

Implementation of Risk Management at the Makassar Region V Airport Authority Office

Yunita Astuti¹, Muhammad Ridwan Arif², Abdul Samad Arief¹

¹Master of Management Program, Graduate School, Universitas Fajar Makassar, Indonesia

²Politeknik Negeri Ujung Pandang, Indonesia

Email: yunitaperencanaan@gmail.com

Abstract. *This study aims to evaluate the implementation of risk management at the Makassar Region V Airport Authority Office, focusing on the extent to which risk management principles, frameworks, and processes have been implemented in accordance with the ISO 31000:2018 standard and Minister of Transportation Decree No. KM 69 of 2023. The analysis was conducted using the Risk Control Self-Assessment (RCSA) approach to identify risks, evaluate internal controls, and assess the effectiveness of the three lines of defense structure in risk management. The results of the study indicate that the implementation of risk management at the Makassar Region V Airport Authority Office goes through several processes starting from establishing the context, then continuing with risk identification, conducting risk analysis and evaluation, risk management plans, and then recording and reporting. The implementation of risk management at the Makassar Region V Airport Authority Office has only been running for 2 years, so it still faces various obstacles, such as limited human resources, lack of data integration, and an organizational culture that does not fully support risk management. This study provides a strategic contribution to the development of risk management practices in the air transportation sector and recommends continuous improvement through strengthening internal policies, increasing human resource capacity, and optimizing the use of information technology.*

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INTRODUCTION

In the modern world of organizations, risk management is a crucial component that cannot be ignored. Every operational activity, especially in a vital sector like aviation, always carries potential risks that can impact the achievement of organizational goals. These risks can originate from internal and external factors, such as procedural errors, regulatory inconsistencies, policy changes, technological disruptions, and even extreme weather conditions and natural disasters. With increasing flight volumes and operational complexity, the risks faced are also increasingly diverse (Bracci et al., 2021; Silva & Dutra, 2021; Andersen & Young, 2021). According to ISO 31000:2018 in the Minister of Transportation Decree Number 69 of 2023, risk management is the coordinated activities carried out to manage and control an organization in relation to the risks it faces (Transportation and Indonesia 2023).

Therefore, in the context of air transportation management, which is highly complex and carries significant levels of risk, risk management is a necessity that cannot be ignored. Risk

management plays a crucial role in ensuring flight safety, airport security, and operational efficiency and effectiveness (Sivakumar, 2022; Liou et al., 2022). The Makassar Region V Airport Authority Office is an extension of the Directorate General of Transportation (Ditjen Hubud) within the Ministry of Transportation. Based on the Minister of Transportation Regulation Number PM 41 of 2011 concerning the organization and work procedures of the Airport Authority Office, the Airport Authority Office is a technical implementer within the Ministry of Transportation that has the task of implementing the regulation, control and supervision of flight activities at airports. The Makassar Region V Airport Authority Office has a total of 164 ASN (State Civil Apparatus) employees. In accordance with the mandate of the institution, which oversees airport operations in the Sulawesi region, it has strategic responsibility for managing risks that could potentially impact the quality of public services, flight oversight, and air transportation safety in general (Jadhav et al., 2024). However, the reality on the ground indicates that significant challenges remain in the implementation of risk management within this institution.

The Makassar Region V Airport Authority Office has not achieved the Corruption-Free Area (WBK) designation from 2019 to 2024, despite various improvement efforts, including the establishment of an integrity zone. This situation indicates gaps in the implementation of good governance principles, particularly in risk control. Ineffective risk management not only impacts the institution's reputation but also has the potential to undermine service quality and the effectiveness of aviation safety oversight (Asnawi et al., 2023; Pramayuningtyas & Djakman, 2024). Therefore, a systematic study is needed to determine the extent to which risk management principles, frameworks, and processes have been implemented within the Makassar Region V Airport Authority Office. This research is also relevant to the enactment of Decree of the Minister of Transportation of the Republic of Indonesia Number KM 69 of 2023 concerning Risk Management within the Ministry of Transportation, which emphasizes the importance of implementing risk management principles in an integrated, structured, and sustainable manner across all Ministry of Transportation work units (Alijoyo & Fisabilillah, 2021; Hikam et al., 2026).

Risk management in the air transportation sector, particularly within airport authorities, serves not only to prevent incidents and accidents but also as a tool to improve the efficiency, transparency, and accountability of public institutions (Tangsgaard, 2022; Bracci et al., 2024). International standards such as ISO 31000 provide comprehensive guidance on the process of identifying, analyzing, evaluating, and controlling risks that can be adopted by public sector organizations. In this context, it is crucial to explore how risk management can be implemented effectively at the Makassar Region V Air Authority Office. One initial step is to conduct an in-depth analysis of the types of risks likely to be faced. This raises questions about the extent to which regulatory bodies, such as the Makassar Region V Airport Authority Office, implement comprehensive risk management principles (Renn, 2022; Whittle & Nel-Sanders, 2022).

