The Impact of Tourism Destination on Air Pollution and Traffic Congestion Using Importance Performance Analysis

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Full Manuscript Anonymous

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Abstract
Yogyakarta City is one of the famous destinations in Indonesia. The tourism sector is the highest tax revenue for local government. Besides, tourism gives high revenue but tourism also give negative impacts on the citizens as hosts such as congestion and pollution. This study was conducted to determine the importance level of each attribute on the quality of congestion and air pollution management services in the city of Yogyakarta based on the citizen's perception by utilizing the Importance Performance Analysis (IPA) method. This study also aimed to determine the level of satisfaction of the Yogyakarta citizens on the management of congestion and air pollution using the Customer Satisfaction Index (CSI) method. This study implemented a purposive sampling technique which was then obtained from the population sample of 100 respondents with 86 saturated samples. The results showed based on the perception of the Yogyakarta citizens, a high level of attributes included wide and comfortable pavements, trees that block the sunlight and have a cooling effect, motorists who obeyed traffic signs, and drivers who drive well. The result of the Yogyakarta Citizens' satisfaction index showed 60.54%, which has the category of "very poor".
Keywords: Tourism, Congestion, Air Pollution, Citizen's Perception, Service Quality, Community Satisfaction
JEL Classification:

Introduction

Yogyakarta City is one of the tourist destinations in Indonesia with the number of visitors reaching 4 million people per year. The average proportion of visitors is one million foreign tourists and 3.5 million local tourists. Along pandemic Covid-19 amount of visitors, both locals and foreigners decrease by 1.3 million per year (Yogyakarta Tourism Office, 2021).

The contribution of the tourism sector to the City of Yogyakarta has reached 17.5 percent and it has made the tourism sector a leading sector over the past three years. The city government should continue to strive to improve the quality of tourism in the city of Yogyakarta if they need the contribution of tourism to increase. The challenges and demands of the market make the government attempt to make a comfortable city for tourist destinations.

According to the government sector, it is necessary to develop and facilitate tourism spots so that tourism can contribute to economic development (Suastika and Yasa, 2015); (Lankford, 2016). Apart from high contributions, the government also realizes that the development of the tourism sector is expected to be able to increase the role of other sectors outside the tourism sector (Lankford, 1994).

Tourism activities that coexist with the activities of the people of Yogyakarta City are quite complex, resulting in high mobility during busy times. Besides that, the high growth in the number of motor

vehicles without adjustment to the increase in road length results in congestion at a certain point (Mondschein and Taylor, 2017).

The existence of congestion is one of the factors causing the decline in air quality in the city of Yogyakarta (Murad *et al.*, 2010); (Ahmad *et al.*, 2005; Patz *et al.*, 2014). Air pollution caused by the large volume of motor vehicles on the roads will have a bad impact on health (Dinda, 2004). Chemicals that are dangerous to be inhaled continuously for a long time or even in a short me will cause various respiratory diseases that have an impact on health (Kunzli *et al.*, 2000).

Something often forgotten by the government is the perception of the citizens living in tourist destinations. Kim and Jinok (2013) stated that the existence of tourism causes a negative perception of the citizens on the environmental aspects and the existence of passing tourist transportation causes air quality to decline. In line with (Kim and Jinok, 2013). Keith and Boley (2019) also prioritized tourist destinations to maintain air quality so that local citizens are not harmed by poor air quality, which can cause respiratory problems. On the other hand, the research of Ahmad *et al.* (2019) declared that tourism does not have a negative environmental impact, especially in decreasing air quality. It is because the local government implements an environmentally friendly transportation policy in its mass transportation. Beladi *et al.*, (2020) confirmed that another alternative in maintaining environmental quality due to tourism is to include pollution costs in tourism rates.

Several studies have focused on how to measure the level of congestion(Ahmad *et al.*, 2016) (Wang, Quddus and Ison, 2009); to calculate the cost of congestion (Zebin, Shi and Jian, 2010), and to explore the factors that cause congestion (Koetse and Rietveld, 2009). Congestion must be anticipated because it will have an impact on high mobility and community activities that will encourage increased development (Mondschein and Taylor, 2017).

However, in the study that focused on citizens as hosts of tourism. The researchers who conducted with local citizens as subject is still rare. The novelty of the research is the measurement of the perception of citizens. The citizens perceptions should be government consideration in development planning (Alemayehu and Bewket, 2017). This study analyzed the level of importance and the level of service quality performance based on the perceptions of the Yogyakarta citizens. The purpose of this study are to observe which ones should be improved using the Importance Performance Analysis (IPA) method (Achterkamp, Robinson and Moital, 2010; Lee, 2018) and also to examine the satisfaction index of the Yogyakarta citizens using the Customer Satisfaction Index (CSI) (Husna and Syukri, 2014). Yogyakarta as the destination of tourism on the efforts that have been made by the government in overcoming congestion and air pollution.

Research Method

This research commenced by observing phenomena in the field, including observing the main road in Yogyakarta. Some of roads in Yogyakarta experienced an increase in vehicle volume during peak hours, such as: Jl. Malioboro, Jl. Botanical Gardens, Jl. Rotowijayan, Jl. Panembahan Senopati. Based on observations, problems can be formulated regarding the perception of Yogyakarta citizens towards the efforts of the Yogyakarta City Government in overcoming congestion and air pollution.

The next step was to conduct a literature study to obtain the theory or secondary data needed to support the research. Then, the researchers conducted observations and interviews. Observations

were made to explore problems in the field and search for justification according to experts during the interview. Meanwhile, interviews were conducted at the Transportation Department of Yogyakarta as the executor of policies in related fields, such as traffic, transportation, and public transport. At this stage, the interview was performed to deepen the information related to the attributes to be used in the research based on the explanation from the policy implementer in the field of transportation.

The next step was the stage of collecting primary data on the perception of the Yogyakarta citizens regarding the service quality using a questionnaire. The questionnaire in this study collected data in the form of a Likert scale with five answer choices. It comprised of strongly disagree, disagree, neutral, agree, and strongly agree. Slamet (2007) stated that the use of the Likert scale can develop various answers but it is still within the framework of a five-score scale. Each of which will obtain an assessment score based on citizens' perceptions. The citizens' perception in this study was based on how they feel about the efforts made by the Yogyakarta City Government in overcoming congestion and air pollution.

The quality of service used in this study was based on 5 (five) criteria according to Tjiptono, F., & Chandra (2017). First, the Tangible dimension assessed the physical condition of public transportation facilities, the cleanliness of public transportation facilities, the presence of a parking lot that is strategic and in good condition, the clarity of traffic signs, the presence of trees, and Green Open Space (*Ruang Terbuka Hijau* or RTH), the condition of the bicycle path, and the location of the bicycle parking. Second, the Reliability dimension assessed the reliability of drivers and public transportation officers in providing services, reliability, and orderliness of motor vehicle drivers, parking officers who provide services, and police officers in performing their duties to regulate traffic order.

Third, Responsiveness assessed the responsiveness of public transportation officers in responding to complaints from public transportation users, the responsiveness of parking attendants in responding to complaints from parking service users, the responsiveness of the police in responding to traffic problems, the responsiveness of the Yogyakarta City Government in responding to complaints about the benefits of pedestrian paths, and the availability of Green Open Space (RTH). The next dimension was Assurance, which assessed the friendliness and politeness of public transportation officers in serving public transportation users, trustworthy parking attendants, police officers in providing safe and comfortable services, and vigilance for every driver to drive well and not harm others. Finally, the Empathy dimension assessed the clarity of information provided by public transportation officers, the sincerity of parking attendants in providing parking services, legal certainty and justice provided by police officers, and the sense of comfort provided by the City Government due to adequate RTH.

