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THE ANALYSIS OF DELAY IMPLEMENTATION RISK SPATIAL BALANCE INTEGRATION MAPPING PROJECT IN THE CILIWUNG-CISADANE RIVER AREA

Yudi Firmansyah[1], Pio Ranap Tua Naibaho[2]
[1,2]Master Program in Civil Engineering, Faculty of Engineering, Tama Jagakarsa University, Jakarta
Email: *firmansyah7474@gmail.com[1], piorthnaibaho@gmail.com[2]*

Abstract

Consulting Service jobs often have high complexity; only some of these jobs experience delays in completion. The delay has a significant impact on both the employer and the party that is responsible for carrying out the activity. The uncertainty extremely influences both of these parties. In this study, an examination of the factors that carry a high potential for resulting in delays in the completion of activities is carried out. This investigation classified risk factors into one of three categories according to the implementation stage. They are variable components of support for the implementation of work, technical implementation of work, and assistance/supervision of activities. Factors with a high level of risk are then responded to with a risk response as a step to follow up on these risk factors. As for minimizing risk, the Risk Reduction method is used.
Keywords*: Risk analysis, Spatial Balance Integration.*

INTRODUCTION

Spatial Account, Integration Mapping activities will not be separated from implementation risks, starting with preparation, implementation, and post-production activities as the finalization stage of activity outputs. Proper risk management is very much needed for an activity's success and smooth running. If the individual or group responsible for acting fails to take the necessary precautions, the large scale of the action will make the risks that come up more severe and more difficult to carry out.

The factors that lead to natural disasters include landslides, droughts, and floods, which are all caused by environmental damage. One of the factors that are said to affect the occurrence of natural disasters is damage to the upstream DAS or watershed, which is the area that serves as the water catchment area. The destruction of watersheds is supported by the increase in the utilization of natural resources, which is the impact of increasing population, conflicts of interest, economic development, and the lack of synchronization between upstream, midstream, and downstream sectors and regions, especially in the era of regional autonomy. The boundaries of watersheds, which automatically serve as natural boundaries for various aspects of resources such as water and upstream-middle-downstream resources, should become the boundary unit for environmental management; however, in practice, elements of watershed boundaries are often forgotten when regional administrative boundaries influence development implementation. It is because watershed limitations automatically serve as natural boundaries for various aspects of resources.

She quoted from the statement of Environment and Forestry Minister Siti Nurbaya in a seminar entitled "Coastal and watershed management" at Gajah Mada University on Tuesday, September 26,

2017. Currently, 2,145 of the 17,000 watersheds in Indonesia are polluted. One hundred eight of them have been damaged. Responding to this condition, through the RPJM of 2015-2019 stipulated in Presidential Decree No. 2 of 2015, the government has prioritized restoring 15 watersheds that could cause environmental damage. Two of the fifteen priority watersheds are the Ciliwung and Cisadane watersheds. These watersheds are included in the Ciliwung Cisadane River Area (WS).

One of the steps in watershed recovery is integrated watershed management. Integrative watershed management is manifested in the stage of management and application of policies and the activities related to the processing of natural resources in a watershed as a whole through consideration of several physical, economic, institutional, and social aspects in and around the watershed in order to achieve the desired goals.

Integrated management of watershed natural resources as an indicator of watershed direction must present integrated upstream-mid-downstream natural resource geospatial information within a certain timeframe that can be used as a parameter to measure whether or not the management is good. The integrated natural resource geospatial information can also be used for spatial planning analysis and future projections. The integrated natural resource balance applies the comprehensive analysis of the changes in spatial functions over a certain period, which is intended to determine the rate of land conversion for each part or purpose, both qualitatively and quantitatively. Changes in spatial function, which usually only cover one type of indicator, such as forest or mangrove forest, cannot impact integrated watershed management, so it is necessary to assess changes in land cover function covering the entire watershed area. The continuity of this kind of activity will positively affect watershed management for all stakeholders.

The method used by integrated natural resource mapping is sensing technology. Today, remote sensing (aerial photography or satellite imagery) is widely used in several interests related to natural resource inventory procedures and area expansion because the area is large, provides the latest or most *up-to-date* information, delivers levels of needs and details, and is very easy and affordable to obtain. Users' selection of satellite imagery is based on several considerations: area coverage, speed or ease of getting data, suitability of data quality that can meet data needs, data price, and availability of data management *software* and *hardware*. Geospatial information on natural resources can be implemented using remote sensing satellite data instruments or spatialization of non-spatial data on natural resources into thematic geospatial information on natural resources. Mapping the dynamics of integrated natural resources has a new concept that natural resources are seen as a series of processes that directly or indirectly influence each other. The aspect of dynamic mapping is organizing thematic geospatial information to discover changes in the elements of the resources studied and the types of resources reviewed by more than one type. An example is mapping the dynamics of water resources, which are, in fact, heavily influenced by forest resources as a factor in evaluating water resource reserves and land resources as a factor in assessing the use of water resources.