Empirical data shows that in recent years, there has been a trend of increasing accidents related to aviation safety and security management. This is evident in Table 1.1, a 5-year average accident data (2020-2024) released by IATA in its 2024 safety report. The IATA (International Air Transport Association) report shows significant, sustained improvements in aviation safety. For example, the average was one accident for every 456,000 flights in 2011-2015, increasing to one accident for every 810,000 flights in 2020-2024. (IATA Releases 2024 Safety Report). Aviation safety management research emphasizes the importance of systematic safety assessment and risk-based approaches in maintaining and improving aviation safety performance (Dewi, 2021; Stoop et al., 2023).

According to a report from the Ministry of Transportation, throughout 2022, there was an increase in reports of hazards and unusual events (irregularities), indicating a weak early detection system for critical risks. The following is the global accident data from 2020-2024, based on the IATA (International Air Transport Association) report. In this context, the Makassar Region V Airport Authority Office plays a strategic role in responding to these reports and developing data-driven risk control mechanisms. However, if a risk management system is not

implemented comprehensively, risk responses will be reactive and ineffective (Andersen & Young, 2023; Guo et al., 2024). Recent research also demonstrates the importance of anomaly detection and predictive analytical approaches in identifying potential safety problems before they develop into more serious operational events (Wang et al., 2025; Hu et al., 2025).

Several previous studies indicate that the topic of risk management in the air transportation sector is still dominated by technical approaches and narrow case studies. Research by Abisay and Nurhadi (2014) emphasized the importance of implementing ISO 31000 in the context of Soekarno-Hatta Airport, but did not examine institutional aspects and oversight by airport authorities. Meanwhile, research by Irvan and Maulana (2023) also noted that at Sultan Muhammad Salahuddin Airport in Bima, the majority of aviation risks were in the red zone, indicating the need for improved risk control and monitoring. On the other hand, research by Ramadhani and Rachmawati (2022) on runway operations at Juanda Airport shows that the systematic use of ISO 31000:2018 and HIRADC (Hazard Identification, Risk Assessment, and Determining Control)-based methods can help identify risks and develop more effective control plans (Sivakumar, 2022; Zu et al., 2024). These limitations create a research gap in the literature regarding the implementation of holistic risk management in airport authority institutions (Kwak & Choi, 2021; Nugraha et al., 2022).

This research aims to fill this gap through a descriptive approach to risk management implementation at the Makassar Airport Authority Office Region V. By focusing on the stages of identification, analysis, evaluation, and risk handling and mitigation, this study is expected to systematically describe how risk management policies and practices are implemented, including the obstacles encountered in their implementation. Furthermore, this approach will explore the relationship between risk management and governance aspects, organizational culture, and the effectiveness of the oversight function, which are the institution's primary mandate (Priyarsono et al., 2023; Rinaldi et al., 2024).

The contribution of this research is both strategic and applicable. First, from an academic perspective, this study is expected to enrich the literature on public sector risk management, particularly in the air transportation sector, which has received relatively little attention in the Indonesian context. Second, from a practical perspective, the findings of this study have the potential to provide operational and actionable recommendations for policymakers within the Makassar Region V Airport Authority Office and the Ministry of Transportation more broadly, to improve the effectiveness of risk-based governance and oversight functions. Third, from a social perspective, improving the effectiveness of risk management is seen as capable of fostering more reliable, transparent, and accountable public services, and significantly reducing the potential for incidents that could endanger the safety of air transportation users (Yudiyanto & Ningsih, 2023; Weyha et al., 2025; Labolo et al., 2025).

With a systematic, data-driven evaluative approach and a strong theoretical framework, this study is expected to address gaps in previous studies and serve as a reference for risk management reform within transportation sector regulatory agencies in Indonesia. Based on the above description, the researcher deems it necessary to conduct an in-depth study to determine the extent of risk management implementation within the Makassar Region V Airport Authority Office. This study not only aims to describe the risk management implementation process, but also to identify its effectiveness, constraints, and potential for improvement in the context of air transportation sector supervision.

METHODS

Research Approach and Design

This study adopts a qualitative descriptive design aimed at generating a comprehensive, contextualized understanding of how risk management is implemented at the Makassar Region V Airport Authority Office. The qualitative descriptive approach is particularly suitable for studies

seeking to describe processes, behaviors, and institutional practices as they occur naturally, without imposing complex theoretical constructs. Within this framework, the study employs the Risk Control Self-Assessment (RCSA) approach as the analytical lens. RCSA is widely recognized in organizational governance and internal control research as an effective mechanism for identifying key risks, assessing control effectiveness, and systematically evaluating potential vulnerabilities (Basel Committee, 2014). Its use in this study is methodologically justified because aviation oversight institutions operate under compliance-intensive environments where risk identification and control effectiveness must be continuously monitored at the unit level. The integration of RCSA into a qualitative design enables the researcher to capture not only documented risks and mitigation plans but also the interpretive, behavioral, and structural dimensions influencing risk management practices.

