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PERFORMANCE ANALYSIS OF JEND AHMAD YANI ROAD KM.7 BANJAR REGENCY DUE TO MARKET ACTIVITIES

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ABSTRACT

Reduced road performance will result in losses for road users due to reduced speed, increased delays , and queues of vehicles, which can result in increased vehicle operating costs and lost time. This study aims to analyze the performance of Jalan Ahmad Yani in Banjar Regency as a result of market activity.

The method used in this research is field research, namely the observation method in the form of direct observation and field recording conducted on Jalan Ahmad Yani, Banjar Regency. The data collected in this study are geometric data, traffic volume , and travel time. Data is entered to calculate road performance using the MKJI 1997 method and analytical methods such as the Greenshield model, the Greenberg model , and the Underwood model. The results of the analysis will show if there are differences in road performance with the MKJI and Analytical Methods.

Based on the results of observations made on the performance of the Ahmad Yani Km.7.4 road segment, Banjar district, the volume, speed and density were lower due to market activities compared to the performance of the Ahmad Yani Km.8 road section where there was no market activity on the side of the road. .

Key words : Road performance, market activity, method, Traffic , Road , Speed , Capacity

1. INTRODUCTION

Section road is current Then cross Which No move in the same direction, Good movement person with vehicle nor without vehicle (pedestrian foot). Section road hold role Which very important in ensure smoothness Then cross, can seen that part big road highway own segment road Which widened For increase speed Then cross. reduction road segment performance will resulted loss for user road Because decrease speed, increase delay And queue vehicle, Which can resulted increase cost operational something vehicle as well as loss time. Section road Which analyzed in study This is Road Ahmad Yani Km. 7.4 Regency Banjar. In segment road This there is a number of light warning or light yellow Which signify so that be careful moment traverse intersection, Because road the is at in area activity (shops) And education. Activity edge road like transport goods, rarely person Which past, parking haphazard in edge road, And exists Lots intersection is reason congestion Which can add time travel.

Objective And Benefit Study

Study This have objective as following :

1. For analyzing estimated road capacity with MKJI and Analytical Methods .
2. To analyze the difference in road performance, it is reviewed with the traffic characteristic parameters .

Limitation Problem

Limitation problem Task End This as following :

1. Area reviewed is segment Jalan Ahmad Yani. Km. 7 ,4 and Km. 8.
2. Calculation Performance segment road based on Method used _ on study This that is refers in the Capacity Manual Jalan Indonesia (MKJI), 1997 and Method Analytical (Greenshield model , Greenberg model, Underwood model).
3. Time parameters calculation on location segment the path under consideration done for 12 hours.

2. THEORETICAL BASIS

Performance segment road

1. Obstacle Side

Side resistance is the impact on the traffic performance of the activity side of the road segment indicated by the actual incident weight factor multiplied by the vehicle weight factor.

2. Last Volumes Cross

Traffic volume is the number of vehicles passing through a road segment at a certain time period.

3. Capacity

Capacity defined as current maximum through something point in the way that can be maintained per unit hour on condition certain

wide road .

Characteristics Current So Cross .

1. Last Volumes Cross

Volumes are amount passing vehicles _ something point or segment road during hose time certain can _ expressed in yearly , daily , hourly or sub hourly .

2. Speed So Cross

Speed that is possible distance _ taken something vehicle on something segment path per unit time .

3. Density So Cross

Traffic density is the number of vehicles occupying a certain length of road or lane. Generally stated in vehicles per kilometer (veh/km), junior high school/kilometer or vehicles per kilometer per lane (veh/km/lj)

Relationship Models -Volume speed and Density Road

1. Greenshield model

Greenshield get results that connection between speed And density linear . Speed linear relationship And density This become popular relationship _ in review movement current traffic , remember function the simplest relationship so that easy applied .

2. Greenberg model

Greenberg relationship assumes that current Then cross have similarity with current fluid , relationship between speed And density shaped curve logarithm .

3. Model Underwood

Underwood suggested hypothesis that connection between speed And density is something function exponential with form equality as following (McShane & Roes , 1990)

3. METHOD E

Location Study

Location research to be done located on Jalan Ahmad Yani Km 7,4 near Alfamart and Km.8 near Kalimantan Carwash District Banjar , South Kalimantan.

