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IMPLEMENTATION OF RISK MANAGEMENT FOR THE MANAGEMENT OF THIRD-PARTY INFRASTRUCTURE, FACILITIES, AND PUBLIC UTILITIES (PSU) OBLIGATIONS

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ABSTRACT

Third-party Infrastructure, Facilities and Public Utilities (PSU) liabilities arise from Space Utilisation Permits received by third parties to utilise land they own. Many liabilities for Space Utilization Permits have not been submitted, even though the Space Utilization Permit has expired, and the land is being utilized by third parties, who should be using public facilities. Risk management is made so that the risks in managing these liabilities can be reduced to an acceptable level, and the objectives in managing third-party PSU liabilities can be achieved. In implementing risk management, this study uses the ISO 31000: 2018 framework to guide the risk management process. The process starts from identification, analysis, evaluation, and risk treatment. The method used in risk evaluation is assessing the likelihood and impact. Based on the results of the research, 24 risk events were obtained, which were then analysed and evaluated, showing three risk events in the very high category, four risk events in the high category, 8 risk events in the medium category, and nine risk events in the low and very low categories. For risk events with medium to very high categories, this research provides suggestions for risk mitigation actions that the DKI Jakarta Provincial Government can take to reduce the occurrence of these risks.

KEYWORDS *Risk Management, ISO 31000:2018, Infrastructure, Facilities, and Public Utilities (PSU) liabilities*

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INTRODUCTION

The increasing urban development requires the improvement of public infrastructure to realize a decent, healthy, safe, and comfortable quality of urban life (Najich Alfayn, 2022; Nurrahman et al., 2021; Sari & Wardianto, 2022). To meet these needs, the Government is responsible for providing quality, feasible, accessible infrastructure, facilities, and public utilities (PSU). Infrastructure is the physical

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completeness of an environment that meets specific standards for a healthy, safe, comfortable, decent residence (Agara et al., 2020; Ahmadsyah et al., 2024; Dianasari, 2021; Mukhsin, 2017; Zieliński & Wójtowicz, 2019). Facilities are facilities that support the implementation and development of social life in a residential environment. Meanwhile, Public Utilities completes the function of supporting environmental services (BPK, 2023).

In Indonesia, the provision of PSU is the responsibility of local governments, both at the district/city level and the provincial level. In fulfilling these responsibilities, the government is often faced with problems related to the provision of infrastructure, facilities, and public utilities, including the issue of funding adequacy, land availability, and population density. From these several problems, the adequacy of funding is a factor that hinders the provision of infrastructure, facilities, and public utilities (Dianasari, 2021; Mukhsin, 2017). To overcome these problems, the government embraces the participation of the private sector through *the developer financing* schee. The scheme requires developers to build or develop the public infrastructure required to issue permits for their project activities (Amani et al., 2023; Areza Ugang et al., 2022; Astuti et al., 2021; Raharjo et al., 2023; Rahmadina & Budiarti, 2017; Saptari et al., 2021).

The Jakarta Special Capital Regional Government as a provincial local government formed through Law Number 23 of 2014 concerning Regional Government has stipulated several policies for a license that can give rise to the obligation of third parties (developers) to submit or provide PSUs based on the Decree of the Governor of DKI Jakarta Number Da.11/3/11/1972 concerning Land Use Designation Permits (SIPPT) which later changed the term to Utilization Principle Permits Space (IPPR) in 2016 through Governor's Regulation Number 209 of 2016. In SIPPT/IPPR, there are obligations in the form of:

a. Land handover for facilities, infrastructure, and public utilities affected by the city plan within the SIPT planning area;
b. Provision of public facilities, infrastructure, and utilities in the SIPT planning area; and
c. Financing and building simple flats, where these obligations can be converted into the construction of flats, facilities, infrastructure, and public utilities, as well as the procurement of goods.

Of all SIPPTs that the DKI Jakarta Provincial Government has issued, it is known that the SIPPT has an average validity period of 3 years from the date of issuance. This means that all obligations in the SIPPT should have been fulfilled during its validity period. As of December 31, 2022, as many as 1,309 SIPPT have been issued with a total liability of 26,125,879 m2. Of this number, there are still 793 SIPPT that have not completed handing over obligations covering an area of 9,811,656 m2. Of the 793 SIPPTs, only 70 are still valid, with the remaining liabilities of 1,737,223 m2. Therefore, 723 SIPPTs have expired but still have obligations that have not been resolved/submitted.