Researcher's Role and Reflexivity

In qualitative research, the researcher serves as the primary instrument responsible for data collection, interpretation, and verification. Throughout this study, the researcher acted as an observer-participant who interacted directly with informants, observed risk management activities, and analyzed relevant documents. Recognizing the centrality of reflexivity, the researcher maintained continuous reflective notes to identify potential biases such as interpretive over-familiarity with government institutions or assumptions about regulatory compliance. These biases were mitigated through triangulation of data sources, peer debriefing with independent qualitative experts, strict documentation of analytic decisions, and avoidance of leading or evaluative questions during interviews. This reflexive positioning enhances the transparency, neutrality, and trustworthiness of the research.

Research Site

The study was conducted at the Makassar Region V Airport Authority Office, located at Jl. Otoritas Bandara No. 5, Mandai District, Maros Regency. The site was selected due to its strategic role as a regulatory body responsible for supervising aviation safety, airport operations, and compliance with national air-transport regulations. Its centrality in coordinating risk management processes provides a rich context for investigating institutional readiness, procedural consistency, and organizational challenges in implementing risk management systems.

Sampling Strategy and Informants

This study used purposive sampling to ensure that participants were selected based on their direct involvement with risk management functions. Informants were required to meet at least one of the following criteria: involvement in drafting risk identification or mitigation documents, responsibility for monitoring risk management implementation, formal designation as a risk owner or risk manager, or participation in SIMARKO-based risk reporting. A total of twelve (12) informants participated, including unit heads, risk owners, risk managers, inspectors, planning-division personnel, and administrative staff supporting risk documentation. This distribution ensures representation across the three lines of defense framework risk owners (first line), risk managers planners (second line), and internal audit representatives (third line). Sampling continued until data saturation was achieved, indicated by repetitive insights and the absence of new codes emerging from interview transcripts.

Data Sources

The research utilized both primary and secondary data. Primary data consisted of in-depth interviews, participant observations, and field notes taken during coordination meetings, SIMARKO data-entry sessions, and internal risk-management evaluations. Secondary data were obtained from formal documents including risk charters, risk profiles, business process drafts, performance agreements, audit reports, and regulatory instruments such as KM 69/2023 and ISO

31000:2018. All documents were analyzed to strengthen the interpretation of field data and to verify procedural consistency.

Data Collection Techniques

Data collection was conducted through three primary techniques. First, semi-structured interviews were used to elicit detailed explanations of how risks are identified, analyzed, mitigated, and monitored within the agency. The interview protocol was developed specifically for this research and consisted of question clusters addressing contextual analysis, RCSA implementation, coordination mechanisms, system utilization, and perceived challenges. Interviews lasted 45–75 minutes and were audio-recorded with informed consent. Second, participant observation allowed the researcher to directly observe organizational behavior during risk-assessment activities, thereby capturing non-verbal communication, decision-making dynamics, and procedural deviations that could not be obtained solely from interviews. Third, document analysis was conducted using a systematic reading strategy focusing on document purpose, structure, alignment with regulatory standards, and their contribution to risk-management processes. These three methods complemented each other and supported triangulation.

Data Analysis Procedures

Data were analyzed using the interactive model developed by Miles and Huberman (2014), operationalized through three interconnected stages. The first stage, data reduction, involved importing transcripts, observation notes, and documents into NVivo and conducting open coding to identify initial concepts appearing in the data. Codes such as “context establishment gaps,” “document–practice mismatch,” “coordination dependency,” and “risk categorization difficulties” emerged during this stage. These initial codes were then grouped into broader categories through axial coding, forming clusters such as “procedural consistency,” “organizational readiness,” and “structural constraints.” The second stage, data display, organized reduced data into thematic matrices, conceptual charts, and comparative tables that illustrated relationships between categories and sub-themes. The third stage, conclusion drawing and verification, involved identifying final themes, validating interpretations through cross-source comparison, and refining analytic conclusions through iterative review of coded segments. This process enabled a rigorous transformation of raw data into coherent thematic findings.

Validity and Trustworthiness

To ensure methodological rigor, the study applied Lincoln and Guba’s trustworthiness criteria. Credibility was strengthened through triangulation of methods (interviews, observations, documents) and sources (leaders, inspectors, planners). Member checking was conducted with key informants to confirm the accuracy of interpretations. Transferability was supported by detailed description of the institutional context and research setting. Dependability was achieved through an audit trail documenting all research steps, analytic decisions, coding iterations, and interpretive memos. Confirmability was ensured through reflexive journaling and external peer debriefing, allowing interpretations to be grounded in empirical data rather than subjective inclination.

Ethical Considerations

Ethical procedures were strictly followed throughout the research process. All participants were informed of the study’s purpose, their right to withdraw, and the confidentiality of their responses. Interview recordings and transcripts were stored securely using encrypted digital storage, and participants’ identities were anonymized using initials to protect their privacy. Sensitive institutional information was handled according to ethical guidelines and was used solely for academic purposes.

Separation of Procedures and Findings

The methodological procedures presented above describe only the systematic steps undertaken in conducting the research and do not contain empirical findings. All findings resulting from the execution of these procedures including identified risks, challenges, or institutional patterns are presented separately in the *Results and Discussion* section to maintain conceptual clarity and avoid methodological empirical conflation.

