

# The New Paradigm of the Risk-Based Internal Audit: Is it Effective or Not?

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This research seeks to discover the influence of the role of the internal audit function and the commitment of top management and training towards the successful risk-based internal audit, and its implication to the implementation of risk management in the Regency governments in the Sumatera Utara Province. The survey population method is implemented to three Regency governments in Sumatera Utara. The data consisted of primary data, which was collected by questionnaire and secondary data, which supports this research. The hypothesis was tested using the path analysis method. Based on the results, the following discoveries were made: (1) there are no correlations between the role of the internal audit function, the commitment of top management, and training in the Regency governments in the Sumatera Utara Province; (2) simultaneously and partially, the role of the internal audit function, the commitment of top management, and training, influence towards the successful risk-based internal audit; and (3) the implications of both the simultaneous and partial role of the internal audit function, the commitment of top management, training, and the successful risk-based internal audit, influence the implementation of risk management.

**Keywords:** *Role of internal audit function, Commitment of top management, Successful risk-based internal audit, Implementation of risk management.*

## Introduction Background

In the current era of development, the Republic of Indonesia must realise a just and prosperous society. To achieve this, we need a government system that does not compromise or legalise any interests associated with the violations of norms or applicable laws that have been regulated in the law, as the basis of the State.

Some regions have met these standards to achieve 'unqualified opinion'. The standard requires Audit Board of the Republic Indonesia (BPK-RI) to plan and carry out audits. In order for BPK-RI to gain adequate confidence, financial statements are free from material misstatements. An examination includes an assessment on the basis of testing, evidence supporting the amounts, and disclosures in the financial statements.

The overall BPK examination results revealed 20 findings, 19 of which were weaknesses in the design and implementation of the internal control system, and one finding which related to statutory compliance. In the report, the BPK stated the 'unqualified opinion' on the Sumatera Utara Provincial Government's balance sheet, as of 31 December 2017. However, even though the Government of Sumatera Utara Province has obtained an 'unqualified opinion', it is not followed by some regencies or cities in the Sumatera Utara Province. Out of 33 regencies or cities in the Sumatera Utara Province, only 14 or 41 per cent of the regencies or cities received the same opinion as the Government of Sumatera Utara Province, namely the 'unqualified opinion'. This indicates that there are still many weaknesses in the regencies and cities in the Sumatera Utara Province. Table 1 below presents the development of the BPK RI opinion representatives of the Sumatera Utara Province:

**Table 1:** Regional Government Audit Opinion in Sumatera Utara

| Number | Regional Government      | 2012                 | 2013                 | 2014                 | 2015        | 2016        | 2017        |
|--------|--------------------------|----------------------|----------------------|----------------------|-------------|-------------|-------------|
| 1      | Sumatera Utara Province. | Qualified            | Qualified            | Modified Unqualified | Unqualified | Unqualified | Unqualified |
| 2      | Medan City               | Modified Unqualified | Modified Unqualified | Modified Unqualified | Qualified   | Qualified   | Qualified   |
| 3      | Binjai City              | Qualified            | Qualified            | Modified Unqualified | Qualified   | Unqualified | Qualified   |
| 4      | Tebing Tinggi City       | Disclaimer           | Qualified            | Unqualified          | Qualified   | Unqualified | Unqualified |
| 5      | Pematang Siantar City    | Qualified            | Qualified            | Unqualified          | Qualified   | Unqualified | Qualified   |
| 6      | Tanjung Balai City       | Disclaimer           | Disclaimer           | Qualified            | Qualified   | Qualified   | Unqualified |
| 7      | Padang Sidempuan City    | Qualified            | Qualified            | Qualified            | Qualified   | Qualified   | Qualified   |
| 8      | Sibolga City             | Qualified            | Qualified            | Disclaimer           | Disclaimer  | Disclaimer  | Qualified   |
| 9      | Gunung Sitoli City       | Qualified            | Qualified            | Qualified            | Qualified   | Qualified   | Qualified   |

|    |                          |                      |             |                      |             |             |             |
|----|--------------------------|----------------------|-------------|----------------------|-------------|-------------|-------------|
| 10 | Langkat District         | Qualified            | Qualified   | Qualified            | Qualified   | Qualified   | Qualified   |
| 11 | Deli Serdang District    | Adverse              | Disclaimer  | Qualified            | Disclaimer  | Qualified   | Qualified   |
| 12 | Serdang Bedagai District | Qualified            | Qualified   | Modified Unqualified | Qualified   | Qualified   | Qualified   |
| 13 | Batubara District        | Qualified            | Qualified   | Disclaimer           | Qualified   | Qualified   | Qualified   |
| 14 | Asahan District          | Qualified            | Qualified   | Modified Unqualified | Qualified   | Qualified   | Unqualified |
| 15 | Simalungun District      | Qualified            | Disclaimer  | Qualified            | Qualified   | Qualified   | Disclaimer  |
| 16 | Toba Samosir District    | Qualified            | Qualified   | Qualified            | Qualified   | Unqualified | Unqualified |
| 17 | Labura District          | Qualified            | Qualified   | Unqualified          | Unqualified | Unqualified | Unqualified |
| 18 | Labuhan Batu District    | Qualified            | Qualified   | Unqualified          | Qualified   | Qualified   | Qualified   |
| 19 | Labusel District         | Qualified            | Unqualified | Modified Unqualified | Unqualified | Unqualified | Unqualified |
| 20 | Padang Lawas District    | Disclaimer           | Disclaimer  | Qualified            | Qualified   | Qualified   | Qualified   |
| 21 | Paluta District          | Qualified            | Qualified   | Qualified            | Qualified   | Qualified   | Unqualified |
| 22 | Samosir District         | Qualified            | Qualified   | Qualified            | Disclaimer  | Qualified   | Unqualified |
| 23 | Karo District            | Qualified            | Qualified   | Qualified            | Qualified   | Disclaimer  | Qualified   |
| 24 | Dairi District           | Qualified            | Qualified   | Unqualified          | Unqualified | Unqualified | Unqualified |
| 25 | Humbahas District        | Modified Unqualified | Unqualified | Unqualified          | Qualified   | Unqualified | Unqualified |
| 26 | Pakpak Barat District    | Qualified            | Qualified   | Unqualified          | Qualified   | Unqualified | Unqualified |
| 27 | Tapsel District          | Qualified            | Qualified   | Unqualified          | Unqualified | Unqualified | Unqualified |
| 28 | Tapteng District         | Qualified            | Qualified   | Qualified            | Qualified   | Qualified   | Unqualified |
| 29 | Taput District           | Qualified            | Qualified   | Modified Unqualified | Unqualified | Unqualified | Unqualified |