Thus, mapping from the dynamics of integrated natural resources is expected to provide a more

significant output in watershed management in the future. The number of components that must be calculated and analyzed increases the risk of failure in carrying out activities based on predetermined schedules and targets. Failure can impact both parties—the executor of the action and the giver of the movement. In addition to the material losses received, losses from the GPA can also be attached to both parties.

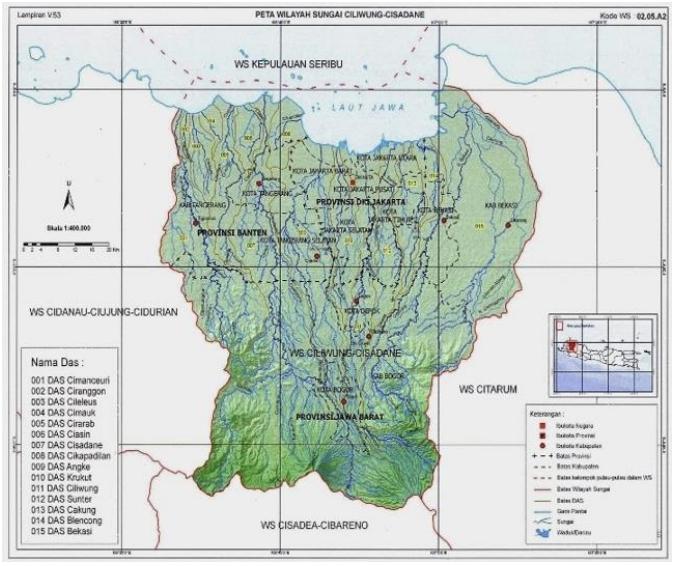

Figure 1. Map of the Study Area

Even though the event has not impacted the implementation of activities, it will likely become an obstacle in these activities and work if it is about the risks that will be accepted. The maximum delay time for government activities is 50 days based on Presidential Regulation Number 70 of 2012 to complete work according to that time. If there is a delay of more than 30 days, the contract must be terminated, resulting in the disbursement of the performance guarantee is 5% of the contract value and inclusion in the *blocklist*.

Based on the elaboration above, this study aims to provide an overview of the risks that may arise in carrying out activities. It can mitigate and assess known threats, especially dominant risks, to achieve activity objectives.

Problem Formulation: (1) What risks may occur in the work of the Spatial Balance Integration Mapping Project in the Ciliwung Cisadane River Basin? (2) How to deal with risks that occur in the work of Integration Mapping Activities

THEORETICAL FOUNDATION

Definition and Terminology

1) Risk Management

Several definitions can be given to the term risk. However, the risk is generally about the possibility of negative impact events or impacts that cause losses such as loss, opportunity, fire, injury, and others. Good risk management can optimize the success of activities (Santosa, 2009).

Project Management Institut Body of Knowledge (PMBOK) divides the definition of risk into three, they are:

a) Risk management is a formal stage by the risk factors from a system of identification, interpretation, and determination.
b) Risk management is a formally coherent management method that focuses on controlling and identifying activities with causal forces for change.
c) Risk management in the context of activities is the art and insight of science in identifying and responding to risk factors comprehensively in the life of action.

2) Definition of Risk

According to the Project Management Institute, the risk is a phenomenon or dubious atmosphere that, if it occurs, will have a negative and positive effect on the performance of activities in terms of quality, time, and cost (Project Management Institute, 2008). Risk is a condition that arises due to doubt and has a certain chance of happening, which, if it happens, will have an adverse impact. Moreover, risk in activities is a condition that arises due to doubts about the possibility of certain events that, if they occur, will have adverse physical or financial impacts on achieving activity targets, namely quality, time, and cost of activities (Dewi N. P., 2013).

3) Standards and Guidelines of Risk Management

Guidelines and standards that can be used in compiling risk management research are:

- *Association for Project Management, UK (1997), PRAM Guide*
- *Office of Government Commerce (OGC), UK (2002), Management Risk.*
- *Project Management Institute* (2008).
- *Treasury Board of Canada (2001), Integrated Risk Management Framework*
- *Project Management Body of Knowledge, Chapter 11 on risk management.*
- *AS/NZS 4360 (2004), Risk Management, StandardsAssociation of Australia*
- *IEC 62198 (2001), Project Risk Management – Application Guidelines*

These guidelines and standards only outline the main topics of activity management and provide little insight into how risk management processes can be implemented in activities. Most of these guidelines and standards have the same structure when compiling an analysis of activity management, although they often use different terms (Siswanto, 2011).