RESULTS AND DISCUSSION

Interview Data Related to Risk Management Process at the Airport Authority Office of Region V Makassar

The first interview was conducted on Thursday, June 26, 2025, at 16:00, in the head office meeting room, following the data entry for risk management in the newly implemented Risk Management Information System (SIMARKO). This opportunity was utilized by the researcher to conduct an interview with two informants, whose identities have been anonymized for confidentiality: Mr. Jm, from the Planning and Finance section representing the Risk Management Unit (UMR), and Mr. Mr, representing the Risk Owner Unit (UPR) in the field of aviation security. The interview focused on several key aspects of risk management: context establishment, risk identification, risk analysis and evaluation, risk treatment, and consultation and communication. Context establishment serves as the foundational parameter for implementing risk management. This stage involves defining basic parameters by first understanding the internal and external environment in which risk management operates.

At this stage, the researcher asked Mr. Jm:

"To what extent has the Airport Authority Office of Region V Makassar implemented risk management?"

Mr. Jm explained:

"Risk management has been implemented for the past two years. It is part of the assessment of the Government Internal Control System (SPIP) and helps ensure that all identified risks within the organization are managed properly." (Interview, June 26, 2025)

The implementation of risk management is evidenced by several risk management documents, including Form 1 (Context Establishment Form), Form 5 (Risk Profile Form for identification, analysis, and evaluation of risks), and Form 8 (Risk Treatment Plan Form). These documents serve as supporting data for the risk management reporting of the Airport Authority Office of Region V Makassar.

Regarding context establishment, the researcher further asked:

"How does the organization establish internal and external context for each work unit? Is there an official document that describes the risk context comprehensively, and who is involved in the context establishment process?"

Mr. Jm explained:

"In establishing the context, we refer to the strategic plan (Renstra) of the Airport Authority Office of Region V Makassar, which outlines our strengths and weaknesses. Internal factors include man (human resources), money (budget), method (procedures and methods in performing duties), machine (facilities and equipment supporting duties), and material (adequate materials and supplies). These five elements help determine the strengths and weaknesses of the risk owner. External factors consider the organization's relationships with stakeholders across political, economic, socio-cultural, and other dimensions. Context establishment is carried out by risk managers with the involvement of unit leaders." (Interview, June 26, 2025)

Based on KM 69 of 2023, context establishment is typically conducted by risk managers in the first line of defense. However, at the Airport Authority Office of Region V Makassar, the process is conducted by the UMR in the second line, as the Planning section functions under the SPI mandate from UMR Directorate General of Civil Aviation to monitor risk management within work units. The Planning section has received technical guidance on risk management, which is then disseminated to the designated Person in Charge (PIC) of risk management through a Head of Office Decree. In practice, context establishment mainly refers to planning documents, which makes it easier for the second line to present the data while still coordinating with the first line.

On July 16, 2025, the researcher requested Mr. Jm to show the risk management document related to context establishment. Mr. Jm presented Form 1, included in the appendix, and demonstrated its interface in the SIMARKO application. From the SIMARKO interface, context establishment is found under the risk establishment menu, which requires prior input in other menus, namely objectives and business processes. According to the information obtained, the strategic plan (Renstra) is inputted in the objective's menu, while business process data is entered based on RO (Output Details) and KRO (Output Classification Details) found in the operational activity guidelines (POK). Although the data entry is conducted through the SIMARKO application, the Airport Authority Office of Region V Makassar continues to compile the risk management context recorded in Form 1, in accordance with Minister of Transportation Decree No. KM 69 of 2023 on risk management within the Ministry of Transportation.

The following section presents an example of context establishment in risk management at the Airport Authority Office of Region V Makassar, continuing through to the risk treatment plan. According to KM 69 of 2023, risk identification is the process of determining what, where, when, why, and how an event can occur that may negatively impact the achievement of organizational objectives. This process results in a risk list that contains structured risk questions.

Regarding risk identification, the researcher asked:

"How is the risk identification process conducted at the Airport Authority Office of Region V Makassar?"

Mr. Jm explained:

"The process of identifying risks begins by establishing business processes derived from the duties and functions of each work unit. These processes are then grouped so that we can identify risk events, risk causes, risk impacts, risk controls, and risk levels, allowing us to determine the risks that may occur. The methods used follow Minister of Transportation Decree No. KM 69 of 2023 on Risk Management within the Ministry of Transportation, and Circular Letter 1 of 2024 on risk appetite at the Ministry level." (Interview, June 26, 2025)

Based on the researcher's observations, risk identification refers to the strategic plan (Renstra) of the Airport Authority Office of Region V Makassar, which is then aligned with the budget utilization plan. According to Mr. Jm, this year the process still refers to RO (Output Details) and KRO (Output Classification Details) as outlined in the operational activity guideline (POK).

Risk identification is conducted by the risk managers in the first line of defense, in accordance with KM 69 of 2023. Although assisted by the Planning section, the actual identification is carried out by the first-line risk managers, as they have the direct knowledge of risks related to oversight and control activities at the Airport Authority Office of Region V Makassar.