|    |                       |            |            |            |            |            |            |
|----|-----------------------|------------|------------|------------|------------|------------|------------|
| 30 | Kab. Madina           | Disclaimer | Disclaimer | Qualified  | Qualified  | Qualified  | Qualified  |
| 31 | Nias District         | Disclaimer | Qualified  | Qualified  | Qualified  | Qualified  | Qualified  |
| 32 | Nias Barat District   | Disclaimer | Disclaimer | Disclaimer | Qualified  | Disclaimer | Disclaimer |
| 33 | Nias Selatan District | Disclaimer | Disclaimer | Disclaimer | Disclaimer | Disclaimer | Disclaimer |
| 34 | Nias Utara District   | Disclaimer | Disclaimer | Qualified  | Qualified  | Qualified  | Qualified  |

Table 1 shows the development of the BPK's opinion on the Local Government Financial Reports (LKPD) in the Sumatera Utara Province from year to year. Although, in general, there was a fairly good development in 2017, where the LKPD that received 'unqualified' increased by 14 entities, compared to 2016, where only 12 entities received 'unqualified', and in 2015, only five entities received 'unqualified'. The Sumatera Utara Government Inspection report (LHP) of 2017 showed a good quality improvement, but the improvement in quality did not mean that there were no findings that led to recommendations to be immediately accounted for. The LHP for the 2017 fiscal year also leaves significant audit findings. Table 2 explains the findings obtained from the LKPD examination results of the Regional Government in the Province of Sumatera Utara, in 2017, as follows:

**Table 2:** BPK Audit Findings on LKPD 2017

| <b>Audit Findings in 2018</b>  |
|--|
| <ol style="list-style-type: none"><li>1. There is a cash shortage in the treasurer of expenses.</li><li>2. Management of cash at the 2017 regional treasury is disorderly.</li><li>3. Inventory expenses have not been recorded in Operational Report (LO).</li><li>4. Recording of inventories has not been orderly.</li><li>5. Presentation of accounts receivable and allowance for receivables are not in accordance with the provisions.</li><li>6. Administration of rural and urban PBB receivables (Land and Building Tax) is inadequate and validation has not been done.</li><li>7. Incomplete data collection of assets.</li><li>8. True assets are not believed to be true because there are differences in the value of the balance sheet with the supporting value.</li><li>9. Assets are presented at Rp. 0.00.</li><li>10. Assets are not supported by adequate details, land under roads and irrigation areas has not been presented in the balance sheet, and the rehabilitation value of fixed assets is not attributed to the initial acquisition of fixed assets.</li><li>11. Capitalisation of expenditure after initial acquisition of fixed assets is not added or attributed to the value of the initial assets, but as new assets.</li><li>12. Accumulated depreciation is not in accordance with Government Accounting Standards (SAP).</li></ol> |

13. There is a lack of work volume on procurement of construction services.
14. The execution of work is not according to the contract specifications (in capital expenditure).
15. Administration of PBB receivables is also inadequate and has not been validated.
16. Realisation of goods and services expenditure cannot be trusted because it does not show the actual conditions and is not supported by complete and valid documents.
17. Accountability of regional government financial management is in question as there are still many shortcomings.
18. Submission of reports to BPK is not timely.
19. District Government has a lot of debt to third parties.
20. The income seems great, even though there are no funds, resulting in a budget deficit.

In the current phenomenon, the quality of work of the District or City Inspectorate is still relatively low in carrying out its supervisory function. This can be seen from the results of the examination of the Supreme Audit Board (BPK) on the implementation of the management of the Regional Revenue and Expenditure Budget (APBD), in the Regency or City Government in the Sumatera Utara Province, which still finds instances of fraud that cannot be found by the APIP Inspectorate of the Regency of the City. Based on the BPK's findings, it indicates that the APIP Inspectorate has not been able to carry out its roles and functions properly and shows the inability of the APIP to detect and assess potential fraud. Before the financial statements of the local government are submitted to the BPK-RI, the Regional Government Inspectorate must conduct a review of the Regional Government Financial Report (LKPD). The increased ability to control the audit risk management will have an impact on the quality of the reports, on the results of the internal audits conducted by the APIP and simplify the BPK's tasks when carrying out general audits.

In recent years there has been a shift in the auditing approach, namely from a system-based audit to a process-based audit. Today, the approach used in auditing is the risk-based audit. With the shift in the auditing approach, a lot of research has been carried out related to risk-based internal auditing. Among other studies conducted by Reding et al. (2009), Cantele et al. (2020), Falshaw et al. (2006), and others, Eshikhati examined the factors that influence the adoption of the public sector risk-based audits in Kenya.

Risk management is required so that the risks originating from the four organisational goals consisting of strategic objectives, operational objectives, reporting objectives and compliance objectives (COSO, 2004), can be minimised. One of the organisational goals is a reporting objective that focusses on the reliability or accuracy of reporting. Thus, risk management can minimise the risk of financial reporting fraud (Khan, 2020). In addition, risk management can guarantee the achievement of organisational goals and provide long-term benefits because the implementation of risk management is emphasised on control at Sarbanes-Oxley, and is



mainly focussed on financial reporting (COSO, 2004). Naturally, there is a relationship between risk management to improving financial reporting and, of course, increasing transparency (COSO, 2004).

Ahmeti stated that the application of risk management in public sector organisations, especially government, is not an option but a necessity, if they want to ensure that the achievement of their strategic goals and objectives are achieved. In addition, managing risk in the public sector is more challenging than risk management in the private sector. This is due to the many central government and local government regulations, the bureaucracy, and the various conflicts of interest of the stakeholders involved. Although in reality, there is no good theory of risk management strategies in local governments, and there is still little research related to risk management in local governments.

### *Novelty*

This research adds the application of risk management as a moderating variable. The risk-based internal audit cannot be carried out if the regional device organization (OPD) has not implemented risk management. The determinant factor that is suspected by Ainuddin (2007), as a determinant of success, is the risk-based internal audit that determines the successful implementation of risk management. If risk management has been implemented, then it is assumed that internal auditors will be easier to implement risk-based internal supervision (RBIA). The management is a process of detecting risks that arise in achieving organisational goals, where one of the goals of the organisation is to prepare financial reports that are relevant, reliable, comparable, and understandable and timely and free from misstatements. The process of identifying the types of risks carried out by public entities in the end risks can be grouped according to the right type of risk. Thus, the entity can properly handle these risks. Entity actions in managing risks can be in the form of avoidance, transfer, keep, and mitigation.

