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# Risk Analysis of Project Owners As Actors in the Procurement of Government Goods and Services in Construction Work

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## ABSTRACT

*In the implementation of PBJP construction work, potential risks that can affect the achievement of PBJP goals, namely producing the right goods/services according to the budget, but this has still not been researched in the Agam Regency area. Therefore, this study aims to identify and analyze the risks that can occur to Project Owners/Owners (PBJP) in the implementation of construction in the area. The risk identification method was carried out through a pilot survey of project owners as well as previous literature studies. Meanwhile, the risk assessment was carried out using a questionnaire distributed to PBJP actors, referring to the Australian/New Zealand Risk Management standard (AS 4360). Risks are grouped based on their risk levels at various stages, namely planning, procurement, selection, election implementation, and handover. The results of the risk assessment showed that there were no risks with extreme categories, but there were 10 risks with high categories, 53 risks with medium categories, and 1 risk with low categories. The results of this study are expected to contribute to the development of construction risk management policies and practices in the Agam Regency area, as well as provide new insights in research related to PBJP in other areas that have similar characteristics.*

***Keywords:*** *Services Procurement; Construction Work; Risk; PBJP Stakeholders; Project Owners.*


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## INTRODUCTION

PBJP is an activity of Procurement of Goods/Services by Ministries/Institutions/Regional Apparatus financed by the State Budget/Regional Budget whose process starts from the identification of needs to the handover of work results [1]. PBJP actors from the owner's side are Budget Users (PA), Budget User Proxies (KPA) and Commitment Making Officials (PPK) who can be assisted by the Contract Management Team which can consist of a Technical Team, Team/Experts and a support team (Government Goods/Services Procurement Policy Institute, 2021), with the aim of minimizing the risk of problems arising in the implementation of PBJP. A condition that arises due to uncertainty with all the unfavorable consequences that may occur is called risk or can also be said to be the result or deviation of the realization of the plan that may occur unexpectedly [2]

Based on data in 2023, a number of Construction Projects at the Public Works and Spatial Planning office of Agam Regency cannot be paid in the current budget year, from 24 project packages for Road, Bridge, Irrigation, SPAM and Drainage work to contractors caused by changes in budget policies and there are several other obstacles in the implementation of PBJP construction work so that it requires meticulousness from Service Users/Owners with the Contract Management Team in managing contract, considering the risks that can occur if the implementation of the construction PBJP is not carried out in accordance with applicable

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regulations. Currently, there is no research related to the risks that may occur in the implementation of PBJP, so it is necessary to conduct research to examine this.
This research can be a reference for Project Owners in planning more targeted risk mitigation measures at each stage of the project, from planning to handover. In addition, the results of this study are expected to contribute to the development of construction risk management policies and practices in the area.

## METHOD

The purpose of this study is to provide an alternative risk management model that can be used along with information about the possibility of risks in project owners in the implementation of PBJP Construction Work in Agam Regency. The stages and methods of the research are explained in more detail in the figure below:

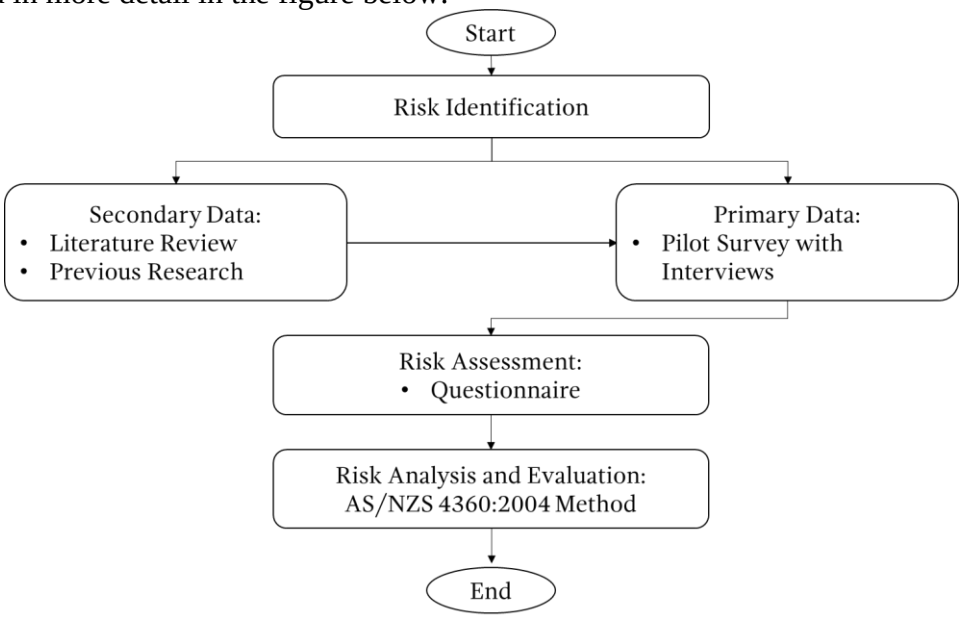


Figure 1. Research Flowchart

For more details, the stages and methods of the research are explained in more detail as follows:

### 1. Risk Identification

**Secondary data** is data obtained by researchers based on literature studies, as well as previous research and other supporting documents. The results of secondary data collection from this study are used as the basis for primary data collection (Pilot Survey).
At the stage of literature study, data was collected from several related sources, including research conducted by Rohdamei Lady Clara Sihotang [3], research conducted by Donny A. D. Mamesah, Cindy J. Supit, Steeva G. Rondonuwu [4], research conducted by Mustofa Kamal [5], and some book sources such as Managing PBJP contracts [6], Module for Planning PBJP [7], and PBJP Preparation Selection Module [8].

**Primary data** is data obtained by researchers directly from sources, this Pilot Survey method aims to determine the risk in accordance with the conditions of Construction Work Project Owners in Agam Regency by interviewing 3 officials as resource persons, namely PPK who are PBJP actors at the Agam Regency PUTR Office. Sampling for the Pilot survey stage with the following data from resource persons:

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a. PPK Bina Marga Area, DPUTR Agam Regency
b. PPK Cipta Karya Area, DPUTR Agam Regency
c. PPK Water Resources Management (PSDA) Area, DPUTR Agam Regency
From the results of the pilot survey, a list of risks will be compiled that will be used as a questionnaire design that will be distributed to respondents. In analyzing the list of risks, the approach taken is obtained as follows:

Table 2. Matrix of Research Stages and Methods

| | |
|---|---|
| **Variable X** | Producing the right goods/services for every amount spent, measured in terms of quality, quantity, time, cost, location, and provider, in accordance with procurement ethics. |
| **Variable Y** | Potential risks that may arise in the implementation of PBJP (Government Procurement of Goods/Services) for construction works.1.4 |

2. **Risk Assesment**
Respondents in the risk assessment using this questionnaire are PBJP Construction Work actors from the Project Owner, namely PA, KPA, PPK, PPTK, and the Technical Team who have experience in the Construction Work PBJP in the Agam Regency Government. At this stage of risk assessment, the total number of respondents was 31 people. The respondents were taken from 5 Agencies in Agam Regency that are often involved in the procurement of construction work. The questionnaire was distributed to respondents based on the data of the pilot survey list that had been identified

Table 3. Number of Population from the Risk Assessment Stage

| Procurement Actors | PUTR Office | Health Office | Perkim Office | Agriculture Office | Education Office | Total |
|---|---|---|---|---|---|---|
| PA/KPA | 1 | 1 | 1 | 1 | 1 | |
| PPK | 3 | 1 | 1 | 1 | 2 | |
| Technical Team | 15 | | 1 | 2 | | |
| Sum | 19 | 2 | 3 | 4 | 3 | 31 |

overall, the respondents can understand the questions asked well. This shows that the instruments used are relevant and in accordance with the research objectives. In addition, sample respondents were given questionnaires at different times to test consistency in filling in data. The results of this test showed that respondents gave consistent answers on both occasions, which indicates that the instrument used has good reliability and is reliable to measure the variables referred to in this study.