For this reason, the Audit Board (BPK) stated that the Jakarta Provincial Government has set operational objectives in the management of third-party PSU obligations, namely to ensure that the use of PSUs derived from the fulfillment of third-party obligations can be carried out according to their functions and in line with

the public interest, realizing the smooth and orderly public services and realizing legal certainty in the management of PSUs. However, regarding these objectives, BPK did not find any results in identifying and analyzing risks that could impact the objectives in managing PSU obligations.

Based on the description above, risk management is necessary to identify the risks involved in implementing these activities, including the cause and the impact. Furthermore, the risk is analyzed using the possibility and impact method to choose the correct response according to the organization's needs. After the response is determined, a control/mitigation analysis is carried out to reduce the risk.

1. Government Internal Control System (SPIP)

Internal Control System is a comprehensive process involving continuous actions and activities by leaders and employees to achieve organizational goals. The purpose of this system is to provide adequate confidence through the implementation of effective and efficient activities, ensure the reliability of financial statements, protect state assets, and ensure compliance with laws and regulations. The presence of SPIP has 4 (four) goals to be achieved, namely:

a. Effectiveness and efficiency in achieving organizational goals
b. Financial Reporting Reliability
c. Asset Security
d. Compliance with Laws and Regulations

SPIP has elements adopted from the internal control components listed in the COSO Internal Control Integrated Framework. The elements are:

a. Control Environment
b. Risk Assessment
c. Control Activities
d. Information and Communication: Internal Control System Monitoring

2. Risk Management

The International Organization for Standardization (ISO) 31000 (2018) defines risk as the effect of uncertainty on the target or uncertainty that has an impact (effect) on the target. From this definition, risk can occur in all businesses or public sectors. To avoid or mitigate the negative impact of these risks, all organizations need to implement effective risk management. By implementing sound risk management, organizations can identify, evaluate, and manage potential risks, thereby increasing the likelihood of achieving their goals efficiently and effectively.

2.1 Correlation of Risk Management Principles, Frameworks, and Processes

According to ISO 31000 (2018), risk management is a systematic process that assists businesses in formulating strategies, achieving goals, and making informed choices. Risk management is integral to leadership and governance, as the foundation for organizational management at all levels. It is an integral part of the organization's operations and is important in stakeholder relationships. Risk management considers internal and external issues, including organizational culture and human behavior. Risk management relies on relevant concepts, structures, and procedures, as shown in the following figure:

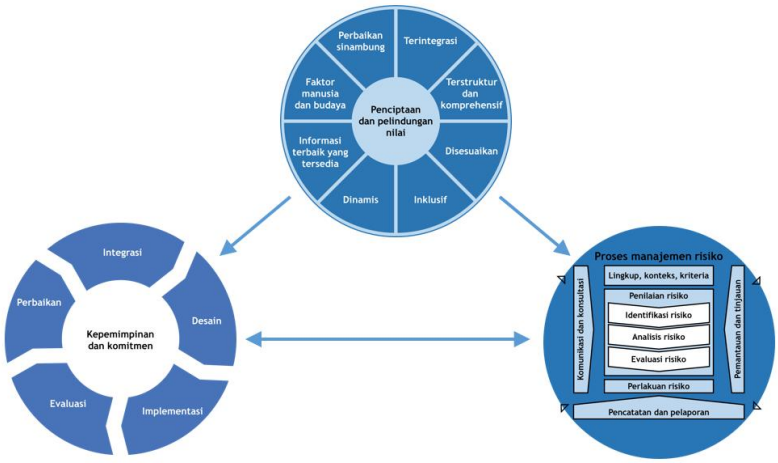

Figure 1. Principal Correlations, Risk Management Frameworks and Processes

2.2 Risk Management Principles

In order to improve the effectiveness of risk management, organizations must adhere to risk management principles. These principles provide direction to the quality of successful risk management and efficiency, as well as convey its values and set its goals and objectives. The basic principles of risk management are an important factor that must be considered when creating risk management frameworks and procedures. This idea is expected to help companies effectively manage the influence of uncertainty on their goals. Here are the various risk management concepts that can be explained in the following figure:

Figure 2. Risk Management Principles

2.3 Risk Management Framework

The main objective of the risk management framework outlined in Hutchins (2018) is to facilitate the integration of risk management into all aspects and operations

of the organization. The efficacy of risk management rests on its incorporation into corporate governance, including decision-making processes. This requires help from stakeholders, especially senior leaders. Figure 2.2 illustrates the framework's evolution by Hutchins (2018) organizational governance, including decision-making processes. To achieve this, the support of all stakeholders, especially top management, is essential. The development of the framework, as described in Hutchins (2018), can be seen in the following Figure.