## **Literature Review**

### *Theoretical basis*

#### *Agency Theory*

Agency theory tries to describe the relationship between two parties, where one party, the principal, and the delegation works with the other party, the agent. Khan et al. (2020) assert that agency theory states that auditors are appointed for the benefit of third parties and also management. Agency theory explains the agency relationship that arises from the contract between the agent and the principal, in which the agent performs tasks for the benefit of the manager. Differences in interests between agents, as company management and capital owners or shareholders, can occur in the implementation of agency relationships.



Shareholders or owners of capital give the mandate or authority to the agent to carry out and make decisions for the company's operational activities, based on agreements or contracts that have been agreed by both parties. Mandates are given to agents to carry out company operations in accordance with the specified limits. To ensure good operational activities of the company, control from shareholders or owners of capital is needed because the agent will seek personal gain for his work. As the principal also has an interest in the company's operations, the relationship between the agent and the principal often creates a conflict of interest. This conflict occurs because each individual will attempt to obtain his or her own benefits, which can lead to information asymmetry, the difference in information between the interests of agents, and principal interests. The financial statements prepared by the management as agents can cause information asymmetry due to differences in interests. Therefore, an independent third party is needed, so that financial reporting is fair and responsible, as well as in the process of implementing the risk-based internal audit.

### ***Risk Management***

Porter (1980) states that in accordance with ISO 31000 standards, risk is interpreted as an uncertain effect that can be a positive and/or negative deviation from what is expected. This definition is far broader than traditional (control-based) approaches that apply the product of the probabilities and effects of negative events. As a result, risk management must not concentrate on reducing the probability and/or, more or less, the predictable effects of 'inherent' or apparently inherent risk factors. Instead, it must consider the significance of the effects of 'persistent' factual but difficult to measure uncertainty on purpose, based on the best available information. This approach is also supported by the fact that it is not a high probability event that causes the most damage, but inadequate changes in conditions, as well as rare or unpredictable events (chains) that trigger and/or intensify each other.

To ensure risk management has been carried out adequately, the role of the risk management system is very important. The management system is defined by Litschert (1994) as the framework of processes and procedures which are used to ensure that an organisation can fulfil all the tasks required to achieve its objectives. Thus, a risk management system can be interpreted as a process framework and procedures to ensure that the company can fulfil the tasks required in management and achieving risk management goals. From this definition, the risk management system focusses on adopting a consistent and systematic approach to manage all risks faced by the company. Of course, management system risk is considered by some researchers as a basic model for managing a portfolio of risks faced by companies (Park, 2004; Snow, 1978; Simkins, 2010; Wikipedia, 2019).

An adequate risk management system must meet certain requirements to ensure its reliability in supporting the successful implementation of enterprise risk management (ERM). One



skeleton risk management that requires adequate management system support is The COSO (2004), which states that ERM must have the following elements: internal environment; objective settings; event identification; risk assessment; risk response; control activities; information and communication; and monitoring. The COSO framework emphasises that the role of the eight elements vary depending on the size of the company. In essence, COSO emphasises that the costs and benefits of a risk management system vary from company to company, depending on the COSO elements and company size.

### ***Risk-Based Internal Audit***

The risk-based internal audit approach is a method used by the auditor to determine the audit procedures to be carried out, that is based on risk or an indication that there is a greater likelihood that a transaction or level of transaction, account or balance, and/or disclosure of misstatements, so that the auditor can achieve the audit objectives. The risk-based audit, which focusses on recorded and unrecorded risks, increases financial statement guarantees and the financial reporting process. The higher the risk area, the more audit time and client control are needed. In addition to focussing on the level of risk, risk-based methods help to evaluate and build value into the financial reporting process. To do this, the auditor must have the latest insights. The knowledge gathered can help design an audit program that includes the most effective and efficient combination of tests that is responsive to each client's unique circumstances. For this reason, the risk-based approach is superior to traditional audit methods (Hoyt, 2003).

Although the risk-based audit approach has been widely used as a tool for internal control systems in the public sector, many scandals continue to reappear every year. What remains unclear, is whether the risk-based approach is ineffective or the method of implementation is inappropriate or maybe the personnel involved in applying the risk-based audit approach. Therefore, the risk-based approach has spent significant funds and more needs to be done to justify the costs of implementing a risk-based audit approach. Therefore, this study seeks to establish the effect of the risk-based audit approach on the implementation of internal control systems.

The risk-based audit theory argues that experience can increase the ability of auditors to assess future risks accurately. However, psychology shows that individuals tend to overestimate experiences when confronted with current risk cues that conflict with experience. The risk-based audit theory argues that the auditor's evaluation during an audit becomes more effective with the experience he or she has. Conversely, there is a risk that the auditor will depend on experience, which appears to be left behind, in addition to gaining an increase in specific knowledge. The risk-based internal audit is applied to the internal control and risk management system, which requires all departments to build risk management awareness, identify risk





control points, take appropriate steps to control, record various risk controls, and make risk-based internal audits from important data sources (Hermanson, 2005). According to this theory, the responsibility for identifying and managing risks belongs to the management, while one of the main roles of the internal audit is to provide assurance that those risks have been well-managed (Cooper, 2006). Professional internal audit activities can achieve their mission as the best foundation of governance by positioning their work in the context of the organisation's own risk management framework. This involves looking at how managers identify, assess, respond, and report risks, and the effectiveness of managers monitoring how responses to risks work.

### ***The Role of the Internal Audit Function***

Internal auditors in the local government environment were originally called the 'bawasda', and are now called the 'inspectorate'. At this time, the function has shifted its role to assess and provide advice on the process of risk management, control, and governance. This name and function change is often misunderstood and causes confusion in the auditor's internal roles and functions.