4) Risk Management Process

The Project Management Institute (2008) defines the risk management process as a systematic approach to identify, evaluate, and respond to risks that can be implemented by all parties, at all levels of management, and all phases of the life cycle of activities by emphasizing risk assessment

when analyzing quantitative and qualitative risks. Therefore, a risk management process includes risk management planning, identification, qualitative and quantitative risk analysis, risk response planning, and risk control (Max, 2013).

5) Planning risk management considers what is to be implemented through several sources owned. Planning aims to set broad goals and determine the best way to fulfill them. The manager evaluates several alternative plans before deciding and then reviews the selected program to determine whether it is appropriate and can be used to meet these objectives. Planning is the main process of a series of management functions because, without a plan, other parts cannot be carried out (Wibisono, 2010).

   Risk management planning determines the remaining risk management efforts. It involves determining how to implement, who needs to be applied, when risk management activities should be carried out during the activity implementation cycle, and the intensity of the activities they carry out (Mulcahy, 2010).

Risk Identification and Classification

The following is the basic framework of the procedure for the implementation of risk decision-making:

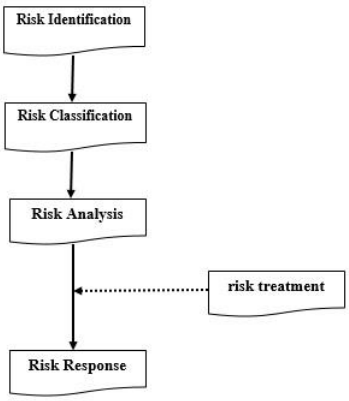

Figure 2. General Framework of Risk Management (Source: Flanagan, 1993)

Risk Identification

1) Risk Classification

   The risks encountered during software development activities can be categorized into several classifications: management risk, financial risk, technical risk, human resource risk, resource risk, and contract and legality risk (Yulianto, 2012).

2) Risk Analysis

   Risk reduction requires analysis to break down the impact on activities. The effect of the risk of the possibility of risk x the impact of risk (Joni I. G., 2012).

3) Qualitative Risk Analysis

   The qualitative method is a type of research that produces various findings that cannot be realized or obtained by using statistical procedures or other forms of measurement or quantification.

4) Quantitative Risk Analysis

   Quantitative risk analysis is an attempt to analyze how big the risk is in an activity so that all parties can spend limited time and effort in the areas of greatest risk to reduce risks.

5) Risk Response

   Risk response is dealing with risks that may occur to determine what can be done to minimize the comprehensive risk of activities by reducing the possibilities and consequences of threats and increasing the probabilities and values of opportunities (Mulcahy, 2010).

Risk Monitoring and Control

Risk control and review include monitoring known risks, identifying the latest threats, minimizing risks, and comprehensively improving the effectiveness of risk reduction in life activities (Kartika E., 2014).

METHOD

The research method being used is the descriptive quantitative method, which is carried out through the implementation of surveys. The purpose of these surveys is to obtain the opinions of respondents regarding the risks that are associated with the Spatial Balance Integration Mapping activity that is taking place in the Ciliwung Cisadane River Area.

Research Location

The Miranthi Konsultant Permai Office Jl carried out the location of the research: Maleer no.40 Bandung and the Geospatial Information Agency Jl. Raya Bogor-Jakarta no 46 Cibinong Bogor, and the implementation location was in the Ciliwung Cisadane River Area.

Research Respondent Sampling

This study used purposive sampling techniques for sampling.

Table 1. Respondents in the Research

No	Respondent
1	Consulting Management
2	Consulting Experts
3	Expert Assistant
4	PPK Spatial Mapping and Atlas
5	Engineering Implementation

This study's population is the owner and the supervisor/consultant. The sample used is based on the respondent's criteria, namely: a minimum of 5 years of experience; cooperation; and reputation; namely, the criteria for an expert having more than 15 years of experience in their field; having a good reputation in the reconstruction sector; and having a supporting education in this field.

Data Types and Data Sources

Questionnaires were used to obtain primary data, field investigations, and interviews with various parties relevant to this research. Meanwhile, data sources were obtained from diverse literature related to the research object.

Data Analysis

1) Validity Test

   This validity test uses *Pearson Correlation* by calculating the correlation between the score of each question item and the total score. If the correlation between the score of each question item and the total score has a significance level below 0.05, the question item is declared valid or vice versa (Ghozali, 2009).