The experimental questionnaire was distributed via Google Form then be examined its validity and reliability by the questionnaire. The validity test in this study used SPSS 16.0 software to determine the r count. If the questionnaire has been tested valid and reliable, the questionnaire will be distributed widely to the Yogyakarta citizens based on the purposive sampling technique. The following are the sampling criteria for this study:

Table 1. Sampling Criteria

Information	Sample
Native citizens of Yogyakarta aged 17-64 years who are recorded on the National Identity	

Card (KTP)	32
Citizens who have lived in Yogyakarta with the age range of 17-64 years old	25
Citizens outside Yogyakarta who often cross the streets of Yogyakarta City (at least five times a week) with the age range of 17-64 years old	43
Total	100

Source: Primary data from processed respondents (2020)

In this study, the use of samples for an unknown population will be sufficient if the sample has reached saturation. The saturated sample in this study was 86 respondents. Based on Table 1. Sampling Criteria, the total number of samples used in this study was 100 respondents.
The methods used in this research were Importance Performance Analysis (IPA) and Customer Satisfaction Index (CSI). The IPA method developed by John A. Martilla and John C. James was used to analyze service quality performance based on the level of importance and level of performance (Cole and Neumayer, 2004; Ha and Park, 2021). In this study, service quality assessment was assessed based on the perception of Yogyakarta citizens based on the level of expectation and level of reality (Rulleau, Rey-Valette and Hérivaux, 2015; Tripathi and Mishra, 2017).

This study implemented Quadrant Analysis and Gap Analysis in the Natural Science method (Immanuel and Setiawan, 2020); (Tjitrohartoko and Saraswati, 2020). First, Quadrant Analysis classified the attributes according to the level of expectations and the level of reality. The attributes in each quadrant indicated how the attribute would be treated, whether it was enhanced, retained, reviewed, or removed. Quadrant I (Main Priority) contained attributes that have a high level of expectation but performance in the field was still low. Quadrant II (Maintain Achievement) contained attributes that both have high levels of expectations and performance in the field. Quadrant III (Low Priority) contained attributes that both have low levels of expectations and performance. Quadrant IV (Excessive) contained attributes that have a low level of expectation but high performance.

Second, Gap Analysis was used to determine the difference between the level of performance and expectations of the performance that has been done. If the gap is positive, it means that the perception score is greater than the expected score. Thus, the Yogyakarta citizens are satisfied with the management and supporting facilities in overcoming congestion and air pollution in Yogyakarta as a City of Tourism. Meanwhile, if the gap is negative, it means that the expected score is greater than the perception score. Hence, it is necessary to improve management and supporting facilities in overcoming congestion and air pollution in Yogyakarta as a City of Tourism.

Husna and Syukri (2014) The CSI method was used to determine the satisfaction index of the Yogyakarta City Community towards the efforts of the Yogyakarta City Government in overcoming congestion and air pollution. Community satisfaction was assessed based on how they feel about the supporting facilities that have been undertaken by the Yogyakarta City government in overcoming congestion and excess air pollution. The following is a table of CSI criteria:

Table 2. CSI criteria

Index Figures	Interpretation

CSI ≤64%	*Very poor*
64%	*Poor*
71%	*Cause for concern*
77%	*Borderline*
80%	*Good*
84%	*Very good*
87%	*Excellent*

Source: (Husna & Syukri, 2014)

Result and Discussion

Descriptive statistics

The division of the groups was based on the residence status of the respondents, namely the native citizens' of Yogyakarta, citizens' who have lived in Yogyakarta City, and citizens outside Yogyakarta who frequently cross the roads of Yogyakarta (at least five times a week). The characteristics of the respondents based on the age group were dominated by the age group 17-26 years, i.e., 82 people. Meanwhile, the smallest age group of respondents was 47-56 years with only one percent. The 27-36 year age group participated for six percent. The 37-46 year age group participated for four percent while the 57-64 year age group participated for seven percent.

The group of respondents based on the gender on the questionnaire was dominated by female respondents 69% while male respondents were 31%. The characteristics of respondents based on occupation in the questionnaire were dominated by college students by 64% of the total 100 respondents. It was followed by private employees by ten percent, State Civil Apparatus by ten percent, housewives by four percent, and self-employed and Civil Servant retirees by two percent. Meanwhile, eight percent of other jobs consisted of drafter, nurse, student, customer service, IT Technical Consultant, security, admin, and online motorcycle taxi drivers.

Public Perception of Efforts to Overcome Congestion and Air Pollution

The importance Performance Analysis (IPA) method was used to determine the level of importance and performance using the expectation level approach and the level of reality. IPA measured the success of the Yogyakarta City Government in its efforts to overcome congestion and air pollution according to respondents' assessments. The level of expectation was an assessment according to the perception of the Yogyakarta citizens based on what they want. Meanwhile, the level of reality was an assessment according to the perception of the Yogyakarta citizens based on what is in the field and what the Yogyakarta citizens feel. Yogyakarta Citizens' perceptions were used to assess the quality of congestion and air pollution management services by the Yogyakarta City Government. This study used five dimensions of service quality, namely tangible (physical evidence), responsiveness, reliability, assurance, and empathy.

Quadrant Analysis

The step taken using the IPA method in the first quadrant analysis was to calculate the average of each attribute at the level of expectation and level of reality. After obtaining the mean level of expectation and level of reality, then it determined the mean of the mean level of expectation and

level of reality to determine the point of intersection on the Cartesian diagram. The following is a calculation of the mean for each level of expectation and level of reality:

Table 3. Calculation Results of Mean Expectation Levels

Attribute	Expectancy Level	Mean	Attribute	Expectancy Level	Mean
T1	457	4,57	R6	434	4,34
T2	476	4,76	RS1	440	4,4
T3	423	4,23	RS2	449	4,49
T4	451	4,51	RS3	442	4,42
T5	451	4,51	RS4	451	4,51
T6	454	4,54	RS5	445	4,45
T7	467	4,67	A1	454	4,54
T8	444	4,44	A2	456	4,56
T9	441	4,41	A3	465	4,65
R1	448	4,48	A4	460	4,6
R2	430	4,3	E1	449	4,49
R3	462	4,62	E2	440	4,4
R4	420	4,20	E3	452	4,52
R5	445	4,45	E4	456	4,56
Mean					4,486

Source: Primary data from processed respondents (2020)

According to the Table 3, mean expectation of respondents perception is 4,486. The highest of expectancy level reached 4,76 and the lowest of expectancy level is 4,2. The resulf of mean expectancy level informs us that the expectancy of citizens actually is high.