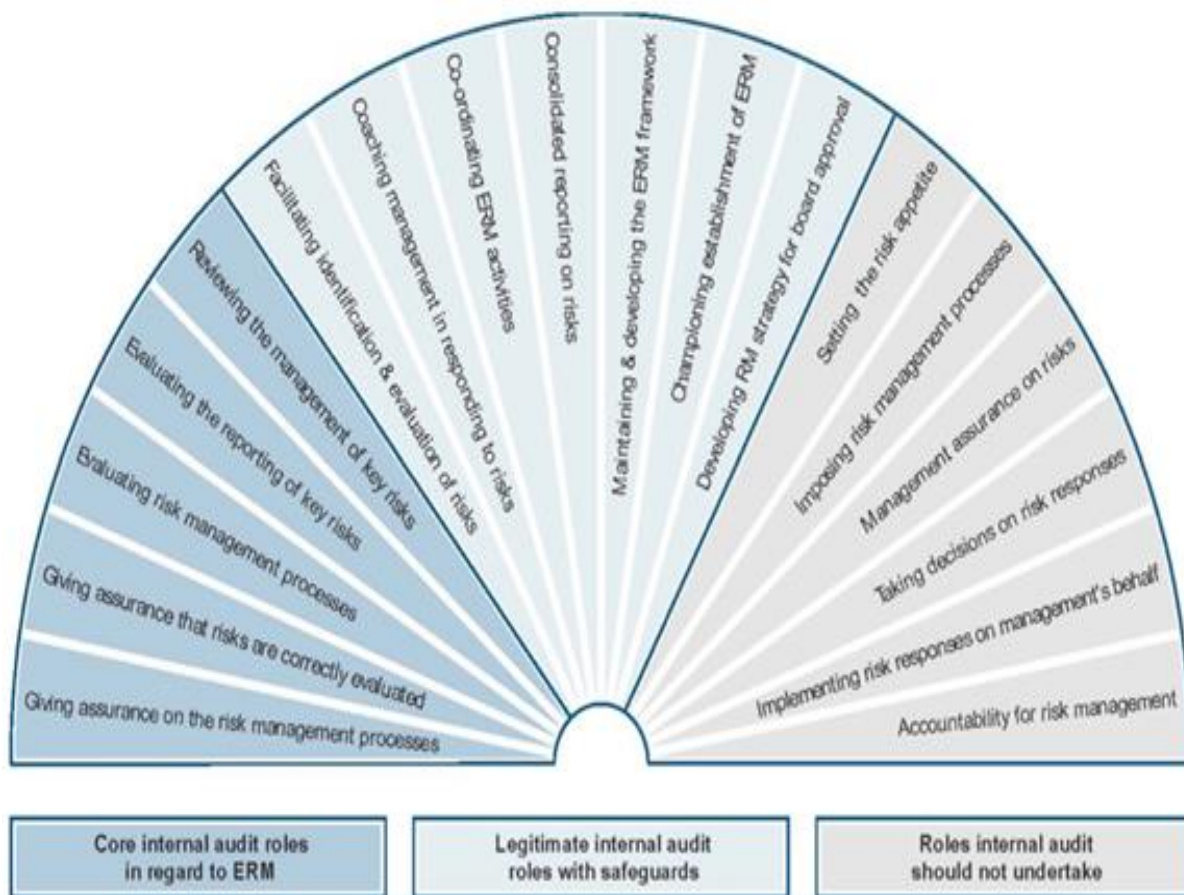
As a result of changing organisational needs, technology, and the complexity of the organisation's activities and systems, the nature of the services sought from internal auditors has changed over the years from an emphasis on traditional compliance audits, where independence has become the main paradigm for the role of embodying values and where the partnership with management is given greater meaning (Nocco, 2006).

This shift has resulted in a more effective and strategic focus in its operations, application of internal audit standards and best practices invited by the Institute of Internal Auditors (IIA), and improvement of governance through the establishment of an audit and risk management committee. The RBIA provides a system for setting priorities when there are competition demands for limited resources. As a fundamental step towards public services that are forward-looking, proactive, accountable, and innovative, all heads of public institutions should be required to develop and implement a risk management framework.

Internal auditing is an independent, objective, and consultation activity. Its core role is to provide an objective guarantee to the board on the effectiveness of risk management. Indeed, research has shown that the Board of Directors and internal auditors agree that the two most important ways that internal auditing provides value to the organisation are in providing objective guarantees that key business risks are managed appropriately, and providing guarantees that risk management and internal control frameworks operate effectively.

Figure 1 presents a series of enterprise-wide risk management (ERM) activities and shows which roles an effective internal audit professional must perform and, equally important, which should not be carried out. The important factors to consider when determining the role of the internal audit are whether the activity poses a threat to the independence and objectivity of the internal audit activity, and whether it is likely to improve the organisation's risk management, control, and governance processes.

**Figure 1.** Role of Internal Audit in ERM



**Source:** The Institute of Internal Auditors (IIA)

### ***Top Management Commitment***

The commitment of top management is one of the most influential factors in implementing risk-based internal auditing (RBIA) due to the support of strong leaders and having a better governance structure. The agreement and active involvement of the head of the internal audit, senior management, audit staff, accounting staff, and senior operational management, can encourage an independent evaluation of the effectiveness of risk management, control, and governance (Erlina, 2018).



The top management plays an important role in implementing the RBIA because such decisions involve the commitment of resources and organisational change. Top management commitment is needed to identify whether the organisation shows a genuine interest in implementing the RBIA. Prescott (1986) emphasised that although organisations maintain the old audit approach as a guideline for conducting audits, top management's commitment is the main indicator that determines the successful implementation of the RBIA.

Top management commitment becomes a reality when company or division managers accept responsibility for the successful implementation of risk management. The manager must be involved and add the special skills and talents that make him president. The term, 'top manager', usually refers to the chief executive and those who report to him. Top management commitment includes activities such as communicating the value of company quality, strengthening quality message meetings with workers and customers who provide formal and informal recognition, and receive training. The top managers develop and facilitate the achievement of the mission and vision, develop the values needed for long-term success and implement them through appropriate actions and behaviours, and are personally involved in ensuring that the organisation's management system is developed and implemented. Other important responsibilities of top management are building an environment with valued performance, where management is able to motivate workers, establish relationships where companies treat employees fairly and well, and phases that emphasise principles, where managers better utilise the creativity and imagination of their employees, and apply in the application of the RBIA.

