • (40), • (8), • (4), • (1)
	Food Service Facility	• (4), • (7), • (4), • (47), • (13), • (14), • (1), • (109)	• (39), • (27), • (5), • (135), • (91), • (55), • (3), • (482)	• (24), • (15), • (7), • (115), • (80), • (38), • (528)	• (6), • (3), • (6), • (32), • (67), • (18), • (186)	• (5), • (17), • (3), • (102), • (64), • (43), • (13), • (367)
	Accomodation Facility	• (230), • (31), • (22)	• (101), • (67), • (207), • (3)	• (80), • (38), • (328) • (8), • (172)	• (34), • (6), • (79), • (2)	• (20), • (14), • (79), • (2)
	Transportation Facility	• (4), • (49)	• (6), • (126) • (14), • (3), • (9), • (3), •	• (55), • (593), • (4), • (5) • (20), • (2), • (6), • (6), •	• (34), • (145), • (3) • (3), • (3), • (4), • (10), •	• (33), • (106), • (3), • (1) • (11), • (15), • (6), • (4), •
Castle	Shopping Facility	• (2), • (3), • (1), • (3), • (10)		(1), • (8), • (3), • (7), • (1), • (3), • (5), • (28), • (1) • (16), • (119), • (41), • (20),		(11), • (13), • (0), • (4), (1), • (5), • (7), • (2), • (2), • (23) • (4), • (17), • (78), • (29), •
	Other Tourism Facilities	• (4), • (22), • (5), • (1), • (1), • (7), • (12), • (1), • (3), • (7), • (5)	(27), • (4), • (6), • (9), • (1), • (11), • (27), • (33), • (82), • (16), • (32), • (28), • (2)	• (1), • (22), • (7), • (7), • (22), • (2), • (2), • (10), • (42), • (19), • (2)	$(7), \bullet (4), \bullet (3), \bullet (19), \bullet (6),$ $\bullet (4), \bullet (6), \bullet (20), \bullet (6), \bullet$ (20)	(1), • (2), • (4), • (13), • (2), • (14), • (1), • (14), • (6), • (26), • (1)
	Food Service Facility	• (30), • (21), • (9), • (179), • (114), • (63), • (3), • (700)	• (141), • (95), • (22), • (561), • (332), • (209), • (28), • (2022)	• (108), • (71), • (36), • (560), • (414), • (207), • (19), • (2268)	• (87), • (55), • (25), • (439), • (423), • (194), • (42), • (1946)	• (60), • (55), • (21), • (529), • (496), • (223), • (63), • (2308)
	Accomodation Facility	• (216), • (67), • (208), • (3)	• (361), • (231), • (721), • (14)	• (393), • (159), • (842), • (3)	• (256), • (104), • (616), • (19)	• (205), • (109), • (613), • (9)
	Transportation Facility	• (34), • (217), • (2)	• (94), • (611), • (5), • (1)	<ul><li>(115), • (860), • (2), • (2)</li></ul>	<ul><li>(164), • (785), • (4), • (8)</li></ul>	<ul><li>(183), • (692), • (9), • (4)</li></ul>
Museum	Shopping Facility	• (18), • (1), • (10), • (10), • (1), • (1), • (6), • (6), • (3), • (12), • (6), • (3), • (5) • (35)	• (66), • (8), • (37), • (21), • (5), • (20), • (22), • (14), • (27), • (11), • (3), • (11), • (100), • (6)	• (77), • (12), • (47), • (40), • (5), • (30), • (21), • (3), • (37), • (11), • (19), • (18), • (131), • (8)	• (50), • (11), • (43), • (48), • (4), • (34), • (7), • (4), • (48), • (30), • (6), • (21), • (172), • (3)	• (72), • (3), • (47), • (56), • (2), • (31), • (11), • (8), • (45), • (19), • (10), • (14), • (173), • (7)
	Other Tourism Facilities	• (1), • (19), • (127), • (47), • (1), • (24), • (2), • (6), • (14), • (7), • (21), • (34), • (33), • (3), • (17), • (41), • (14), • (2), • (1)	• (4), • (51), • (424), • (118), • (3), • (82), • (13), • (22), • (50), • (12), • (56), • (83), • (98), • (10), • (56), • (137), • (11), • (11), • (9)	• (3), • (73), • (522), • (234), • (1), • (92), • (7), • (42), • (92), • (33), • (55), • (93), • (137), • (7), • (50), • (251), • (82), • (17), • (7)	• (1), • (68), • (19), • (23), • (94), • (37), • (108), • (61), •	• (8), • (68), • (498), • (229), • (8), • (61), • (14), • (13), • (120), • (29), • (118), • (49), • (89), • (4), • (41), • (219), • (52), • (9), • (1)
	Food Service Facility	• (3), • (4), • (2), • (45), • (20), • (7), • (2), • (100)	• (22), • (14), • (3), • (53), • (62), • (29), • (2), • (304)	• (13), • (7), • (6), • (85), • (75), • (39), • (4), • (348) • (101), • (28), • (114), • (3)	• (54), • (30), • (9), • (139), • (97), • (74), • (13), • (634)	• (32), • (24), • (15), • (171), • (143), • (71), • (11), • (673) • (110), • (71), • (276), • (4)
	Accomodation Facility Transportation Facility	• (27), • (17), • (41) • (4), • (43), • (1)	• (47), • (19), • (86), • (1) • (15), • (124), • (1)	• (12), • (128), • (4), • (1)	• (109), • (67), • (259), • (4) • (25), • (224), • (2), • (3)	• (38), • (229), • (6), • (4)