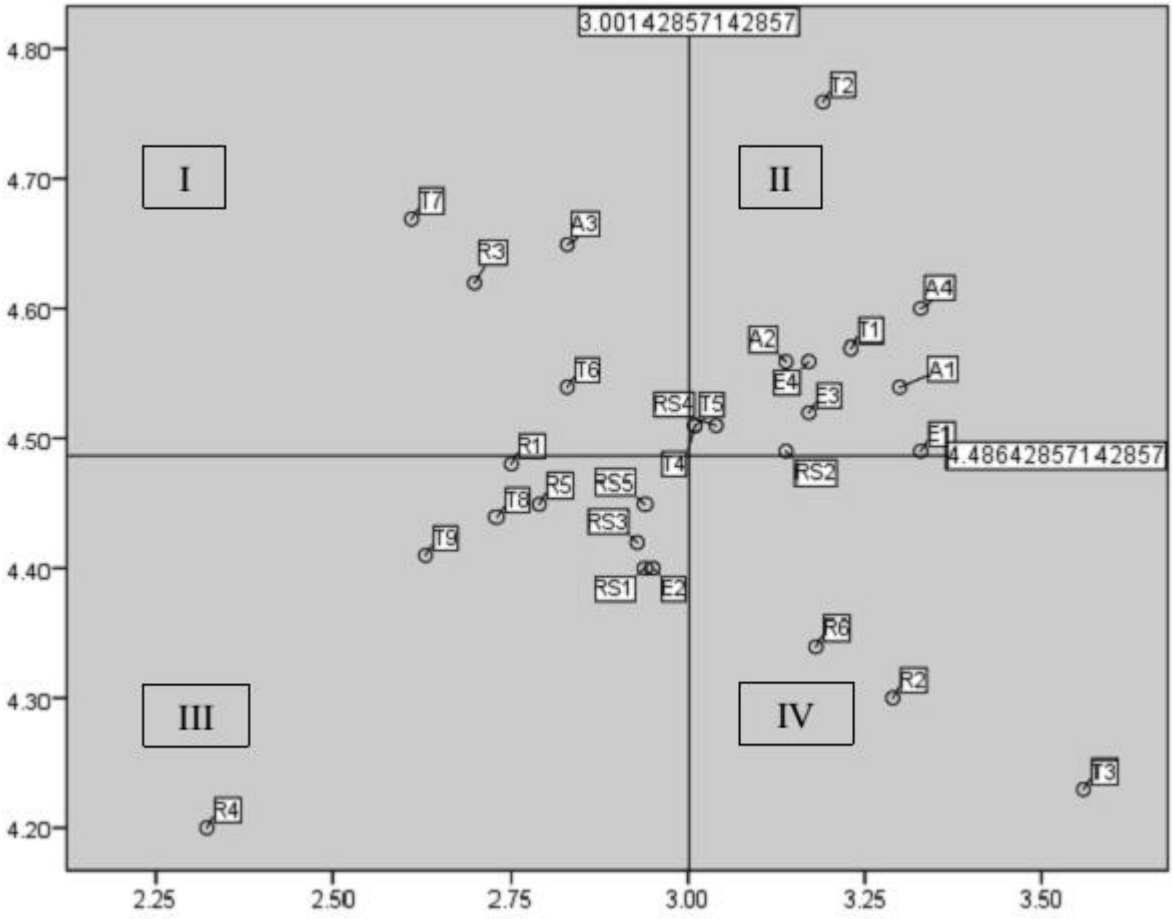
Table 4. Calculation Results of Mean Level of Reality

Attribute	Level of Reality	Mean	Attribute	Level of Reality	Mean
T1	323	3,23	R6	318	3,18
T2	319	3,19	RS1	294	2,94
T3	356	3,56	RS2	314	3,14
T4	301	3,01	RS3	293	2,93
T5	301	3,01	RS4	304	3,04
T6	283	2,83	RS5	294	2,94
T7	261	2,61	A1	330	3,3
T8	273	2,73	A2	314	3,14
T9	263	2,63	A3	283	2,83
R1	275	2,75	A4	333	3,33
R2	329	3,29	E1	333	3,33
R3	270	2,7	E2	295	2,95
R4	232	2,32	E3	317	3,17
R5	279	2,79	E4	317	3,17
Mean					3,00

Source: Primary data from processed respondents (2020)

According to Tabel 4, the highest level of reality reached 3,56 and the lowest reached 2,61. In general perception of Yogyakarta citizens is 3,00. It means that residents perception still need improvement on congestion or air pollution performance.

After obtaining the calculation of the mean level of expectation and reality along with the intersection of the Cartesian diagram with the coordinate point (3.0014; 4.4864), the final step was to categorize each attribute on the Cartesian diagram so that it can be grouped by quadrant. In each of these quadrants, it was known how these attributes would be treated, whether it was enhanced, maintained, reviewed, or removed. The following is a grouping of attributes on a Cartesian diagram:



Information

T = Tangible E=Empathy A = Assurance

R= Reliability RS=Responsiveness

Figure 1

Results of Natural Science Analysis in a Cartesian Diagram

Quadrant I

The attributes contained in quadrant I are located at the coordinate point [(0.00-3.00) - (4.486-4.67)], which has the highest effect on service quality. The attributes in this quadrant have characteristics that are considered important by the Yogyakarta citizens but their performance is not yet fully felt. Therefore, the Yogyakarta City Government through related agencies can focus on management to reduce congestion and air pollution in Yogyakarta City in this quadrant. Following are the attributes contained in quadrant I; (T6) The pedestrian path is wide and comfortable, (T7) There are shady trees, (R3) The drivers obey the traffic signs, (A3) The drivers drive well.

Quadrant II

The attributes contained in quadrant II are located at the coordinate point [(3,00-3,33) - (4,76-4,486)]. The attributes have characteristics that are considered important by the Yogyakarta citizens, and their performance can be felt to reduce congestion and air pollution in Yogyakarta. The attributes in this quadrant are good and satisfying so they need to be maintained and even improved. Following are the attributes contained in quadrant II; (T1) Condition of public transportation facilities, (T2) Cleanliness of public transportation facilities, (T4) Strategic location of parking lots, (T5) Good and proper parking space, (RS2) Responsibility of police officers in regulating traffic, (RS4) Responsibility of City Government in serving complaints about pedestrian paths, (A1) Friendliness of drivers/public transportation officers, (A2) Trustworthy parking attendants, (A4) Police officers serving safely and comfortably, (E1) Clarity of information from drivers/public transportation officers, (E3) Justice and legal certainty for police officers, (E4) The effort of City governments to build green open space.

Quadrant III

The attributes contained in quadrant III are located at the coordinate point [(0.00-3.0014) - (0.00-4.4864)]. The attributes have characteristics of the low level of performance and importance to overcoming congestion and low air pollution. A low level of importance means that the attributes in this quadrant have a low priority. In this study, the attributes in quadrant III tend to approach the average borderline of the level of importance. Therefore, the performance of the attributes in this quadrant should be still considered to increase community satisfaction. Following are the attributes contained in quadrant III; (T8) The visible bicycle path, (T9) Availability of bicycle parking, (R1) Obedience of public transportation drivers in driving, (R4) Competency certificates that are owned by parking attendants (R5) Bicycle users who use their lanes, (RS1) Responsiveness drivers/public transportation officers, (RS3) Parking attendant responsiveness, (RS5) City government responsiveness in serving bicycle lane complaints, (E2) Parking attendants that are sincere in their services.

Quadrant IV

The attributes contained in quadrant IV III are located at the coordinate point [(3.0014-3.56) - (0.00-4.4864)]. They have characteristics of a high level of performance in overcoming congestion and air pollution. However, these attributes are not considered important for the Yogyakarta citizens. Excessive levels of performance and low levels of importance require Yogyakarta City Government to reconsider the attributes in this quadrant. What can be done is to allocate resources to attributes that have high priority. Following are the attributes contained in quadrant IV; (T3) Clarity of traffic sign information, (R2) Services provided by public transportation officers, (RS6) Police officers who can manage traffic properly.