Figure 3. Risk Management Framework

2.4 Risk Management Process

According to ISO 31000 (2018), risk management consists of systematically implementing policies, procedures, and practices to conduct communication and consultation activities, create context, evaluate, manage, monitor, review, record, and report risks. This process should be a critical component of management and decision-making and incorporated into the company's structure, operations, and activities. This integration is carried out at several levels of the organization, from the strategic to the operational level, and is also included in the context of a program or project. According to ISO 31000 (2018), the risk management process can be seen in the following Figure.

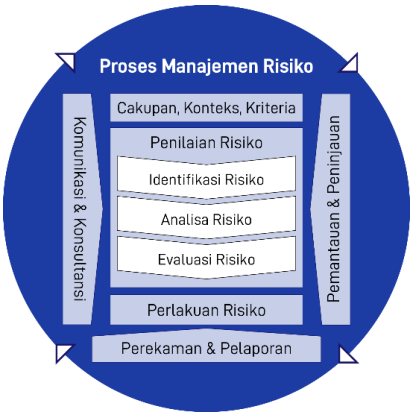

Figure 4. Risk Management Process

3. Risk Management in the Jakarta Provincial Government

In order to improve the implementation of the Internal Control System, the Jakarta Provincial Government (Jakarta Provincial Government) has implemented risk management to support the achievement of organizational goals effectively and efficiently and create good governance. To implement it, the Jakarta Provincial Government has stipulated the Governor Regulation of the Special Capital Region of Jakarta (Pergub) Number 122 of 2020 concerning the Implementation of Risk Management in the Provincial Government of the Special Capital Region of Jakarta. The Governor's Regulation has set organizational goals based on the strategic goals listed in each regional apparatus's strategic plan document (RENSTA). Meanwhile, the risk management process can be described as follows:

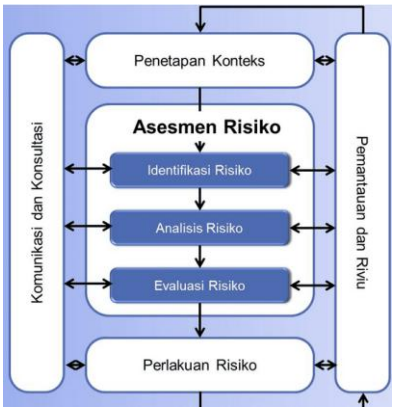

Figure 5. Risk Management Process of Governor's Regulation 122 of 2020

RESEARCH METHOD

This research method is carried out with a qualitative and quantitative approach to a case study approach. A case study is an empirical study that investigates phenomena that occur in the present day in everyday life when the boundaries between phenomena and reality are not clearly visible and multiple sources of evidence are used Yin in Mahardika (2017). The qualitative research method carried out in this study is in the process of determining the scope and identification of risks by conducting in-depth interviews with several sources to obtain data/opinions related to risks that may occur in each business process of managing the obligations of third-party PSUs in the DKI Jakarta Provincial Government and analyzing data from other documents. The resource persons were taken from several parties who represented and were considered competent in the management of third-party PSU obligations.

Meanwhile, the quantitative approach in this study was selected when conducting a risk analysis by calculating the level of risk using the *likelihood* and impact methods. According to Creswell's opinion in Wanditha (2018), quantitative research is a study that studies social or human problems by testing a theory consisting of variables. These variables are measured using numbers and analyzed using statistical procedures to determine whether the generalization of the theory's predictions is correct. The steps taken in this study are:

a. Determination of Scope, Context, and Risk Criteria

The scope of this research is the management of third-party PSU obligations at the DKI Jakarta Provincial Government. This study uses an interview technique to determine the context, which is then analyzed using PESTEL analysis for external contexts and resource and capabilities analysis to determine internal contexts. In determining the risk category, refer to the category contained in the DKI Jakarta Provincial Government's risk management guidelines.

b. Identify Risks

At this stage, risk identification is carried out by interview and *brainstorming methods* with parties involved in the business process starting from the stages of determining obligations, billing, handing over to the administration of PSUs as a result of fulfilling these obligations. The results of the interview were then transcribed and then the risk events contained in the transcript were identified.

c. Risk Analysis

The risk analysis process in this study uses a quantitative technique, namely a risk analysis method with an assessment of the likelihood of risk (likelihood) and impact on the risks that have been identified. There are five levels of possibility and five levels of impact. Determination of the level of likelihood and impact through a questionnaire submitted to the core party at the regional apparatus responsible for each process of managing the obligations of third-party PSUs as respondents. Regarding the description of each level 1 to 5 on the possibility and impact, refer to Governor's Regulation Number 122 of 2020 as a risk management guideline. Likelihood levels and impact levels are determined based on the criteria listed in Tables 1 and 2 below.