2) Reliability Test

   A questionnaire is called reliable if someone's answers in the questionnaire are stable or steady from time to time. A questionnaire is reliable if it has a Cronbach's alpha value of more than 0.6 (Ghozali, 2009). The decision-making process in the reliability test is as follows:

   a. *Cronbach's alpha 0. 8* = good reliability
   b. *Cronbach's alpha 0. 6-0. 79* = acceptable reliability
   c. *Cronbach's alpha< 0. 6* = bad reliability (Mathar, 2013)

   In this study, reliability testing was carried out using only one measurement or one shot. The measurement here is only once, and then the result is compared with other questions or measured for reliability using statistical tests of *Cronbach Alpha* (α).

3) Classical Assumption Test

   - Multicollinearity Test
   - Normality test
   - Autocorrelation test
   - Heteroscedasticity test
   - Multiple Linear Regression Analysis
   - Hypothesis test
   - Partial test (T-test)
   - Risk Probability Assessment

Research Area

The integration mapping work of the spatial balance from natural resources, which is the object of this research, is located in the Ciliwung Cisadane River area. The catchment area of the Ciliwung Cisadane River Area is located on Mount Gede-Pangrango and Mount Salak, which flow through several administrative regions such as Jakarta, Bekasi, Tangerang City, Tangerang Regency, Bogor City, and Bogor Regency.

RESULTS AND DISCUSSION

Research Data Analysis

This study discusses the Risk Analysis of delays in the integration mapping work of the spatial balance from natural resources. Respondents in this study were experts from PT. Miranthi Permai, PPK and BIG Technical team, technical team of related SKPD/ministerial institutions. The identification of respondents was carried out according to age, education, and gender. The results of the frequency distribution of respondents based on gender can be reviewed as follows:

Table 2. Description of Respondents by Gender

Gender	Amount	Percentage (%)
Man	25	81%
Woman	6	19%
Amount	31	100%

Source: Processed research data, 2020

Based on the table above, it can be concluded that there were 31 respondents (100%): 25 male respondents (81%) and six female respondents (19%). It shows that the majority of respondents are male.

Table 3. Description of Respondents by Age

Age	Amount	Percentage (%)
< 25 years	4	13%
25 - 35 years	13	42%
35 - 45 years	9	29%
> 45 years	5	16%
Amount	31	100%

Source: Processed research data, 2020

Based on the table above, it can be concluded that there were four respondents (13%) of the 31 respondents studied aged < 25 years, aged 25-35 years, 13 respondents (42%) of the 31 respondents looked, aged 35-45 years, nine respondents (29%) from 31 respondents studied, and respondents aged >45 years of 5 respondents (16%). Based on this, it shows that most respondents are over 35-45 years old.

Table 4. Description of respondents by education

Education	Amount	Percentage (%)
D3	3	10%
S1	20	65%
S2	5	16%
S3	3	10%
Amount	31	100%

Source: Processed research data, 2020

Based on the table above, it can be concluded that there were three respondents (10%) out of 31 respondents studied with D3 education, there were 20 respondents (65%) from 31 respondents looked with S1 education backgrounds, there were five respondents (16%) from 31 respondents studied with S2 education, and three respondents (10%) from 31 samples analyzed with S3 Bachelor education. It shows that the majority of respondents are S1 educated.

Table 5. Description of respondents by the institution

institute	Amount	Percentage (%)
TA PT.MKP	11	35,5%
BIG (PPK, PTRA)	9	29%
Lembaga/Kementrian	11	35,5%
Jumlah	31	100%

Source: Processed research data, 2020

Based on Table 6, it is known that respondents from PT Miranthi's TA were 11 people, or 35.5%; from PPK/PTRA BIG, as many as nine people, or 29%; and from related ministry institutions, as many as 11 people, or 35.5%.

Data Quality Test Results

1) Validation Test

The validity test is carried out by comparing r tables with r counts using the product-moment correlation coefficient formula presented by Pearson; that is, if r tables <r counts, it can be considered valid, and vice versa. Obtaining r tables is carried out with r product moment tables, namely installing alpha = 0.05 and n (Sample) = 31 people to get an r table value of 0.291. Therefore, the results of the validity test can be displayed as follows:

Table 6. Validity Test Results for Job Supporting Component Variables (X1)

No	r Count	r Table	Information
1	0,444	0,291	Valid
2	0,549	0,291	Valid

No	r Count	r Table	Information
3	0,486	0,291	Valid
4	0,480	0,291	Valid
5	0,351	0,291	Valid
6	0,619	0,291	Valid
7	0,604	0,291	Valid
8	0,470	0,291	Valid
9	0,711	0,291	Valid
10	0,519	0,291	Valid

Source: SPSS Output Data 22, 2020

According to Table 7, the ten items of the Work Support Component (X) instrument can be valid because the r table <r count so that the statement can be used in this study. The results of the validity test on 26 items of variable statement instruments. Spatial Work Implementation Techniques, as follows:

Table 7. Results of Validity Test of Technical Variables of Work Implementation (X2)

No	r Count	r Table	Information
1	0,760	0,291	Valid
2	0,481	0,291	Valid
3	0,527	0,291	Valid
4	0,512	0,291	Valid
5	0,385	0,291	Valid
6	0,392	0,291	Valid
7	0,461	0,291	Valid
8	0,439	0,291	Valid
9	0,616	0,291	Valid
10	0,437	0,291	Valid
11	0,361	0,291	Valid
12	0,466	0,291	Valid
13	0,523	0,291	Valid
14	0,487	0,291	Valid
15	0,558	0,291	Valid
16	0,418	0,291	Valid
17	0,760	0,291	Valid
18	0,481	0,291	Valid
19	0,527	0,291	Valid
20	0,512	0,291	Valid

No	r Count	r Table	Information
21	0,385	0,291	Valid
22	0,392	0,291	Valid
23	0,461	0,291	Valid
24	0,439	0,291	Valid
25	0,616	0,291	Valid
26	0,437	0,291	Valid

Source: SPSS Output Data 22, 2020

According to Table 8 above, it can be understood if the five items of variable instrument statements from the achievement of work results/outputs (Y) can be declared valid because the r table <r count so that the information can be used in this study.

2) Reliability Test

The reliability test tests the consistency of measuring instruments and whether they produce stability when measurements are repeated. Inconsistent questionnaire instruments mean reliability in size, so the results cannot be trusted. The reliability test often used in research is the Cronbach alpha method. Items are declared reliable if Cronbach Alpha > 0.60 and vice versa. If < 0.60, then they are declared unreliable (Priyatno, 2016: 154). Below is a table of the results of distributing the questionnaires carried out in this study:

Table 7. Results of the Case Process Statement Questionnaire

Case Processing Summary

		N	%
Cases	Valid	31	100.0
	Excluded[a]	0	.0
	Total	31	100.0

a. Listwise deletion based on all variables in the procedure.

Source: SPSS Output Data 22, 2020

According to Table 8 above, if all statement instruments for all variables from 28 respondents are declared 100% valid, then they can be used in collecting data for analysis research on work support components for spatial integration mapping work on natural resource balances.

Table 8. Statement Questionnaire Reliability Test Results

Reliability Statistics

Cronbach's Alpha	N of Items
0,862	31

Source: SPSS Output Data 22, 2020

According to Table 9 above, Cronbach's alpha value is greater than 0.60. It shows that according to the data, the questionnaire statements for all variables can be declared reliable, or, in other words,

the instrument is consistent and reliable.

Classical Assumption Test Results

1) Normalise Test Results

The normality test is one part of the data analysis requirements test or the classical assumption test, or the data analysis requirements test, meaning that before carrying out statistical analysis in testing the hypothesis in this study, namely regression analysis, the research data must be tested for normal distribution. The basis for making decisions in the K-S normal test is as follows:

(a) If the significant value (Sig) is less than 0.05, the research data is not normally distributed.

(b) Conversely, the research data is normally distributed if the significant value (Sig) is greater than 0.05.

The normality test can be predicted by looking at the distribution of points on the diagonal axis from the normal p-plot graph. The basis for making decisions is if the data or several points spread around the diagonal line and follow the diagonal line, it shows the form of a normal distribution, and the regression model fulfills the normality assumption. This regression model is sufficient for normality or cannot be seen in Figure 3 below:

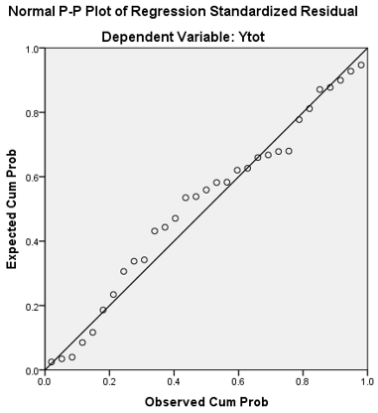

Figure 3. Normal P-Plot Graph

2) *Multicollinearity* Test Results

To know the multicollinearity in this study, it can be seen from the VIF and tolerance in the Coefficients¬¬a table. The basis for making decisions is that if the VIF value is greater than 10 and the tolerance value is less than 0.1, it means that the regression model in this study is free from multicollinearity.