Community Satisfaction Analysis Using the CSI Method

Analysis using the CSI method was used to determine how much satisfaction the Yogyakarta citizens have with the efforts made by the Yogyakarta City Government in overcoming congestion and pollution viewed from the level of expectation and level of reality. The first step that must be done was to determine the average of the total Y values, namely the Mean Importance Score (MIS). The next step was to determine the Weight Factors (WF) by dividing the MIS of each attribute by the number of MIS multiplied by 100%. Then, it was to find the average number of X values,

namely the Mean Satisfaction Score (MSS). After identifying the MSS, then it should search for Weight Score (WS) by multiplying the MSS of each attribute by the MIS of each attribute multiplied by 100%. Then, finding CSI can be done by dividing the WS with the highest Likert scale score. These calculations can be displayed in the table, as follows:

Table 5. Calculation of the Customer Satisfaction Index (CSI)

No	Attribute	Expectation Level (Y)		Level of Reality (X)		WF	WS
		Sum of Y Values	MIS value	Sum of Value X	MSS Value		
1	T1	457	5	323	4	0,0370	0,1481
2	T2	476	5	319	3	0,0370	0,1111
3	T3	423	4	356	4	0,0296	0,1185
4	T4	451	5	301	3	0,0370	0,1111
5	T5	451	5	301	3	0,0370	0,1110
6	T6	454	5	283	3	0,0370	0,1110
7	T7	467	5	261	3	0,0370	0,1110
8	T8	444	4	273	3	0,0296	0,0888
9	T9	441	5	263	2	0,0370	0,0740
10	R1	448	5	275	2	0,0370	0,0740
11	R2	430	4	329	3	0,0296	0,0888
12	R3	462	5	270	2	0,0370	0,0740
13	R4	420	5	232	2	0,0370	0,0740
14	R5	445	4	279	3	0,0296	0,0888
15	R6	434	5	318	3	0,0370	0,1110
16	RS1	440	4	294	3	0,0296	0,0888
17	RS2	449	5	314	4	0,0370	0,1480
18	RS3	442	5	293	3	0,0370	0,1110
19	RS4	451	5	304	3	0,0370	0,1110
20	RS5	445	5	294	3	0,0370	0,1110
21	A1	454	5	330	3	0,0370	0,1110

22	A2	456	5	314	3	0,0370	0,1110
23	A3	465	5	283	3	0,0370	0,1110
24	A4	460	5	333	4	0,0370	0,1480
25	E1	449	5	333	3	0,0370	0,1110
26	E2	440	5	295	3	0,0370	0,1110
27	E3	452	5	317	4	0,0370	0,1480
28	E4	456	5	317	3	0,0370	0,1110
Total			135		85		3,0271
CSI Index			**60,54%**				
Interpretation			***Very poor***				

Source: Primary Data from Processed Respondents (2020)

Based on Table 5 of the calculation of the Customer Satisfaction Index (CSI), the CSI index is 60.54% and the category is very poor. Yogyakarta citizens still expect numerous improvements to the management of congestion and air pollution. The efforts made by the Yogyakarta City Government are still not in line with what most people expect.

The results of this study indicated that the government's efforts to increase the number of tourism visits must also be accompanied by a commitment to maintaining environmental quality. These results supported the research conducted by (Kim and Jinok, 2013) and (Keith and Boley, 2019). Of the five attributes used in the study, it can be mapped that several attributes fall into category III or IV. The mapping showed that the resources allocated by the city government are considered excessive, such as (T3) clarity of traffic sign information, (R2) services provided by public transportation officers, and (RS6) police officers who can manage traffic well

Toward local residents decreasing of quality environment i.e. congestion and air pollution, it will increase stress and dissatisfaction among people residing in crowded tourist destinations (Dickinson, Ã and Robbins, 2008). Pada akhirnya ketika penduduk lokal merasa tidak dirugikan akan menyebabkan penurunan jumlah wisatawan yang datang ke Yogyakarta. Pendapat ini sesuai dengan yang dikemukakan oleh Diedrich and Garci (2009).

Reducing the level of congestion as an impact of increasing the number of tourist visits can be overcome by managing transportation management. According to Mondschein & Taylor et al (2017), the transportation options for tourism are also decisive. It includes good transportation options, for example, do not lead to an increase in the number of vehicles in the city. Meanwhile, in the city of Yogyakarta, it is frequently found that tourist buses join the traffic-congested streets to pick up and drop off passengers at inns or hotels. The conclusion of Keith and Boley (2019) clarified the importance of Sustainable Tourism Initiatives (STI). With STI, all stakeholders have the same vision to develop sustainable tourism.

Conclusion

The perception of Yogyakarta citizens show attributes that have a high level of importance are in Quadrant I, namely wide and comfortable pedestrian paths, the availability of shady trees, drivers who obey traffic signs, and the drivers who drive well. Quadrant II shows good performance, for example, the condition of public transportation facilities, the cleanliness of the city of Yogyakarta,

good parking arrangements, and pedestrian-compliant services. Meanwhile, from quadrant III it can be concluded that attention is paid to the cyclist lanes, parking for bicycles, and parking attendant skills. Meanwhile, from quadrant IV, it is identified that public services are adequate but the community does not consider them important. For example, the clarity of information on traffic signs and services provided by public transportation officers.

The level of satisfaction of the Yogyakarta citizens with the efforts of the Yogyakarta City Government to improve congestion and air pollution was analyzed using the Customer Satisfaction Index (CSI) method. It has an index of 60.54% with the category "very poor". The success of the Yogyakarta City Government's efforts in dealing with congestion and air pollution is not only the responsibility of the government and related agencies. However, it is necessary to have cooperation from the citizens by fostering public understanding and awareness to take part in maintaining order and obeying driving protocols.

There are at least two implications of this study. First, the government reduce traffic congestion by restriction for parking tourist bus in high traffic area. The local citizens are potentially suffering cause of tourism especially for congestion and air pollution. Secondly, the government offer the parking area around the city of Yogyakarta. When the tourist enter the city, the tourist can use shuttle bus to their destinations or their hotel.

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Appendix

Dimensions	Attributes	
Tangible	T1	Condition of public transportation facilities
	T2	Cleanliness of public transportation facilities
	T3	Clarity of traffic sign information
	T4	Strategically located parking pockets
	T5	The parking lot is good and decent
	T6	Wide and comfortable pedestrian path
	T7	There are shady and shady trees
	T8	The bike path is clearly visible
	T9	Availability of bicycle parking

Reliability	R1	Obedience of public transport drivers in driving
	R2	Services provided by public transportation officers
	R3	Drivers obey traffic signs
	R4	Parking attendants have competency certificates
	R5	Cyclists use their own lane
	R6	Police officers manage traffic well
Responsiveness	RS1	Responsiveness of drivers/public transport officers
	RS2	Responsiveness of police officers to regulate traffic
	RS3	Parking attendant response
	RS4	Responsiveness of the City Government in handling pedestrian complaints
	RS5	Responsiveness of the City Government in handling bicycle lane complaints
Assurance	A1	Friendliness of the driver/public transport officer
	A2	Parking attendant can be trusted
	A3	The rider drives well
	A4	Police officers serve safely and comfortably
Empathy	E1	The driver/public transport officer gives information clarity
	E2	Parking attendants are sincere and sincere in parking
	E3	Justice and legal certainty for police officers
	E4	The city government seeks to open green open parks

