Visitors Preferences and Spatial Interaction Analysis of Taman Krida Wisata and Pijar Park

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Abstract

Taman Krida Wisata and Pijar Park are located on Kudus Regency. Culture and Tourism Departement of Kudus Regency informed that Taman Krida Wisata is a family recreation park with various animal statues.Youth, Sports, and Tourism Departement of Central Java informed that Pijar Park is a tourist destination that offers a tourism concept with a variety of interesting attractions and facilites. Taman Krida Wisata has an artificial tourist attraction, while Pijar Park has natural and artificial attractions. In 2020, Taman Krida Wisata had 2.588 visitors, while Pijar Park was 723. In addition, in 2019, Taman Krida Wisata was visited by 22.836 tourists, while Pijar Park was visited as many as 3.623. The two tourist areas affect the surrounding economy because there are people who take benefit from the existence of the tourist area. Besides, Taman Krida Wisata and Pijar Park have different management, visitor's distribution, and tourist destination facility. Therefore, Hedonic Pricing Method is used to determine the value of visitors prefrences in the area and the Gravity model to determine the flow of movement berweetn the two tourist areas with nearest district, office zone, and central economic zone. There are 9 variables are used for HPM, namely tourism facility, transportation, lodging, gift center, entrance fee, health facilities, worship facilities, shopping complex, and public service area. HPM Taman Krida Wisata used 131 sample, while Pijar Park used 135 sample. Taman Krida Wisata has a hedonic value with intervals 4.000-4.189, while Pijar Park has a value 3.976-4.160. Based on the calculation of spatial interaction, Taman Krida Wisata has a higher value than Pijar Park.

Keywords: Gravity Model, Hedonic Value, Pijar Park, Spatial Interaction, Taman Krida Wisata

1. Introduction

1.1 Sub Introduction

Based on Goverment Regulation number 50 year 2011 about 2010-2025 National Tourist Masterplan, tourist attraction is divided into three, namely natural, culture, and specific or man-made product. Kudus regency has various tourist destinations, like Taman Krida Wisata which has man-made product tourist attraction and Pijar Park which has natural and man-made product tourist attraction. Based on Central Java Tourist Book in Number 2019, Taman Krida Wisata has 22.836 visitors, while Pijar Park has 2.623 visitors. This number shows that the two tourist attractions are quite attractive.

Culture and Tourism Departement of Kudus Regency informed that Taman Krida Wisata is a family recreation park equipped with various animal statues and open buildings. Some type of animal statues are hippos, elephants, giraffes, and lions.In Taman Krida Wisata also often used for various activities such as cultural arts performances, seminars, and competitions because its open space representatively.

Central Java Youth, Sports, and Tourism Departement informed that Pijar Park is a tourist destination that offers a tourism concept with a variety of interesting attractions and facilities, such as camping ground, photo spots, culinary center, outbond, and coffe education. In 2021, Kajar Camping Ground is transformed into Pijar Park taking advantage of the tourist's geographical location which is on the slopes of Muria Mountains.

Therefore, an analysis about visitors preference and spatial interactions can be used as a reference and basis for considering developed of each area. An analysis of the hedonic value was also carried out to determine the level of visitor preference for the facilities in around the tourist area as an additional analysis of the total economic value. In addition, an analysis was also carried out using the gravity model method to determine the spatial interaction of the

nearest district, office zone, and economic center zone towards the two tourist areas.