Cultural	Character To 1914	• (9), • (1), • (2), • (1), • (2),		• (7), • (3), • (2), • (8), • (2), • (7), • (2), • (1), • (15), •		• (11), • (2), • (9), • (7), •
Heritage Site	Shopping Facility	• (1), • (1), • (10), • (2) • (1), • (5), • (26), • (14), •	• (6), • (1), • (6), • (1), • (1), • (1), • (39), • (3) • (1), • (11), • (65), • (24), • (13), • (1), • (1), • (24), •	(1), • (2), • (1), • (13), (1), • (2), • (39), • (1) • (1), • (21), • (91), • (30), • (20), • (2), • (6), • (30), •	(1), • (14), • (10), • (26), • (4), • (5), • (1), • (40), • (2) • (2), • (13), • (131), • (70), • (25), • (4), • (7), • (40), •	(13), • (10), • (1), • (30), • (5), • (4), • (2), • (71), • (4) • (7), • (27), • (143), • (82), • (30), • (4), • (6), • (53), •
	Other Tourism Facilities	(6), • (1), • (3), • (9), • (11), • (8), • (8), • (8), • (22), • (6), • (10), • (2)	(6), • (7), • (12), • (16), • (3), • (57), • (72), • (16), • (12), • (1)	(13), • (13), • (20), • (13), • (1), • (17), • (115), • (9), • (9), • (1)	(9), • (24), • (22), • (52), • (4), • (34), • (196), • (41), • (9), • (1)	(10), • (43), • (36), • (40), • (3), • (32), • (169), • (32), • (14), • (4)
	Food Service Facility	• (5), • (5), • (20), • (10), • (7), • (1), • (41)	• (4), • (2), • (1), • (29), • (19), • (8), • (142)	• (7), • (6), • (1), • (19), • (16), • (12), • (71)	• (2), • (3), • (29), • (26), • (11), • (1), • (127)	• (2), • (5), • (1), • (15), • (8), • (5), • (1), • (69)
	Accomodation Facility	• (14), • (8), • (26)	• (7), • (7), • (18)	• (22), • (14), • (33), • (2)	• (15), • (8), • (53)	• (1), • (21)
Shopping	Transportation Facility	• (1), • (17) • (3), • (2), • (1), • (1), • (1),	• (2), • (32) • (5), • (2), • (1), • (2). • (1),	• (9), • (36) • (1), • (1), • (2), • (22), •	• (6), • (36) • (2), • (5), • (2), • (2), • (3),	• (6), • (40), • (1), • (1) • (2), • (1), • (1), • (1), • (1),
Trourism	Shopping Facility  Other Tourism Facilities		• (1), • (1), • (5), • (4) • (2), • (26), • (8), • (6), • (2), • (4), • (1), • (3), • (7), •	(1), • (1), • (4), • (1) • (4), • (21), • (9), • (3), • (2), • (6), • (30), • (13), • (13), • (20), • (13), • (1), •	• (2), • (2), • (1), • (10) • (2), • (5), • (2), • (2), • (3), • (2), • (2), • (1), • (10)	• (6) • (1), • (1), • (16), • (5), • (2), • (2), • (2), • (1) • (4), •
	Food Service Facility	(3) • (35), • (3), • (21), • (45), •		(17), • (115), • (9), • (9), • (1) • (28), • (4), • (8), • (116), •	• (13), • (2), • (1), • (76), •	(3). • (10), • (1) • (12), • (4), • (2), • (77), •
		(32), • (16), • (140)	(109), • (45), • (84), • (306)	(159), • (47), • (41), • (300)	(117), • (45), • (25), • (207)	(111), • (52), • (27), • (226)
	Accomodation Facility Transportation Facility	• (4), • (8), • (94), • (2) • (23), • (42), • (2), • (1)	• (16), • (7), • (216), • (19) • (64), • (63), • (9), • (3)	• (28), • (14), • (33), • (2) • (64), • (56), • (10), • (2)	• (17), • (26), • (121), • (4) • (54), • (51), • (10)	• (24), • (12), • (96), • (4) • (49), • (39), • (9)
Cultural Tourism	Shopping Facility	• (6), • (4), • (9), • (4), • (2), • (6), • (12), • (3), • (27), • (4)	• (35), • (1), • (7), • (13). • (8), • (14), • (24), • (28), • (6), • (5), • (2), • (46), • (5)	(8), • (20), • (11), • (21). • (8), • (20), • (8), • (31), • (6), • (10), • (2), • (50), • (11)	• (12), • (3), • (6), • (4). • (7), • (11), • (1), • (26), • (2), • (5), • (49), • (5)	• (5), • (1), • (3), • (5). • (3), • (11), • (4), • (4), • (27), • (2), • (1), • (35), • (4)
	Other Tourism Facilities	• (1), • (2), • (25), • (92), • (3), • (40), • (3), • (24), • (8), • (16), • (5), • (22), • (7), • (111), • (2)	• (5), • (7), • (43), • (161), • (9), • (111), • (12), • (57), • (20), • (29), • (3), • (59), • (1), • (12), • (241), • (1)	• (2), • (9), • (83), • (282), • (7), • (160), • (10), • (86), • (23), • (21), • (7), • (49), •	• (7), • (69), • (220), • (5), • (196), • (4), • (2), • (82), • (18), • (12), • (5), • (29), • (3), • (16), • (511), • (12), • (4), • (1)	• (2), • (17), • (64), • (193), • (3), • (162), • (1), • (2), • (86), • (21), • (17), • (3), • (25), • (3), • (14), • (430), • (12), • (6), • (2)

