

# Risk Management Instrument Design at the Indonesia Asia Friendship College of Foreign Languages

Muhammad Ridha Habibi Z<sup>1</sup>, Syawal Gultom<sup>2</sup>, Restu<sup>3</sup>

{habibiz@unimed.ac.id<sup>1</sup>, syawalgultom@unimed.ac.id<sup>2</sup>, restugiran@unimed.ac.id<sup>3</sup>}

<sup>1,2,3</sup>Educational Management, Universitas Negeri Medan, Indonesia

**Abstract.** Risk management in higher education institutions is increasingly recognized as a critical component of internal quality assurance and governance. However, existing frameworks such as ISO 31000 and COSO ERM mainly provide conceptual guidance and lack standardized, empirically tested instruments tailored to specific higher education contexts, particularly foreign language institutions. This theoretical and empirical gap has resulted in inconsistent and subjective risk identification practices at the institutional level. This study aims to develop a risk management instrument tailored for the Sekolah Tinggi Bahasa Asing Persahabatan Indonesia Asia (STBA PIA). Using a Research and Development (R&D) approach adapted from Borg & Gall and the ADDIE model, the study involved needs analysis, instrument design, expert validation, pilot testing, and reliability analysis. Expert judgment indicated strong content validity, with Aiken's V values ranging from 0.80 to 0.95. A small-group pilot test involving 12 respondents demonstrated that almost all items were empirically valid ( $r\text{-calculated} > 0.576$ ), with only one item requiring revision. Reliability testing produced Cronbach's Alpha values between 0.741 and 0.895, indicating good to excellent internal consistency. This study contributes to risk management research in higher education by providing a psychometrically tested instrument that is context-specific, feasible, practical, and effective for institutional risk management implementation. The developed instrument is ready for broader field testing and practical application in higher education quality assurance systems.

**Keywords:** risk management, instrument development, higher education, validity, reliability.

## 1 Introduction

Higher education institutions operate in increasingly dynamic and uncertain environments characterized by rapid technological advancement, regulatory changes, globalization, accreditation requirements, financial constraints, and evolving stakeholder expectations. These challenges expose institutions to a wide range of risks, including strategic, operational, academic, financial, technological, and reputational risks. Consequently, risk management has become an essential component of institutional governance and internal quality assurance systems in higher education institutions [1,2].

In recent years, universities have faced growing pressure to maintain educational quality while simultaneously ensuring organizational sustainability and accountability. The increasing complexity of higher education management requires institutions to identify, assess, and mitigate risks systematically. Effective risk management enables higher education institutions to anticipate potential threats, improve decision-making processes, protect institutional resources, and strengthen organizational resilience in response to internal and external uncertainties [3,4].

Sekolah Tinggi Bahasa Asing Persahabatan Indonesia Asia (STBA PIA) possesses unique characteristics as a specialized foreign language higher education institution. Unlike general universities, STBA PIA depends heavily on the availability of qualified language lecturers, international partnerships, curriculum alignment with global language competency standards, student mobility programs, and cross-cultural academic interactions. These characteristics create specific institutional risks related to human resources, academic quality, international collaboration, student recruitment, and institutional reputation. In addition, STBA PIA faces common higher education risks associated with finance, operations, information systems, governance, and regulatory compliance.

Despite the increasing importance of risk management, preliminary observations at STBA PIA indicate that risk identification and assessment activities are still conducted in a fragmented and non-standardized manner. Risk assessment practices are generally performed through internal audits, quality assurance evaluations, management meetings, and administrative reviews without the support of a validated measurement instrument. As a result, risk assessments tend to be subjective, inconsistent across organizational units, and difficult to compare over time. This condition limits the institution's ability to implement evidence-based risk management and develop comprehensive risk mitigation strategies [2].