2. Material and Methods

2.1 Location of Research

The research is located in Taman Krida Wisata and Pijar Park in Kudus Regency. Data Collection was carried on June until August 2022 with interviewing respondents, submitting data request to relevant agencies, and toponymic survey. Site of location map can be see at figure 1.
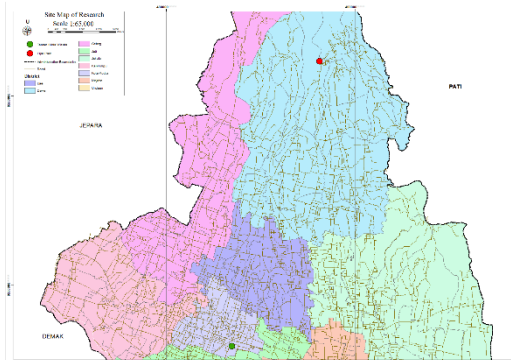

Fig 1. Location of Research Map

2.2 Tools and Materials of Research

The tools which is used in this research is ArcGIS 10.8, IBM SPSS 25, Microsoft Word, Microsoft Excel, and Mobile Topographer. The materials whis is used in this research is result of interviewing using Travel Cost Method, Contingent Valuation Method, and Hedonic Pricing Method, population of Kudus Regency visitors data and area data of Taman Krida Wisata and Pijar Park, number of the government employees data, map of administration Kudus Regency, SPOT-7 Imagery, and result of toponymic survey.

2.3 Data Analysis

2.3.1 Hedonic Pricing Method

Based on Indonesia National Standar Number 012346-2006 about Instructions for Organoleptic and/Sensory Testing issued by the National Standardization Agency in 2006 , the hedonic test is an assessment of a sample whose test is based on th epanelist's preference level which depends on the quality range determined so that the number of preference levels can vary. There are variables is used for HPM.

    Y = visit frequency
    X1 = tourism facility
    X2 = transportation
    X3 = lodging
    X4 = gift center
    X5 = entrance fee
    X6 = health facilities
    X7 = worship facilities
    X8 = shopping complex
    X9 = public service area

The equation which is used to calculate the hedonic value is shown by equation 1.

$$P((\bar{x}-1{,}96.s/\sqrt{n}))<\mu<(\bar{x}+(1{,}96.s/\sqrt{n}))\dots\dots\dots\dots(1)$$

Explanation :

$\bar{x}$ = average quality value
s = standard deviation
n = total of panelist
μ = hedonic value

2.3.2 Classical Assumption Test

In this research, classical assumption testing was carried out using the following four methods.

1. Normality Test

   Purnomo (2016) states that the normality test is used to assess the residual value obtained from the regression which follows the normal distribution in the regression model. Several methods of normality test are P-Plot test, One Kolmogorov-Smirnov Test, and statistical test used zskewness and zkurtosis.

2. Multicollinearity Test

   According to Purnomo (2016), multicollinearity is the existence of an almost perfect or perfect relationship between independent variables in a regression model. Multicollinearity test can be used to compare the significance of the coefficients with the determinant or pay the value of the VIF or the inflation coefficient in the regression model.

3. Heteroscedasticity Test

   Purnomo (2016); Caggianese et al., 2018 states that heteroscedasticity is the difference between the variables of each observation in a regression model. Tests for heteroscedasticity can be performed using Spearman Rank method, Correlation Coefficient Test, and Glejser Test.

2.3.3 Statistic Test

In this research, the statistical test used is as follows.

1. Validity Test

   According to Dyah and Bandur (2018), validity is the accuracy and/or precision of research instrument or tool. According to Komarudin and Sarkadi (2017), validity can be tested by equation 2.

$$r_{xy}=\frac{N\sum XY-(\sum X)(\sum Y)}{\sqrt{\{N\sum X^2-(\sum X)^2\}\{N\sum Y^2-(\sum Y)^2\}}}\dots\dots\dots(2)$$

   Explanation :

   r = description of the correlation of X with the overall Y score
   N = total data
   X = instrument item value
   Y = instrument item value

2. Reliability Test

   According to Dyah and Bandur (2018), reliability is consistency of a method and research result. Nunally (1978) in Dyah and Bandur (2018) states that a data is declared reliable if it has

alpha cronbach value more than 0,70. According to Komarudin and Sarkadi (2017), the reliability test compute with equation 3.

