

# OPTIMIZATION OF THE AHP METHOD IN DETERMINING THE LOCATION OF TOURIST DESTINATIONS ON THE ISLAND OF JAVA, INDONESIA

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## ABSTRACT

A tourist attraction must of course have an appeal and leave its impression so that it can attract the attention of tourists. This study aims to map the pattern of tourist preferences in visiting tourist destinations on the island of Java. In this study, we discuss the results of the analysis of the calculation of the AHP method for weighting and ranking and then compare it with the results of the analysis of the calculation of the AHP method for ranking. So from the results of the comparison which method is more accurate with the original data from the research object. The results showed that Jakarta became the main priority, then Bandung and respectively. Ease of access and completeness are the reasons for choosing a tourist destination on the island of Java.

Keywords: AHP, Java Island, tourist destinations, preferences

## INTRODUCTION

One of the great potentials that can improve the local community's economy is developing in the tourism sector, this can be realized when it can be managed professionally, effectively, and efficiently. In the development of a tourist attraction, of course, it must have an attraction and leave a distinct impression so that it can attract the attention of tourists. Tourism is a series of travel activities carried out both individually and family trips as well as groups from their original place of residence to various other places only to make tourist visits and not for work or to earn income in their destination (Ali et al. 2019).

Meanwhile, according to Law Number 9 of 1990 concerning tourism, it is explained that a tourist attraction is something that is a tourist-target, including; tourist attraction created by God Almighty in the form of natural conditions, flora, and fauna, as well as tangible human creations such as museums, historical relics, arts and culture, agro-tourism, hunting tourism, nature adventure tourism, recreation parks, and entertainment complexes, and special interest tourist attractions such as, shopping places, swift rivers, places of worship, places of pilgrimage and so on (Fadhli et al, 2019). Then Andayani (Untari, 2020) states that there are four factors supporting tourist objects and attractions, including; tourist attraction, namely everything that can attract tourists to visit a tourist destination, accessibility, attraction and access that can be used for tourists to go to a place that is a tourist destination, facilities ) namely all supporting facilities for the activities of tourists while they are in and to tourist destinations (Untari, 2019; Dharmato et al, 2019).

Java Island is one of the islands that has a major role in the socio-economic development of the Indonesian nation (Untari et al, 2017). Where the island of Java is one of the most populous islands with a fairly high population and the availability of complete tourism facilities. Based on this background, it is important to explore the pattern of tourist preferences in choosing tourist destinations on the island of Java.

## METHOD

In this study, the sample data used is data sourced from the "Indonesian backpacker" group. Respondents were selected based on the criteria that they had traveled to three tourist destinations, namely; Jakarta, Yogyakarta, and Bandung. Data collection was carried out to obtain information and data related to this research. While the secondary data collection method is by reading, observing, and studying data from sources related to this research (Untari and Satria, 2021). In this study, the researcher optimizes the calculation of the AHP method to determine the ranking of the existing alternatives so that it is hoped that the calculation results are more accurate than using the AHP method. The final result of the optimization of the AHP method aims to obtain alternative patterns of tourist preferences in choosing tourist destinations on the island of Java

## RESULT AND DISCUSSION

References read and reviewed in completing this research include Multiple Attribute Decision Making documents, Introduction to AHP (Analytical Hierarchy Processes) Methods, Decision making with the analytic hierarchy process (saaty, 2008), as well as journals and books related to this research. Based on the results of the analysis of the data needed in applying the Analytical Hierarchy Process method, it is described with the following criteria and alternatives,

A. Criteria in the decision making are :

- 1) Reputation (X1)
- 2) Site information (X2)
- 3) Site Transaction (X3)

B. Destinations alternative are:

- 1) Jakarta (Y1)
- 2) Yogyakarta (Y2)
- 3) Bandung (Y3)

The description of the implementation of this method is explained through the stages in the Analytical method Hierarchy Process. Steps taken to the data that has been obtained are as follows:

**Table 1.** Paired comparison table to the criteria

	X1	X2	X3	Normalization	X1	X2	X3	$\Sigma$	EigenVector
X1	2,500	4,000	6,000		0,521	0,688	0,538	1,747	0,420
X2	1,000	2,000	3,000		0,207	0,135	0,331	0,673	0,311
X3	1,000	2,000	3,000		0,203	0,018	0,154	0,375	0,269
$\Sigma$	4,500	8,000	12,000						

