ISSN NO: 2249-3034

Studying the extent of implementation of risk-based internal audit in Yemeni banks

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Abstract

The concept of risk-based internal audit has received great attention in the last two decades, but research in less developed countries such as the Republic of Yemen is still almost non-existent. In this study, we aimed to identify the extent of application of risk-based internal audit in Yemeni banks by measuring the extent of application The three stages of risk-based auditing, which are risk assessment, planning for risk-based auditing, and implementing individual tasks. Are the stages of risk-based internal auditing implemented at the bank level or departments, branches, and tasks? Are there statistically significant differences attributed to the type of bank activity (commercial, Islamic)? or bank ownership (national, foreign), and due to the conditions of political instability in Yemen, the researcher used the questionnaire to collect data despite the small size of the sample represented by internal audit managers in Yemeni banks or their representatives, which number 18 banks. The results show that the level of application of internal audit based on The risks in Yemeni banks were at the departmental level and to varying degrees between banks. There are also no statistically significant differences regarding the application of risk-based internal audit stages in banks due to the type of bank activity (commercial, Islamic) or bank ownership (national, foreign)**.**

Index Terms **- Internal audit, risk-based internal audit (RBIA).**

1. INTRODUCTION

Internal audit has evolved progressively as a result of social and economic advancement as well as the fundamental requirements of business management (Xiangdong, 1997) [1]. This development has been reflected in the adoption of auditing approaches that address the needs of each period, (Fazal, 2011) [2] stated that there are two approaches to auditing: procedure-based auditing, also known as traditional auditing, and risk-based auditing. According to (Yazdaniyan & Dastgir, 2019) [3], the risk-based audit model is determined to be more effective and efficient than the procedure-based audit model. Since risk-based internal auditing (IA) necessitates a deeper comprehension of its processes to suitably satisfy stakeholder expectations, it is more effective and efficient (Castanheira et al., 2010) [4].

The transition towards risk-based auditing started in the mid-1990s, and all prominent regulatory bodies have released guidelines for risk assessment. The Auditing Standards Board (ASB) and the International Auditing and Assurance Standards Board (IAASB) released their standards between 2005 and 2006 (AICPA, 2013), but the Public Company Accounting Oversight Board (PCAOB) released its risk assessment standards in 2010. Standard setters assert that using a risk-based audit approach would enhance the calibre of audits. The IASB has stated that its risk assessment standards will improve the quality of audits by demanding a deeper understanding of the company and its surroundings to identify the risks of significant errors in the financial statements and how the company is addressing them. Additionally, these standards will require a more thorough evaluation of the risks of significant errors in the financial statements based on this understanding. Lastly, there will be a stronger connection between the assessed risks and the specific audit procedures carried out in response to those risks. (Messier, 2014) [5]

The Institute of Internal Auditors (IIA) [6] defines risk-based internal audit (RBIA) as “a methodology that links internal audit to an organization's overall risk management framework. The RBIA allows internal audit to provide assurance to the board that risk management processes are managing risks effectively, in relation to risk appetite".

(Zainal Abidin, 2017) [7] emphasizes that the transition to risk-based auditing underscores the need of evaluating risks associated with strategic and operational goals, as elucidated by (Selim & McNamee, 1999)[8]. The internal audit function is anticipated to tackle risks in a comprehensive and unified approach rather than in isolation (Matyjewicz & D'Arcangelo, 2004) [9]. Standardized risk assessment protocols must be included into the yearly internal audit plan (Koutoupis & Tsamis, 2009) [10], including the whole internal audit process and the execution of assignments (Selim & McNamee, 1999 [8]; Coetzee & Lubbe, 2014[11]).

Tuti Dharmawati et al. (2024) [12] states that the RBA is crucial in improving banking performance via many key roles. By focusing audits on high-risk areas, RBA improves operational efficiency and effectiveness. In addition, the RBA gives banks the tools they need to be proactive in identifying and managing risks, which improves operational and financial stability. To further lessen the possibility of fines and penalties, the (RBA) encourages banks to comply more closely to laws and industry norms. More than that, RBA encourages the use of IT to help with risk management and the development of a strong culture of risk management.

Furthermore, risk-based internal audit fosters a culture of proactive risk management within banks. This approach encourages internal auditors not only to identify risks but also to propose actionable recommendations to mitigate those risks. By doing so, banks can strengthen their overall risk management practices and create a robust framework to address potential vulnerabilities.