3.**Risk Analysis and Evaluation**
Risk analysis and evaluation are carried out to determine whether the risk category is still acceptable or not. The results of the risk evaluation are also used in determining the priority of control efforts to be carried out on the risks that occur. Risk evaluation is carried out based on AS/NZS 4360:2004 by determining the risk category, impact level and probability of the risk
The value scale frequency is selected from 1 to 5 with the following criteria:

Table 4: Frequency/ Possibility

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| Frequency Level | Value |
|---|---|
| Almost never happens | 1 |
| Rare | 2 |
| Sometimes it happens | 3 |
| Often occurs | 4 |
| Almost always happens | 5 |

Scale of impact/consequences if a risk occurs with the following criteria:

Table 5. Impact/Consequence assessment scale

| Consequence Level | Value |
|---|---|
| Very Low | 1 |
| Low | 2 |
| Medium | 3 |
| High | 4 |
| Very high | 5 |

The risk level value of all questionnaire data that has been filled in by the respondent will be processed to determine the average of the questionnaire data. The average score is

$$\text{Average} = \frac{\text{Total value of Frequency/impact}}{\text{Number of respondents}}$$

The risk level value is the value used for each respondent from the results of the assessment that has been filled in by the respondents, the risk level value is obtained with the formula:
Risk Level Assessment=F (Frequency) Average x D (Impact) Average
From the average value obtained, the level of risk in each indicator data can be determined. The level of risk by adopting the US/NZS 2004 risk matrix table

Table 6. Risk Level Scale (Level) According to AS/NZS 2004

| Risk Assessment | Risk Categories | Description |
|---|---|---|
| 1-4 | L | Low Risk |
| 5-9 | M | Moderate Risk |
| 10-16 | H | High Risk |
| 17-25 | E | Extreme Risk |

Risk evaluation is carried out to determine whether the risk category is still acceptable or not. The results of the risk evaluation are also used in determining the priority of control efforts to be carried out on the risks that occur.

## RESULTS AND DISCUSSION

At the risk identification stage, primary data produced a list of risks based on literature studies, then a pilot survey was conducted to 3 resource persons. From the results of the questionnaire, there were several adjustments between the results of the literature study and the results of the pilot survey, so that the number of risk lists became 65 risks. Some risks are eliminated and added according to the conditions in Agam Regency. Of the 65 risks, these risks are divided into 3 stages according to the stages in the procurement of government goods/services, namely the planning and preparation stage for procurement, the stage of preparation for the election and the implementation of the election as well as the implementation and handover stage. The results of the pilot survey are as follows:

Table 7. List of Risks Based on Pilot Survey Results

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| Activities | No. | Risk |
|---|---|---|
| **Stages of Planning and Preparation for Procurement** | | |
| Determination of Procurement Methods | R1 | The results of determining the method of procurement of goods/services are not appropriate |
| Packaging and Consolidation | R2 | Ineffective time and cost and resources |
| Procurement Budget | R3 | Revision of budget/organizational policy causes tender to be canceled |
| Assign HPS | R4 | Difficulty finding data to support Specifications/HPS of goods including installation/installation |
| | R5 | HPS value too high/low/past HPS validity period |
| | R6 | Incomplete components that form the forecast price |
| Menetapkan rancangan Kontrak | R7 | Contract language gives rise to multiple interpretations |
| | R8 | PPK does not set a late fine (period and amount of fine) |
| | R9 | The type of Contract used is not appropriate |
| Establish technical specifications/KAK | R10 | Technical specifications/KAK for tender/selection documents are unclear (too general/loose) |
| | R11 | The construction planning design is not in accordance with the scope of work |
| | R12 | Technical Specifications are not available in the market |
| Stipulating down payment, down payment guarantee, performance guarantee, maintenance guarantee, warranty certificate and/or price adjustment | R13 | Payment system indefinite error in the contract |
| | R14 | Error in calculating the value of the performance guarantee |
| | R15 | Error in determining the execution guarantee time |
| **Stages of Election Preparation and Election Implementation** | | |
| Review by the Selection Working Group/Procurement Officer | M1 | The results of the review of the preparatory documents are not in accordance with the provisions |
| Establishing Selection Methods, Bid Evaluation Methods, and Bid Document Delivery Methods | M2 | The Election Document is not in accordance with the provisions or characteristics of the work |
| | M3 | Pokmil lacks experience/ does not master the selection process |
| | M4 | There is a system problem/ application update/ change in tender rules causing the tender mechanism to change |
| Offer Evaluation | M5 | Lack of interest from providers to bid |
| | M6 | The tender schedule was postponed because it took longer document evaluation time |
| | M7 | Tender failed/did not obtain the tender winner |
| Offer Evaluation | M8 | There is collusion between PPK, Partners, PPHP, PA and Working Group |
| Rebuttal Management | M9 | There was a rebuttal at the end of the tender process |
| **Implementation and Handover** | | |
| Review of Provider Selection Results Report | P1 | The determination of the winner is not in accordance with the evaluation criteria |
| Contract Signing Preparation Meeting | P2 | Contract clauses are not in accordance with the draft contract |