Table 1. Likelihood criteria level

Level of Possibility	Probability Criteria	
	Percentage Probability of occurring in 1 period	Number of possible frequencies in 1 period
Almost nothing happens (1)	$x \leq 5\%$	Very Rare: < 2 times in 1 year
Rare (2)	$5\% < x \leq 10\%$	Rare: 2 times to 5 times in 1 year
Sometimes it happens (3)	$10\% < x \leq 20\%$	Quite often: 6 to 9 times in 1 year
Frequent (4)	$20\% < x \leq 50\%$	Frequency: 10 to 12 times in 1 year
It almost certainly happens (5)	$x > 50\%$	Very often: > 12 times in 1 year

Table 2. Level of impact criteria

Impact Area		Impact Level				
		Insignificant (1)	Minor (2)	Moderate (3)	Significant (4)	Very Significant (5)
Regional	Fraud	-	-	-	IDR 1 million ≤ x ≤ IDR1M	x ≥ Rp 1M

Impact Area		Impact Level				
		Insignificant (1)	Minor (2)	Moderate (3)	Significant (4)	Very Significant (5)
Financial Burden	Non-Fraud	X ≤ 0.01 per thousand	0.01 per < x ≤ 0.1 per thousand	0.1 per < x ≤ 1 per thousand	1 per thousand < x ≤ 10 per thousand	>10 per thousand
Reputational Decline		• Number of complaints directly verbal (documentable) /written to the organization ≤10 • The level of stakeholder/investor trust is excellent • Service user satisfaction level of 4.5 < x ≤5 (scale 5)	• Number of complaints directly verbal (documentable) /written to the organization >10 • Good level of stakeholder/investor confidence • Service user satisfaction rate of 4.25 < x ≤4.5 (scale 5)	• Negative news on social media • Negative news in the local mass media • Moderate level of stakeholder/investor confidence • Service user satisfaction level of 4 < x ≤4.25 (scale 5)	• Negative news in national and international mass media • Low level of stakeholder/investor trust • Service user satisfaction level of 3.5 < x ≤4 (scale 5)	• The level of stakeholder/investor confidence is very low • Service user satisfaction rate of ≤ 3.5 (scale 5)
Criminal, Civil, and/or Administrative Sanctions		-	-	Administrative : The defendant is an echelon III official and below, or an equivalent official	Criminal ≤ 5 years Civil ≤ 100M Administrative : the defendant is an echelon I, II official, or equivalent official	Criminal > 5 years Civil > 100M Administrative : the defendant is the Governor/Deputy Governor
Work Accidents		Psychic Threats	Minor physical and mental injuries	Moderate physical and mental injuries	Severe physical and mental injuries	Death
Disruption to service		X < 5% of daily service operating hours	5% ≤ x < 15% of daily service operating hours	15% ≤ x < 35% of daily service operating hours	35% ≤ x < 50% of daily service operating hours	X ≥50% of daily service operating hours
Performance Degradation		x≥95%	90%≤x<95%	80%≤x<90%	75%≤x<80%	X<75%

d. Risk Evaluation

The risk evaluation process includes comparing the risk criteria and the risk analysis results to determine additional actions to be taken (ISO 31000, 2018). The comparison process is carried out using the level of risk assessed based on impact and likelihood, then mapped in a risk map. The risk evaluation results are in the form of risk levels that map risks based on their severity, namely very low, low, medium, high, and very high.

e. Risk Treatment

At this stage, the research will provide recommendations for mitigation actions to be carried out by the regional apparatus based on an understanding of the literature and theory. The selection of risk treatment has been determined based on

risk appetite stipulated in Governor Regulation 122 of 2020, where risk mitigation must be carried out for medium to very high risk levels.

RESULT AND DISCUSSION

1. Determination of Scope, Context, and Criteria

The risk management stages of third-party PSU Liability Management Activities are based on understanding these activities' internal and external context. Internal context analysis analyzes resources and capabilities owned by the regional apparatus, while the external context analysis uses PESTLE analysis. To understand the internal and external context for determining risk mitigation measures, interviews were conducted with the responsible parties at the Urban Planning and Environment Bureau. The Bureau of Urban Planning and Environment is a regional apparatus responsible for the coordination and formulation of policies related to various aspects of government administration and government affairs in the field of public works and spatial planning.