### ***Training***

Most organisations have enrolled their employees in training programs to improve their skills, knowledge, and abilities. Most of them facilitate training through program development with the ability to meet the needs of their employees. Some companies give their employees the opportunity to enroll in training programs established by other companies. Thus, previous studies have shown that if implemented properly, internal programs are more effective than external ones. The difference comes from the fact that internal programs are designed so that they respond to specified training needs (Drew, 2005). External programs are designed for a diverse population of various organisations, and as such, they are relatively less effective (Chandler, 1962). Etzioni (1961) found that external programs are not always ineffective. In some cases, they are better than internal training programs because they provide new or important knowledge and skills that the organisation may not have information about. Therefore, when designing training programs, companies focus on providing employees with opportunities for the development of general and special



skills. The programs are intended, among others, for organisational development, management development, career development, and supervisory development training.

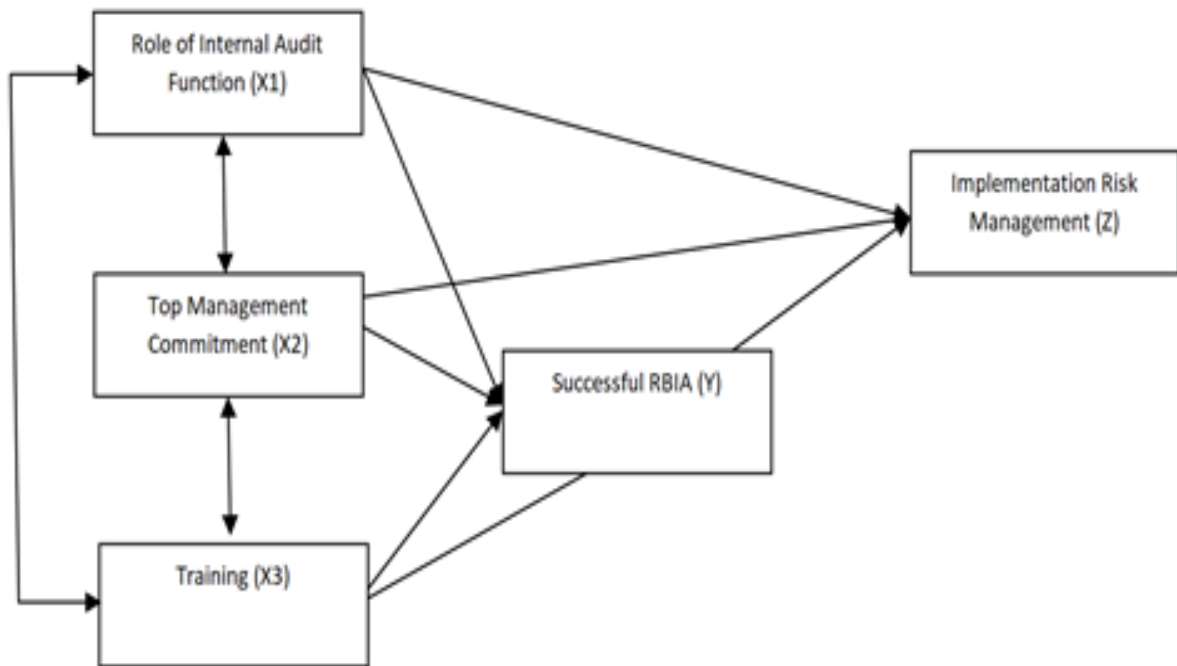
The efforts to ensure the provision of appropriate training may include certification as an internal auditor, and are not carried out in a planned and continuous manner. There is no mechanism for ensuring auditor participation in the corporate design training of new systems, improvements to existing ones, and the introduction of new services. This shows that the role of adding internal audit value through involvement in the development and revision of the system is limited (Brodwin, 1984). As the nature of the business is complex and dynamic, providing ongoing training and focus will be crucial to achieving internal audit results by adding value. According to Hatch (2006), the scope of the audit function, the extent to which the issues raised by the internal audit department are corrected, and the internal audit management competencies affect efficient and effective internal controls. Required resources, such as the internal audit staff training, are therefore important to provide. Desarbo (2005) also states that to meet the challenges and management support, internal auditors regularly need to acquire and develop new skills in terms of following new developments in regular training updates. In this case, there is a need for training for internal auditors on training in a risk-based audit approach.

For internal auditing to be efficient, ongoing training is needed from internal auditors. Internal auditors are people who have a high level of knowledge, skills, and abilities, and adhere to the international standards in assessment standards, ensuring more effective control (Blumentrint, 2006). It is difficult for auditors to detect fraud, and one of the reasons why internal auditors find it difficult to track and detect fraud is because they do not have enough experience in identifying falsified financial data (Hambrick, 1981). Training involves the stimulation of fraud cases that make internal auditors gain significant experience (Hambrick, 1982), improve performance, and improve their ability to detect evidence that shows fraud. In their research on current control practices by copying with employee fraud and organisational risk, Domokos (2015) compared the conditions of the fraud detection of United States (US) and Canadian companies with desired conditions in respect to risk management training, understanding fraud management procedures, recognition of key fraud indicators, and incentives to report fraud. They concluded that training employees to manage fraud is training that needs to be improved. Finally, Thompson (2007) examined the impact of auditor training on detecting fraud.

## Research method

### Research Design

**Figure 2.** Conceptual Framework



### Population and Sample

The population used in this study were all inspectorates in the North Sumatra Regional Government, and several regencies and cities in the North Sumatra Province. The selected regencies and cities are Binjai City, and Medan City. Meanwhile, the sample to be used in this study is the entire population.

**Table 3:** Population and Sample

| No    | Government              | Population |
|-------|-------------------------|------------|
| 1     | Sumatera Utara Province | 86         |
| 2     | Medan City              | 100        |
| 3     | Binjai City             | 82         |
| Total |                         | 268        |

### Data Collection Technique

A questionnaire was used in this study, which is the process of collecting data by submitting a list of written questions to be completed by the respondents. The measurement of the

variables of this study uses a Likert scale. A Likert scale is used to measure the attitudes, opinions and perceptions of a person or group of people about social phenomena. The measurement of the variable indicators in this study, which are answers to positive and negative questions, are made in five assessment weights.

### ***Data Analysis Technique***

Since the problem being tested is a network of various variables and has a causal relationship between variables, the data analysis used to test the hypothesis of this study is a path analysis. The relationship between research variables is shown in Figure 1. Of the variables to be analysed, there is one intermediate variable. Thus, this analysis tool can explain the direct and indirect effects of a set of causative variables (exogenous variables) and effect variables (endogenous variables).