A visual representation of risk identification in the SIMARKO application can be seen in while the corresponding Form 5 template, in accordance with KM 69 of 2023, is available in the appendix. Under the risk establishment menu, all types of risk events are listed and grouped by business process, with risk categories (operational, fraud, compliance, reputational, and others),

followed by risk causes and risk impacts. This is similar to Form 5 under KM 69 of 2023; however, Form 5 not only includes risk identification but also incorporates risk analysis and evaluation.

The researcher also noted that the Airport Authority Office of Region V Makassar does not yet have official business process documents that should be used to determine risk events. On guidance from the Planning section of the Directorate General of Civil Aviation (Ditjen Hubud), risk events currently refer to RO and KRO as listed in the operational activity guideline (POK). According to KM 69 of 2023, risk analysis is the process of assessing identified risks to estimate their likelihood and impact in order to determine the risk level. Regarding risk analysis and evaluation, the researcher asked the informants several questions.

When asked, "How is the risk level (high, medium, or low) determined?" Mr. Jm explained:

"The risk level is determined by reviewing past incidents," and Mr. Mr added:

"In analyzing risk, we consider the estimated frequency of risks that have occurred or may occur, as well as their potential impacts. For example, if an event is likely to occur frequently but its impact is not significant, it can be tolerated." (Interview, June 26, 2025)

Determining the risk level is part of the risk analysis stage, meaning that all potential risks in the supervision and control activities are identified, their likelihood and potential impacts are estimated, and the risk levels are categorized accordingly.

Regarding risk evaluation, the researcher asked: "How is the evaluation process conducted at the Airport Authority Office of Region V Makassar?"

Mr. Jm explained:

"In the evaluation process, the risk level is determined by the risk owner." Mr. Mr added:

"Risk evaluation is the process of prioritizing risks, meaning that risks with the highest level from the risk analysis are identified as needing treatment." (Interview, June 26, 2025)

Risk evaluation involves comparing the results of risk analysis with pre-established risk criteria to determine whether the risk is acceptable or requires further action. The evaluation results are used to prioritize risks and determine appropriate mitigation measures.

Next, the researcher asked: "How is it determined whether a risk requires follow-up?"

Mr. Jm explained:

"Based on the results of the risk analysis, the risk manager prepares a list according to risk levels, which helps determine which risks need to be treated." (Interview, June 26, 2025)

In the SIMARKO application, each activity has a different risk level. In the risk establishment menu, under analysis and evaluation, the likelihood, impact, and risk level for each event are displayed, helping to determine whether a mitigation action is required. The risk level is derived from the risk analysis matrix. From observations, it can be concluded that risk analysis and evaluation form the basis for the development of strategies to reduce risk.

Regarding risk treatment, the researcher asked: "Does every risk have a mitigation plan?"

Mr. Jm replied:

"Not all risks require a mitigation plan. Priority is given to risks that have a significant impact on the organization. Risk managers schedule mitigation actions to reduce both the likelihood and impact of these risks, and monitoring is conducted quarterly by the Risk Management Unit." (Interview, June 26, 2025)

Risk mitigation involves a set of actions to identify, assess, reduce, or manage potential risks, aiming to minimize the likelihood or negative impact of the risk.

On July 18, 2025, Mr. Jm demonstrated the risk treatment feature in the SIMARKO application (Figure 4.6). Activities with the highest risk levels are included in the treatment plan. Based on the analysis and evaluation results (Table), four risk events with medium risk levels require mitigation. These risks are included in the treatment plan, as shown in Figure 4.6 and Form 8 in the appendix according to KM 69 of 2023.

The treatment plan represents the final stage of risk management implementation at the Airport Authority Office of Region V Makassar. Subsequently, monitoring is conducted according to the implementation schedule. Monitoring is performed by the UMR and reported to the Echelon 1 level. Observations indicate that documentation and reporting support effective risk management. Documentation records the implementation process, while reporting is conducted quarterly and annually by the first-line risk managers and the UMR (second line) before being submitted to the Directorate General of Civil Aviation (Ditjen Hubud).

Observations show that the Airport Authority Office of Region V Makassar continuously monitors risk events, tracking implementation according to the schedule set by the risk manager. Typically, the risk management team in the Planning section invites the PICs of risk management to monitor the results of mitigation actions. Communication aims to promote awareness and understanding of risk, while consultation involves gathering feedback and information to support decision-making. Close coordination between the two ensures the exchange of accurate, timely, relevant, and understandable information, while maintaining confidentiality, integrity, and individual privacy (ISO 31000:2018).

When asked: "Is communication and consultation conducted with internal and external stakeholders in handling risks?" Mr. Mr answered:

"Yes, coordination with leadership is always conducted, while external parties are communicated with directly through their respective stakeholders. Reports are also regularly submitted to the relevant directorates (Echelon I)." (Interview, June 26, 2025)

Regarding training: "Have any risk management trainings been conducted?" Mr. Mr replied:

"Yes, some aviation security inspectors have received training and hold Risk Management certificates." (Interview, June 26, 2025)

However, the information indicates that most employees still require training in risk management to better consider risk impacts in activity planning.

