



# **ANALYSIS OF TOURIST TRAVEL PATTERNS TOWARD HEALTH CARE FACILITIES (Case Study of Prambanan Sub-District, Klaten District)**

**Nida Hanifah<sup>1</sup>, Marta Nilasari Catur Pujianingsih<sup>2</sup>, Dea Handika Pratiwi<sup>3</sup>,  
Lintal Alfi Fahmi<sup>4</sup>, Fathurohim Anhari<sup>5</sup>, Thoriq Albayani<sup>6</sup>**

<sup>1,2,3,4,5,6</sup>Department of Geography Education, Muhammadiyah University of Surakarta  
Email : kenzielittel@gmail.com

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## **Abstract**

One of the sectors that are closely related and reasonably determining for the growth and development of the tourism sector is the health sector. The aim of this research was to a) know the affordability of health care facilities from tourism Prambanan and Plaosan Temple, b) to know the travel patterns of tourists headed for healthcare facilities. This research uses qualitative descriptive method by using data collection observation techniques, documentation, and data analysis using network analysis. The network analysis method that used is the closest facility. The results of this research show that a) the affordability of the nearest health service facility from the Plaosan Temple object is Kebondalem Lor Health Center which is traveled by 1.7 km distance and takes about 4 minutes from the location of Plaosan Temple, while the closest health service facility from the Prambanan Temple is Prambanan Health center which is taken with distance of 5.3 km and travel time 14 minutes from location of Prambanan Temple. to be known travelers can use private vehicles at tourism Plaosan Temple, because the attractions have a radius of 1.7 km. While on the tourist object of tourism Prambanan Temple can not use private vehicle because the mileage exceeds 3 km, and b) The travel pattern of tourists to health care facilities is categorized good, because the tourists can access health services with the nearest route and adequate facilities.

**Keywords:** Travel Patterns, Health Facilities, Network Analysis

## **1. Introduction**

The journey is formed because of the activities that are out of domiciles. that was mean, the relationship between the region of space is very instrumental in creating the journey and the pattern of land use distribution will greatly affect the pattern of travel people (Ofyar, 1997). Travel patterns are used to find out the magnitude of the journey from the original location (origin) to the destination location (destination), one of the travel patterns did by the people is towards health care facilities. The pattern of the journey towards health care facilities, is affected by accessibility.

Accessibility of health services is the ability of every person in seeking health services in suitable with what they need. Access dimensions include: physically (including geographical issues), cost, or social access. Access to medical services is the ability of each individual to seek health services needed (Laksono & dkk, The Accessibility of Health Service in Indonesia, 2016).

Health takes an important role in the development of a country. According to Law No. 36 of 2009, development efforts must be based on health insight, meaning that national development should pay attention to public health so that the government is responsible for the availability of access to information, education, and health services facilities in improving and maintaining health for the people. To achieve the goal of good development required the supply of sufficient and affordable health facilities in each region. Health development in every region will achieve success if the community, government, and health management agency synergize in realizing good health.

Health care facilities according to the regulations of the Government of the Republic of Indonesia Number 47 Year 2016 is a tool or place used to provide health services, whether promotive, preventive, curative or rehabilitative by the central government, local government, and the community. The health service facility consists of several types, that is: (1) the place of health workforce practices, (2) community health center, (3) clinic, (4) hospital, (5) pharmacy, (6) blood transfusion unit, 7) health laboratories, (8) optical, (9) medical treatment facilities for legal purposes, (10) traditional health care facilities. Health care facilities are used to carry out the efforts of the health services which include preventive efforts, curative, and rehabilitative programmes implemented by the Government, local authorities and communities. According to (Anwar, Introduction to Health Administration , 2010), in Indonesia was in general health care facilities are divided into three, that is: (1) Primary health service, (2) Secondary health services (secondary health services), (3) Third-level health services (tertiary health services).

According to Law No. 47 of 2016 Article 3 states, health care facilities provide health services such as Individual health services and Community health services.