The steps taken in path analysis are calculating the path coefficient, direct influence, and coefficient of determination (R<sup>2</sup>). The path coefficient is calculated after calculating the correlation matrix between the variables and the inverse matrix (r<sup>-1</sup>). The next step calculates the coefficient of multiple determination (R<sup>2</sup>): R<sup>2</sup><sub>y</sub> (x<sub>1</sub>; x<sub>2</sub>; x<sub>3</sub>) and R<sup>2</sup><sub>z</sub> (x<sub>1</sub>; x<sub>2</sub>; x<sub>3</sub>; y). 'X<sub>1</sub>' is the role of the internal audit function, 'X<sub>2</sub>' is the commitment of top management, 'X<sub>3</sub>' is the training, 'Y' is the successful RBIA, and 'Z' is the implementation of risk management. Based on the coefficient of determination, the residual variable can be calculated = Pyxi, Pyxi, and the magnitude of XiY's direct influence with Z is Z = Pzxiy, Pzxiy. Meanwhile, the indirect effect sung: h Analysis.

$$Y \quad X_i \Omega X_j \quad Y = P_{yxi} \cdot r_{xjxi} \cdot P_{yxj} \quad [1]$$

$$Z \quad X_i Y \Omega X_j Y_j \quad Z = P_{zxiy} \cdot r_{xjyj} \cdot P_{zxyj} \quad [2]$$

### **Results and Discussion**

Testing the seriousness of the respondents in answering the questions is important in this study. For this purpose, data testing is then performed with the validity and reliability test. Analysis of the validity test uses the Pearson correlation, while the reliability is an index that shows the extent to which a measuring instrument can be trusted or is reliable. The reliability test analysis was performed using the Cronbach Alpha analysis.

The results of the validity test of all data obtained from respondents showed that there were more significant items compared to insignificant items. This means all variables are valid. The Cronbach Alpha test results on all valid items on the role of the internal audit function,

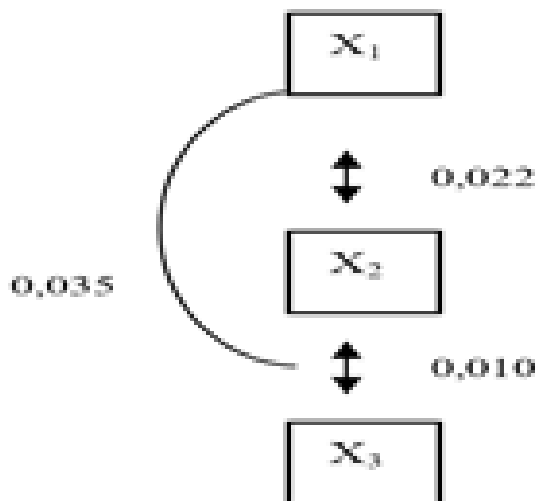
and the commitment of top management. The successful risk-based internal audit and implementation of risk management indicate that Cronbach's Alpha values are above 0.600,

Since the research data was obtained from the survey population, no significance test was conducted. The conclusions are drawn directly from the path coefficients of each exogenous variable and the coefficient of determination, both simultaneously and partially on the endogenous variables.

### ***Relationship between the Role of the Internal Audit Function, Commitment of Top Management, and Training***

The results of testing the first hypothesis, in accordance with the calculation in Figure 2, shows the relationship between the role of the internal audit function (X1) with the top management commitment (X2) is indicated by a correlation coefficient of 0.022. The relationship between the role of the internal audit function (X1), and training (X3) is indicated by a correlation coefficient of 0.035. Lastly, the relationship between the top management commitment (X2), and training (X3) is indicated by a correlation coefficient of 0.010.

**Figure 3.** Structure 1: Relationship correlational between variable X1 and X2, X1 and X3, and the relationship between X2 and X3



According to Cooper (1995), there are five categories of correlation criteria with a range of 0.20 for each category. If the correlation between the exogenous variables is equal or below 0.19, based on the criteria, the correlation is in the very low category or is a negligible correlation. Thus, the role of the internal audit function has an insignificant relationship with the commitment of top management. The role of the internal audit function also has an

insignificant relationship with training, and the commitment of top management has an insignificant relationship with training.

***The Relationship of the Role of the Internal Audit Function, Top Management Commitment, and Simultaneous and Partial Training on the Success of the RBIA***

The second hypothesis of this study is there is an influence of the role of the internal audit function (X1), top management commitment (X2), and training (X3) simultaneously and partially on the success of the RBIA (Y).

The results of testing the two hypotheses are shown in Table 4. Based on the calculation results in Table 4, it can be explained that the simultaneous influence of the role of the internal audit function, top management commitment, and training on the success of the RBIA (R2) is 0.7681. Thus, the hypothesis stating the role of the internal audit function, top management commitment, and training simultaneously influences the success of the RBIA, can be accepted. This means that simultaneously, the role of the internal audit function, top management commitment, and training affect the success of the RBIA.

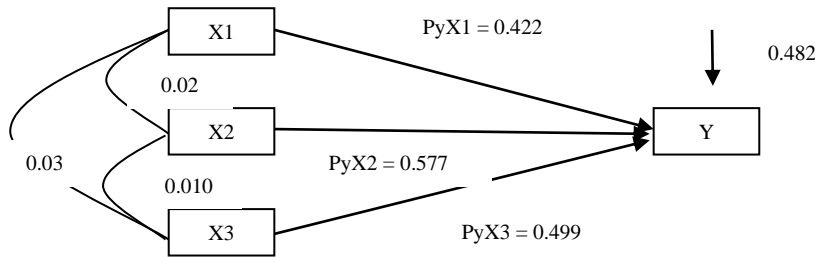
**Table 4:** Path Coefficient analysis results

| Path coefficient  | Path coefficient | Coeff. Determination | Rest of it |         |
|---|------------------|----------------------|------------|---------|
|   | Pyxi             | R2                   | 1-R2       | Pye     |
| The relationship between the role of the internal audit function and the success of the RBIA. | 0.422            | 0.7681               | 0.23219    | 0.48156 |
| The relationship between the commitment of top management and the success of the RBIA.        | 0.557            |                      |            |         |
| The relationship between training and the success of the RBIA.                                | 0.499            |                      |            |         |

Table 4 shows that the path coefficient partially effects the role of the internal audit function (X1) on the success of the RBIA (Y) at 0.422; the commitment of top management (X2) to the success of the RBIA (Y) is 0.557; and training (X3) on the success of the RBIA (Y) is 0.499. The mean HA1 hypothesis is accepted. Thus, the role of the internal audit function (X1), top management commitment (X2), and training (X3) partially have a positive effect on the success of the RBIA (Y). Based on the value of the path coefficient, the path diagram can be presented in Figure 4.