The results of understanding internal and external contexts are as follows:

a. Internal Context

Using capabilities and resource analysis, the Jakarta Provincial Government can determine policy direction through regulations that can force third parties or developers to accelerate the realization of obligations. In addition, the DKI Jakarta Provincial Government can collaborate with other institutions to help accelerate the fulfillment of obligations.

In terms of *resources*, the Jakarta Provincial Government has a strong source of financing for the APBD (regional revenue and expenditure budget) because it is the local government that has the largest APBD in Indonesia. In terms of technology, there is an information system called SIPRAJA, the system has been equipped with information related to land in the DKI Jakarta area. Meanwhile, in terms of human resources, human resources personnel who are part of the DKI Jakarta Provincial Government have a minimum undergraduate education level, especially when carrying out third-party PSU management activities.

b. External context

Understanding the external context using PESTEL Analysis shows that, from a political perspective, the policy of handing over PSUs by third parties or developers is influenced by central government policies. This influence can hinder or accelerate the delivery of outstanding PSU liabilities.

From the economic side, the fulfillment of obligations is influenced by the economic conditions of third parties or developers. Meanwhile, the country's economic conditions influence the developer's economy. This creates obstacles in fulfilling obligations when the country's economy deteriorates.

From the social side, the main purpose of PSU obligations submitted by third parties or developers is to provide facilities for the community both in and around the SIPPT/IPPR location so that the quality of life of the community improves. This shows that there are social aspects that need to be considered in the management of PSU obligations.

From a technological perspective, SIPRAJA, an information system that can be accessed through the www.jakartasatu.jakarta.go.id portal, helps in obtaining information about PSU obligations and makes it easier to manage them.

From the legal side, the management of third-party PSU obligations has been regulated in Regional Regulation Number 7 of 2012 concerning Public Infrastructure, Facilities and Utilities and Governor Regulation Number 12 of 2020 concerning Procedures for Fulfilling the Obligations of Permit Holders and/or Non-Permit Space Utilization, which forms the basis for the DKI Jakarta Provincial Government's management of the obligations of third parties or developers.

From the environmental side, PSU obligations are expected to contribute to achieving better and sustainable urban planning, although limited funds may affect their implementation. Existing urban planning is prepared by considering the harmony between environmental sustainability and development that can meet basic needs, improve living standards, and create a protected ecosystem.

2. Identify Risks

Risk identification aims to understand conditions, facts, and events that occur in the past or present that may be a risk to the implementation of third-party PSU liability management activities. A risk structure is made to facilitate the risk identification process in identifying risks. The division of the risk structure is based on the consideration of the stages in the business process of managing the obligations of third-party PSUs and the responsibilities of the parties involved in each of these stages. The risk structure is divided into 3 (three) parts, namely

1) The occurrence of obligations is the task of the PLH Bureau and the CKTRP Office.
2) Billing, supervision, monitoring of the fulfillment of obligations, and handover are the tasks of TP3W and
3) PSU administration is the task of BPAD.

Based on the results of semi-structured interviews and brainstorming conducted with the parties in charge of each risk structure, 24 risk incidents were faced in the business process.

Table 3. Identified Risk Events

Risk Code	*Risk Event*
Onset of obligations	
A1	Unclear Assignment of Obligations
A2	*Human Error* in setting points of obligation
A3	External intervention
A4	Changes to the City Plan
A5	Overlapping obligations
A6	Lack of understanding of the process
A7	Limitations on Access to Information
Billing, Supervision, and Monitoring of Compliance	
B1	Limited Human Resources
B2	Negative Intervention from the Provincial Government's Internal Parties
B3	Regulatory Differences
B4	Difficulties in Communication
B5	Disclaimer from the Developer

Risk Code	*Risk Event*
B6	Economic Conditions of the Developer
B7	SIPPT/IPPT/IPPR is not revoked
B8	Transfer of part or all of the land of another party
B9	Not performing obligations
B10	Not immediately handed over to the Jakarta Provincial Government
	Handover
C1	PSU is used by other parties
C2	The PSU land that has been handed over is transferred
	Administration
D1	Incompleteness of documents
D2	Recording Errors
D3	Claims from external parties
D4	Non-compliance with regulations
D5	Not processing certificates on behalf of the Jakarta Provincial Government

Table 3 shows 24 risk events in the entire business process of third-party PSU liability management activities. Seven risk events can hinder the determination of liabilities in the business process of occurrence. The second business process is Billing, Supervision, and Monitoring of Compliance, which consists of 10 risk events. The third process is the handover of liabilities, which consists of 2 risk events, and the last process is the administration of liabilities as a result of the handover, which consists of 5 risk events.