Table 1. Needs of Health Infrastructure Facilities in Settlement Areas

No	Type of Facility	Number of supporting population (person)	Needs per unit of facility		Standard (m <sup>2</sup> /person)	Criteria	
			Floor Area Min. (m <sup>2</sup> )	Land Area Min. (m <sup>2</sup> )		Radius achievement (m)	Location and settlement
1	Posyandu	1.250	36	60	0,048	500	In the middle of neighboring groups. not cross the highway
2	Treatment Of Citizens Hall	2.500	150	300	0,12	1000	In the middle of neighboring groups. not cross the highway
3	BKIA/ Maternity Clinic	30.000	1.500	3.000	0,1	4000	It can be reached by public transport
4	Health Center Helpers and Environmental Medicine Hall	30.000	150	300	0,006	1.500	
5	Health Center and Medicine Hall	120.000	420	1.000	0,008	3.000	
6	Clinic	5.000	18	-	-	1.500	
7	drugstore	30.000	120	250	0,025	1.500	

Source: SNI 03-1733-2004 about Spatial regions and cities (Normative Views. Technical) Muta'ali (2013: 133-134).

Factors that affect the low accessibility is topography, because it can be a barrier for the smoothness to conduct interaction in that area. Hydrological conditions such as rivers, lakes, swamps, and the sea is also very influential to the development and the growth of agriculture, fisheries, transportation, industry, and tourism. So, the height of the region depends on morphology, topography, sea, network system and the availability of supporting facilities and infrastructure to facilitate various relationships between the surrounding areas (Narsid, Development Geography, 1998).

Utilization of health facilities owned by District Prambanan in the Year 2016 there are 2 Health Center that is Kebondalem Lor Public Health Center is located in Kebondalem Lor village and Prambanan Health Center is located in Kemudo Village. One sector that is closely related to the growth and development of the tourism sector is the health sector. The health sector is important for comfort and safety travelers. Travelers are increasingly balanced with the needs of health facilities. The facilities or health service facilities in Prambanan Sub-district are the first-rate health facilities providing basic or outpatient health services. For that we need to note the fastest route for tourists to health service facilities in accordance with the needs of tourists by using Network analysis.

According to Groenou and Tilburg (1975) Network analysis is an analytical method used to calculate the size of the network structure and content. Network analysis is used to find the shortest distance through line segments according to the length of the geometry line. Data model is created by giving weight factor on line segment (road). Determination of the first shortest path using Dijkstra Algorithm, which serves to find the shortest path from one node to the node. This algorithm calculates the route/distance of the rational basis depending on the optimization criteria selected on a route that is a weighting factors such as the length of the road segment, the time taken from one node to another node, the speed of the vehicle, the traffic density, etc(Kuntarto & Purwanto, Use of Geographic Information Network Analysis System for Route Planning Tourists in Sleman, 2012).

Research conducted by KwawaQoirum M; et al (2017) with research title *Geometric network analysis* on geographic information system (SIG) to know distribution pattern Junior High School (SMP) in part district Wonogiri". Result of this study (1) distribution education Junior High School (SMP) in part district Wonogiri has a diffuse pattern, (2) influential factors to distribution Junior High School (SMP) is a students, (3) analysis performed by research found that there should be an addition junior high school (SMP) located in the district Wonogiri which is approaching the border Giriwono Village, after that need to be school transfer from Giripurwo Village to Village Village.

Network analysis related to three major things, that is the location of the origin, destination, and travel. Network analysis has the ability to perform network analysis for the purpose of determining routes, driving directions, nearby facilities, service area, and locations. Network analysis providing support to be able to realistically model the network conditions, such as entering one-way street information, reversing restrictions, vehicle height limits, speed limits, and travel speed values based on traffic.