From a theoretical perspective, internationally recognized frameworks such as ISO 31000:2018 and COSO Enterprise Risk Management (ERM) provide comprehensive guidance for implementing organizational risk management. These frameworks emphasize principles, processes, governance structures, and continuous improvement mechanisms for managing risk. However, both frameworks primarily serve as conceptual and procedural references rather than providing operational instruments that can directly measure the effectiveness of risk management implementation within higher education institutions. Consequently, there remains a need to translate these frameworks into measurable indicators and practical assessment tools suitable for educational environments [5,6].

From an empirical perspective, previous studies on risk management in education have predominantly focused on risk identification, risk mapping, risk registers, governance policies, and implementation strategies. While these studies contribute significantly to the understanding of educational risk management, relatively few studies have concentrated on the development and validation of risk management measurement instruments. Existing instruments are generally designed for primary and secondary education settings or specific organizational contexts, limiting their applicability to higher education institutions. Furthermore, previous research rarely evaluates instrument feasibility, practicality, validity, reliability, and effectiveness simultaneously within a single development framework [3,7,8].

This study addresses these theoretical and empirical gaps by developing a risk management instrument specifically designed for STBA PIA. The instrument is developed based on the principles of ISO 31000 and COSO ERM while incorporating the unique characteristics and

operational requirements of higher education institutions. Through a Research and Development (R&D) approach, the study aims to produce a valid, reliable, feasible, practical, and effective instrument that can support standardized risk assessment, strengthen institutional quality assurance systems, and improve evidence-based decision-making processes.

The findings of this study are expected to contribute both theoretically and practically. Theoretically, the study enriches the literature on educational risk management by providing an empirically validated measurement instrument tailored to higher education settings. Practically, the developed instrument can serve as a useful tool for institutional leaders, quality assurance units, internal supervisory units, and academic departments in implementing systematic and sustainable risk management practices.

## **2 Theoretical Summary**

The development of a risk management instrument for higher education institutions requires a strong theoretical foundation derived from risk management theory, governance principles, educational quality assurance systems, and instrument development research. This chapter presents the conceptual and empirical foundations that support the development of the proposed instrument. The discussion focuses on risk management frameworks, the implementation of risk management in higher education, the relationship between risk management and educational quality, and previous studies concerning risk management measurement instruments.

### **2.1 Risk Management Concepts and Framework**

Risk management is generally defined as a systematic process used by organizations to identify, analyze, evaluate, and manage uncertainties that may affect the achievement of organizational objectives. According to ISO 31000:2018, risk management consists of principles, frameworks, and processes that support organizations in making informed decisions while addressing uncertainty [5].

The ISO 31000 framework emphasizes that risk management should be integrated into organizational governance, strategy, planning, operations, reporting, and performance evaluation. The risk management process includes establishing the context, risk identification, risk analysis, risk evaluation, risk treatment, communication and consultation, and monitoring and review. These interconnected activities enable organizations to manage risks proactively and continuously improve organizational performance [5].

In addition to ISO 31000, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) developed the Enterprise Risk Management (ERM) framework. COSO ERM emphasizes the alignment between organizational objectives, strategy, governance, and risk management activities. The framework promotes an enterprise-wide perspective in which risk management is embedded within strategic decision-making processes rather than being treated as a separate administrative function [6].

Various studies indicate that effective risk management contributes to organizational performance improvement, strengthens accountability, enhances transparency, and supports evidence-based decision-making [1,9,12]. Therefore, risk management is increasingly recognized as an essential component of organizational governance across both public and private sectors.

Based on ISO 31000 and COSO ERM, the core dimensions relevant to the development of a higher education risk management instrument include risk governance, context establishment, risk identification, risk analysis and evaluation, risk treatment, communication, monitoring, and organizational risk culture. These dimensions provide the theoretical basis for constructing measurable indicators within the developed instrument. The evolution of risk management practices has expanded from traditional risk control approaches toward strategic and governance-oriented frameworks [10].