Obstacles and Challenges in Implementing Risk Management at the Airport Authority Office of Region V Makassar

Based on observations, the implementation of risk management at the Airport Authority Office of Region V Makassar is still relatively new. Therefore, it is expected that there are several obstacles and challenges in its execution. To gain a deeper understanding, the researcher conducted interviews at the leadership level.

On July 17–18, 2025, the researcher interviewed key leadership figures, including the Acting Head of Administration (Ms. Yn) and the Head of Planning and Finance Subdivision (Mr. Rr). The researcher requested permission to ask questions regarding the implementation of risk management at the Airport Authority Office of Region V Makassar.

When asked, "To what extent has risk management been implemented at the Airport Authority Office of Region V Makassar?" Mr. Rr explained:

"So far, risk management has been implemented in accordance with the Minister of Transportation Decree No. KM 69 of 2023 on Risk Management within the Ministry of Transportation. During implementation, we are monitored and coordinated directly with the Echelon 1 Planning Division to ensure compliance with the established criteria. Examples

include the issuance of the Risk Management Team Decree (SK), the Risk Management Charter, and other relevant documents." (Interview, July 17, 2025)

Ms. Yn added:

"Although risk management is a relatively new practice at our office and has undergone several changes, we strive to fulfill the mandates as prescribed by the established regulations." (Interview, July 18, 2025)

Regarding leadership involvement, the researcher asked: "To what extent are leaders involved in risk management implementation at the Airport Authority Office of Region V Makassar?"

Mr. Rr responded:

"Leadership has been quite cooperative in implementing risk management. A simple example is the open communication where the office leadership, as the risk owner, instructs the risk managers to carefully anticipate potential risks that may arise in carrying out the office's duties and functions." (Interview, July 17, 2025)

Ms. Yn further explained:

"Leaders consistently provide support and input for risk management implementation, including participation in decision-making processes." (Interview, July 18, 2025)

From these interviews, it can be concluded that leadership actively supervises the implementation of risk management within the Airport Authority Office of Region V Makassar. Leaders monitor compliance with the Ministry of Transportation mandates as outlined in KM 69 of 2023 and participate in decision-making processes.

When asked, "What are the supporting factors and obstacles in implementing risk management at this office?" Mr. Rr explained:

"Regarding supporting factors, we have competent human resources (HR) capable of carrying out their duties and functions, which allows them to contribute effectively to risk management implementation. Although risk management is new, we implement it according to established rules, specifically KM 69 of 2023. As for obstacles, budget efficiency constraints have limited the allocation for activities such as risk management socialization." (Interview, July 17, 2025)

Ms. Yn added:

"Regarding supporting factors and obstacles, our HR is skilled, but providing risk management training would enhance their capacity, especially for all employees who need to understand the implementation of risk management. Overall, the implementation is in accordance with regulations, and there is good coordination between the PICs handling risk management and leadership, extending up to coordination with Echelon 1 supervisors." (Interview, July 18, 2025)

Based on interviews and observations, the challenges in implementing risk management at the Airport Authority Office of Region V Makassar are as follows: Limited comprehensive understanding of risk management among employees. Frequent changes in risk management implementation, transitioning from using Forms 1, 5, and 8 to the SIMARKO application, which is still being improved. The office does not yet have formal business process documentation to guide risk management. Budget limitations due to efficiency measures have impacted the implementation of risk management activities.

Meanwhile, supporting factors for risk management implementation include: Coordination with leadership in defining risk events, making decisions, and learning from past experiences supports effective risk management implementation. Effective cooperation between the first and second lines of defense: First line: Risk owners, including the Head of the Airport Authority Office

of Region V Makassar, and risk managers, typically officials one level below, except for the planning division, are responsible for executing risk management processes. Second line: The Risk Management Unit (UMR), conducted by the Planning and Finance Subdivision, supports monitoring and coordination of risk management activities.

Based on the findings, the Airport Authority Office of Region V Makassar implements risk management by referring to the Ministry of Transportation's risk management structure, using a three-line concept. This consists of: First line: Executed by the risk owner (Head of the Airport Authority Office of Region V Makassar) and risk managers (Risk Management Coordinators and Inspectors). Second line: Executed by the Risk Management Unit (UMR) under the Planning Division. Third line: Executed by the Internal Audit Unit (UPI), which is the Inspectorate General. The Airport Authority Office of Region V Makassar has implemented risk management in accordance with Ministerial Decree KM 69 of 2023 through several processes, including:

Based on interviews and documentation, context establishment at the Airport Authority Office of Region V Makassar is the initial step to enable the organization to understand its internal and external strengths and weaknesses. Internal strengths and weaknesses include man, money, method, machine, and material, meaning the organization must assess the quality of its human resources, budget capacity, procedural efficiency, and supporting facilities and equipment. External strengths and weaknesses include political, economic, socio-cultural, environmental, natural, and information technology factors.