Risk analysis will be carried out using the likelihood and impact assessment methods based on all identified risk events. This method refers to Governor's Regulation Number 122 of 2020, a risk management guideline for the DKI Jakarta Provincial Government (Kurniawan et al., 2024; Mahardika, 2017; Nazhifa & Fatima, 2023).

3. Risk Analysis

At this stage, the identified risk events are analyzed using likelihood and impact methods. The level of likelihood and impact is determined by the party responsible for each business process or the party experienced or in charge of the regional apparatus that carries out the business process. This study used a questionnaire with the respondents, namely the responsible or experienced parties.

Table 4. Results of Likelihood and Impact Assessment

Risk Code	***Risk Event***	**Likelihood (*Likelihood*)**		**Impact (*Impact*)**	
A1	Unclear Assignment of Obligations	4	Frequent Occurrences	1	Insignificant
A2	*Human Error* in setting points of obligation	3	Sometimes It Happens	2	Minor
A3	External intervention	2	Rare	4	Significant
A4	Changes to the City Plan	4	Frequent Occurrences	2	Minor
A5	Overlapping obligations	3	Sometimes It Happens	1	Insignificant

A6	Lack of understanding of the process	4	Frequent Occurrences	1	Insignificant
A7	Limitations on Access to Information	4	Frequent Occurrences	1	Insignificant
B1	Limited Human Resources	4	Frequent Occurrences	4	Significant
B2	Negative Intervention from the Provincial Government's Internal Parties	1	Almost Nothing Happens	3	Moderate
B3	Regulatory Differences	5	Almost Certain to Happen	5	Very Significant
B4	Difficulties in Communication	2	Rare	2	Minor
B5	Disclaimer from the Developer	2	Rare	3	Moderate
B6	Economic Conditions of the Developer	4	Frequent Occurrences	4	Significant
B7	SIPPT/IPPT/IPPR is not revoked	4	Frequent Occurrences	4	Significant
B8	Transfer of part or all of the land of another party	3	Sometimes It Happens	3	Moderate
B9	Not performing obligations	3	Sometimes It Happens	3	Moderate
B10	Not immediately handed over to the Jakarta Provincial Government	2	Rare	2	Minor
C1	PSU is used by other parties	3	Sometimes It Happens	4	Significant
C2	The PSU land that has been handed over is transferred	2	Rare	5	Very Significant
D1	Incompleteness of documents	3	Sometimes It Happens	3	Moderate
D2	Recording Errors	3	Sometimes It Happens	3	Moderate
D3	Claims from external parties	3	Sometimes It Happens	3	Moderate
D4	Non-compliance with regulations	3	Sometimes It Happens	3	Moderate
D5	Not processing certificates on behalf of the Jakarta Provincial Government	5	Almost Certain to Happen	5	Very Significant

Table 4 shows the risk analysis results of 24 risk events using the likelihood and impact assessment methods. The results were then mapped into the risk map contained in Governor's Regulation Number 122 of 2020, which became a DKI Jakarta Provincial Government risk management guideline.

4. Risk Evaluation

Risk evaluation aims to assist the decision-making process through a follow-up on understanding risks to develop risk treatment options based on risk analysis results. At this stage, the assessment results of the likelihood and impact of each risk event are mapped into a 5x5 trip map (Ahmeti & Vladi, 2017; Hutchins, 2018; Pribadi & Ernastuti, 2020). The risk map used has been determined in Governor's Regulation Number 122 of 2020, a DKI Jakarta Provincial Government risk management guideline. In the risk map, the risk level has been set based on the severity level, which is very low, low, medium, high, and very high.