## **2.2 Risk Management in Higher Education**

The application of risk management in higher education institutions has expanded significantly during the last two decades. Universities operate within environments characterized by increasing uncertainty resulting from globalization, technological disruption, demographic changes, financial constraints, regulatory reforms, and growing stakeholder expectations [7].

Several studies conducted in different countries indicate that risk management in higher education contributes to asset protection, continuity of academic services, regulatory compliance, institutional sustainability, and increased stakeholder confidence [7,8]. Consequently, many universities have adopted formal risk management systems as part of their governance and quality assurance frameworks.

Recent research demonstrates that higher education institutions face increasingly complex risks that extend beyond traditional financial and operational concerns. Contemporary risks include cybersecurity threats, data privacy issues, online learning quality, internationalization challenges, academic integrity concerns, and reputational risks arising from digital communication platforms [12,13]. These developments require universities to implement comprehensive and data-driven approaches to risk management.

In Indonesia, the implementation of risk management has become increasingly important as universities seek to improve institutional governance, fulfill accreditation requirements, and achieve National Higher Education Standards. Various higher education institutions have adopted risk management guidelines based on ISO 31000 and SNI ISO 31000 standards. However, many institutions still rely primarily on policy documents and risk registers without employing standardized instruments capable of measuring the effectiveness of risk management implementation across organizational units [8].

As a result, there is a growing need for validated instruments that can facilitate objective risk assessment, support institutional benchmarking, and improve evidence-based risk management practices within higher education institutions. Recent literature reviews have highlighted the growing importance of enterprise-wide risk management frameworks within universities and higher education institutions [13].

## **2.3 The Role of Risk Management in Education Quality and Governance**

Educational quality and institutional governance are closely associated with an organization's ability to manage risks effectively. Contemporary governance models emphasize that organizational sustainability depends not only on performance achievement but also on the institution's capacity to identify and mitigate potential threats that may hinder strategic objectives [1].

Various studies indicate that effective risk management contributes to educational quality improvement, governance enhancement, organizational resilience, and evidence-based

decision-making [1,7,8]. Risk management enables institutional leaders to identify vulnerabilities, allocate resources efficiently, and implement preventive actions before significant problems emerge.

Within higher education institutions, risk management supports the achievement of strategic objectives by ensuring that academic programs, student services, research activities, financial management, and administrative operations function effectively and sustainably. Furthermore, risk management contributes to transparency, accountability, and continuous improvement, which are fundamental principles of higher education governance [6].

For specialized institutions such as foreign language colleges, risk management assumes even greater importance. Institutional success depends heavily on maintaining qualified academic staff, sustaining international partnerships, ensuring curriculum relevance, and preserving institutional reputation. Consequently, risk management serves not only as a defensive mechanism against threats but also as a strategic tool for identifying opportunities and supporting institutional development.

## **2.4 Risk Management Instruments in Educational Institutions**

A risk management instrument refers to a structured set of indicators and measurement items designed to assess the implementation and effectiveness of risk management practices within an organization. Such instruments play an important role in translating abstract risk management concepts into measurable variables that can be systematically evaluated.

Previous literature reviews on educational risk management reveal various approaches to formulating risk indicators, ranging from academic and financial risks to safety and security risks [1,2,7]. Existing instruments have been developed for different educational contexts, including primary schools, secondary schools, vocational institutions, and universities.

Despite these developments, many existing instruments remain context-specific and have limited applicability beyond their original settings. Furthermore, several studies focus primarily on identifying risk factors or evaluating implementation practices without conducting comprehensive psychometric testing. As a result, evidence regarding instrument validity, reliability, practicality, and effectiveness remains limited [4,5,6].

In Indonesia, studies on educational risk management have generally concentrated on policy implementation, risk mapping, and governance improvement. Relatively few studies have focused on developing standardized and empirically validated instruments capable of supporting risk assessment activities across higher education institutions. This gap highlights the need for the development of context-specific risk management instruments that are theoretically grounded, empirically tested, and practically applicable within higher education environments.