Congestion and Air Pollution

by Suryanto Suryanto

Submission date: 04-Oct-2022 10:13PM (UTC+0700)
Submission ID: 1916463269
File name: estination_on_Air_Pollution_and_Traffic_Congestion_mendeley.docx (103.91K)
Word count: 5586
Character count: 31134

The Impact of Tourism Destination on Air Pollution and Traffic Congestion Using Importance Performance Analysis

Abstract

Yogyakarta City is one of the famous destinations in Indonesia. The tourism sector is the highest tax revenue for local government. Besides, tourism gives high revenue but tourism also give negative impacts on the citizens as hosts such as congestion and pollution. This study was conducted to determine the importance level of each attribute on the quality of congestion and air pollution management services in the city of Yogyakarta based on the citizen's perception by utilizing the Importance Performance Analysis (IPA) method. This study also aimed to determine the level of satisfaction of the Yogyakarta citizens on the management of congestion and air pollution using the Customer Satisfaction Index (CSI) method. This study implemented a purposive sampling technique which was then obtained from the population sample of 100 respondents with 86 saturated samples. The results showed based on the perception of the Yogyakarta citizens, a high level of attributes included wide and comfortable pavements, trees that block the sunlight and have a cooling effect, motorists who obeyed traffic signs, and drivers who drive well. The result of the Yogyakarta Citizens' satisfaction index showed 60.54%, which has the category of "very poor".

Keywords: Tourism, Congestion, Air Pollution, Citizen's Perception, Service Quality, Community Satisfaction

JEL Classification:

Introduction

Yogyakarta City is one of the tourist destinations in Indonesia with the number of visitors reaching 4 million people per year. The average proportion of visitors is one million foreign tourists and 3.5 million local tourists. Along pandemic Covid-19 amount of visitors, both locals and foreigners decrease by 1.3 million per year (Yogyakarta Tourism Office, 2021).

The contribution of the tourism sector to the City of Yogyakarta has reached 17.5 percent and it has made the tourism sector a leading sector over the past three years. The city government should continue to strive to improve the quality of tourism in the city of Yogyakarta if they need the contribution of tourism to increase. The challenges and demands of the market make the government attempt to make a comfortable city for tourist destinations.

According to the government sector, it is necessary to develop and facilitate tourism spots so that tourism can contribute to economic development (Suastika and Yasa, 2015); (Lankford, 2016). Apart from high contributions, the government also realizes that the development of the tourism sector is expected to be able to increase the role of other sectors outside the tourism sector (Lankford, 1994).

Tourism activities that coexist with the activities of the people of Yogyakarta City are quite complex, resulting in high mobility during busy times. Besides that, the high growth in the number of motor vehicles without adjustment to the increase in road length results in congestion at a certain point (Mondschein and Taylor, 2017).

The existence of congestion is one of the factors causing the decline in air quality in the city of Yogyakarta (Murad *et al.*, 2010); (Ahmad *et al.*, 2005; Patz *et al.*, 2014). Air pollution caused by the large volume of motor vehicles on the roads will have a bad impact on health (Dinda, 2004). Chemicals that are dangerous to be inhaled continuously for a long time or even in a short me will cause various respiratory diseases that have an impact on health (Kunzli *et al.*, 2000).

Something often forgotten by the government is the perception of the citizens living in tourist destinations. Kim and Jinok (2013) stated that the existence of tourism causes a negative perception of the citizens on the environmental aspects and the existence of passing tourist transportation causes air quality to decline. In line with (Kim and Jinok, 2013). Keith and Boley (2019) also prioritized tourist destinations to maintain air quality so that local citizens are not harmed by poor air quality, which can cause respiratory problems. On the other hand, the research of Ahmad *et al.* (2019) declared that tourism does not have a negative environmental impact, especially in decreasing air quality. It is because the local government implements an environmentally friendly transportation policy in its mass transportation. Beladi *et al.*, (2020) confirmed that another alternative in maintaining environmental quality due to tourism is to include pollution costs in tourism rates.

Several studies have focused on how to measure the level of congestion(Ahmad *et al.*, 2016) (Wang, Quddus and Ison, 2009); to calculate the cost of congestion (Zebin, Shi and Jian, 2010), and to explore the factors that cause congestion (Koetse and Rietveld, 2009). Congestion must be anticipated because it will have an impact on high mobility and community activities that will encourage increased development (Mondschein and Taylor, 2017).

However, in the study that focused on citizens as hosts of tourism. The researchers who conducted with local citizens as subject is still rare. The novelty of the research is the measurement of the perception of citizens. The citizens perceptions should be government consideration in development planning (Alemayehu and Bewket, 2017). This study analyzed the level of importance and the level of service quality performance based on the perceptions of the Yogyakarta citizens. The purpose of this study are to observe which ones should be improved using the Importance Performance Analysis (IPA) method (Achterkamp, Robinson and Moital, 2010; Lee, 2018) and also to examine the satisfaction index of the Yogyakarta citizens using the Customer Satisfaction Index (CSI) (Husna and Syukri, 2014). Yogyakarta as the destination of tourism on the efforts that have been made by the government in overcoming congestion and air pollution.

Research Method

This research commenced by observing phenomena in the field, including observing the main road in Yogyakarta. Some of roads in Yogyakarta experienced an increase in vehicle volume during peak hours, such as: Jl. Malioboro, Jl. Botanical Gardens, Jl. Rotowijayan, Jl. Panembahan Senopati. Based on observations, problems can be formulated regarding the perception of Yogyakarta citizens towards the efforts of the Yogyakarta City Government in overcoming congestion and air pollution.

The next step was to conduct a literature study to obtain the theory or secondary data needed to support the research. Then, the researchers conducted observations and interviews. Observations were made to explore problems in the field and search for justification according to experts during the interview. Meanwhile, interviews were conducted at the Transportation Department of Yogyakarta as the executor of policies in related fields, such as traffic, transportation, and public transport. At this stage, the interview was performed to deepen the information related to the

attributes to be used in the research based on the explanation from the policy implementer in the field of transportation.

The next step was the stage of collecting primary data on the perception of the Yogyakarta citizens regarding the service quality using a questionnaire. The questionnaire in this study collected data in the form of a Likert scale with five answer choices. It comprised of strongly disagree, disagree, neutral, agree, and strongly agree. Slamet (2007) stated that the use of the Likert scale can develop various answers but it is still within the framework of a five-score scale. Each of which will obtain an assessment score based on citizens' perceptions. The citizens' perception in this study was based on how they feel about the efforts made by the Yogyakarta City Government in overcoming congestion and air pollution.

The quality of service used in this study was based on 5 (five) criteria according to Tjiptono, F., & Chandra (2017). First, the Tangible dimension assessed the physical condition of public transportation facilities, the cleanliness of public transportation facilities, the presence of a parking lot that is strategic and in good condition, the clarity of traffic signs, the presence of trees, and Green Open Space (*Ruang Terbuka Hijau* or RTH), the condition of the bicycle path, and the location of the bicycle parking. Second, the Reliability dimension assessed the reliability of drivers and public transportation officers in providing services, reliability, and orderliness of motor vehicle drivers, parking officers who provide services, and police officers in performing their duties to regulate traffic order.