This aligns with the findings of Irvan & Maulana (2023) at Sultan Muhammad Salahuddin Bima Airport, which also emphasize internal-external context analysis. However, the difference lies in regulatory depth: this study integrates national regulations more comprehensively, whereas Irvan & Maulana focus primarily on the operational environment of the airport. Additionally, the context establishment refers to the strategic plan (renstra) of the Airport Authority Office of Region V Makassar, identifying issues based on program objectives and performance indicators. Similarly, ISO 31000:2018 emphasizes that context establishment is a crucial initial stage in risk management, used to understand the organization's internal and external environment and to define parameters for the risk management process. The researcher concludes that context establishment has been conducted generally but is not yet fully documented systematically. Understanding of the external context is relatively strong due to regulatory compliance, whereas internal context requires further strengthening through training, budget availability, and improved coordination.

Risk identification is the process of identifying issues that may negatively impact the achievement of organizational objectives. This process is carried out by the Risk Owner Unit (UPR) and is based on the strategic plan (renstra) and other planning documents. Through risk identification, the organization can categorize risks (legal, operational, fraud, compliance, reputational, etc.). The findings indicate that risk identification is performed participatively across all units, guided by the five fundamental questions of ISO 31000 (what, where, when, why, how). Identified risks include potential accidents, flight delays, facility damage, and procedural operational issues.

These findings are consistent with Abisay & Nurhadi (2014) at Soekarno-Hatta Airport, where risk identification also focused on operational, safety, and security aspects. The main difference is that the Airport Authority Office of Region V Makassar emphasizes cross-unit involvement, whereas Abisay & Nurhadi focused more on specific operational units. According to KM 69 of 2023, risk identification based on organizational objectives refers to: Reports from internal/external audits and law enforcement, related to organizational losses, violations, failures, or errors. Loss Event Database (LED) reports, containing records of past losses from the current or previous years. Past performance reports and experiences from risk owners and/or managers. Expert opinions regarding specific risks. Benchmark data, providing comparative risk

information from other risk management units or relevant organizations. Other relevant documents.

Within the SIMARKO application, each risk event is accompanied by information on its causes and potential impacts on the organization. This aligns with KM 69 of 2023, Form 5, which integrates risk identification, analysis, and evaluation into a single format. A notable difference is that Form 5 provides a broader scope as it directly incorporates the subsequent stages of analysis and evaluation. The risk identification process at the Airport Authority Office of Region V Makassar has been conducted systematically, following business processes and organizational planning documents, although business processes are not yet fully structured. The use of digital applications like SIMARKO adds value by enabling structured documentation and integration of risk data.

Risk analysis involves assessing the likelihood and impact of identified risks to determine the risk level. Evaluation is the subsequent step that allows risk owners and the Risk Owner Unit (UPR) to prioritize risks, deciding which risks require immediate attention. According to ISO 31000:2018, risk analysis involves understanding the nature of risk and determining its level, assessing both likelihood and impact relative to organizational objectives. Risk evaluation compares analysis results with pre-established risk criteria to determine acceptability. Similarly, KM 69 of 2023 defines risk analysis as the process of estimating the probability and impact of risks to establish their level. Risk levels are determined by the intersection of likelihood and impact. The risk analysis steps include: Risk managers assess the likelihood and impact of identified risks.

Ranking residual risk levels, with higher residual risk scores prioritized. Considering the organization's risk appetite: Risks within the risk appetite may not require mitigation. Risks above the risk appetite must be mitigated if resources allow. Selecting residual risks above the risk appetite for prioritization in the risk treatment plan. Creating a risk map that illustrates all prioritized risks by level, which ranges from very high, high, medium, low, to very low. At the Airport Authority Office of Region V Makassar, a qualitative approach using likelihood and impact matrices is employed, resulting in low, medium, and high-risk classifications. Evaluation is directly linked to documented mitigation plans, unlike some prior studies that provided recommendations without detailed follow-up action plans (Sari & Harindahyani, 2019).

Risk treatment follows analysis and evaluation, focusing on risks with the highest levels. Risk managers establish treatment targets, document them (Form 8), and monitor implementation. The UMR reviews treatment outcomes quarterly, with reporting to Echelon 1 UMR units. Treatment primarily emphasizes mitigation for high-risk events through routine monitoring and control, consistent with Abisay & Nurhadi (2014). ISO 31000:2018 defines risk treatment as the process of selecting and implementing options to manage risk, which may include avoidance, reduction, sharing, or acceptance. The stages include: Identifying treatment options. Evaluating the effectiveness and feasibility of each option. Selecting the optimal option based on cost, benefits, resources, and organizational objectives. Implementing the treatment plan. Monitoring and reviewing treatment effectiveness. KM 69 of 2023 specifies risk treatment steps as:

Identifying treatment options according to risk profiles, including reducing likelihood, reducing impact, combining both, sharing, accepting, or avoiding risk. Documenting selected risk treatments (Form 8), considering cost-benefit analysis. Defining indicators for treatment success and responsible parties. Planning the implementation schedule, prioritizing higher-level risks. Estimating post-treatment risk levels based on likelihood and impact. Integrating implemented treatments into subsequent risk analysis cycles. The implementation at the Airport Authority Office of Region V Makassar adheres to ISO 31000:2018 and KM 69 of 2023, though effectiveness can be improved by: Integrating risk treatment plans with strategic organizational planning.

Regular monitoring and evaluation to ensure mitigation proceeds as intended. Enhancing risk communication across units. Strengthening risk awareness culture across the organization.