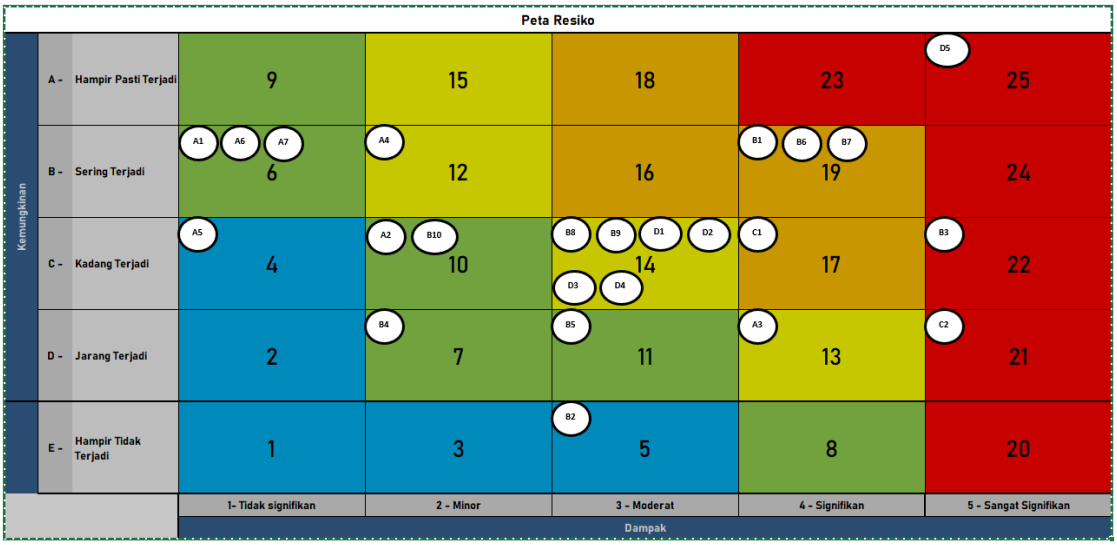

Figure 1. Risk Map of Third-Party PSU Liability Management

Figure 1 shows the results of the probability and impact assessment that have been mapped in the risk map. The results of the mapping showed that there were 3 (three) risk events that were included in the very high category (red), namely B3 Regulatory Differences, C2 PSU Land that had been handed over, and D5 Developers did not process certificates on behalf of the Jakarta Provincial Government. While in the high category (orange), there are 4 (four) risk events, namely B1 limited human resources, B6 economic conditions of developers, B7 SIPPT/IPPT/IPPR not revoked, and C1 PSU is used by other parties.

A total of 8 (eight) risk incidents are included in the medium (yellow) category, namely A3 intervention by external parties, A4 changes in the city plan, B8 Transfer of part or all of other parties' land plots, B9 Not carrying out obligations, D1 incompleteness of documents, D2 recording errors, D3 claims from external parties, and D4 non-compliance with regulations.

A total of 9 (nine) risk incidents that are included in the low (green) and very low (blue) categories, namely A1 Unclear Determination of Obligations, A2 Human Error in determining the point of liability, A6 Lack of understanding of the process, A7 Limited Access to Information, B4 Difficulties in Communication, B5 Rejection from developers, and B10 Not immediately submitting to the DKI Jakarta Provincial Government for the low category and A5 Overlapping obligations and B2 Negative Intervention from the Provincial Government's Internal Parties for very low category.

5. Risk Treatment

Once the risks have been evaluated and mapped into a risk matrix based on severity, the next step is to determine the risk treatment that can be applied to the liability management activities of third-party PSUs. The determination of risk treatment takes into account the risk appetite specified in Governor's Regulation Number 122 of 20200, where risk mitigation must be carried out for medium to very high risk levels. The results of determining risk treatment, including reducing and avoiding, are then

followed by proposed risk mitigation actions. In providing proposed risk mitigation measures, this study considers the external and internal context of managing the obligations of third-party PSUs.

Table 5. Risk Treatment

Risk Code	*Risk Event*	Risk Level	Risk Treatment
A1	Unclear Assignment of Obligations	Low	Accept
A2	*Human Error* in setting points of obligation	Low	Accept
A3	External intervention	Keep	Reduce
A4	Changes to the City Plan	Keep	Reduce
A5	Overlapping obligations	Very Low	Accept
A6	Lack of understanding of the process	Low	Accept
A7	Limitations on Access to Information	Low	Accept
B1	Limited Human Resources	Tall	Reduce
B2	Negative Intervention from the Provincial Government's Internal Parties	Very Low	Accept
B3	Regulatory Differences	Very High	Reduce
B4	Difficulties in Communication	Low	Accept
B5	Disclaimer from the Developer	Low	Accept
B6	Economic Conditions of the Developer	Tall	Reduce
B7	SIPPT/IPPT/IPPR is not revoked	Tall	Reduce
B8	Transfer of part or all of the land of another party	Keep	Reduce
B9	Not performing obligations	Keep	Reduce
B10	Not immediately handed over to the Jakarta Provincial Government	Low	Accept
C1	PSU is used by other parties	Tall	Reduce
C2	The PSU land that has been handed over is transferred	Very High	Reduce
D1	Incompleteness of documents	Keep	Reduce
D2	Recording Errors	Keep	Reduce
D3	Claims from external parties	Keep	Reduce
D4	Non-compliance with regulations	Keep	Reduce
D5	Not processing certificates on behalf of the Jakarta Provincial Government	Very High	Avoid

Table 5 refers to the treatment of each risk event. Of the 24 risk events that have been identified and assessed, risk treatment in the form of reducing risk is carried out for 14 (fourteen) risk events, and avoiding risks (avoid) is carried out for 1 (one) risk event.

