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Development Risk Management Mbah Buto Mojowarno Suspension Bridge on Regional Development

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Abstract

Infrastructure development in the form of roads and bridges is a government program in an effort to improve facilities and infrastructure. Infrastructure has a fairly strong relationship with social and environmental welfare for the development of a region. Bridges in Indonesia have progressed quite a lot. This is marked by the construction of several types of long bridges that connect one area to another. The construction of the Mbah Buto Suspension Bridge has a very positive role in increasing social activities, transportation facilities and improving the economy of the surrounding community. This study aims to determine the development of the area after the construction of the Mbah Buto Suspension Bridge. This research method uses descriptive quantitative method. The object of this research is the community around the construction site, using primary data sources in the form of questionnaire results, observations, and secondary data which includes supporting documents regarding development. The analytical method used is simple linear regression analysis using SPSS application in the form of validation test, reliability test, t test, and coefficient of determination test. The results of the study indicate that the Infrastructure Development in the form of the Mbah Buto Suspension Bridge has a very positive and significant role in social activities, transportation facilities and the economy of the surrounding community.

Keywords
Infrastructure Development, Risk management, Regional development.

1. Preliminary

Infrastructure or facilities and infrastructure have a very strong relationship to social welfare and environmental quality as well as to the process of economic growth of a region or region. This can be shown by indications that areas with better infrastructure systems usually have higher levels of social welfare and environmental quality as well as better economic growth (Departmen Pekerjaan Umum Badan Penelitian dan Pengembangan Pusat Penelitian dan Pengembangan Jalan dan Jembatan, 2006).

The influence in the era of globalization has a double impact, namely on the one hand this era brings population growth and increasingly unstoppable growth in transportation. In this case, the construction of the Mbah Buto Suspension Bridge is very important given the increasing volume of vehicles and almost uncontrollable. Therefore, the Ministry of Public Works and Public Housing (PUPR) has given the task of the Regional I National Road Implementation Unit of East Java Province to carry out the construction of the Mbah Buto Suspension Bridge so that adequate and proper infrastructure is met.

The method used in this research is descriptive method and survey method. Where the Descriptive Method explains and explains the results obtained from the formulation of the problem, for the Survey Method obtained from respondents as research samples using a questionnaire as a data collection instrument. Departing from the selection of studies regarding the impact of the construction of the Mbah Buto Suspension Bridge on the development of the Jombang Regency area, the title of the thesis is "Analysis of Risk Management of the Construction of the Mbah Buto Suspension Bridge on Regional Development"

2. Research Methods

The data used in this study were obtained from the study of literature and the distribution of questionnaires to the parties concerned in order to complete the analysis carried out. Processing data from the questionnaire using the Likert scale method to determine the risk to be analyzed using the quantitative risk analysis method (Nazir, 2011).

The conceptual framework for research on bridges can be described as follows:

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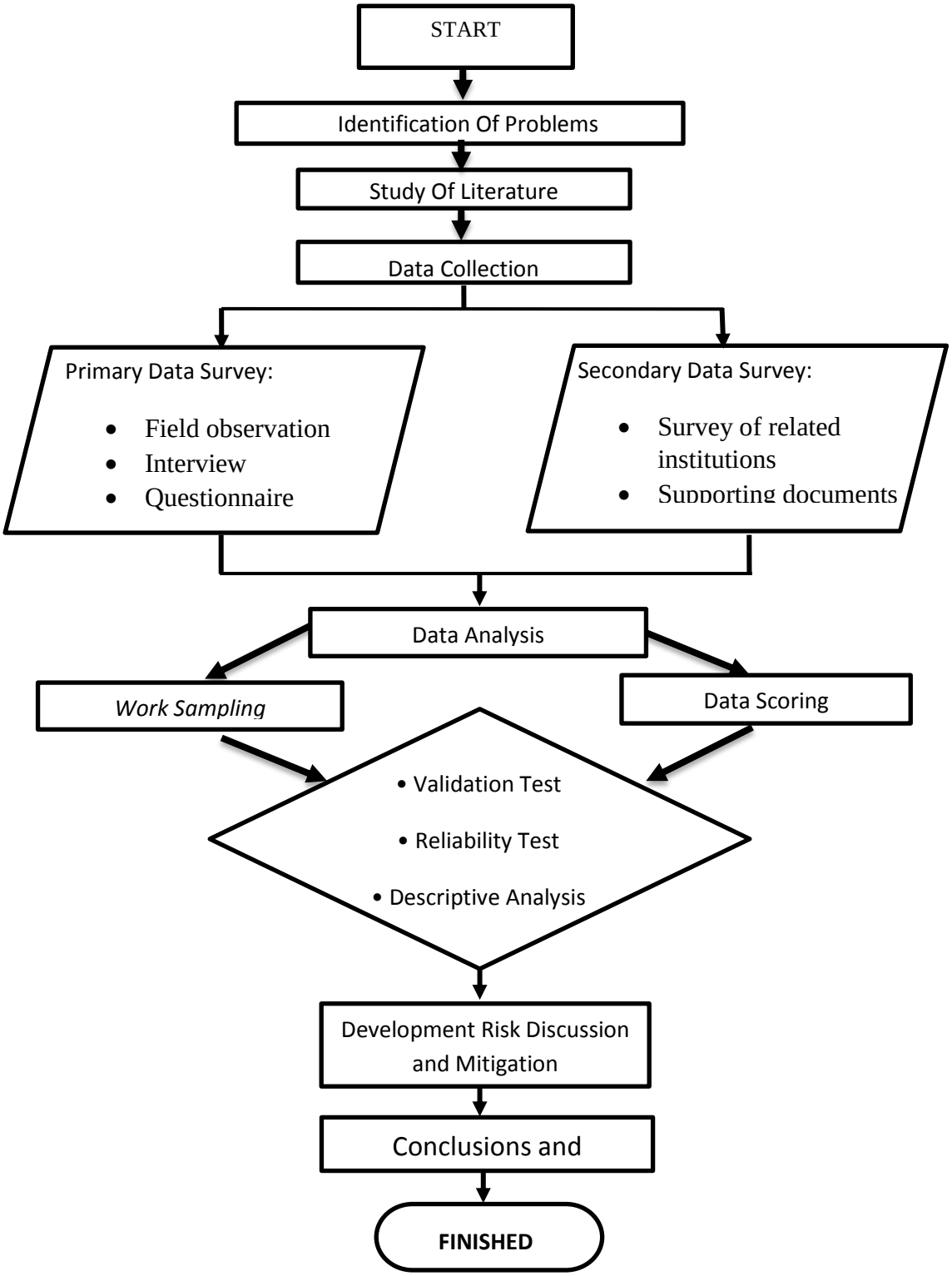

Figure 1.

2.1 Questionnaire Data

The questionnaire was conducted by distributing questionnaires to the respondents as many as 100 questionnaires. The number of respondents' samples was taken from the approach according to Slovin's emulation.

$$n = \frac{N}{1 + N(e)^2}$$

Information:
N = Sample size/number of respondents
N = Population size
E = Percentage of allowance for accuracy of sampling error that can still be tolerated;
e = 0.1
In the Slovin formula there are the following provisions:
The value of e = 0.1 (10%) for a large population
The value of e = 0.2 (20%) for a small population
So the range of samples that can be taken from the Slovin technique is between 10-20% of the research population.(Nanang, 2012)

The total population in this study was 107 employees and 4,193 residents, so the percentage of allowance used was 10% and the calculation results could be rounded up to achieve conformity. So to find out the research sample, with the following calculations:

$$n = \frac{4.300}{1 + 4.300(0,1)^2}$$

$$n = \frac{4.300}{1 + 4.300(0,01)}$$

$$n = \frac{4.300}{1 + 4.300(0,01)}$$

$$n = \frac{4.300}{44}$$

$n = 97,7$; adjusted by the researcher to 100 respondents.

3. Result and Discussion

Compilation of Respondent's Description

The distribution of respondents' answers to the infrastructure development variable can be seen in the following table:

Table 1. Deskripsi Responden Variabel Pembangunan Infrastruktur

Question	SS		S		KS		TS		Total	
	F	%	F	%	F	%	F	%		
X 1	54	54%	46	46%	0	0	0	0	100	100%
X 2	0	0	0	0	36	36%	64	64%	100	100%
X 3	66	66%	34	34%	0	0	0	0	100	100%
X 4	72	72%	28	28%	0	0	0	0	100	100%
X 5	78	78%	22	12%	0	0	0	0	100	100%
X 6	70	70%	30	30%	0	0	0	0	100	100%
X 7	66	66%	34	34%	0	0	0	0	100	100%
X 8	0	0	64	64%	36	36%	0	0	100	100%
X 9	0	0	0	0	32	32%	68	68%	100	100%
X 10	66	66%	34	34%	0	0	0	0	100	100%

3.1 Validity Test

Validation test is used to measure the determination of an item in the questionnaire or scale that you want to measure. In determining whether or not the item is valid. Sunarti, (2012)To find out the level of validity, a validity test will becarried out first using IBM SPSS software, while the output results can be seen from the following table:

3.2 Validity Test Table

Table 2.