The purpose of this research is (a) to know the affordability of health service facility from tourism object of Prambanan Temple and Plaosan Temple, and (b) to know the pattern of tourist trip to health service facility. Determining the fastest route will affect tourist travel patterns in Prambanan. Travelers who understand the importance of health care facilities will attempt to find the fastest route towards the nearest health facilities.

## **2. The Methods**

The method used is descriptive qualitative researchers. Bogdan and Tailor as quoted by Moeleong, defining the qualitative methodology as a research procedure generates descriptive data in the form of words or written or oral forms of policy action (Moeloeng,

2002). This research was conducted in district Prambanan, Central Java. Researchers take 16 village is Kemudo village, Kebondalem Lor village, Kebondalem Kidul village, Brajan village, Sanggrahan village, Joho village, Cucukan village, Tlogo village, Bugisan village, Kotesan village, Randusari village, Sengon village, Kokosan village, Taji village, Geneng village and Pereng village. This researchers was conducted for 3 months, that is March to May 2018.

The data used in this research is the primary data obtained directly through observation in the field, and secondary data include books, articles, journals, as well as using the supporting sources include data BPS Sub district Prambanan and Google Earth. Technique of data analysis using Network Analysis that is determining optimal route from tourism object of Temple to health service facility (Health center) which will pass by tourists if need medical aid. Network Analysis closest facility is a determination of closest facility from one place to the destination. Where the existing health service facilities in District Prambanan there are 2 places namely Kebondalem Lor Health Center and Prambanan Health Center.

### **3. Results and Discussion**

One of the most closely related and significant sectors for the growth and development of the tourism sector is the health sector. Prambanan sub-district has cultural tourism such as Prambanan and Plaosan Temple. Tourists who visit come from local or foreign countries, efforts in anticipation of the needs of the tourists will encourage tourists to find out about the optimal route between affordable tourism prambanan and plaosan with health care facilities. Tourists can know the distance, speed, and travel time, so that tourists can find out the route between Prambanan temple and plaosan to the nearest health service facility.

Affordability to basic health service facilities that is Health center in Prambanan sub-district from the cultural tourism sites of Prambanan and Plaosan can be easily reached. Here is the table of health service facilities near from tourism object Prambanan and Plaosan Temple.

Table 2. Nearby Facilities of The Temple

No	Object of The Temple	The Nearest Health Centers	Distance
1	Plaosan temple	Clinics of Kebondalem Lor	1,7 Km
2	Prambanan temple	Clinics of Prambanan	5,3 Km

Source: Result of calculation, Year 2018

Based on the table above the affordability of the health facilities towards from the cultural attractions of the temples vary, depending by the relative location of the temple with the nearest health centers, Prambanan Temple located in the village of Tlogo, Prambanan sub-district, Klaten Regency. The nearest route to the health service facility of the temple is the KebonDalemLor public health center with the distance to be reached by tourists is 1.7 Km, while the object of Plaosan Temple is located in Dukuh Plaosan, Bugisan Village, Prambanan District, Klaten Regency has the closest route to health service facility that is Prambanan health center located in Kemudo village, Prambanan sub-district, Klaten district with a distance of 5.3 km. The output obtained by tourists through network analysis is the fastest optimal route map between the attractions of Prambanan Temple and Plaosan Temple with health service facility of Health center. The existence of the optimal route can increase the knowledge of the tourists about the distance and the nearest time to reach health facilities, with the map, the tourists can choose and know the optimal route to health facilities.

The target to be achieved is that tourists have the knowledge and information related to the optimal route to health care facilities when the situation is sick and needs urgent help. This optimal route can be a reference for tourists to choose Health center based on the tourist location of the temple in the visit. The results of this mapping is the tourists can easily understand the closest and fastest route for visiting the clinic that can be reached easily. If there is something urgent especially health, tourists are no longer confused in choosing the closest route from its location.

Prambanan Temple is a tourist attraction that has enough tourists, so the health of tourists need to be considered. One of them by mapping the optimal route from the location of the temple to health care facilities based on distance, speed and travel time required. The existence of optimal route map is expected to tourists can travel calmly and have information about the route of health care facilities that can be reached from the attractions, thus encouraging the government to realize a good and affordable service facilities.