$$r_{11}=(\frac{k}{k-1})(1-\frac{SD_b{}^2}{SD_t{}^2})\dots\dots\dots\dots\dots(3)$$

Explanation :
K = total item
SDb = varians of item
SDt = varians of total score

2.3.4 Spatial Interaction With Gravity Model

According to Anderson and Van Wincop (2003) in Shepherd (2013), the gravity model is a demand function. Apart from being used for economic purposes, the gravity model can also be used to calculate spatial interactions. Brocker (1989) in Irsyad and Syahnur (2018); Schmitz et al., 2007 states that spatial interaction is movement/communication between different areas. Efforts to assess movement or interregional relations can be in the form of economic flows, information flows, and population movements. Spatial interaction use gravity model can use equation 4.

$$T_{ij} = k\,\frac{m_i{}^{\alpha}m_j{}^{\beta}}{r^c{}_{ij}}\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(4)$$

Explanation :
T_{ij} = spatial interaction of region i and j
m_i = push factor
m_j = pull factor
r_{ij} = distance of i and j
α,β,c = mass coefficient
k = constanta

3. Discussion Result
3.1 Classical Assumption Test
The result of classical assumption test in this research are as follows.

1. Normality Test

Ghozali (2011) said a model regression is declared normal when zskewness and zkurtosis lower than 1,96. Based table 1, all data lower than 1,96 so distributed normally.

Table 1. Result of Normality Test

Location	Zskewness	Zkurtosis
Taman Krida Wisata	-1.673	0.522
Pijar Park	0.542	-0.391

2. Multicollinearity Test

VIF value of HPM are shown by table 2.

Table 2. VIF Value of HPM

Variable	Taman Krida Wisata	Pijar Park
X1	1.186	1.124
X2	1.271	1.148
X3	1.320	1.236
X4	1.292	1.170
X5	1.328	1.121
X6	3.917	5.575
X7	4.127	5.377
X8	1.792	1.690
X9	3.668	3.075

A regression model is declared have not multicollinearity if it has a Variance Inflation Factor or VIF value of less than 10. Based on that table 2, it is known that HPM for Taman Krida Wisata and Pijar Park have not multicollinearity because their VIF value is less than 10 (Sakarya and Gurani, 2021).

3. Heteroscedasticity Test

A regression model is declared hasn't heteroscedasticity if the significance value is more than 0.5 and does not form a certain pattern. The result of heteroscedasticity test is shown by figure 2 and table 3.
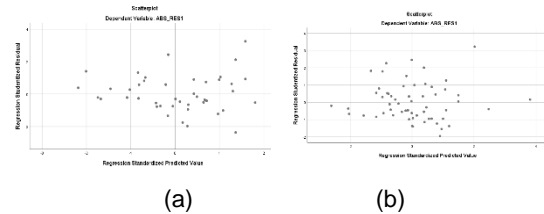

(a) (b)

Fig 2. Result of Heteroscedasticity Test HPM Taman Krida Wisata (a) and Pijar Park (b)

Table 3. Significance Result of Heteroscedasticity Test of HPM's Data

Variable	Taman Krida Wisata	Pijar Park
X1	0.056	0.310
X2	0.643	0.079
X3	0.552	0.104
X4	0.185	0.533
X5	0.130	0.129
X6	0.765	0.246
X7	0.572	0.615
X8	0.323	0.721
X9	0.061	0.060

Based on table 3, it is known that significance value of HPM data more than 0,05. So, HPM data for Taman krida Wisata Wisata and Pijar Park haven't heteroscedasticity.

3.2 Statistical Test
The explanation about result of statistical test in this research is as follows.

1. Reliability Test

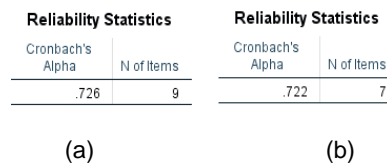The result of HPM validity test are shown in figure 3.