Table 9. Multicollinearity Test Results

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	X1tot	0,310	3,225
	X2tot	0,533	1,878
	X3tot	0,354	2,828

a. Dependent Variable: Ytot

Source: SPSS Output Data 22, 2020

By Table 10 above, it can be understood that the regression model does not have multicollinearity disturbances. It can be seen from each variable having a tolerance value of 1.891, which is > 0.1, and the VIF value of each variable is 1.891, which is <10. So it can be understood that there is no multicollinearity

3) *Heteroscedasticity* Test Results

Heteroscedasticity aims to find out whether the data used is free from heteroscedasticity or not; they are variations in values that change or are unstable. It can be shown in Table 11 below:

Table 10. *Heteroscedasticity* Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-7.539E-16	1,939		0,000	1,000
	X1tot	0,000	0,092	0,000	0,000	1,000
	X2tot	0,000	0,050	0,000	0,000	1,000
	X3tot	0,000	0,164	0,000	0,000	1,000

a. Dependent Variable: Unstandardized Residual

Source: SPSS Output Data 22, 2020

Table 11 shows that the heteroscedasticity test of the calculation of each variable shows the sig level > β, so this study is free from heteroscedasticity and feasible to do research.

Multiple Linear Regression Analysis

1) Multiple Linear Regression Analysis Test Results

The multiple linear regression analysis used in this study aims to identify the influence of the independent variable on the dependent variable. The summary of the results of data processing using the SPSS version 22 program is as follows:

Table 11. Multiple Linear Regression Analysis Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-7.539E-16	1,939		0,000	1,000
	X1tot	0,000	0,092	0,000	0,000	1,000
	X2tot	0,000	0,050	0,000	0,000	1,000
	X3tot	0,000	0,164	0,000	0,000	1,000

a. Dependent Variable: Unstandardized Residual

Source: SPSS Output Data 22, 2020

According to the table above, the following regression equation results are obtained:

$$Y = b_0 + b_1X_1 + b_2X_2$$

$$Y = 17, 512 + 0. 338\ X_1 + 0, 532\ X_2$$

The meaning of the above model is as follows:

a) Constants = 2,800

If Work Support Components and Technical Work Implementation variables are 0, then the output result or output mapping value is 2,800.

b) Coefficient of Work Support Components (X_1) = 0, 122

It means that if the Work Support Component is increased by 1 unit, then the mapping output will decrease by 0.122.

c) Technical Coefficient of Work Execution = 0, 086

It means that if the Technical Implementation of Work is increased by 1 unit, the work output results will increase by 0.086.

d) Technical Coefficient of Work Execution = 0, 798

It means that if the Technical Implementation of Work is increased by 1 unit, then the Work Output Results will increase by 0.798

2) T Test (Partial)

The T-test aims to identify the influence of ork support components (X_1) and work implementation techniques (X_2) partially on the mapping output results (Y) of PT. Miranthi Consultants used a t-test to obtain a t-table value of 2.048 from the measurement results using SPSS version 22, and t-count results were obtained as shown in the table below:

Table 12. T-test results of the influence of variables X_1 and X_2 on Y

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6,408	2,330		2,750	0,010
	X1tot	0,295	0,072	0,604	4,083	0,000

a. Dependent Variable: Ytot

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5,270	2,589		2,035	0,051
	X2tot	0,212	0,052	0,607	4,112	0,000

a. Dependent Variable: Ytot

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,907	1,592		2,455	0,020
	X3tot	0,754	0,100	0,815	7,562	0,000

a. Dependent Variable: Ytot

Source: SPSS Output Data 22, 2020

By Table V.13, it can be concluded that the Job Support Component variable (X1) is obtained with tcount > ttable; it is 5.251 > 2.048 with a total significance value of 0.306 > 0.000. Therefore, Ho is rejected. It proves that the job-supporting component variables partially affect the mapping output (Y). The partial test of Technical Work Implementation (X2) obtained t calculate < t table which is 0.612 < 2.048 and significance value which is 0.291 < 0.546 then Ho is accepted. It shows that the Technical Variables of Work Execution do not partially influence the Mapping Output (Y).

3) Test Results for the Coefficient of Determination (Adjusted R^2)

Analysis, or the coefficient of determination (R^2), is used to identify the percentage contribution of the independent variable simultaneously to the dependent variable. Based on the results of the Model Summary table, the following R^2 (R Square) values can be identified:

Table 13. Determination Coefficient Test Results (R^2)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,838[a]	0,702	0,668	0,96065

a. Predictors: (Constant), X3tot, X2tot, X1tot

Source: SPSS Output Data 22, 2020

According to Table V 14, it can be seen that the value of r square is 0.702. It can be interpreted if the independent variables (Job Supporting Components and Integration mapping) can explain the dependent variable (output/mapping output), which is 70%. In comparison, the remaining 30% is explained by other factors not examined in this study.