Table 6. Risk Mitigation Proposal

Risk Code	*Risk Event*	Risk Treatment	Risk Mitigation Proposal
A3	External intervention	Reduce	Establish a Joint Decision Minutes that are carried out jointly by involving the role of the developer as well as the community and associations in the planning and decision-making process
A4	Changes to the City Plan	Reduce	It does not make the city plan a determination of obligations, but the determination of obligations involves the role of *stakeholders*, both from the developer and from the community around the SIPPT/IPPT/IPPR Location
B1	Limited Human Resources	Reduce	Recruiting employees or proposing employee needs, and providing training to existing employees
B3	Regulatory Differences	Reduce	Advocacy for regulatory changes to regulations that may hinder the collection process
B6	Economic Conditions of the Developer	Reduce	Prepare regulations/SOPs on the procedure for applying for relief
B7	SIPPT/IPPT/IPPR is not revoked	Reduce	Establish a policy to unilaterally revoke SIPPT/IPPT/IPPR
B8	Transfer of part or all of the land of another party	Reduce	Inform the obligations listed in the land parcel on the Sipraja Information System, and when to issue BPHTB (Land and Building Rights Acquisition Duty)
B9	Not performing obligations	Reduce	Imposing sanctions on developers who do not carry out these obligations
C1	PSU is used by other parties	Reduce	Carry out supervision and control, and install Signs/Ownership Signs
C2	The PSU land that has been handed over is transferred	Reduce	Update the SOP for the issuance of BPHTB by adding requirements in the form of the results of civil verification and filing a lawsuit against the developer
D1	Incompleteness of documents	Reduce	update the SOP in the administration of PSU assets by prioritizing the process of "picking up the ball" or requesting the completeness of administrative documents directly to the required documents issued by other regional apparatus under the DKI Jakarta Provincial Government and reporting them to the Regional Secretary
D2	Recording Errors	Reduce	provide training or technical guidance to the party who makes the recording and update the SOP in input/recording using 2-step verification of the recording carried out.
D3	Claims from external parties	Reduce	Physical security is in the form of fencing and the installation of signs/ownership signs.

Risk Code	*Risk Event*	Risk Treatment	Risk Mitigation Proposal
D4	Non-compliance with regulations	Reduce	Make an SOP for the implementation of administration and establish sanctions for internal parties involved
D5	Not processing certificates on behalf of the Jakarta Provincial Government	Avoid	Change the policy so that the Jakarta Provincial Government carries out the certificate process after the handover of land plots

Table 6 shows the proposed risk mitigation for risk events with moderate to very high risk levels. Of the 24 risk events, only 14 were given proposed mitigation measures. Proposed mitigation measures for each risk event have taken into account the results of internal and external context analysis as considerations.

CONCLUSION

Based on the results of the research, there are 24 risk *events* that have been successfully identified in the Management of Infrastructure, Facilities, and Public Utilities (PSU) obligations of third parties at the DKI Jakarta Provincial Government. Furthermore, a risk analysis is carried out, which aims to understand the nature and characteristics of the risk and assess the risk rating. Risk analysis uses the likelihood and impact assessment methods. The risk analysis results are then carried out through a risk evaluation using a risk map that has been determined in the risk management guidelines.

Based on the risk map, there are 3 (three) risk events included in the very high category, 4 (four) high category risk events, 8 (eight) risk events included in the medium category, and 9 (nine) risk events included in the low and very low categories.

The risk evaluation results suggest treating risk at moderate to very high levels. The risk treatment consists of reducing risk (reduce) to 14 (fourteen) risk events and avoiding risk (avoid) for 1 (one) risk event. For risk events that require risk treatment, this study recommends mitigation actions that can be taken to reduce or avoid the occurrence of these risks.

Further research is suggested that in identifying risks in the management of third-party PSU obligations, consider information obtained from external parties such as developers. In addition, the use of other methods in risk analysis to obtain a more accurate assessment and comprehensive understanding of risks in the management of third-party PSU liabilities so that planned mitigation actions are on target.

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