Type of Tourism	Support Facility	Distance						
Site	Support Facility	1 km	2 km	3 km	4 km	5 km		
	Food Service Facility	• (3), • (1), • (4), • (20), •	• (5), • (4), • (2), • (17), •	• (7), • (2), • (3), • (22), •	• (13), • (14), • (3), • (50), •	<ul><li>(6), • (6), • (4), • (56), •</li></ul>		
	Food Service Facility	(1), • (2), • (30)	(17), • (5), • (1), • (84)	(27), • (18), • (102)	(35), • (22), • (4), • (191)	(36), • (17), • (3), • (220)		
	Accomodation Facility	• (1), • (2), • (12)	• (23), • (11), • (40)	• (14), • (13), • (45), • (2)	• (41), • (21), • (126), • (1)	• (38), • (28), • (51)		
	Transportation Facility	• (4), • (16), • (1)	• (3), • (41), • (1)	• (3), • (47), • (1)	<ul><li>(8), ● (76), ● (2)</li></ul>	• (11), • (71), • (1)		
Religious	Shopping Facility	• (2), • (1), • (2), • (6), • (2),	• (1) • (1) • (1) • (2)	• (1) • (1) • (2) • (2) • (2)	• (2), • (4), • (5), • (5), • (1),	• (7), • (3), • (1), • (1), • (2),		
Tourism				• (3), • (1), • (12)	<ul><li>(1), ● (7), ● (2), ● (15), ●</li></ul>	• (4), • (11), • (2), • (12), •		
100115111		(2), (1), (1)	(5), (1), (10), (4)	(3), (1), (12)	(1)	(3)		
			• (6), • (7), • (18), • (1), •	• (1), • (2), • (19), • (28), •	• (2), • (4), • (25), • (39), •	• (15), • (52), • (37), • (21),		
		• (1), • (6), • (10), • (2), •	$(12), \bullet (1), \bullet (1), \bullet (8), \bullet (2),$	(2), • (12), • (3), • (12), •	(14), • (2), • (16), • (1), •	<ul><li>(1), ● (3), ● (21), ● (1), ●</li></ul>		
		$(7), \bullet (5), \bullet (1), \bullet (5), \bullet (8)$	• (6), • (2), • (3), • (15), •	(3), • (2), • (7), • (6), • (1), •	$(7), \bullet (5), \circ (14), \circ (2), \circ (8),$	(9), • (17), • (13), • (8), •		
			(9), • (1)	(4), • (14), • (8)	• (24), • (19)	(38), • (2), • (3)		