Case Processing Summary		N	%
Cases	Valid	100	100.0
	Excluded	0	.0
	Total	100	100.0

Source : Researcher's

In the Case Processing Summary table, it can be seen that the Cases Valid row states that the number of respondents is 100 and the percentage shows 100%, this indicates that the 100 respondents are valid and no respondents are included in the Excluded category. Then, to find out whether the results of the calculation of the data are reliable and consistent or reliable, it can be seen in the Reability Statistics table. Like the table below:

Table 3. Results Reliabilitas

Reliability Statistics	
Cronbach's Alpha	N of Items
.592	10

Source : Researcher Calculation

The results of the Cronbach's Alpha reliability test calculation (r count) can be seen in the Cronbach's Alpha column, which is 0.592 with N of Items indicating that the number of items or the number of statements that the researcher inputs is 10. So it can be said that the results of Cronbach's Alpha for 10 data or 10 statement, which is 0.592

3.3 Simple Linear Regression Analysis

Simple regression analysis is used to predict or test the effect of one independent variable or independent variable on the dependent variable or dependent variable. If the score of the independent variable is known, then the score of the dependent variable can be predicted. Regression analysis can also be done to determine the linearity of the dependent variable with the independent variable. The simple regression model shown to predict the value of the Infrastructure Development variable, from the results of research data processing as follows:

Table 4. Simple Linear Regression Analysis Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1.000	.000		-4421675.638	.000
With the bridge, it can improve the economy of the surrounding community	1.000	.000	.230	36998596.474	.000
The existence of a bridge has a negative impact on the surrounding environment	1.000	.000	.222	37935886.838	.000
There are many benefits of having a bridge	1.000	.000	.219	37513210.263	.000
Residents are happy with the new infrastructure	1.000	.000	.208	34981983.775	.000
With the new infrastructure, residents can carry out activities well	1.000	.000	.192	32268719.150	.000
The new bridge contributes a lot to residents' activities	1.000	.000	.216	33873304.320	.000
The new bridge doesn't support anything	1.000	.000	.216	32291622.512	.000
With the bridge, residents can work well	3.000	.000	.657	95303472.546	.000

Source: Researcher's Calculation

R2 Test (Coefficient of Determination)

The value of the coefficient of determination is between 0 and 1. The value of the coefficient of determination that is close to 0 (zero) means that the ability of all independent variables to explain the dependent variable is very limited, while the value of the coefficient of determination that is close to 1 means that the independent variable almost provides the information described to predict the variation of the dependent variable.

4. Conclussion

Based on the research, the researchers concluded as follows:

1. From the respondents' descriptions, local residents on average strongly agree that infrastructure development in the form of the Mbah Buto Suspension Bridge has a positive impact. As in statement 5 (X5) with a percentage gain of 78% of respondents, for respondents who chose to agree had the highest percentage value as much as 64% of respondents were in statement 8 (X8), while for respondents who did not agree the highest was in statement 8 (X8) and statement 2 (X2) as many as 72 respondents, for respondents who chose to disagree the most were in statement 9 (X9) as many as 68% of respondents.
2. The results of the survey on community satisfaction with infrastructure in the form of bridges. With 100 respondents, with percentage results, Dissatisfied = 13.2%, Less Satisfied = 10.4%, Satisfied = 29.2%, Very Satisfied = 47.2%. it can be concluded that the average community around is very satisfied with the new infrastructure in the form of the Mbah Buto Suspension Bridge.
3. For handling the risk of statement 10 (X10) it can be done by avoiding activities that can interfere with the activities of residents when crossing the bridge. Like selling in the bridge area, because it causes crowds and congestion in the bridge area. Meanwhile, the handling of the risk of statement 2(X2) can be done by reducing waste disposal in the bridge area by recycling it to become a new form or a new function.

4. Suggestions

Based on the research above, the suggestions that researchers put forward are:

1. This research can later be developed with periodic improvements, with the limitation that this research does not check the soil density and mud content in the radius around the bridge, where the mud content can also affect the elevation in the next few years.
2. There needs to be awareness from both the project implementer and the surrounding community, that this bridge project is a project that is useful for the public interest. So, from any party, it is hoped that

they will not take their own advantage and forget that the purpose of this project is to be in the public interest.

3. Further research is needed to improve this research by increasing the number of data samples to be studied and extending the research period so that the results obtained are accurate and varied. Furthermore, it is expected to expand research so that more knowledge can be obtained.

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Biography / Biographies

Ita Zeftin Trisnawati, born in the city of Surabaya on September 9, 1995. is the eldest of two children. My father's name is Sutrisno (late) and my mother's name is Dwi Harini. My father was born in Surakarta on 25 June 1963 and my mother is the same as my father's birthplace on 15 April 1964. I have been through Education at PKK Kalijudan Surabaya Kindergarten, Kalijudan Public Elementary School II Surabaya, 18 Surabaya Junior High School, 6 Surabaya State Vocational School and studied at the University Narotama Surabaya. While studying, he participated in a bridge competition held by another university. That's what adds to my experience. And when he was in college, he also participated in organizations that were on campus which further added to his experience in organizing.