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| Activities | No. | Risk |
|---|---|---|
| Implementation of Contract Signatories | P3 | Job pricing errors in contracts |
| | P4 | No contractual engagement |
| Handover of Work Sites and Personnel | P5 | The work is carried out on land/locations with legal problems |
| Work Start Order (SPMK)/Delivery Order (SPP) | P6 | Late issuance of SPMK |
| Advance Payment | P7 | Work progress is not achieved after the provider receives the down payment |
| Mobilization | P8 | Problems or accidents occur during resource mobilization |
| Joint Examination | P9 | Planning is not in accordance with conditions in the field |
| Contract Control | P10 | Claims from providers |
| | P11 | Revision of the budget/policies of leaders that causes the scope of work to change |
| | P12 | The coordination of the delivery of goods is not good, so the receipt of goods is late |
| | P13 | Goods shipped damaged/project costs go up |
| | P14 | The site/location of the tool is not ready |
| | P15 | The implementation of work exceeds the specified time |
| | P16 | There is a contract dispute |
| | P17 | Delika complaints from the community/investigation from law enforcement officials |
| | P18 | Construction/project costs go up Design drawings are incomplete/available |
| | P19 | The quality of construction work is not met |
| | P20 | The flow of information does not run and communication does not empower electronic devices |
| | P21 | The acting supervisor does not carry out his duties as he should |
| Work Performance Pay | P22 | Payments not in accordance with physical realization |
| Contract Changes | P23 | Addendum additions exceeding 10% of the contract value |
| | P24 | Changing most of the scope of work |
| | P25 | Changes not agreed by either party/no agreement |
| | P26 | The contract addendum is not signed by the authorized authorities |
| Kahar Condition | P27 | A natural disaster occurred causing work to stop |
| Termination of Contract | P28 | The dismissed item/scope of work is still needed |
| Termination of Contract | P29 | No prior warning letter |
| | P30 | There are no sanctions due to the termination |
| | P31 | The reason for the termination of the contract is not in accordance with the provisions |
| Giving Opportunities | P32 | SCM results not met |
| Handover from Providers to PPK | P33 | delay in handover of work |
| | P34 | PPK does not know when the handover must be carried out |
| | P35 | The goods handed over are not in accordance with the specifications |

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| Activities | No. | Risk |
|---|---|---|
| | P36 | Damage to buildings/construction |
| | P37 | PPK Signs BAST from the implementing party for 100% unfinished work |
| | P38 | Administration is not fulfilled/complete |
| | P39 | Increased maintenance costs that do not go according to plan |
| | P40 | Human resources are not in accordance with competencies and PHO Team reports are not in accordance with conditions in the field |

A questionnaire list containing 64 risk lists was distributed to respondents to be filled out by providing frequency (1-5) and impact (1-5) values on each risk list. Frequency indicates how often the risk occurs, while impact describes how much impact it will have if the risk occurs. Then, the data is processed to find the average of each frequency and impact. The average frequency is calculated by dividing the total frequency value by the number of respondents, while the average impact is calculated by dividing the total impact value by the number of respondents. After obtaining all the average frequency and impact, the risk level value is calculated by multiplying the average frequency and the average impact that has been obtained. Furthermore, the risk level values are sorted from highest to lowest, with the risk having the highest value ranking at the top.