## **2.5 Conceptual Framework**

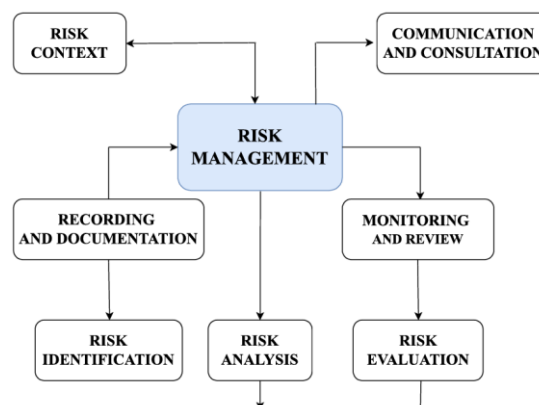
The conceptual framework of this study is derived from the principles of ISO 31000 and COSO Enterprise Risk Management and adapted to the context of higher education institutions. The framework assumes that effective risk management implementation requires instruments that are theoretically sound, practically usable, and capable of supporting institutional decision-making processes.

The framework illustrates the logical relationship between risk management dimensions, including risk governance, context establishment, risk identification, risk analysis and

evaluation, risk treatment, communication, and monitoring. These dimensions are translated into measurable indicators and subsequently developed into instrument items.

In this study, the quality of the developed instrument is evaluated through three major dimensions: feasibility (X1), practicality (X2), and effectiveness (X3). Feasibility refers to the conceptual and structural appropriateness of the instrument based on risk management theory. Practicality reflects the ease of use and applicability of the instrument by institutional stakeholders. Effectiveness represents the instrument's ability to improve risk assessment processes, support institutional governance, and strengthen evidence-based decision-making.

The conceptual framework serves as the foundation for instrument development, expert validation, practicality testing, and effectiveness evaluation. It also provides a systematic structure for assessing risk management implementation within higher education institutions, particularly STBA Persahabatan Indonesia Asia. The developed instrument consists of three major dimensions: feasibility (X1), practicality (X2), and effectiveness (X3). These dimensions serve as the primary constructs for evaluating the quality of the developed risk management instrument through validity, reliability, practicality, and effectiveness testing.



**Fig 1.** Conceptual Framework

### 3 Method

This study is a research and development (R&D) study employing a mixed approach to instrument development and validation [14]. The R&D approach was chosen because the study not only aims to describe the phenomenon, but also to produce a model instrument, validate it, and ensure its usefulness. The development model used is a modification of Borg and Gall's educational R&D model [15] and the ADDIE instructional design framework [16], which includes: (1) needs analysis, (2) initial model design, (3) expert development and validation, (4) practicality testing, (5) effectiveness testing, (6) revision, and (7) final product.

The research was conducted at the Indonesian Asian Friendship College of Foreign Languages (STBA-PIA). The location was chosen based on the institution's need for a structured and standardized risk management instrument in accordance with accreditation, SPMI, and governance requirements. The expert validation subjects of this research team were risk management experts (minimum PhD or ISO 31000/COSO certified practitioners), instrument development experts (educational evaluation experts), and higher education/SPMI experts. The following are the subjects of the Practicality Test Respondents came from STBA units, including: STBA leadership (chair/vice chair), program chair, LPM (Quality Assurance Institute) unit, SPI (Internal Supervisory Unit) unit, and administration & educational staff unit. Meanwhile, the subjects of the Effectiveness Test consisted of lecturers, educational staff, and unit leaders involved in the risk assessment process using the developed instruments. The pilot test involved 12 respondents, which is considered adequate for preliminary instrument testing in R&D studies, as small-group trials are intended to identify item clarity, initial validity, and reliability before broader field testing [17].