**Figure 4.** Structure 2: Relationship correlational between variable X1 and X2, and X3, to Y



From the magnitude of the total influence partially contained in Table 5, it can be seen that the influence of the role of the internal audit function, top management commitment, and training on the success of the risk-based internal audit are respectively 19.07 per cent, 31.82 per cent, and 25.92 per cent. This means that the success of the RBIA can only explain 19.07 per cent of the role of the internal audit function, 31.82 per cent of the commitment of top management, and 25.92 per cent of the training.

**Table 5:** Path coefficient based on the magnitude of direct and indirect effects, as well as the coefficient of determination of exogenous variables (Xi) on endogenous variables (Y)

| Variable | Description   | Direct Effect (%) | Indirect Effect (%) | Total (%) |
|----------|---|-------------------|---------------------|-----------|
| X1       | To Y = $(0.422)^2 \times 100\%$<br>Through X2 to Y = $(0.422 \times 0.022 \times 0.557) 100\%$<br>Through X3 to Y = $(0.422 \times 0.035 \times 0.499) 100\%$             | 17.81             | 0.52<br>0.74        | 19.07     |
| X2       | To Y = $(0.557)^2 \times 100\%$<br>Through X1 to Y = $(0.557 \times 0.022 \times 0.422) 100\%$<br>Through X3 to Y = $(0.557 \times 0.010 \times 0.499) 100\%$             | 31.02             | 0.52<br>0.28        | 31.82     |
| X3       | To Y = $(0.499)^2 \times 100\%$<br>Through X1 to Y = $(0.499 \times 0.035 \times 0.422) 100\%$<br>Through X2 to Y = $(0.499 \times 0.010 \times 0.557) 100\%$<br>Subtotal | 24.90             | 0.74<br>0.28        | 25.92     |



|  |   |       |      |       |
|--|---|-------|------|-------|
|  | Coeff. Determination R <sup>2</sup> <sub>y</sub><br>(x <sub>1</sub> , x <sub>2</sub> , x <sub>3</sub> ) | 73.73 | 3.08 |       |
|  | Subtotal  |       |      | 76.81 |
|  | Effect other variable Y (ε <sub>1</sub> )   |       |      | 23.19 |
|  | Total   |       |      | 100   |

The interpretation of this research is for the success of the risk-based internal audit and identifying the role of the internal audit function. The local government, in a sustainable manner, must pay attention to and establish an overall quality policy within the government, provide sufficient budget for risk management implementation, determine the internal audit function to oversee or guarantee the implementation of risk management, and must be actively involved in risk management. In addition, to participate in increasing the internal understanding of auditors through training and education in improving quality, so as to encourage increased understanding of risk management. Thus, indirectly, the role of the internal audit function is improving in the application of risk management, which directly encourages top management's commitment or influences the increasing success of the risk-based internal audit.

***The Relationship of the Role of the Internal Audit Function, Top Management Commitment, and Simultaneous and Partial Training on the Success of the RBIA***

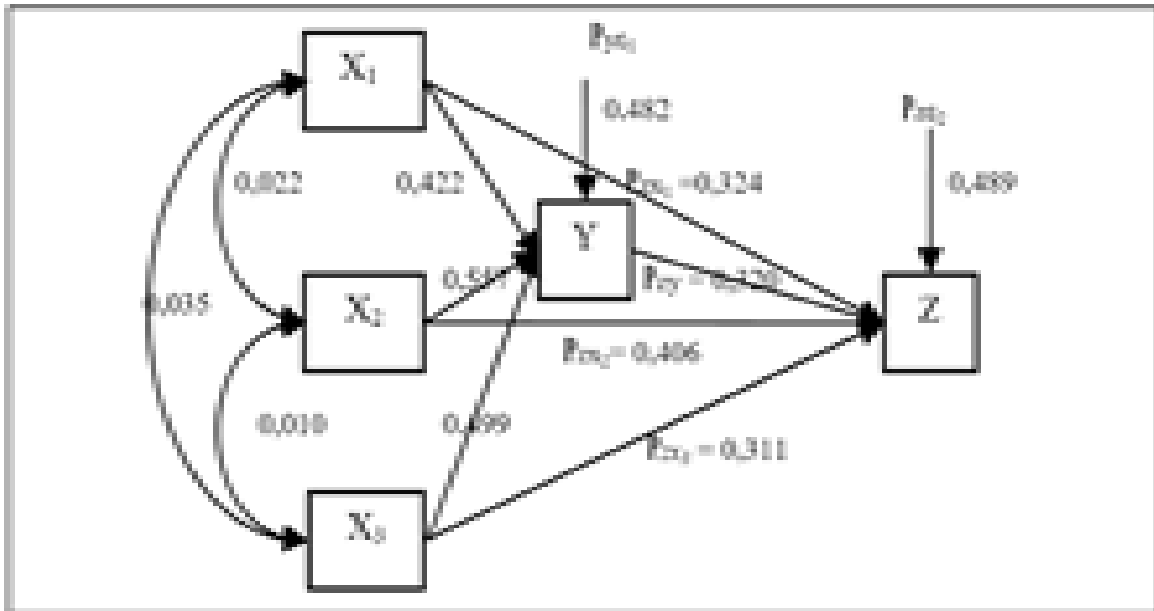
Hypothesis three of this study proposes the influence of the role of the internal audit function (X<sub>1</sub>), top management commitment (X<sub>2</sub>), training (X<sub>3</sub>), and the success of the RBIA (Y) simultaneously and partially on the implementation of risk management (Z) in the North Sumatran Provincial Government. The results of testing the three hypotheses are shown in Table 6. Based on the calculation results in Table 6, it can be explained that the role of the internal audit function, top management commitment, training, and success of the RBIA simultaneously influence the application of risk management at 76.06 per cent. It means the hypothesis stating the role of the internal audit function, top management commitment, training and the RBIA success simultaneously influences the application of risk management, is proven.