(a) (b)
Fig 3. Result of Validity Test of HPM Taman Krida Wisata (a) and Pijar Park (b)

A regression model is declared reliable if Cronbach's alpha value is > 0.70. Based on figure 3, it is known that cronbach's alpha of HPM Taman Krida Wisata is 0.726, while Pijar Park is 0.722. All values have exceeded 0.70 so the data is reliable.

2. Validity Test

The result of validity test is shown by table 4 for HPM Taman Krida Wisata and table 5 for HPM Pijar Park. A variable is declared valid when R count is more than R table. If the opposite condition happens, the

variable is declared invalid. In this research, invalid variables have inconsistent data characteristics.

Table 4. The Result of Validity Test of HPM Taman Krida Wisata

Variable	*Corrected Item-Total Correlation*	R Table	Description
Visit frequency	0.315	0.2706	Valid
Transportation	0.119	0.2706	Invalid
Lodging	0.334	0.2706	Valid
Gift center	0.243	0.2706	Invalid
Entrance fee	0.317	0.2706	Valid
Medical facility	0.690	0.2706	Valid
Worship facilitiy	0.607	0.2706	Valid
Shopping complex	0.452	0.2706	Valid
Public service facility	0.631	0.2706	Valid

Table 5. The Result of Validity Test of HPM Pijar Park

Variabel	*Correlated Item-Total Correlation*	R Tabel	Description
Transportation	0.185	0.2257	Invalid
Lodging	0.272	0.2257	Valid
Gift Center	0.238	0.2257	Valid
Medical Facility	0.724	0.2257	Valid
Worship facility	0.708	0.2257	Valid
Shopping complex	0.424	0.2257	Valid
Public service facility	0.675	0.2257	Valid

Based on table 4, it is known that the valid variable in HPM Taman Krida Wisata are visit frequency, lodging, entrance fee, medical facility, worship facility, shopping complex, public facility. Based in table 5, it is known that the valid variable in HPM Pijar Park are lodging, gift center, medical facility, worship facility, shopping complex, public service facility.

3.3 Influential Variable Analysis

Influential variable analysis was carried out by conducting a t test on HPM data of Taman Krida wisata and Pijar Park. The result of the t test for each method at both locations is shown in table 6.

Table 6. The Result of t Test for HPM Taman Krida Wisata and Pijar Park

Variabel	T stat Taman Krida Wisata	Description	T Stat Pijar Park	Description
Tourist facility	4.846	Affect	10.509	Affect
Transportation	6.830	Affect	-3.562	Affect
Lodging	-2.718	Affect	-7.263	Affect
Gift center	-0.787	No affect	-0.910	No affect
Entrance fee	0.346	No affect	-6.382	Affect
Medical facility	1.443	No affect	-1.439	No affect
Worship facility	0.727	No Affect	-1.603	No affect
Shopping complex	-0.978	No Affect	2.163	Affect
Public Service facility	1.871	No affect	4.435	Affect

Based on table 6, it is known that variables which affected positively to frequency of visit for HPM Taman Krida Wisata are tourist facility, transportation, while variable which affected negatively is lodging. In HPM Pijar Park, variables which affected positively are tourist facility, shopping complex, and public service facility, while variables which affected negatively are transportation, lodging, and entrance fee.

3.4 Hedonic Value Analysis

Taman Krida Wisata has hedonic value intervals 4.000 until 4.189, while Pijar Park has hedonic value intervals 3.976 until 4.160. Although both Taman Krida Wisata and Pijar Park have a hedonic value of 4 if referring to the writing of hedonic values in SNI number 012346-2006 concerning Instructions for Organoleptic and/Sensory Testing because what is used is the smallest value in the interval then it is rounded up to one decimal point,Taman Krida Wisata has the highest and the lowest score at interval higher than Pijar Park.