**1. Results and Analysis of Risk Level Values for Procurement Planning and Preparation Stages**

The results of the analysis of the calculation of the Risk Level Value obtained from multiplying the average frequency with the average impact on the Planning and Preparation Stage of Procurement can be shown in the table below

Table 8. List of Risk Level Values based on Procurement Planning and Preparation Stages

| Code | Average frequency | Average Impact | Risk Level Assessment | Level Risk | Rank |
|---|---|---|---|---|---|
| R1 | 1,65 | 3,26 | 5,36 | Moderate | |
| R2 | 1,87 | 3,16 | 5,91 | Moderate | |
| R3 | 2,52 | 3,35 | 8,44 | Moderate | 1 |
| R4 | 2,10 | 3,39 | 7,10 | Moderate | |
| R5 | 2,16 | 3,58 | 7,74 | Moderate | 3 |
| R6 | 1,97 | 3,35 | 6,60 | Moderate | |
| R7 | 1,87 | 3,32 | 6,22 | Moderate | |
| R8 | 1,52 | 3,81 | 5,77 | Moderate | |
| R9 | 1,42 | 3,61 | 5,13 | Moderate | |
| R10 | 2,29 | 3,29 | 7,54 | Moderate | |
| R11 | 2,19 | 3,61 | 7,93 | Moderate | 2 |
| R12 | 1,90 | 3,55 | 6,75 | Moderate | |
| R13 | 1,55 | 3,65 | 5,64 | Moderate | |
| R14 | 1,71 | 3,45 | 5,90 | Moderate | |
| R15 | 1,52 | 3,68 | 5,58 | Moderate | |

As for the graph, it can be described as follows:

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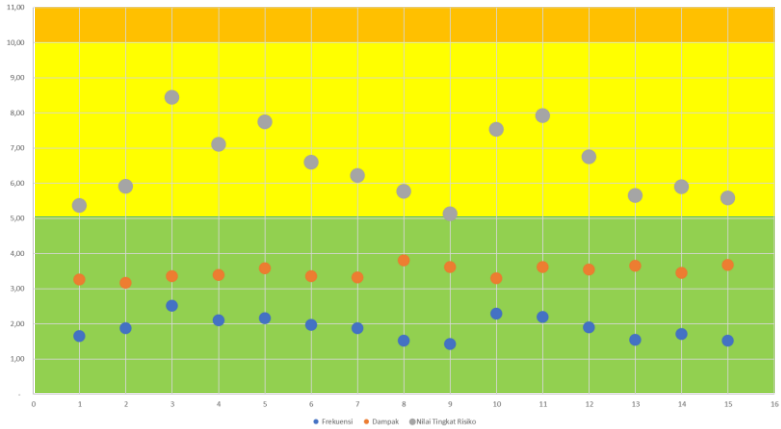

Figure 2. Average Results of Risk Level Values at the Planning and Preparation Stages of Procurement

From the average results of the Risk Level Value at the Planning and Preparation stage of Procurement, all Risk Levels are Moderate/Medium. with the Highest Value in Procurement Budget Activities, namely Budget Revision/Organizational Policy Causing the Tender to Be Canceled (R3), Followed by the Activity of Determining Technical Specifications/KAK with the Risk of Construction Planning Design Not in Accordance with the Scope of Work (R11), Followed by the Activity of Determining HPS with the Risk of HPS Value Being Too High/Low/HPS Validity Period Has Expired (R5).
Activities with the highest impact at the stage of Planning and Preparation for Procurement are Activities to Determine Contract Designs with Risks PPK does not set late fines (duration and amount of fines) (R8) but respondents are of the view that this event is relatively rare (average value 1.52)

**2. Analysis of Risk Level Values for Election Preparation and Election Implementation Stages**

From the analysis of the calculation of the Risk Level Value, it is obtained from multiplying the average frequency with the average impact on the Election Preparation Stage and Election Implementation can be shown in the table below:

Table 9. List of Risk Level Values based on Election Preparation Stages and Election Implementation

| Code | Average Frequency | Average Impact | Risk Level Assessment | Level Risk | Rank |
|---|---|---|---|---|---|
| M1 | 1,77 | 3,32 | 5,89 | Moderate | |
| M2 | 1,68 | 3,35 | 5,63 | Moderate | |
| M3 | 2,10 | 4,00 | 8,39 | Moderate | |
| M4 | 2,35 | 3,61 | 8,51 | Moderate | |
| M5 | 2,35 | 3,32 | 7,82 | Moderate | |
| M6 | 3,29 | 3,48 | 11,46 | High | 1 |
| M7 | 2,61 | 3,52 | 9,19 | High | 3 |
| M8 | 1,42 | 4,03 | 5,72 | Moderate | |
| M9 | 2,94 | 3,52 | 10,32 | High | 2 |

As for the graph, it can be described as follows:

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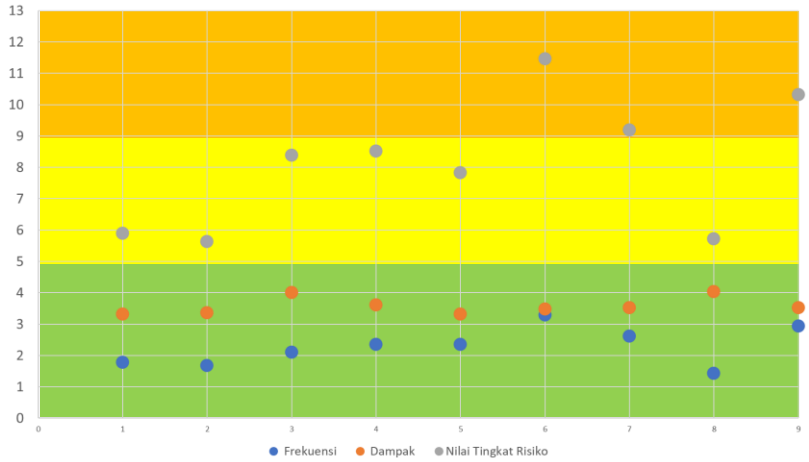


Figure 3. Average Results of Risk Level Scores at the Election Preparation and Election Implementation Stages

From the average results of the Risk Level Value at the Election Preparation and Election Implementation stage of 3 High/High Value Risk Levels with the Highest Score in the Bid Evaluation Activity, namely the tender schedule is backward because it takes a longer document evaluation time (M6), Followed by the Rebuttal Management activity with the emergence of a rebuttal at the end of the tender process (M9), Followed by the Evaluation of the Bid with the Risk of the Tender failing/not obtaining the tender winner (M7)
The Activity with the Highest Impact At the Stage of Election Preparation and Election Implementation is the Bid Evaluation Activity with Collusion between PPK, Partners, PPHP, PA and Working Group (M8) but respondents are of the view that this event is relatively rare (average score 1.42) and the risk of Pokmil lack of experience/not mastering the election process (M3) respondents are of the view that this event sometimes occurs (average score 2.10).

**3. Results and Analysis of Risk Level Values for Implementation and Handover Stages**
From the analysis of the calculation of the Risk Level Value, it is obtained from multiplying the average frequency with the average impact on the Implementation and Handover Stages can be shown in the table below:

Table 10. List of Risk Level Values based on Implementation and Handover Stages

| Code | Average Frequency | Average Impact | Risk Level Assessment | Level Risk | Rank |
|---|---|---|---|---|---|
| P1 | 1,81 | 3,87 | 6,99 | Moderate | |
| P2 | 1,42 | 3,48 | 4,94 | Moderate | |
| P3 | 1,68 | 3,52 | 5,90 | Moderate | |
| P4 | 1,16 | 3,71 | 4,31 | Moderate | |
| P5 | 1,58 | 4,23 | 6,68 | Moderate | |
| P6 | 1,61 | 3,35 | 5,41 | Moderate | |
| P7 | 2,35 | 3,87 | 9,12 | High | |
| P8 | 1,74 | 3,45 | 6,01 | Moderate | |
| P9 | 2,71 | 3,71 | 10,05 | High | 1 |
| P10 | 1,68 | 3,32 | 5,57 | Moderate | |
| P11 | 2,19 | 3,65 | 8,00 | Moderate | |
| P12 | 2,32 | 3,65 | 8,47 | Moderate | |