The research stages are presented in the following order: Stage 1. Need Assessment with the following activities: Identifying risk management issues and needs at STBA PIA. Analyzing risk policy documents: Risk Guidelines, SPMI Manual, SOP, Internal Audit, previous Risk Register (if any). Interviews with leaders, LPM, SPI, and Study Programs. Reviewing ISO 31000, COSO ERM, SNI 8615 literature, as well as previous research. Stage 2. Initial Instrument Model Design with the following activities: Developing a theoretical risk management model construction. Determining the dimensions of the instrument (e.g., risk policy, risk context, identification, analysis, treatment, monitoring, communication, risk culture). Developing a blueprint/outline of the instrument. Compiling statement items using a Likert scale. Stage 3. Development & Expert Validation with activities: The draft instrument is sent to three categories of experts. Experts assess content validity using the following indicators: item suitability, language accuracy, indicator measurability, theoretical relevance, and usefulness for STBA. Stage 4. Practicality Test. The practicality test aims to assess the ease of use of the instrument by users (user-friendly). This is done through: practicality questionnaires, user interviews, and observation of instrument use with the criteria of being easy to use, having clear and understandable indicators, not requiring a long time, being relevant to the work unit, and being practical in risk assessment and documentation with the following categories: Score  $\geq 80\%$  = Practical, 60–79% = Quite Practical,  $< 60\%$  = Not Practical. Stage 5. Product Effectiveness Test. The effectiveness test is conducted to ensure that the use of the instrument has an impact on improving the risk management process. Stage 6. Product Revision. Revisions are made based on findings: content validity, practicality, effectiveness, user feedback.

### 3.1 Data Collection Techniques

Data collection was conducted using the following instruments: risk management instruments (main research product), content validation sheets, practicality questionnaires, effectiveness questionnaires, interview guides, and focus group discussions. The main instrument used a 1–5 Likert scale with the following categories: 1 = strongly disagree, 2 = disagree, 3 = unsure, 4 = agree, 5 = strongly agree. This refers to the following table:

**Table 1.** Data Components

| Data Type              | Source               | Instrument           | Technique                     |
|------------------------|----------------------|----------------------|-------------------------------|
| Risk Requirements Data | Management, LPM, SPI | Interview Guidelines | Interviews & Document Studies |

|                  |                      |                               |                                       |
|------------------|----------------------|-------------------------------|---------------------------------------|
| Content Validity | Expert               | Validation Sheet              | Expert Judgment                       |
| Practicality     | User                 | Practicality<br>Questionnaire | Survey                                |
| Effectiveness    | User, Risk Documents | Questionnaire, Risk Register  | Observations,<br>Document<br>Analysis |

This study certainly ensures the validity and ethics of the research. Therefore, this study pays attention to ethical aspects with the consent of respondents (informed consent), data confidentiality, and the use of data only for research purposes and not to harm respondents or institutions.

## 4 Result and Discussion

### 4.1 Descriptive Analysis

This study aims to develop a risk management instrument at the Indonesian-Asian Friendship College of Foreign Languages. Before being used on a large scale, the instrument was first tested on a small group of 12 respondents to obtain information about the validity and reliability of the instrument. The validity test was conducted to ensure that each item of the instrument was able to measure the predetermined indicators. Meanwhile, the reliability test aims to test the internal consistency of the instrument so that it can be used repeatedly with stable results.

#### a. Instrument Validity Test Result

Validity testing was conducted using Pearson's correlation between item scores and total scores. With 12 respondents, the r-table value at a 5% significance level was 0.576. An item was considered valid if the r-count value was  $\geq 0.576$ .

#### Validity of Variable X<sub>1</sub> (Feasibility)

Items that did not meet the minimum validity threshold were revised or excluded from further analysis. Therefore, only valid items are presented in the following tables. The results of the validity test for the feasibility dimension (X<sub>1</sub>) can be seen in the following table.