Tourist travel patterns toward health facilities can make it via the route. In this study, because it is used to locate the nearest health facilities from the attractions of Plaosan

Temple and Prambanan Temple, then the method used is the new closest facility. The following healthcare facilities route map methods closest facility.

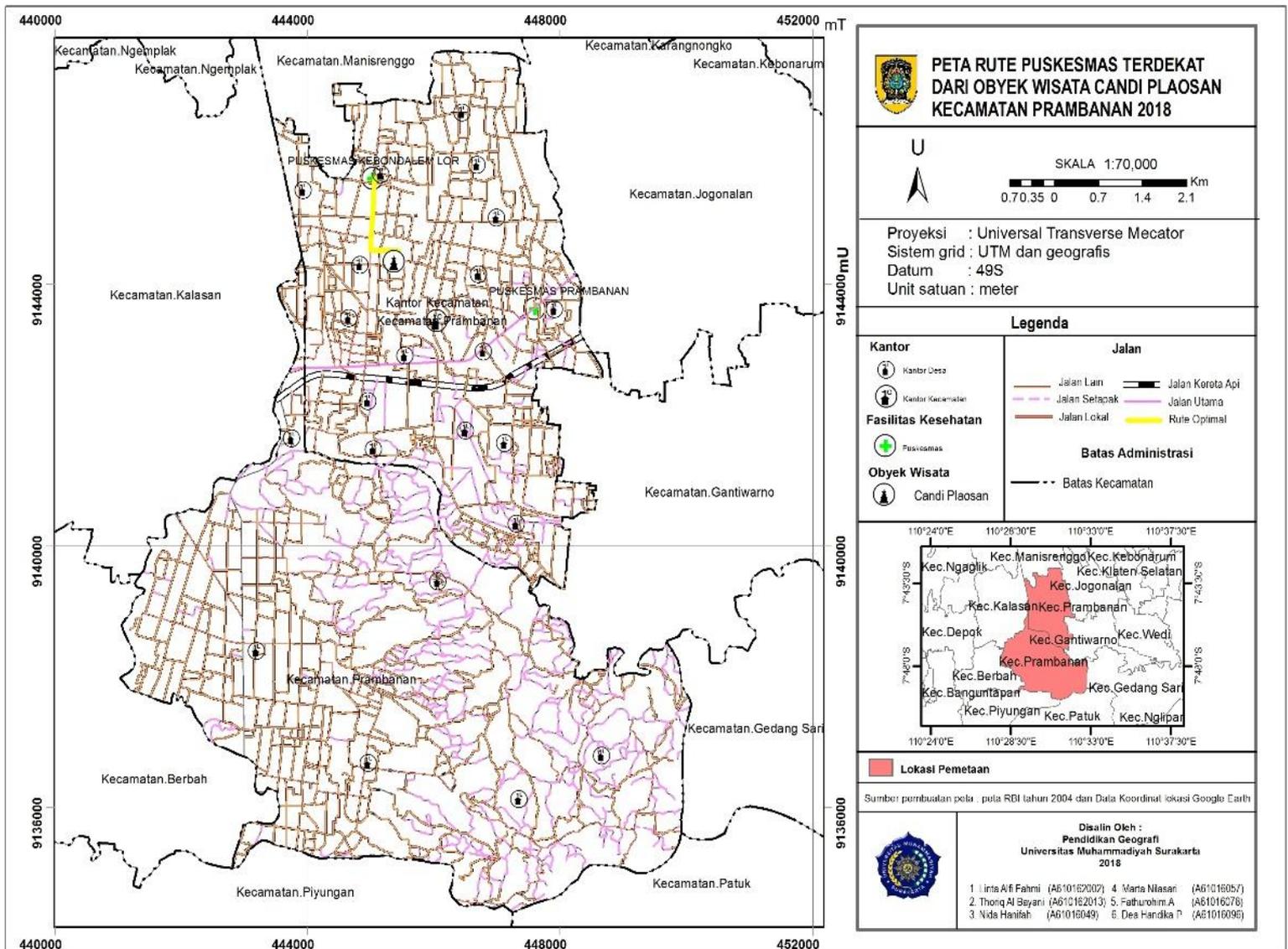


Figure 1. Maps of The Route to The Nearest Health Centers of Tourism Plaosan Temple