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| Code | Average Frequency | Average Impact | Risk Level Assessment | Level Risk | Rank |
|---|---|---|---|---|---|
| P13 | 2,06 | 3,65 | 7,53 | Moderate | |
| P14 | 2,35 | 3,39 | 7,98 | Moderate | |
| P15 | 2,65 | 3,77 | 9,98 | High | 2 |
| P16 | 1,61 | 3,52 | 5,67 | Moderate | |
| P17 | 2,61 | 3,81 | 9,95 | High | 3 |
| P18 | 2,16 | 3,32 | 7,18 | Moderate | |
| P19 | 2,45 | 3,84 | 9,41 | High | |
| P20 | 2,19 | 3,19 | 7,01 | Moderate | |
| P21 | 2,52 | 3,84 | 9,66 | High | |
| P22 | 1,81 | 3,84 | 6,93 | Moderate | |
| P23 | 1,55 | 3,65 | 5,64 | Moderate | |
| P24 | 1,87 | 3,52 | 6,58 | Moderate | |
| P25 | 1,35 | 3,35 | 4,55 | Moderate | |
| P26 | 1,13 | 3,52 | 3,97 | Low | |
| P27 | 2,39 | 3,87 | 9,24 | High | |
| P28 | 1,61 | 3,87 | 6,24 | Moderate | |
| P29 | 1,58 | 3,48 | 5,51 | Moderate | |
| P30 | 1,35 | 3,74 | 5,07 | Moderate | |
| P31 | 1,35 | 3,84 | 5,20 | Moderate | |
| P32 | 1,84 | 3,77 | 6,94 | Moderate | |
| P33 | 2,35 | 3,71 | 8,74 | Moderate | |
| P34 | 1,39 | 3,45 | 4,79 | Moderate | |
| P35 | 1,81 | 3,84 | 6,93 | Moderate | |
| P36 | 1,87 | 3,81 | 7,12 | Moderate | |
| P37 | 1,19 | 4,19 | 5,01 | Moderate | |
| P38 | 2,06 | 3,68 | 7,59 | Moderate | |
| P39 | 2,00 | 3,52 | 7,03 | Moderate | |
| P40 | 2,03 | 3,77 | 7,67 | Moderate | |

As for the graph, it can be described as follows:

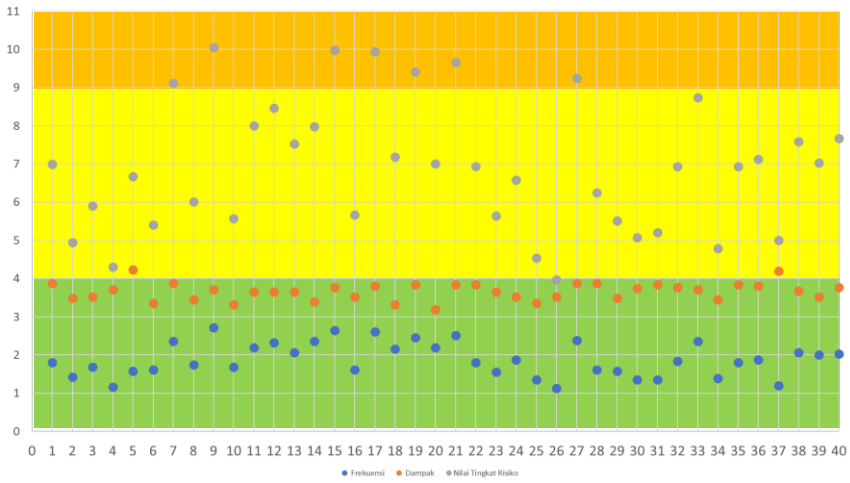


Figure 4. Average Results of Risk Level Values at the Implementation and Handover Stages

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From the average results of the Risk Level Value at the Implementation and Handover stages, there are 7 High/High Value Risk Levels, with the highest score in the Joint Inspection Activity, namely Planning not in accordance with conditions in the field (P9), Followed by Contract Control activities with the implementation of work beyond the specified time (P15), Followed by the same activity, namely Contract Control with the risk of Delika complaints from the community/inspection from law enforcement officials (P17).

Activities with the Highest Impact At the Implementation and Handover Stage are Handover of Work Sites and Personnel with the risk of work being carried out on land/locations with legal problems (P5) with an average impact value of 4.23, but respondents are of the view that this event is relatively rare with an average frequency value of 1.58) and Handover Activities from Suppliers to PPK with the risk of PPK Signing BAST from the implementing party for unfinished work 100% (P37) with an average impact value of 4.19, but respondents are of the view that this event is relatively rare with an average frequency value of 1.19)

After obtaining the Risk Level Value from the Average Frequency Result and the Average Impact Result, an Evaluation of the Risk Value from the highest value is carried out and categorized according to the Risk Level. The following Risk Level Values have been sorted by risk level.