The value is supported by a more diverse distribution of infrastructure facilites around the Taman Krida Wisata area with $\pm$ 4 km radius. In Taman Krida Wisata, 161 points were taken with details of 15 health points, 45 worship points, 49 commerce points, 7 green open space points, 42 public service facility points, and 3 hotels. Health points which is taken were 1 clinic, 4 health centers, 6 hospitals, and 4 pharmacies. For worship, 36 mosques, 1 prayer, 2 temples, and 6 churches were taken. In commerce, minimarkets, traditional markets, and shophouses are taken. Public service facilities included 11 government offices, 8 gas stations, 8 ATMs, 14 banks, and 1 terminal.

In Pijar Park, 64 points were taken with details of 3 health points, 22 worship points, 29 commerce points, 8 public service facility points, and 1 hotel. In terms of health, 2 midwife practice houses and 1 doctor practice house were taken. For worship, 13

mosques, 8 musholla, 1 church, and 1 monastery were taken. In commerce, points are taken at food stalls, minimarkets, and traditional markets. For public service facilities, 2 ATMs, 2 banks, 1 pertashop, and 1 workshop were taken. The map display of the distribution of facilites and infrastructure Taman Krida Wisata and Pijar Park is shown in figure 4 and figure 5.
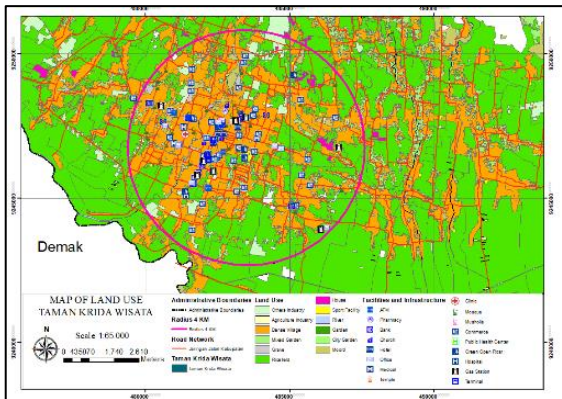

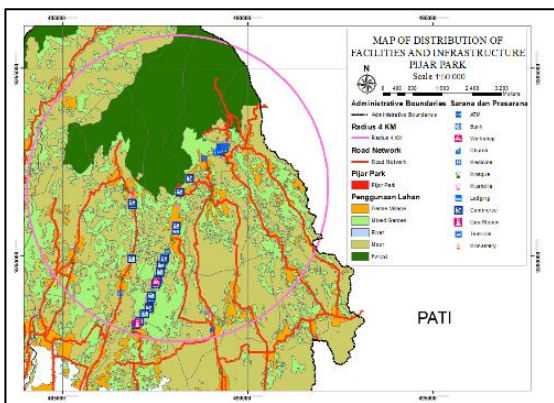**Fig 4.** Distribution Facilities and Infrastructure Map of Taman Krida Wisata

Fig 5. Distribution Facilities and Infrastructure Map of Pijar Park

3.5 Spatial Interaction with Gravity Model

In this research, spatial interactions are calculated using the gravity model. For calculation, the model is need data of total visitor,population of Demak, Pati, and Jepara, and distance from Demak, Pati, and Jepara to tourist destination.

Spatial interaction is used for nearest district, office zone, and central economic area. The result of Gravity Model are explained as follows.

1. Nearest District

The result of spatial interaction calculations from the nearest district to Taman Krida Wisata and Pijar Park are shown in table 7. Based on table 7, it is known that in each area, Kudus Regency has the highest spatial interaction value. The lowest spatial interaction value in Taman Krida Wisata is Jepara Regency with a value of 2.424, while in Pijar Park is Demak with 23.657. Nearest district spatial interaction map displays are shown in figure 6 and figure 7.