Based on figure 1, the nearest health service facility from Plaosan temple is Kebondaem Lor public health center which is located 1.7 km from the location of the temple. The time taken from Prambanan Temple to the health facility is 4 minutes. The path directed on the map through the network analysis automatically shows the route of the nearest and most efficient road. Here's the route landing table to the nearest health center.

Table 3. Direction from Plaosan Temple Route towards Kebondalem Lor Community Center

No	Direction	distance (dalam Km)
1	Go west on lain street	0.6
2	Turn right on local street	0.2
3	Bear right to stay on local street	0.8
4	Continue on lain street	<0.1
5	Continue on Local street	<0.1
6	Finish at Kebondalem lor Health Center	1.7

Source: results of the mapping closest facility network analysis.

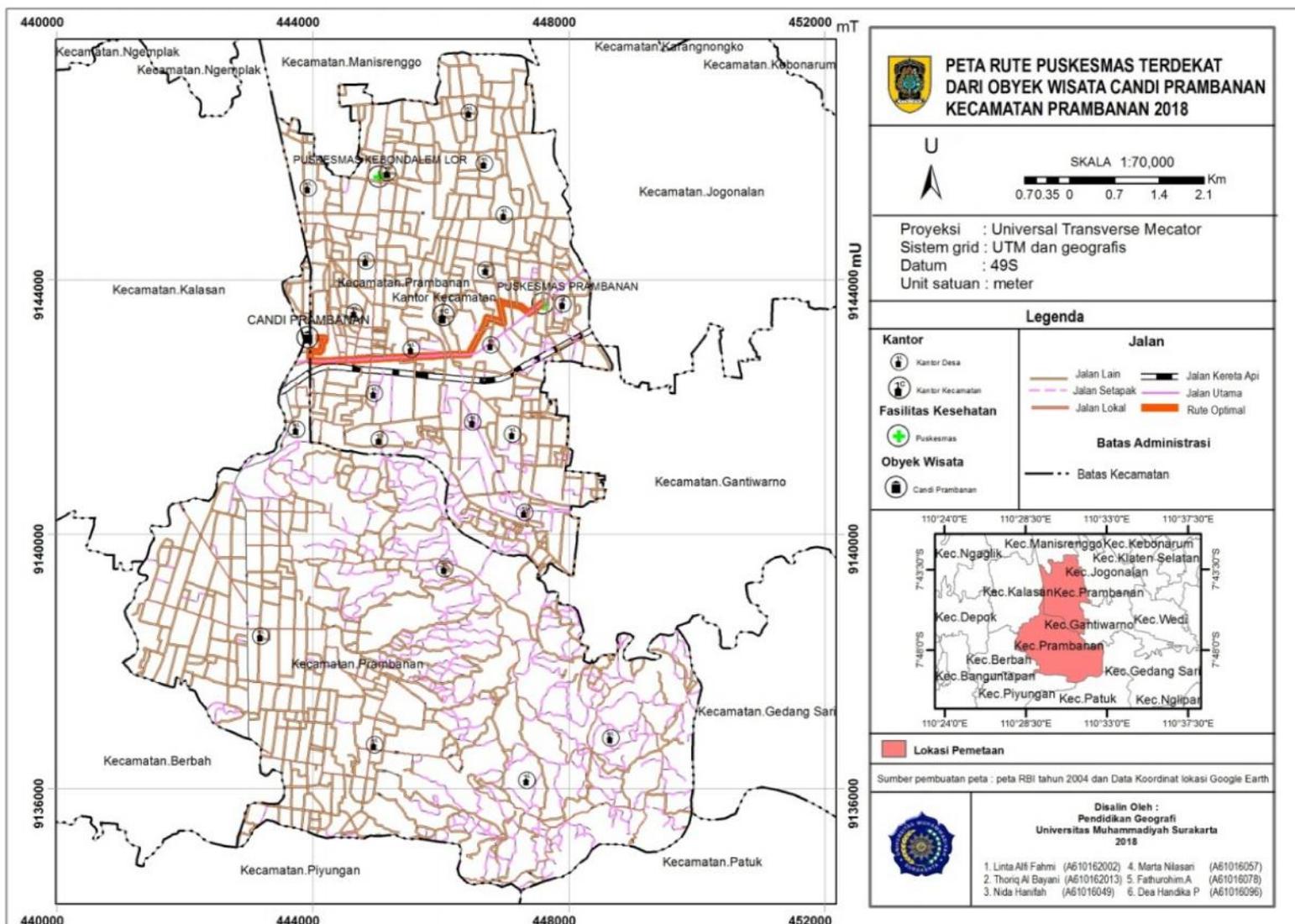


Figure 2. Route Map of Clinic Nearest Tourist Placest of Prambanan

Based on figure 2, the nearest health service facility from Prambanan Temple is Prambanan Health center which is traveled by 5.3 km distance from the location of the

temple. Time taken from Prambanan Temple toward health facilities is 14 minutes. The path directed in the map through network analysis automatically shows the route of the nearest and the most efficient way. The following table direction towards the nearest clinics.

Table 4. Direction of Route of Prambanan Temple towards Prambanan Health Center

No	Direction	Distance ( Km)
1	Go east on local street	0.1
2	Turn right to stay on local street	0.4
3	Turn left at jalan lain to stay on local street	0.2
4	Turn left ton on main street	2.5
5	Turn left on lain street	0.9
6	Make sharp left to stay on lain street	0.3
7	Make sharp right on local street	0.5
8	Turn left on main street	0.3
9	Finish at Prambanan Health Center	5.3

Source: results of the mapping closest facility network analysis.