Data Collection

Data retrieved is collected data direct from source original For objective certain through survey field with use various Method . Collected data on study This is do observation direct in the field , which is in the form of geometric data , the last volume cross And time go . time data travel worn For estimate speed passing vehicles _ segment road observation . In do study This needed data collection _ thorough from research . Grouped data types from the source shared be 2 ie as following .

1. Primary data

   Primary data is data obtained by observation right on site study or data obtained from sources which include :

- Geometric Data Road .
- Speed Data So cross
- Traffic Volume Data - Traffic

2. Secondary data

   Secondary data is the data obtained from something related agencies _ with research conducted , secondary data function as primary data support .

Survey And Time Implementation Observation

Observations made to obtain these data are:

1. Field Survey Preparation
2. Implementation of Data Collection
3. Data Processing Methods
   a. Free Flow Speed
   b. Vehicle Speed
   c. Traffic Volume
   d. Road Capacity

4. Data Analysis Method
5. Performance Road

Data Analysis

Obtained data from field is input For calculation Performance segment road with refers in the Capacity Manual Jalan Indonesia (MKJI), 1997 and Method Analytical namely the Greenshield model , the Greenberg model, the Underwood model .

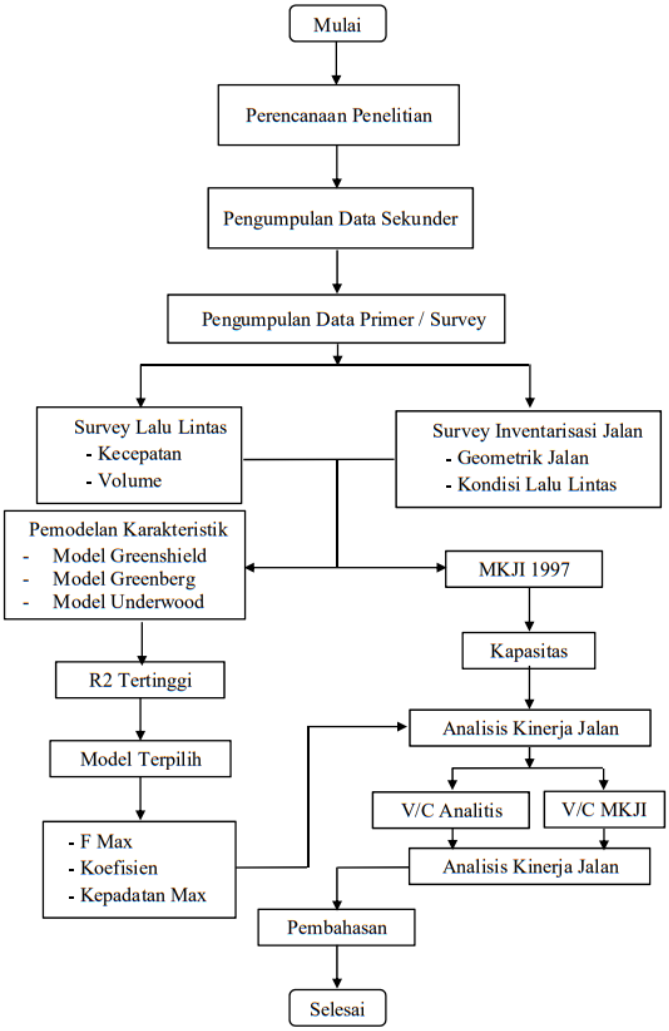

Figure 1 . Research Flowchart

4. RESULTS AND DISCUSSION

Data Description

On This section discusses the description of the data obtained from field observations. Aims to evaluate the performance of the Ahmad Yani Km 7.4 road near

Alfamart and Km.8 near Kalimantan Carwash Banjar Regency, Kalimantan The physical characteristics of this road segment consist of the geometry of the road sections and the profile of the road sections. Data is separated and carried out for one day. Based on the results of field observations, data obtained on Jalan Ahmad Yani can be seen in Table 1 .

Table 1 . Field Observation Results

No	Road Inventory Data	Information
1	Observation location	Jl . Ahmad Yani Km. 7, 4 and Km. 8
2	Road type	Six lane Two Direction Split (6/2 D)
3	One Way Lane Width	5.1m
4	Drainage Condition(Ka/Ki)	Drainage Permanent Closed
5	Market Use	Left Road

On location observation located on Jl. Ahmad Yani with type road six lane two direction divided (6/2 D), with obstacle And No There is resistance in the body road so that influential to condition traffic on Jalan Ahmad Yani .