Source: Data processed, 2022

**Table 2.** Paired comparison table to the options according to Site Reputation

	Y1	Y2	Y3	Normalization	Y1	Y2	Y3	$\Sigma$	EigenVector
Y1	1,000	2,000	2,000		0,429	0,522	0,286	1,237	0,498
Y2	0,500	1,000	2,000		0,214	0,261	0,286	0,761	0,306
Y3	0,500	0,500	1,000		0,214	0,130	0,143	0,487	0,196
$\Sigma$	2,000	3,500	5,000						

Source: Data processed, 2022

**Table 3.** Paired comparison table to the options according to Site Information

	Y1	Y2	Y3	Normalization	Y1	Y2	Y3	$\Sigma$	EigenVector
Y1	1,000	4,000	2,000		0,263	0,267	0,308	0,838	0,539
Y2	0,250	1,000	0,333		0,105	0,067	0,077	0,249	0,160

Y3	0,500	3,000	1,000		0,105	0,133	0,231	0,469	0,301
$\Sigma$	1,750	8,000	3,333						

Source: Data processed, 2022

**Table 4.** Paired comparison table to the options according to Site Transaction

	Y1	Y2	Y3	Normalization	Y1	Y2	Y3	$\Sigma$	EigenVector
Y1	1,000	2,000	3,000		0,130	0,146	0,240	0,516	0,505
Y2	0,500	1,000	3,000		0,130	0,073	0,120	0,323	0,316
Y3	0,333	0,333	1,000		0,093	0,049	0,040	0,182	0,178
$\Sigma$	1,833	3,333	7,000						

Source: Data processed, 2022

**Table 5.** Matrix of Relationships between Criteria and Alternatives

	<b>Eigen Vector</b>		
	<b>Site Reputation</b>	<b>Site Information</b>	<b>Site Transaction</b>
<b>Jakarta</b>	0.498	0.539	0.505
<b>Yogyakarta</b>	0.306	0.160	0.316
<b>Bandung</b>	0.196	0.301	0.178

Resource : Data processed, 2022

**Table 6.** The weight matrix of options according to the criteria

	<b>Eigen Vector</b>			<b>Total</b>
	<b>Site Reputation</b>	<b>Site Information</b>	<b>Site Transaction</b>	
<b>Jakarta</b>	0,095	0,240	0,170	0,505
<b>Yogyakarta</b>	0,111	0,059	0,016	0,186
<b>Bandung</b>	0,076	0,023	0,016	0,309

Resource : Data processed, 2022

The order Site Icon in Java Island are based on communal considerations (all criteria) with the AHP method in sequence; Jakarta (50,5%), Bandung (30,9%), and Yogyakarta(18,6%) (Table 6).

Site Transactions from the three destinations get the lowest score of the three indicators. This shows that site transactions have not become a priority in the selection of tourist destinations. The quality of site transactions is closely related to the quality of human resources (HR) where in service products, humans become the mind product. The existence of human resources plays an important role in tourism development.

One aspect that has an important role in the development of the tourism sector is tourism human resources. The reason is because tourism is something that cannot be replaced with any technology because it requires direct interaction with humans (hospital). Tourism HR itself has the meaning as all human aspects that support tourism activities both tangible and intangible, with the aim of meeting needs and realizing the creation of tourist satisfaction. The tourism sector is a sector that focuses on services or services. Therefore, the HR aspect is the key to creating satisfaction and pleasure for the users of these services. In addition, it also has a positive impact on the economy, welfare, and environmental and cultural sustainability in a tourist area. So, improving the quality of human resources is needed in improving the quality of tourist destinations in Java Island.

## CONCLUSION

The result of this study concluded that the order Site Icon in Muara Gembong are based on communal considerations (all criteria) with the AHP method in sequence; Jakarta (50,5%), Bandung (30,9%), and Yogyakarta(18,6%). This happens because Jakarta is the center of government as well as the center of socio-economic and cultural activities in Indonesia so that promotion and access to Jakarta is much easier than other destinations. Meanwhile, Bandung is the second preferred destination, because Bandung is very close to the capital city and access to Bandung is very easy, only 2 - 3 hours via land.

Site Transactions from the three destinations get the lowest score of the three indicators. This shows that site transactions have not become a priority in the selection of tourist destinations. The quality of site transactions is closely related to the quality of human resources (HR) where in service products, humans become the mind product. HR in Tourism sector are all human aspects that support tourism activities, both tangible and intangible, which aims to meet the needs and create tourist satisfaction and have a positive impact on the economy, welfare, and environmental and cultural sustainability in a tourist area. Improving the quality of human resources is very important in improving the quality of tourist destinations.

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