Third, Responsiveness assessed the responsiveness of public transportation officers in responding to complaints from public transportation users, the responsiveness of parking attendants in responding to complaints from parking service users, the responsiveness of the police in responding to traffic problems, the responsiveness of the Yogyakarta City Government in responding to complaints about the benefits of pedestrian paths, and the availability of Green Open Space (RTH). The next dimension was Assurance, which assessed the friendliness and politeness of public transportation officers in serving public transportation users, trustworthy parking attendants, police officers in providing safe and comfortable services, and vigilance for every driver to drive well and not harm others. Finally, the Empathy dimension assessed the clarity of information provided by public transportation officers, the sincerity of parking attendants in providing parking services, legal certainty and justice provided by police officers, and the sense of comfort provided by the City Government due to adequate RTH.

The experimental questionnaire was distributed via Google Form then be examined its validity and reliability by the questionnaire. The validity test in this study used SPSS 16.0 software to determine the r count. If the questionnaire has been tested valid and reliable, the questionnaire will be distributed widely to the Yogyakarta citizens based on the purposive sampling technique. The following are the sampling criteria for this study:

Table 1. Sampling Criteria

Information	Sample
Native citizens of Yogyakarta aged 17-64 years who are recorded on the National Identity Card (KTP)	32
Citizens who have lived in Yogyakarta with the age range of 17-64 years old	25
Citizens outside Yogyakarta who often cross the streets of Yogyakarta City (at least five times a week) with the age range of 17-64 years old	43

Total	100

Source: Primary data from processed respondents (2020)

In this study, the use of samples for an unknown population will be sufficient if the sample has reached saturation. The saturated sample in this study was 86 respondents. Based on Table 1. Sampling Criteria, the total number of samples used in this study was 100 respondents.
The methods used in this research were Importance Performance Analysis (IPA) and Customer Satisfaction Index (CSI). The IPA method developed by John A. Martilla and John C. James was used to analyze service quality performance based on the level of importance and level of performance (Cole and Neumayer, 2004; Ha and Park, 2021). In this study, service quality assessment was assessed based on the perception of Yogyakarta citizens based on the level of expectation and level of reality (Rulleau, Rey-Valette and Hérivaux, 2015; Tripathi and Mishra, 2017).

This study implemented Quadrant Analysis and Gap Analysis in the Natural Science method (Immanuel and Setiawan, 2020); (Tjitrohartoko and Saraswati, 2020). First, Quadrant Analysis classified the attributes according to the level of expectations and the level of reality. The attributes in each quadrant indicated how the attribute would be treated, whether it was enhanced, retained, reviewed, or removed. Quadrant I (Main Priority) contained attributes that have a high level of expectation but performance in the field was still low. Quadrant II (Maintain Achievement) contained attributes that both have high levels of expectations and performance in the field. Quadrant III (Low Priority) contained attributes that both have low levels of expectations and performance. Quadrant IV (Excessive) contained attributes that have a low level of expectation but high performance.

Second, Gap Analysis was used to determine the difference between the level of performance and expectations of the performance that has been done. If the gap is positive, it means that the perception score is greater than the expected score. Thus, the Yogyakarta citizens are satisfied with the management and supporting facilities in overcoming congestion and air pollution in Yogyakarta as a City of Tourism. Meanwhile, if the gap is negative, it means that the expected score is greater than the perception score. Hence, it is necessary to improve management and supporting facilities in overcoming congestion and air pollution in Yogyakarta as a City of Tourism.

Husna and Syukri (2014) The CSI method was used to determine the satisfaction index of the Yogyakarta City Community towards the efforts of the Yogyakarta City Government in overcoming congestion and air pollution. Community satisfaction was assessed based on how they feel about the supporting facilities that have been undertaken by the Yogyakarta City government in overcoming congestion and excess air pollution. The following is a table of CSI criteria:

Table 2. CSI criteria

Index Figures	Interpretation
CSI ≤64%	*Very poor*
64%	*Poor*
71%	*Cause for concern*
77%	*Borderline*
80%	*Good*
84%	*Very good*
87%	*Excellent*

Source: (Husna & Syukri, 2014)

Result and Discussion

Descriptive statistics

The division of the groups was based on the residence status of the respondents, namely the native citizens' of Yogyakarta, citizens' who have lived in Yogyakarta City, and citizens outside Yogyakarta who frequently cross the roads of Yogyakarta (at least five times a week). The characteristics of the respondents based on the age group were dominated by the age group 17-26 years, i.e., 82 people. Meanwhile, the smallest age group of respondents was 47-56 years with only one percent. The 27-36 year age group participated for six percent. The 37-46 year age group participated for four percent while the 57-64 year age group participated for seven percent.

The group of respondents based on the gender on the questionnaire was dominated by female respondents 69% while male respondents were 31%. The characteristics of respondents based on occupation in the questionnaire were dominated by college students by 64% of the total 100 respondents. It was followed by private employees by ten percent, State Civil Apparatus by ten percent, housewives by four percent, and self-employed and Civil Servant retirees by two percent. Meanwhile, eight percent of other jobs consisted of drafter, nurse, student, customer service, IT Technical Consultant, security, admin, and online motorcycle taxi drivers.

Public Perception of Efforts to Overcome Congestion and Air Pollution

The importance Performance Analysis (IPA) method was used to determine the level of importance and performance using the expectation level approach and the level of reality. IPA measured the success of the Yogyakarta City Government in its efforts to overcome congestion and air pollution according to respondents' assessments. The level of expectation was an assessment according to the perception of the Yogyakarta citizens based on what they want. Meanwhile, the level of reality was an assessment according to the perception of the Yogyakarta citizens based on what is in the field and what the Yogyakarta citizens feel. Yogyakarta Citizens' perceptions were used to assess the quality of congestion and air pollution management services by the Yogyakarta City Government. This study used five dimensions of service quality, namely tangible (physical evidence), responsiveness, reliability, assurance, and empathy.

Quadrant Analysis

The step taken using the IPA method in the first quadrant analysis was to calculate the average of each attribute at the level of expectation and level of reality. After obtaining the mean level of expectation and level of reality, then it determined the mean of the mean level of expectation and level of reality to determine the point of intersection on the Cartesian diagram. The following is a calculation of the mean for each level of expectation and level of reality:

Table 3. Calculation Results of Mean Expectation Levels

Attribute	Expectancy Level	Mean	Attribute	Expectancy Level	Mean
T1	457	4,57	R6	434	4,34
T2	476	4,76	RS1	440	4,4

T3	423	4,23	RS2	449	4,49
T4	451	4,51	RS3	442	4,42
T5	451	4,51	RS4	451	4,51
T6	454	4,54	RS5	445	4,45
T7	467	4,67	A1	454	4,54
T8	444	4,44	A2	456	4,56
T9	441	4,41	A3	465	4,65
R1	448	4,48	A4	460	4,6
R2	430	4,3	E1	449	4,49
R3	462	4,62	E2	440	4,4
R4	420	4,20	E3	452	4,52
R5	445	4,45	E4	456	4,56
Mean					4,486

Source: Primary data from processed respondents (2020)

According to the Table 3, mean expectation of respondents perception is 4,486. The highest of expectancy level reached 4,76 and the lowest of expectancy level is 4,2. The resulf of mean expectancy level informs us that the expectancy of citizens actually is high.