**Table 2.** Validity Test Results for the Feasibility Dimension (X<sub>1</sub>)

| No. Statement | Calculated r | Result |
|---------------|--------------|--------|
| 2             | 0.583        | valid  |
| 3             | 0.925        | valid  |
| 4             | 0.712        | valid  |
| 5             | 0.726        | valid  |
| 6             | 0.696        | valid  |
| 9             | 0.583        | valid  |
| 10            | 0.597        | valid  |
| 12            | 0.685        | valid  |
| 13            | 0.688        | valid  |
| 14            | 0.627        | valid  |

The validity test results show that all items in variable  $X_1$  have a calculated  $r$  value ranging from 0.583 to 0.925, all of which are greater than the table  $r$ . Thus, all items in the feasibility dimension ( $X_1$ ) are considered valid and capable of accurately measuring the intended construct.

#### **Validity of Variable $X_2$ (Practicality)**

The results of the validity test for the practicality dimension ( $X_2$ ) can be seen in the following table.

**Table 3.** Validity Test Results for the Practicality Dimension ( $X_2$ )

| <b>No. Statement</b> | <b>Calculated <math>r</math></b> | <b>Result</b> |
|----------------------|----------------------------------|---------------|
| 1                    | 0.847                            | valid         |
| 2                    | 0.674                            | valid         |
| 4                    | 0.711                            | valid         |
| 5                    | 0.742                            | valid         |
| 6                    | 0.718                            | valid         |
| 7                    | 0.591                            | valid         |
| 8                    | 0.711                            | valid         |
| 9                    | 0.761                            | valid         |
| 10                   | 0.599                            | valid         |
| 12                   | 0.594                            | valid         |
| 13                   | 0.693                            | valid         |

For variable  $X_2$ , the calculated  $r$  value ranges from 0.591 to 0.847, all of which are above the critical value of 0.576. Thus, all statements in the practicality dimension ( $X_2$ ) are considered valid and suitable for further implementation.

#### **Validity of Variable $X_3$ (Effectiveness)**

The results of the validity test for the effectiveness dimension ( $X_3$ ) can be seen in the following table.

**Table 4.** Validity Test Results for the Effectiveness Dimension ( $X_3$ )

| <b>No. Statement</b> | <b>Calculated <math>r</math></b> | <b>Result</b> |
|----------------------|----------------------------------|---------------|
| 1                    | .647                             | valid         |
| 2                    | .654                             | valid         |
| 3                    | .694                             | valid         |
| 4                    | .665                             | valid         |
| 5                    | .647                             | valid         |
| 6                    | .654                             | valid         |

The effectiveness dimension ( $X_3$ ) consists of six questionnaire items.

#### **b. Instrument Reliability Test Result**

Reliability testing was conducted using Cronbach's Alpha method. According to Nunnally and Bernstein [17], an instrument is considered reliable when the reliability coefficient exceeds the

acceptable threshold. In this study, an Alpha value of  $\geq 0.60$  was used as the minimum criterion for reliability.

#### **Reliability of Variable X<sub>1</sub> (Feasibility)**

The reliability test results for the feasibility dimension (X<sub>1</sub>) are presented below.

**Table 5.** Reliability Test Results for the Feasibility Dimension (X<sub>1</sub>)

| Reliability Statistics |            |
|------------------------|------------|
| Cronbach's Alpha       | N of Items |
| 0,880                  | 14         |

The Cronbach's Alpha value of 0.880 indicates excellent internal consistency. Therefore, the feasibility dimension (X<sub>1</sub>) can be classified as highly reliable.

#### **Reliability of Variable X<sub>2</sub> (Practicality)**

The reliability test results for the practicality dimension (X<sub>2</sub>) are presented below.

**Table 6.** Reliability Test Results for the Practicality Dimension (X<sub>2</sub>)

| Reliability Statistics |            |
|------------------------|------------|
| Cronbach's Alpha       | N of Items |
| 0,895                  | 14         |

The Cronbach's Alpha value of 0.895 demonstrates excellent internal consistency, indicating that the practicality dimension (X<sub>2</sub>) is highly reliable.