Overall, the Airport Authority Office of Region V Makassar demonstrates commitment to integrating risk management into organizational business processes. Although current business processes rely on existing activity programs, they will be refined over time. The implementation follows the stages outlined in ISO 31000:2018 and KM 69 of 2023, covering context establishment, identification, analysis, evaluation, treatment, monitoring, and reporting.

Challenges and Obstacles in Implementing Risk Management at the Airport Authority Office of Region V Makassar

The implementation of risk management at the Airport Authority Office of Region V Makassar is guided by Ministerial Decree No. KM 69 of 2023 on risk management within the Ministry of Transportation. As risk management is relatively new in this organizational context, several challenges have been observed that affect its full and effective implementation. These challenges can be categorized into human resource, cultural, technical, and financial aspects (Alijoyo & Fisabilillah, 2021; Renn, 2022). One of the primary obstacles is the limited understanding and competence of staff regarding risk management concepts and procedures. Many employees have not received formal training or certification in risk management, which leads to inconsistent implementation across units (Barbosa et al., 2022; Marling et al., 2024). In practice, this means that processes such as risk identification, analysis, evaluation, and mitigation may be treated more as routine administrative tasks rather than as strategic activities that inform organizational decision-making. This finding aligns with ISO 31000:2018 principles, which emphasize that effective risk management depends on knowledge and engagement at all organizational levels. Without proper understanding, employees may fail to identify critical risks or underestimate their potential impact. The dissemination of regulations, guidelines, and standards such as KM 69 of 2023 and ISO 31000:2018 has not been fully executed. Socialization activities and formal training programs remain limited, resulting in a knowledge gap across units (Syafitri et al., 2024; Al Jomaih et al., 2024). Employees who lack adequate exposure to risk management concepts may view these activities merely as compliance obligations rather than integral components of strategic planning. This barrier hampers the development of a risk-aware culture and reduces the effectiveness of risk identification, analysis, and treatment processes (Damayanti et al., 2023; Streicher et al., 2023).

Implementing risk management requires adequate financial, human, and technological resources. Budget limitations due to organizational efficiency measures have constrained the availability of funds for socialization, training, and technology support, including applications like SIMARKO. Consequently, some risk management activities may be delayed, scaled down, or executed with limited scope (Rinaldi et al., 2024; Andersen & Young, 2023). Despite these limitations, the organization continues to implement risk management activities to maintain compliance with KM 69 of 2023, but the restricted resources may affect the sustainability and consistency of these efforts. Organizational culture also presents challenges. Some employees remain reluctant to report risks due to fear of negative evaluation or being perceived as incompetent. A culture of risk aversion or low transparency limits the effectiveness of early warning systems and proactive mitigation measures (Pappacena et al., 2023; Sheedy & Canestrari-Soh, 2023). Developing a risk-aware culture requires ongoing leadership commitment, clear communication, and mechanisms that reward proactive risk identification rather than penalizing employees (Grebe & Marx, 2023; Byrnes et al., 2022).

Although the organization has adopted systems such as SIMARKO to document and manage risks digitally, several technical and structural challenges remain. For instance, the business processes used to determine risk events are not yet fully structured or standardized, and the integration of these processes into the risk management system is ongoing. As a result, data inconsistencies or gaps may occur, affecting the accuracy and reliability of risk assessments

(Muhidin & Ahmad Dahlan, 2022; Prasetyo et al., 2023). Additionally, periodic updates to forms and workflows, transitioning from Forms 1, 5, and 8 to SIMARKO, have introduced temporary adjustments that may slow down operational consistency. Strengthening Human Resource Capacity: Conduct regular training and certification programs to enhance knowledge and skills in risk management across all levels of staff (Nurdiani & Alie, 2022; Marling et al., 2024). Promoting Risk Awareness and Culture: Establish communication channels and incentive systems that encourage transparent reporting and proactive risk management (Streicher et al., 2023; Ghafoori et al., 2023).

Ensuring Adequate Resources: Secure dedicated budget allocations and technological support to sustain risk management activities (Kusumardani & Syamsuddin, 2025). Integrating Risk Management into Strategic Planning: Align risk management processes with organizational planning, ensuring that risk considerations are embedded in decision-making and operational activities (Nocco & Stulz, 2022). Continuous Monitoring and Improvement: Implement ongoing monitoring, evaluation, and refinement of risk management practices, including system updates like SIMARKO, to ensure accuracy, relevance, and effectiveness (Sivakumar, 2022; Nugrahayani & Bunahri, 2024).

CONCLUSION

The implementation of risk management at the Makassar Region V Airport Authority Office adheres to the stages established in ISO 31000:2018 and KM 69 of 2023. The risk management process includes context determination, risk identification, risk analysis and evaluation, risk management, recording and reporting, and risk monitoring through quarterly supervision, while maintaining structured communication and consultation. Obstacles or barriers to the implementation of risk management at the Makassar Region V Airport Authority Office include limited human resource understanding of risk management, a lack of ongoing socialization and technical training, limited resources and budget, and an organizational culture that does not yet support risk management.

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