**Table 4.** Legend for Each Tourism Support Facilities

Food Service Facility		Accommodation Facility		Transportation Facility		Shopping Facility		Other Tourism Facilities	
Bar	•	Hotel	•	Bus station	•	Beauty shop	•	Arts center	•
Bakery	•	Hostel	•	Bus stop	•	Bicycle shop	•	Artwork	•
Beverages	•	Guesthouse	•	Railway station	•	Bookshop	•	ATM	
Café	•	Motel	•	Taxi	•	Computer shop	•	Bank	•
Food Court	•					Department store	•	Cinema	•
Fast Food	•					Furniture shop	•	Clinic	•
Convenience	•					Gift shop	•	College	•
Restaurant	•					Mall	•	Doctors	•
						Market place	•	Fuel	•
						Outdoor shop	•	Hospital	•
						Sports shop	•	Monument	•
						Supermarket	•	Museum	•
						Toy shop	•	Pharmacy	
						Shoe shop	•	Playground	•
								Police	•
								School	•
								Travel agent	•
								Viewpoint	•
								Zoo	•

The results show that the most supporting tourism around nature with a distance of 1 km is restaurants, guesthouses, places of worship, and schools. Other supporting facilities such as hotels, cafes, ATMs, fuel, and so on are not within a 1 km range. Just like the 1 km perimeter, within a 2 km range from natural tourist sites, it is also adjacent to supporting facilities such as restaurants, guesthouses, and places of worship. Other supporting locations that are still closed are schools, banks, and clinics. However, there are few facilities around natural tourist sites with a perimeter of 2 km. The proximity of supporting facilities around natural tourist sites with a distance of 3 km is the same as supporting facilities around natural tourist sites with a distance of 4 and 5 km. However, the difference is shown in the frequency of the number of supporting facilities in the area. Facilities such as supermarkets, banks, and fuel will not be as many as in natural tourist areas with a distance of 4 and 5 km. This happens because natural tourist sites are usually in areas that are difficult to reach because of their geographical location, which makes tourist sites challenging to reach. There are no adequate accommodation facilities around natural attractions.