**Table 6:** Results of Pathway Analysis Coefficients Influencing the Role and Function of Internal Audit (X1), Top Management Commitment (X2), and Training (X3) on the Success of the Risk-Based Internal Audit (Y)

| Path Coefficient<br>(Pzxiy)   | Path Coefficient | Determination Coefficient |       |       |
|---|------------------|---------------------------|-------|-------|
|   | Pzyxi            | R2                        | 1-R2  | Pze   |
| The relationship between the role of the internal audit function and implementation risk management (Pzx1). | 0.324            | 0.761                     | 0.239 | 0.489 |
| The relationship between the commitment of top management and implementation risk management (Pzx2).        | 0.406            |                           |       |       |
| The relationship between training and implementation risk management (Pzx3).                                | 0.311            |                           |       |       |
| The relationship between the successful risk-based internal audit and implementation risk management (Pzy). | 0.320            |                           |       |       |

The path coefficient partially influences the role of the internal audit function (X1) on the application of risk management (Z) at 0.324; the commitment of top management (X2) to the application of risk management (Z) is 0.406; training (X3) to the application of risk management (Z) is 0.311; and the success of the risk-based internal audit (Y) on the application of risk management is 0.320. These results mean the HA2 hypothesis is accepted. Thus, the role of the internal audit function (X1), top management commitment (X2), training (X3), and the success of the risk-based internal audit (Y) partially have a positive effect on the application of risk management (Z). Based on the path coefficient value from the calculation with PLS, the path diagram can be presented in Figure 5.

**Figure 5.** Structure 3: Implication of the Role of the Internal Audit Function, Commitment of Top Management, Training, and the Successful Risk-Based Internal Audit to the Implementation of Risk Management



As is evident in Table 7, and from the magnitude of the total influence partially, it can be seen that the role of the internal audit function, top management commitment, training, and the success of the risk-based internal audit on the application of risk management, respectively are 17.47 per cent, 20.98 per cent, 16.23 per cent, and 21.38 per cent. This means that the application of risk management only explains 17.47 per cent of the role of the internal audit function, 20.98 per cent of top management's commitment, 16.23 per cent of training, and 21.38 per cent of the success of the risk-based internal audit. This shows the effect of the total success of the risk-based internal audit on the application of risk management has the greatest effect.

From the analysis of this data, it can be seen from the magnitude of the direct and indirect factors contained in Table 7, that the biggest direct effect is the variable of top management's commitment to the application of risk management by 16.48 per cent. Meanwhile, the greatest indirect effect found in Table 7 shows the success of the risk-based internal audit was 6.68% + 4.46% at 11.14%.

**Table 7:** Results of the Path Coefficient Analysis Based on the Amount of Direct and Indirect Effects and Determination Coefficient of Exogenous Variables (Xi and Y) on the Implementation of Risk Management (Z)

| Variable | Description   | Direct Effect | Indirect Effect          | Total |
|----------|---|---------------|--------------------------|-------|
| X1       | To Z: $(0.324)^2$<br>Through X2 to Z: $(0.324 \times 0.022 \times 0.406)100\%$<br>Through X3 to Z: $(0.324 \times 0.00 \times 0.311)100\%$<br>Through Y to Z: $(0.324 \times 0.644 \times 0.320)100\%$  | 10.50         | 0.29<br><br>0.00<br>6.68 | 17.47 |
| X2       | To Z: $(0.406)^2$<br>Through X1 to Z: $(0.406 \times 0.022 \times 0.324)100\%$<br>Through X3 to Z: $(0.406 \times 0.00 \times 0.311)100\%$<br>Through Y to Z: $(0.406 \times 0.342 \times 0.320)100\%$  | 16.48         | 0.29<br><br>0.00<br>4.21 | 20.98 |
| X3       | To Z: $(0.311)^2$<br>Through X1 to Z: $(0.311 \times 0.035 \times 0.324)100\%$<br>Through X2 to Z: $(0.311 \times 0.010 \times 0.406)100\%$<br>Through Y to Z: $(0.311 \times 0.611 \times 0.320)100\%$ | 9.67          | 0.35<br><br>0.13<br>6.08 | 16.23 |
| Y        | To Z: $(0.320)^2$<br>Through X1 to Z: $(0.320 \times 0.644 \times 0.324)100\%$<br>Through X2 to Z: $(0.320 \times 0.343 \times 0.406)100\%$<br>Through X3 to Z: $(0.320 \times 0.00 \times 0.311)100\%$ | 10.24         | 6.68<br><br>4.46<br>0.00 | 21.38 |
|          | Subtotal  | 46.89         | 29.17                    |       |
|          | Coefficient determination: $R^2_z (x_1, x_2, x_3, y)$   |               |                          | 76.06 |
|          | The effect of other variables not examined on Z ( $\epsilon^2$ )  |               |                          | 23.94 |
|          | Total   |               |                          | 100   |



The interpretation of the results of this study is to increase the application of risk management by top leaders in the Regional Government of the North Sumatra Province to be more dominant and to pay attention to the increase in the commitment of top management, in an effort to increase the commitment of top management. An enhanced commitment from top management will directly encourage the success of the risk-based internal audit and the better application of risk management. Therefore, the improvement of the risk-based internal audit is improving, so that efforts to prevent fraud and eliminate waste that is not valuable to the Regional Government of North Sumatra can increasingly be avoided.

## **Conclusions**

The relationship between the role of the internal audit function, top management commitment, and training is still very low. This shows there is no relationship between the role of the internal audit function, top management commitment, and training in the Regional Government of the North Sumatra Province.

Simultaneously and partially, the role of the internal audit function, top management commitment, and training affect the success of the risk-based internal audit. This shows that the success of the risk-based internal audit improves if the role of the internal audit function, top management commitment, and training are increasingly enhanced. Partially, the dominant direct effect is the commitment of top management and the dominant indirect influence is the role of the internal audit function on the success of the risk-based internal audit. This means that the better the role of the internal audit function, the more improved top management's commitment to using previous years of knowledge regarding the application of risk management is.

Simultaneously and partially, the role of the internal audit function, top management commitment, training, and the success of the risk-based internal audit affect the application of risk management. This shows that the application of risk management improves if the role of the internal audit function, top management commitment, training, and the success of the risk-based internal audit are increasingly enhanced. Partially, the dominant direct implication is top management's commitment, and the dominant indirect implication is the success of the risk-based internal audit on the application of risk management. This means that the commitment of top management is consistent in using previous knowledge to increase the success of the risk-based internal audit, and indirectly, the success of the risk-based internal audit has a dominant implication on the application of risk management.



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