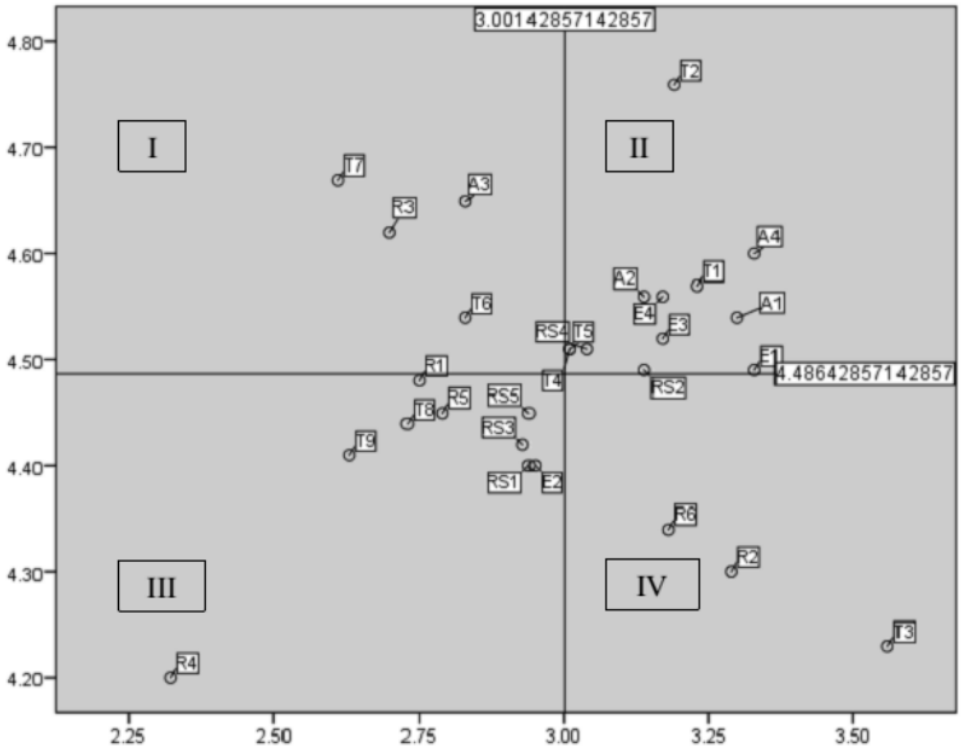
Table 4. Calculation Results of Mean Level of Reality

Attribute	Level of Reality	Mean	Attribute	Level of Reality	Mean
T1	323	3,23	R6	318	3,18
T2	319	3,19	RS1	294	2,94
T3	356	3,56	RS2	314	3,14
T4	301	3,01	RS3	293	2,93
T5	301	3,01	RS4	304	3,04
T6	283	2,83	RS5	294	2,94
T7	261	2,61	A1	330	3,3
T8	273	2,73	A2	314	3,14
T9	263	2,63	A3	283	2,83
R1	275	2,75	A4	333	3,33
R2	329	3,29	E1	333	3,33
R3	270	2,7	E2	295	2,95
R4	232	2,32	E3	317	3,17
R5	279	2,79	E4	317	3,17
Mean					3,00

Source: Primary data from processed respondents (2020)

According to Tabel 4, the highest level of reality reached 3,56 and the lowest reached 2,61. In general perception of Yogyakarta citizens is 3,00. It means that residents perception still need improvement on congestion or air pollution performance.

After obtaining the calculation of the mean level of expectation and reality along with the intersection of the Cartesian diagram with the coordinate point (3.0014; 4.4864), the final step was to categorize each attribute on the Cartesian diagram so that it can be grouped by quadrant. In each of these quadrants, it was known how these attributes would be treated, whether it was enhanced, maintained, reviewed, or removed. The following is a grouping of attributes on a Cartesian diagram:



Information

T = Tangible	E=Empathy	A = Assurance
R= Reliability	RS=Responsiveness	

Figure 1
Results of Natural Science Analysis in a Cartesian Diagram

Quadrant I

The attributes contained in quadrant I are located at the coordinate point [(0.00-3.00) - (4.486-4.67)], which has the highest effect on service quality. The attributes in this quadrant have characteristics that are considered important by the Yogyakarta citizens but their performance is not yet fully felt. Therefore, the Yogyakarta City Government through related agencies can focus on management to reduce congestion and air pollution in Yogyakarta City in this quadrant. Following are the attributes contained in quadrant I; (T6) The pedestrian path is wide and comfortable, (T7) There are shady trees, (R3) The drivers obey the traffic signs, (A3) The drivers drive well.

Quadrant II

The attributes contained in quadrant II are located at the coordinate point [(3,00-3,33) - (4,76-4,486)]. The attributes have characteristics that are considered important by the Yogyakarta citizens, and their performance can be felt to reduce congestion and air pollution in Yogyakarta. The attributes in this quadrant are good and satisfying so they need to be maintained and even improved. Following are the attributes contained in quadrant II; (T1) Condition of public transportation facilities, (T2) Cleanliness of public transportation facilities, (T4) Strategic location of parking lots, (T5) Good and proper parking space, (RS2) Responsibility of police officers in regulating traffic, (RS4)

Responsibility of City Government in serving complaints about pedestrian paths, (A1) Friendliness of drivers/public transportation officers, (A2) Trustworthy parking attendants, (A4) Police officers serving safely and comfortably, (E1) Clarity of information from drivers/public transportation officers, (E3) Justice and legal certainty for police officers, (E4) The effort of City governments to build green open space.

Quadrant III

The attributes contained in quadrant III are located at the coordinate point [(0.00-3.0014) - (0.00-4.4864)]. The attributes have characteristics of the low level of performance and importance to overcoming congestion and low air pollution. A low level of importance means that the attributes in this quadrant have a low priority. In this study, the attributes in quadrant III tend to approach the average borderline of the level of importance. Therefore, the performance of the attributes in this quadrant should be still considered to increase community satisfaction. Following are the attributes contained in quadrant III; (T8) The visible bicycle path, (T9) Availability of bicycle parking, (R1) Obedience of public transportation drivers in driving, (R4) Competency certificates that are owned by parking attendants (R5) Bicycle users who use their lanes, (RS1) Responsiveness drivers/public transportation officers, (RS3) Parking attendant responsiveness, (RS5) City government responsiveness in serving bicycle lane complaints, (E2) Parking attendants that are sincere in their services.

Quadrant IV

The attributes contained in quadrant IV III are located at the coordinate point [(3.0014-3.56) - (0.00-4.4864)]. They have characteristics of a high level of performance in overcoming congestion and air pollution. However, these attributes are not considered important for the Yogyakarta citizens. Excessive levels of performance and low levels of importance require Yogyakarta City Government to reconsider the attributes in this quadrant. What can be done is to allocate resources to attributes that have high priority. Following are the attributes contained in quadrant IV; (T3) Clarity of traffic sign information, (R2) Services provided by public transportation officers, (RS6) Police officers who can manage traffic properly.