Table 11. Level Matrix and Risk Level Value according to Activities and Risk List (Extreme and High)

| No | Level Risk | Code | Activities | Risk List | Risk Assessment |
|---|---|---|---|---|---|
| 1 | Extreme | - | - | - | - |
| 2 | High | M6 | Offer Evaluation | The tender schedule was postponed because it took longer document evaluation time | 11,46 |
| | | M9 | Rebuttal Management | There was a rebuttal at the end of the tender process | 10,32 |
| | | P9 | Joint Examination | Planning is not in accordance with conditions in the field | 10,05 |
| | | P15 | Contract Control | The implementation of work exceeds the specified time | 9,98 |
| | | P17 | Contract Control | Delika complaints from the community/investigation from law enforcement officials | 9,95 |
| | | P21 | Contract Control | The acting supervisor does not carry out his duties as he should | 9,66 |
| | | P19 | Contract Control | The quality of construction work is not met | 9,41 |
| | | P27 | Kahar Condition | A natural disaster occurred causing work to stop | 9,24 |
| | | M7 | Offer Evaluation | Tender failed/did not obtain the tender winner | 9,19 |
| | | P7 | Advance Payment | Work progress is not achieved after the provider receives the down payment | 9,12 |

In the table above, it can be seen that the Highest Risk Level Value at the Election Preparation and Election Implementation Stages, namely in the Bid Evaluation Activity with the risk of the tender schedule being pushed back because it takes a longer document evaluation time with a

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Risk Level Value of 11.46. Bid Evaluation Activity is a procurement stage carried out by an external party from the owner, namely by the Election Working Group, the longer the bid evaluation time will affect the beginning of the implementation of the work and this often occurs due to the number of Election Working Group personnel in Agam Regency is still insufficient compared to the number of Work packages.

Furthermore, the second highest Risk Level Value in Rebuttal Management Activities with the risk of rebuttals appearing at the end of the tender process (Risk Level Value = 10.32), this risk is also the owner's risk whose implementation stage is carried out by the Election Working Group, where the longer the rebuttal stage is completed, it also affects the beginning of the implementation of the work which can reduce the period of implementation of the work that has been set in the draft contract and can cause non-realization PBJP's objectives from the aspect of time and providers. Denials that often occur include providers considering that the Working Group made mistakes in carrying out evaluations, several administrative and technical requirements that often abort providers in the election stage.

Furthermore, the third highest Risk Level Value in Joint Inspection Activities with the risk of Planning not being in accordance with conditions in the field with a Risk Level Value of 10.05, this risk is considered to occur occasionally. After the field handover, a joint inspection of field conditions was carried out with planning documents and outlined in the Mutual Check 0% (MC 0) document. The preparation of MC 0 which is far different from the planning document can provide the risk of delays, because it takes time to review the design, thus making the implementation of the work back from the plan.

## CONCLUSION

Based on the results of the research, the identification of risks in the implementation of PBJP construction work in Agam Regency resulted in a total of 64 risks, which were divided into three stages, namely 15 risks at the Planning and Preparation stage of Procurement, 9 risks at the Selection stage, and 40 risks at the Implementation and Handover stage. From the results of the risk assessment, it was found that there were no risks with the Extreme category, 10 risks with the High category, 53 risks with the Medium category, and 1 risk with the Low category. The highest risk identified was "backward tender schedule", which was caused by the document evaluation process which took longer. To overcome this, it is recommended to tender early, add personnel to the Adhoc Selection Working Group, and provide alternative supplier selection methods such as using e-catalogs.

This research has several limitations that need to be considered. First, the number of respondents is limited to 31 people from 5 agencies in Agam Regency, which may not fully represent all stakeholders related to PBJP. Second, this study only uses questionnaires as a data collection instrument, which has limitations in digging up more in-depth information. Third, this study is limited to Agam Regency, so the results may not be generalized to other areas with different conditions. In addition, this research was conducted for a limited time, so it did not include long-term observation of the impact of the risks that occurred.
To minimize the risk impact of PBJP implementation, there needs to be intensive coordination between all stakeholders starting from the planning stage to the handover of work, including with the Leadership, Election Working Group, Contractors, the Community, Law Enforcement Officials, BPBD, and other related parties. Thus, it is hoped that the goals of PBJP can be achieved optimally and reduce potential risks that can hinder the progress of construction projects. In addition, it is important to conduct regular monitoring to identify and proactively

address risks, so that the project can be carried out in accordance with the plan and budget that has been set.

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