High-Risk Statistical Analysis

Statistical analysis of risks that have a high class is taken from the results of probability class weighting and assessment of 31 case statements divided into three variables; they are ten statements for the variables of Work Support Components, 16 ideas for Technical variables of Work Implementation, and five words for Mapping outputs/outputs. From the weighting results, the lowest to highest weight values maybe 0 to 5. So, if the class is divided into four categories, the range of existing class weights is:

Table 14. Risk Class Division

No	Weight Range	Class
1	0 – 1,25	Low
2	1,26 – 2,5	Medium
3	2,6 – 3,75	Tall
4	3,76 - 5	Very high

Table 15 shows 31 cases; four case statements were assigned a Low class, and nineteen were assigned a medium type. Also, eight were given a high class. The following table presents the risk level of WSCC spatial balance sheet integration mapping work.

Table 15. Risk Level Matrix

Case	Variable		Weight	Class
	Probability	Valuation		
1	4	0,7	2,80	T
2	4	0,58	2,32	M
3	2	0,52	1,03	L
4	3	0,65	1,94	M
5	2	0,74	1,47	M
6	3	0,59	1,78	M

Case	Variable		Weight	Class
	Probability	Valuation		
7	3	0,73	2,19	M
8	2	0,51	1,02	L
9	1	0,71	0,71	L
10	2	0,70	1,39	M
11	4	0,72	2,86	T
12	4	0,58	2,32	M
13	3	0,70	2,09	M
14	4	0,68	2,74	T
15	4	0,67	2,68	T
16	3	0,68	2,03	M
17	3	0,65	1,94	M
18	2	0,60	1,20	M
19	4	0,68	2,74	T
20	3	0,55	1,66	M
21	3	0,57	1,70	M
22	4	0,46	1,83	M
23	4	0,70	2,81	T
24	3	0,59	1,76	M
25	2	0,68	1,35	M
26	2	0,50	1,01	L
27	4	0,77	3,09	T
28	4	0,64	2,54	M
29	4	0,58	2,31	M
30	3	0,71	2,12	M
31	4	0,82	3,29	T

Source: Analysis 2020

Based on the data presented in Table V. 16, 8 cases of statements fall into the high-risk class. The cases of these statements are as follows:

1) Statement number 1: "TA must have a background that is in accordance with the spatial balance sheet integration mapping work." In this statement, about 48% of respondents said they agreed, 32% disagreed, 13% disagreed, and 6% strongly agreed, while for the strongly disagree option, no respondents thought so.
2) Statement No. 11: “The implementation of the work must use the calculation method based on the existing SNI." In this statement, about 61% of respondents agreed, 29% disagreed, 3% disagreed,

3% strongly agreed, and 3% strongly disagreed.

3) Statement No. 14: "The implementation team provides different methods to the employer." In this statement, about 52% of respondents expressed agreement, 39% disagreed, 10% disagreed, and no one strongly agreed or disagreed.
4) Statement No. 15: "The implementation team follows the method of the employer." In this statement, about 48% of respondents expressed agreement, 39% disagreed, 13% disagreed, and no one strongly agreed or strongly disagreed.
5) Statement No. 19: “Determination of field check points according to needs”. In this statement, about 48% of respondents agreed, 45% disagreed, 6% disagreed, and no one thought they strongly agreed or strongly disagreed.
6) Statement No. 23: "The method of calculation between SNI and the Ministry of Related Institutions has differences." In this statement, about 58% of respondents agreed, 35% disagreed, 6% disagreed, and no one thought they strongly agreed or strongly disagreed.
7) Statement no. 27: "The output of mapping work must be in accordance with the output desired by the PTRA technical team." In this statement, about 48% of respondents expressed agreement, 32% disagreed, 13% disagreed, and 6% strongly agreed, while for the option strongly disagreed, none of the respondents thought so.
8) Statement No. 31: "."Representatives of institutions or ministries must attend assistance. In this statement, about 65% of respondents expressed agreement, 32% disagreed, 3% strongly agreed, and no one strongly agreed or disagreed.

Risk Response Analysis

Several case statements that fall into the high class (T) state that the case statement is very risky if it does not receive more attention, which can result in delays in completing work.

1) TA must have a background in spatial balance sheet Integration mapping work.

   Job delays are often caused by the lack of ability and skill of the TA who carries out the work because the TA involved needs an educational background or experience doing the work. The selection of TAs by the criteria and needs is very important and should be carried out by the employer and the implementing party. Both parties must be selective and critical in placing and engaging the TA who will do the work.

   From the job provider's side, the selection of experts must be carried out carefully; the selected TA must have sufficient ability and experience in completing the calculation analysis of the spatial balance of natural resources. Able to work in a team and coordinate between institutions well. Meanwhile, from the employer's point of view, the determination of the TA required to type in the auction must be detailed, and during the evaluation stage of the qualifications of the tender documents, validation and verification of TA data must be carried out carefully because not a few

companies include TA qualification data that does not match reality.