#### **Reliability of Variable X<sub>3</sub> (Effectiveness)**

The reliability test results for the effectiveness dimension (X<sub>3</sub>) are presented below.

**Table 7.** Reliability Test Results for the Effectiveness Dimension (X<sub>3</sub>)

| Reliability Statistics |            |
|------------------------|------------|
| Cronbach's Alpha       | N of Items |
| 0,741                  | 7          |

The Cronbach's Alpha value of 0.741 indicates satisfactory internal consistency, suggesting that the effectiveness dimension (X<sub>3</sub>) is reliable and suitable for further application.

## **4.2 Result of The Expert Team Assessment**

### **Content Conformity Assessment Results (Content Validity)**

In general, the three experts gave high scores for the relevance of the instrument's content. Content validity was assessed using Aiken's V coefficient [18]. Aiken's V values for most items were in the range of 0.80–0.95 (Very Valid category). This indicates that the experts assessed each indicator and item of the instrument to be in accordance with the concepts of ISO 31000,

COSO ERM, and the context of higher education risk management. Items covering the presentation of the model, supporting theories, model structure, practicality of use, and effectiveness of the model were deemed appropriate and relevant to the research objectives.

#### **Language Clarity and Editing Assessment Results**

Experts stated that, in general, the language used in the instrument items was clear, the sentence structure did not cause bias, and the technical terms were easily understood by users (lecturers, department heads, LPM, SPI). However, there were several minor suggestions for improvement, such as simplifying technical terms, improving the sentence structure in several items, and aligning the positive and negative items. These minor revisions do not alter the substance of the instrument, so the instrument as a whole is still deemed acceptable.

#### **Results of the Assessment of the Relevance of Dimensions and Constructs**

Experts agree that the dimensions used in the instrument model feasibility, model practicality, and model effectiveness fully describe the concept of risk management in the context of higher education. According to the experts, the model feasibility dimension ( $X_1$ ) is in line with R&D model development standards, the model practicality dimension ( $X_2$ ) is relevant to the usability principle proposed by Nieveen [19], and the model effectiveness dimension ( $X_3$ ) reflects the principles of good governance and risk management implementation in higher education institutions.

### **4.3 Discussion**

The findings of this study demonstrate that the developed risk management instrument possesses satisfactory psychometric properties and is suitable for implementation in higher education institutions. The validity analysis revealed that all instrument items achieved correlation coefficients exceeding the minimum threshold ( $r > 0.576$ ), indicating that each item successfully represents the intended construct. These results suggest that the dimensions and indicators developed in this study are conceptually aligned with the theoretical foundations of risk management derived from ISO 31000 and COSO Enterprise Risk Management frameworks.

The high validity scores indicate that the instrument successfully translates abstract risk management concepts into measurable indicators that can be applied within higher education environments. This finding supports previous studies emphasizing the importance of developing context-specific measurement instruments to improve the effectiveness of organizational risk management practices [4,5]. Unlike general risk management guidelines that primarily provide conceptual direction, the developed instrument offers operational indicators that can be directly utilized by institutional stakeholders for risk assessment activities.

The reliability analysis further confirmed the consistency of the instrument. Cronbach's Alpha values of 0.880 for the feasibility dimension, 0.895 for the practicality dimension, and 0.741 for the effectiveness dimension indicate strong internal consistency. These values exceed the commonly accepted reliability threshold and demonstrate that the instrument can generate stable and dependable measurements. The findings are consistent with educational instrument development research, which emphasizes that reliable instruments are essential for producing trustworthy data and supporting evidence-based decision-making processes [17].

The expert validation results provide additional evidence regarding the quality of the developed instrument. Experts assessed the instrument as highly relevant to risk management theory, higher education governance principles, and practical institutional needs. The Aiken's V values

ranging from 0.80 to 0.95 indicate strong content validity, suggesting that the instrument adequately covers the essential dimensions of risk management implementation. These findings support the formative evaluation principles proposed by Nieveen [19], which state that educational products should demonstrate validity, practicality, and effectiveness before broader implementation.