In artificial tourism, the average location of the supporting facilities is almost the same on each perimeter of the distance. This can happen because artificial tourist locations such as playgrounds, squares, zoos, and so on are in the middle of the city or affordable areas with other supporting facilities. Thus, supporting facilities such as banks, hotels, ATMs, clinics, bus stops, and so on are easier to find. The number of facilities is more significant than in the nature tourism category. Likewise, the cultural tourism category has a location closer to other supporting facilities. This is due to the location of cultural tourism, which is also affordable so that the supporting facilities in the vicinity are more varied and easier to find.

Apart from the geographical side, which makes cultural tourism and artificial tourism easier to reach, the behavior of tourists in traveling is also a factor that makes cultural tourism and artificial tourism more visited by tourists. This is what makes other supporting facilities more widely spread near tourist sites.

## 4. CONCLUSIONS

This study describes the availability of supporting facilities around the categories of natural tourism, cultural tourism, and artificial tourism. The statistical results show that the frequency of the distribution of tourist sites and tourism-supporting facilities within a distance of 1, 2, 3, 4, and 5 km is different. Differences also occur not only in the distance but in terms of tourism categories—the existence of tourism behavior related to tourism activities. Tourists' diversity of characteristics and background causes the variety of their wants and needs for a tourism product. Tourist groupings can provide information about the reasons for each group visiting a different tourist attraction, how large the group is, the spending patterns of each group, their "loyalty" to a particular tourism product, their sensitivity to changes in the price of tourism products, and the group's response to various types of tourism. Tourism product advertising. Furthermore, knowledge of tourists is needed in planning tourism products that are in accordance with the wishes of certain market groups, including planning appropriate marketing strategies for these market groups.

## 5. REFERENCE

- [1] Secretariat Kabiner RI, Laporan 3 Tahun Pemerintahan Joko Widodo-Jusuf Kalla, Jakarta, Indonesia, 2017.
- [2] Liu, B., Huang, S. & Fu, H., An Application of Network Analysis on Tourist Attraction: The case of Xinjiang, China, Tourism Management, vol. 58, pp. 132-141, Oct. 2017.
- [3] Derek, M., Wozniak, E., & Kulczyk, S., Clustering nature-based tourists by activity. Social, Economic, and Spatial Dimensions, Tourism Management, vol. 75, pp. 509-521, 2019.
- [4] Jan van Eck, Nees and Ludo Waltman. 2010. Software Survey: VOSviewer, A Computer Program for Bibliometric Mapping, Scientometrics, 84:523-538. DOI 10.1007/s11192-009-0146-3.
- [5] Chen, C. 2003. Mapping Scientific: The Quest for Knowledge Visualization. London: Springer Verlag.
- [6] Russell, J.M., Rousseau, R. 2015. Bibliometrics and Institutional Evaluation.
- [7] Draft Buku Pariwisata Jawa Tengah dalam Angka. 2020.
- [8] I Wayan Nuarsa. 2005. Menganalisa Daya Spasial dengan ArcView GIS 3.3. Penerbit Informatika, Bandung.
- [9] Tuman. 2001. Overview of GIS. Retrieved September 7, 2022, from http://www.gisdevelopment.net/tutorials/tuman006.htm
- [10] Allen, D. W., GIS Tutorial II: Spatial Analysis Workbook, New York: Esri Press, 2011.
- [11] Suwena, I. Ketut and Ngurah Widyatmaja, I. Gusti. 2017. Pengetahuan Dasar Ilmu Pariwisata. Pustaka Larasan: Denpasar, Bali.