2) The implementation of work must use the calculation method based on the existing SNI

   The SNI for calculating natural resource balances is the standard for calculating natural resource balances used in work. In contrast, the integration method for mapping spatial equilibria still needs to have a standard set out in the SNI. It is one of the causes of delays in work because discussions and agreements often occur between the BIG technical team and the consultants' team regarding the integration method used. The process of completion and discussion carried out is quite time-consuming, so it has the potential to delay the completion of work.

   Differences in calculation methods often occur in related ministries, where the process of calculating the balance, they use does not follow or is not in accordance with the calculation method in the SNI for natural resource balances. On the one hand, SNI calculations do not accommodate the need for measures in the relevant ministry institutions that carry out more detailed and specific balance sheet calculations. On the other hand, BIG must follow existing SNI because there are regulations that state the obligation to comply with analyses using SNI.

3) The implementation team provides a method that is different from the employer.

   The absence of standard standards in spatial balance Integration mapping preparation makes the consultant team improvise in completing the work. Not all improvisations given by the consultant team can be accepted by the BIG technical team, and this causes debate and discussion that is quite time-consuming in the implementation of activities. To anticipate the possibility of a long method debate, it would be nice if the implementation team improvised and provided a different method. The method must comply with clear and well-structured scientific study principles so that various parties can easily accept it.

4) The implementation team follows the method of the employer

   Just like the previous point, in this case, the consultant team was not accepting of the technique used by the BIG technical team, and the discussion to reach a method agreement was the cause of the reduced time in the implementation of activities.

5) Determination of field checkpoints according to needs

   Determining field checkpoints adjusted to needs is often an obstacle in the field because many conditions do not match the description recorded in secondary data. The return of field check data should be adjusted to the rules of the study, not necessarily forced to meet standard standards but conditionally and according to the laws of scientific studies. Determining field checkpoints must be done by considering various considerations such as location, the distance between sample points, sample representativeness, and natural conditions around the sample point. By considering these factors, a survey path will be more optimal.

6) The calculation method between SNI and the Ministry of Related Institutions has differences.

   The SNI calculation method used is often different from the balance calculation method in the related ministry because the calculation is simplified in the SNI. It is necessary to hold an

agreement between BIG and the church on the calculation method so that debates regarding the calculation method no longer occur when the work is carried out. In the future, the methods contained in SNI must continue to be updated regularly by involving the relevant ministries so that there are no more misunderstandings in the method differences in calculating the balance of resources between the relevant ministries in charge of certain resources and BIG, which has compliance regulations in the use of SNI.

7) The output of mapping work must be in accordance with the desired result by the PTRA technical team.

   The large number of technical teams involved does not rule out the possibility that many desired outputs will be achieved outside of the results required or included in the work contract. The consultant must understand well what creation the BIG technical team wants before the work begins so that the consultant team has prepared and managed a good timeline during the implementation of the activity.

   The technical team coordinator and the implementation team leader must always remind themselves about the work outputs required in the contract at the beginning, considering that at the time of implementation, there may be new outputs that want to be produced both by the PTRA technical team and by the implementation team. Returning to the mutually agreed contract quality plan is a wise solution to avoid delays in implementing activities.

8) Representatives of institutions or ministries Must attend assistance.

   This point is very important, considering that various parties, including ministries, institutions, academics, and the general public, can use the results of this work. Representatives of relevant institutions or ministries involved in assistance activities can assist in the use of analytical methods for calculating the balance of certain resources. Deciding on the calculation process together is more effective in maximizing discussion time than arguing about the calculation results. The presence of three parties who have different approaches will be very risky for the optimal utilization of processing time.

CONCLUSIONS

1) The factors that affect the risk of delays in completing the spatial balance sheet integration mapping work in the Ciliwung Cisadane River area are:
   (a) Competency of quality and composition of Experts in the implementation of WSCC spatial balance integration Mapping activities.
   (b) The analysis method used in implementing WSCC spatial balance sheet integration mapping work.
   (c) Field visits and technical implementation methods
   (d) Coordination between relevant agencies and ministries in charge of natural resource balance

components

(e) Contract documents and contract quality plans serve as guidelines in the execution of work.

2) From the results of the risk probability analysis, it is known that there are eight hypotheses that have a high-risk class; they are:

(a) TA must have a background appropriate to the Spatial Accounts Integration mapping work

(b) The implementation of the work must use the calculation method based on the existing SNI

(c) The implementation team provides a technique that is different from the employer

(d) The implementation team follows the technique of the employer

(e) Determination of field checkpoints according to needs

(f) There are differences in the way of calculation between SNI and the Ministry of Related Institutions

(g) The output of mapping work must be by the desired result by the PTRA technical team

(h) Assistance Must be attended by representatives of institutions/ministries

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