From a theoretical perspective, this study contributes to the literature by addressing a significant gap between conceptual risk management frameworks and operational measurement tools. Although ISO 31000 and COSO ERM provide comprehensive guidance for risk management implementation, both frameworks primarily focus on principles and processes rather than on standardized measurement instruments. Consequently, organizations often encounter difficulties when attempting to evaluate the effectiveness of risk management implementation objectively. The instrument developed in this study contributes to bridging this gap by transforming key risk management dimensions into measurable and empirically validated indicators suitable for higher education institutions.

From an empirical perspective, the findings extend previous research on educational risk management. Earlier studies have largely focused on risk identification, risk mapping, governance policies, and implementation strategies [1,7,8]. Relatively few studies have concentrated on developing and validating risk management instruments specifically designed for higher education institutions. Furthermore, previous studies rarely evaluate validity, reliability, practicality, and effectiveness simultaneously. Therefore, this study provides a more comprehensive approach by integrating these four quality dimensions within a single instrument development framework.

The results also highlight the importance of contextual adaptation in risk management instrument development. STBA Persahabatan Indonesia Asia possesses distinctive institutional characteristics associated with foreign language education, international collaboration, and specialized academic programs. These characteristics create risk profiles that differ from those of general higher education institutions. Consequently, the development of a context-specific instrument enables more accurate risk assessment and improves the relevance of risk management implementation at the institutional level.

Practically, the developed instrument offers several benefits for higher education governance. The instrument can support internal quality assurance units, internal supervisory units, academic departments, and institutional leaders in conducting systematic risk assessments. Through standardized measurement procedures, institutions can identify risk priorities more objectively, develop appropriate mitigation strategies, allocate resources more effectively, and strengthen evidence-based decision-making processes. The instrument may also support accreditation preparation, quality assurance activities, strategic planning, and continuous institutional improvement initiatives.

The novelty of this study lies in the development of a psychometrically tested risk management instrument specifically designed for a higher education institution and evaluated through feasibility, practicality, validity, reliability, and effectiveness dimensions simultaneously. Unlike previous studies that primarily focus on conceptual frameworks or implementation analyses, this study produces an operational measurement instrument that is theoretically grounded, empirically validated, and practically applicable within higher education environments. This contribution provides an important foundation for future research and institutional risk management practices.

Nevertheless, several limitations should be acknowledged. The pilot testing involved a relatively small number of respondents and was conducted within a single higher education institution. Therefore, the generalizability of the findings remains limited. Future studies are recommended to conduct larger-scale field testing involving multiple higher education institutions with diverse organizational characteristics. Further research may also employ exploratory and confirmatory factor analyses to examine the dimensional structure of the instrument and strengthen its psychometric properties.

Overall, the findings indicate that the developed risk management instrument has demonstrated satisfactory validity, reliability, practicality, and effectiveness. The instrument therefore represents a promising tool for supporting systematic risk management implementation and strengthening governance and quality assurance practices within higher education institutions.

## 5 Conclusion

This study successfully developed a risk management instrument specifically designed for STBA Persahabatan Indonesia Asia. The results of expert validation, validity testing, and reliability analysis indicate that the instrument is valid, reliable, feasible, practical, and effective for supporting risk management implementation within higher education institutions. The instrument contributes to the literature by providing a context-specific and psychometrically tested tool that translates risk management principles derived from ISO 31000 and COSO ERM into measurable indicators suitable for higher education environments. Practically, the instrument can assist institutional leaders, quality assurance units, and internal supervisory units in conducting more systematic and evidence-based risk assessments. Future studies are recommended to conduct broader field testing involving multiple higher education institutions and to apply exploratory and confirmatory factor analyses to further strengthen the instrument's psychometric properties and generalizability.

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