Data Analysis Methods Analysis

Influence Obstacle To Characteristics So Cross

Table 2 Recapitulation of Traffic characteristics without Barriers and Barriers

Traffic Characteristics	Unit	No Barriers	There are Barriers	Percentage
Maximum Volume (Qmax)	junior high/hour	4748956	4736938	-0.253%
Maximum Speed (Sm)	km/h	14,247	14,211	-0.253%
Free Speed (Sf)	km/h	38,727	38,629	-0.253%
Condition Density (Dj)	junior high/hour	667	666	-0.100%
Maximum Density (Dm)	smp/km	333.3	333	-0.100%

MKJI Data Analysis Method

1. Calculation Capacity Road

Capacity base For 6 lane 2 way road divided on each direction on Jl. A. Yani Km 7 ,4 and Km 8 Kab . Banjar , with type alignment flat And be on the road urban in can Co value = (1650)+ (1650)+(1650) = 4950 pcu /hour. Factor adjustment wide track Then traffic (FCw) for 1 lane 1 direction divided with the width per lane of 3.50 meters is 1.0 . Factor adjustment Capacity (FCsp) for separator direction based on past volume cross , where For road urban 6 lane 2 way with separator direction 50%–50% = 1 .0 . Factor adjustment obstacle side (FCsf) on Jl. A. Yani Km 7.4 to obstacle side height (width shoulder 1 m) is 0.89 (km/h) and on Jl. A. Yani Km 8 to obstacle side medium (wide shoulder 1 m) is 0.93 (km/h). Factor adjustment size city (FCcs), where size amount resident Regency Banjar of 0.5 -1.0 million _ resident so that got value = 0.94 of values the can obtained mark Capacity Jalan A. Yani Km 6.6 Kab . Banjar are :

C (A. Yani Street Km 8)
= Co x FCw x FCsp x FCsf x FCcs
= 4950 x 1.0 x 1.0 x 0.93 x 0.94
= 4327 .29 junior high school / hour. (Without obstacles)

C (A. Yani Street Km 7,4)
= Co x FCw x FCsp x FCsf x FCcs
= 4950 x 1.0 x 1.0 x 0.89 x 0.94
= 4141 .17 junior high school / hour. (There Are Obstacles)

Comparison Results Analysis Between MKJI Method and Methods Analytical

From the results analysis from MKJI method and Method Analytical can We can know difference results from second Method . Results comparison results analysis second Method can seen on table 3.

Table 3 Comparison Results Analysis of MKJI Method and Method Analytics From The Way Without Barriers And Jalazan with Barriers .

Condition	Traffic Flow Volume		Percentage Difference
	MKJI	Analysis	
No Barriers	3321.20	3712.26	10.53%
There are Barriers	3316.20	3711.52	10.65%

Percentage Difference	0.15%	0.02%	

condition _	Capacity		Percentage Difference
	MKJI	Analysis	
No Barriers	4673.47	4327.29	7.41%
There are Barriers	4472.46	4141.17	7.41%
Percentage Difference	4.30%	4.30%	

Condition	DS		ITP	
	MKJI	Analysis	MKJI	Analysis
No Barriers	0.78	0.78	D	D
There are Barriers	0.80	0.78	D	D
Percentage Difference	2.50%	0.00%		

5. CONCLUSION

Based on the results of the research and discussion, it can be taken conclusion as follows:

1. Estimated Road Capacity based on the results of the comparison of the value of road capacity with MKJI 1997 Method and Method Analytical, the value of Road Capacity produced is almost the same the percentage of similarity is 7.41%. And percentage comparison resemblance to Capacity on the road with barriers compared to road without obstacles by 4.30% and has a road service level D. _
2. For differences in road performance in terms of traffic characteristic parameters from roads without obstacles to roads with almost the same obstacles but experiencing a decrease in road performance from roads with obstacles due to disturbances. The disturbance in question is market activity in the form of vehicles entering and leaving the market and vehicles parked on the shoulder of the road. As a result of the disturbance caused there is no significant change to road performance.

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