Based on the results of the mapping, the use of new closest facility to find the closest facilities of the incident in this study is to determine the nearest health service from prambanan temple and plaosan tourist sites, because the health of tourists at any time can be disturbed then the most important thing is to determine the nearest health facility to make it easier to travel the distance and the nearest time so as to provide comfort in tourist visits. Research performed by Agus Kuntarto and Taufik Herry Purwanto (2012) with the title's "use of network analysis geographic information systems for planning tourism route in sleman Regency ". The type of research used is qualitative with the method used is Network Analysis Geographic Information System. The result of this research is route analysis from Hotel Hyat to Prambanan Temple obtained result that is (1) fastest route takes 11 minutes with distance 17,7 km, (2) side route route takes 24 minutes with distance 19,9 km , (3) side road side route takes 33 minutes with distance of 40 km, and (4) optimal route takes 24 minutes with distance of 18.1 km.

#### 4. Conclusion

The closest route from Prambanan temple that is located in the village of Tlogo, district Prambanan, Klaten Regency to the nearest health service facility is KebonDalemLor Public Health Center with mileage that will be reached by tourists that is 1.7 Km and the required travel time is 14 minutes. While Temple object Plaosan is located in DukuhPlaosan, Bugisan Village, Sub District Prambanan, Klaten District has basic health service facility that

is Prambanan Health Center located in Kemudo Village, Prambanan District, Klaten Regency with distance of 5.3 km and with travel time required is 4 minutes.

Application of new closest facility to find the nearest facility of incident in this research is to determine the nearest health service from prambanan temple and plaosan tourism location, because the health of tourists at any time can be disturbed then the main thing is to determine the nearest health facility to facilitate the distance and the nearest time so as to provide comfort in tourist visits.

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