Table 7 Result of Regional Spatial Interaction

Region	Spasial Interaction of Taman Krida Wisata	Spatial Interaction of Pijar Park
Demak	13.839	23.657
Jepara	2.424	121.954
Pati	8.827	613.477

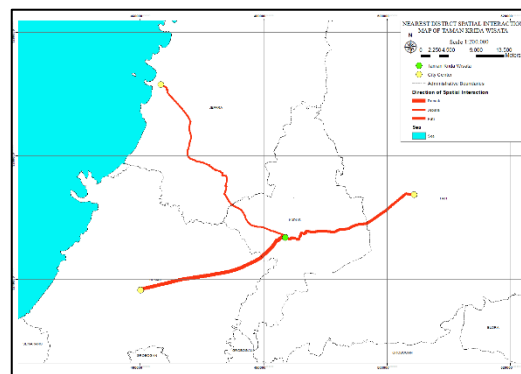**Fig 6.** Regional Spatial Interaction Map of Taman Krida Wisata
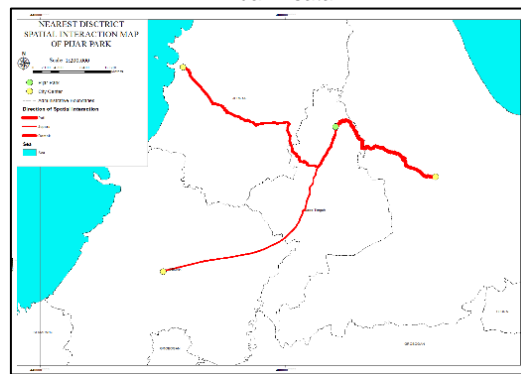

Fig 7. Regional Spatial Interaction Map of Pijar Park

2. Office Zone

The result of spatial interactions for Office Zones to Taman Krida Wisata and Pijar Park is shown by table 8. Office zone which is used on this research is Mejobo office zone because there are several department from different ministry and majority of employess which visit Taman Krida Wisata and Pijar Park from its. Based on table 8, it is known that the value of spatial interaction between the Mejobo office zone and Taman Krida Wisata is higher than Pijar Park. Office zone spatial interaction map displays are shown in figure 8.

Table 8 Result of Office Zones Spatial Interaction

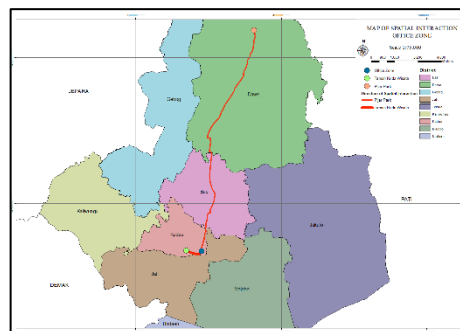| Office Zone	Taman Krida Wisata	Pijar Park
Mejobo	12.382	0.262

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Fig 7. Office Zone Spatial Interaction Map

3. Central Economic Zone

The result of spatial interaction for Economic Center Zone to Taman Krida Wisata and Pijar Park is shown by table 9. Based on table 9, it is known that Taman Krida Wisata has higher spatial interaction value than Pijar Park. Economic centre zone map displays are shown in figure 9.

Table 9 Result of Central Economic Zone Spatial Interaction

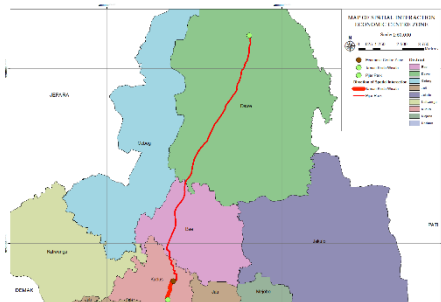| Economic Centre Zone	Taman Krida Wisata	Pijar Park
Kliwon Market	177.889	0.804

Fig 8. Central Economic Zone Spatial Interaction Map

4. Conclusion

Taman Krida Wisata has a higher hedonic value than Pijar Park because it is supported by a wider distribution of facilities and infrastructure due to its geographical location in an urban area. Taman Krida Wisata has a higher regional, office zone, and economic center zone spatial interaction than Pijar Park.

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