Community Satisfaction Analysis Using the CSI Method

Analysis using the CSI method was used to determine how much satisfaction the Yogyakarta citizens have with the efforts made by the Yogyakarta City Government in overcoming congestion and pollution viewed from the level of expectation and level of reality. The first step that must be done was to determine the average of the total Y values, namely the Mean Importance Score (MIS). The next step was to determine the Weight Factors (WF) by dividing the MIS of each attribute by the number of MIS multiplied by 100%. Then, it was to find the average number of X values, namely the Mean Satisfaction Score (MSS). After identifying the MSS, then it should search for Weight Score (WS) by multiplying the MSS of each attribute by the MIS of each attribute multiplied by 100%. Then, finding CSI can be done by dividing the WS with the highest Likert scale score. These calculations can be displayed in the table, as follows:

Table 5. Calculation of the Customer Satisfaction Index (CSI)

No	Attribute	Expectation Level (Y)		Level of Reality (X)		WF	WS
		Sum of Y Values	MIS value	Sum of Value X	MSS Value		
1	T1	457	5	323	4	0,0370	0,1481
2	T2	476	5	319	3	0,0370	0,1111
3	T3	423	4	356	4	0,0296	0,1185
4	T4	451	5	301	3	0,0370	0,1111
5	T5	451	5	301	3	0,0370	0,1110
6	T6	454	5	283	3	0,0370	0,1110
7	T7	467	5	261	3	0,0370	0,1110
8	T8	444	4	273	3	0,0296	0,0888
9	T9	441	5	263	2	0,0370	0,0740
10	R1	448	5	275	2	0,0370	0,0740
11	R2	430	4	329	3	0,0296	0,0888
12	R3	462	5	270	2	0,0370	0,0740
13	R4	420	5	232	2	0,0370	0,0740
14	R5	445	4	279	3	0,0296	0,0888
15	R6	434	5	318	3	0,0370	0,1110
16	RS1	440	4	294	3	0,0296	0,0888
17	RS2	449	5	314	4	0,0370	0,1480
18	RS3	442	5	293	3	0,0370	0,1110
19	RS4	451	5	304	3	0,0370	0,1110
20	RS5	445	5	294	3	0,0370	0,1110
21	A1	454	5	330	3	0,0370	0,1110
22	A2	456	5	314	3	0,0370	0,1110
23	A3	465	5	283	3	0,0370	0,1110
24	A4	460	5	333	4	0,0370	0,1480
25	E1	449	5	333	3	0,0370	0,1110
26	E2	440	5	295	3	0,0370	0,1110
27	E3	452	5	317	4	0,0370	0,1480

28	E4	456	5	317	3	0,0370	0,1110
Total			135		85		3,0271
CSI Index			**60,54%**				
Interpretation			***Very poor***				

Source: Primary Data from Processed Respondents (2020)

Based on Table 5 of the calculation of the Customer Satisfaction Index (CSI), the CSI index is 60.54% and the category is very poor. Yogyakarta citizens still expect numerous improvements to the management of congestion and air pollution. The efforts made by the Yogyakarta City Government are still not in line with what most people expect.

The results of this study indicated that the government's efforts to increase the number of tourism visits must also be accompanied by a commitment to maintaining environmental quality. These results supported the research conducted by (Kim and Jinok, 2013) and (Keith and Boley, 2019). Of the five attributes used in the study, it can be mapped that several attributes fall into category III or IV. The mapping showed that the resources allocated by the city government are considered excessive, such as (T3) clarity of traffic sign information, (R2) services provided by public transportation officers, and (RS6) police officers who can manage traffic well

Toward local residents decreasing of quality environment i.e. congestion and air pollution, it will increase stress and dissatisfaction among people residing in crowded tourist destinations (Dickinson, Ã and Robbins, 2008). Pada akhirnya ketika penduduk lokal merasa tidak dirugikan akan menyebabkan penurunan jumlah wisatawan yang datang ke Yogyakarta. Pendapat ini sesuai dengan yang dikemukakan oleh Diedrich and Garci (2009).

Reducing the level of congestion as an impact of increasing the number of tourist visits can be overcome by managing transportation management. According to Mondschein & Taylor et al (2017), the transportation options for tourism are also decisive. It includes good transportation options, for example, do not lead to an increase in the number of vehicles in the city. Meanwhile, in the city of Yogyakarta, it is frequently found that tourist buses join the traffic-congested streets to pick up and drop off passengers at inns or hotels. The conclusion of Keith and Boley (2019) clarified the importance of Sustainable Tourism Initiatives (STI). With STI, all stakeholders have the same vision to develop sustainable tourism.

Conclusion

The perception of Yogyakarta citizens show attributes that have a high level of importance are in Quadrant I, namely wide and comfortable pedestrian paths, the availability of shady trees, drivers who obey traffic signs, and the drivers who drive well. Quadrant II shows good performance, for example, the condition of public transportation facilities, the cleanliness of the city of Yogyakarta, good parking arrangements, and pedestrian-compliant services. Meanwhile, from quadrant III it can be concluded that attention is paid to the cyclist lanes, parking for bicycles, and parking attendant skills. Meanwhile, from quadrant IV, it is identified that public services are adequate but the community does not consider them important. For example, the clarity of information on traffic signs and services provided by public transportation officers.

The level of satisfaction of the Yogyakarta citizens with the efforts of the Yogyakarta City Government to improve congestion and air pollution was analyzed using the Customer Satisfaction Index (CSI) method. It has an index of 60.54% with the category "very poor". The success of the Yogyakarta City

Government's efforts in dealing with congestion and air pollution is not only the responsibility of the government and related agencies. However, it is necessary to have cooperation from the citizens by fostering public understanding and awareness to take part in maintaining order and obeying driving protocols.

There are at least two implications of this study. First, the government reduce traffic congestion by restriction for parking tourist bus in high traffic area. The local citizens are potentially suffering cause of tourism especially for congestion and air pollution. Secondly, the government offer the parking area around the city of Yogyakarta. When the tourist enter the city, the tourist can use shuttle bus to their destinations or their hotel.

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Appendix

Dimensions	Attributes	
Tangible	T1	Condition of public transportation facilities
	T2	Cleanliness of public transportation facilities
	T3	Clarity of traffic sign information
	T4	Strategically located parking pockets
	T5	The parking lot is good and decent
	T6	Wide and comfortable pedestrian path
	T7	There are shady and shady trees
	T8	The bike path is clearly visible
	T9	Availability of bicycle parking
Reliability	R1	Obedience of public transport drivers in driving
	R2	Services provided by public transportation officers
	R3	Drivers obey traffic signs
	R4	Parking attendants have competency certificates
	R5	Cyclists use their own lane
	R6	Police officers manage traffic well
Responsiveness	RS1	Responsiveness of drivers/public transport officers

	RS2	Responsiveness of police officers to regulate traffic
	RS3	Parking attendant response
	RS4	Responsiveness of the City Government in handling pedestrian complaints
	RS5	Responsiveness of the City Government in handling bicycle lane complaints
Assurance	A1	Friendliness of the driver/public transport officer
	A2	Parking attendant can be trusted
	A3	The rider drives well
	A4	Police officers serve safely and comfortably
Empathy	E1	The driver/public transport officer gives information clarity
	E2	Parking attendants are sincere and sincere in parking
	E3	Justice and legal certainty for police officers
	E4	The city government seeks to open green open parks

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Cover Letter

Dear Editor of JESP UMY

I'm writing to you to submit a manuscript its title The Impact of Tourism Destination on Air Pollution and Traffic Congestion Using Importance Performance Analysis. This research revealed the citizens perception about congestion and air pollution in tourism destination.
Some governments agree that tourism will bring many benefits. In theory, government revenue from tourism will increase the government's ability to fund development for citizens welfare. However, often the benefits of tourism are not directly proportional to the perception of the local community. The level of happiness of the local community decreased and even increased stress levels due to traffic jams.
The novelty in this study investigates whether the perception of the people of Yogyakarta is good with what the government has done with Importance Performance Analysis.

Sincerely,

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