According to (Alzuela, 2003) [13], a characteristic of risk management in non-financial organizations is the lack of strategies that enable the management of inherent hazards. By contrast, risk management inside finance businesses has experienced significant growth in recent years, mostly due to the encouragement provided by existing regulations for banks to enhance their control and risk management systems.
In Yemen, risk-based internal auditing in Yemeni banks was addressed within the governance guide issued by the Central Bank of Yemen in 2010 [14], which specified that internal auditing systems in Yemeni banks must be based on risks and that risk-based auditing be implemented in all departments. Departments, branches and all activities in the banks. It was also specified that the review process be carried out in accordance with international standards for internal auditing.

In Yemen, (Al-Amoudi & Kulaib, 2020) [15]. studied the factors affecting the application of the risk-based auditing approach. He pointed out that the role of the internal auditor is influenced by organizational and personal factors in risk management. However, he did not address the different stages of implementing risk-based internal auditing and at what level it is applied, which creates a research gap in the context of Banks in Yemen require further studies on this subject. In general, the current study seeks to answer the following questions:

1- Do Yemeni banks apply risk-based internal auditing at all audit stages (risk assessment, planning, individual audit tasks)? At what level (company, departments, branches, tasks, does it apply)?
2- Do Yemeni banks apply risk-based internal audit in all departments, branches and activities in the bank?
3- Are there statistically significant differences in the nature of the bank's activity (commercial, Islamic) and its ownership (national, foreign) in applying risk-based internal audit?
To answer the research questions, a questionnaire was developed to collect data from a sample of internal auditors working in Yemeni commercial and Islamic banks. Local and foreign ownership. This study contributes to the literature on the practice of internal auditing by measuring the extent to which best practices for risk-based auditing (BRIA) are implemented in the context of developing countries such as Yemen, although some studies have addressed the application of risk-based internal auditing in developed countries (Greece study) (Italy study) However, little attention has been paid to this topic in developing countries (India study), and therefore this study represents the first study of its kind to the researcher's knowledge. The remaining parts of this paper proceed as follows.

ISSN NO: 2249-3034

The next section presents previous studies and a brief summary of the research on the BRIA method. The development of the hypotheses is addressed in Section 3.

In this part, we outline the research methodology, which include an explanation of the process for selecting the sample and the specific instrument used in the study. In the next section, we will show and discuss the findings of the data analysis. Section 6 contains a discussion of the findings. It also includes the conclusions.In Section 3, we go over how the theories came to be This section lays out the research methodology, which comprises details on the study's instrument and sample selection process. The findings and discussion of the data analysis are presented in.

2. Literature review

A research by (Khanna & Kaveri, 2008) [15], assessed the advancement of Indian banks in the implementation of Risk-Based Internal Auditing (RBIA) using a survey. The research further assessed the preparedness of banks on regulatory framework, infrastructure, auditing personnel, IT support, and other variables. The results indicated that Indian banks used a progressive strategy for adopting RBIA, with varying degrees of advancement among them.

(Koutoupis & Tsamis, 2009) [10] Provide empirical evidence on the adoption of Risk-Based Internal Auditing (RBIA) in selected Greek banks. The results showed diverse practices influenced by contextual factors such as the size and structure of the banks, the applied system, and the exposure of the internal auditors themselves. After conducting frequent internal audits as a direct consequence of pertinent risk assessments, they discovered that only Greek subsidiaries of American and British corporations were aware of the RBIA methodology.

(Allegrini & D'Onza, 2003) [17] The study aimed to focus on risk assessment procedures and apply the risk-based audit methodology. A survey was conducted on the "top 100" companies listed on the Italian Stock Exchange. According to survey data provided by the researchers, there are notable differences in practices across the three models:

1. A small number of companies (25%) focus mostly on traditional compliance tasks and often use the audit cycle approach to annual audit planning;
2. Internal auditors in the majority of companies (67%) use the COSO model and primarily perform operational audits. Risk-based strategy is mostly applied at the macro level.
3. Finally, we may find that a very small percentage of large organizations (8%), both at the macro and micro levels, have auditors who use a risk-based strategy.

According to (Ghosh, 2012) [18] the methodology used for risk-based internal auditing bears a strong resemblance to risk-based banking supervision approaches. Exam time has decreased and auditing resources have improved as a result of the implementation of risk-based internal auditing and risk-based banking supervision. It is imperative that internal audit management create an appropriate audit plan that fits within the constraints of available resources and details the sequential auditing of offices and operations. Quantitative and qualitative data on the branch's performance and operations since the last assessment should be included in risk profile files. Under risk-based auditing, branch offices are audited according to their operational volume, the relative relevance of their activities, and the degree of risk they are exposed to. For high-risk branch offices, risk-based auditing is prioritized.

3. Stages of implementing risk-based internal audit

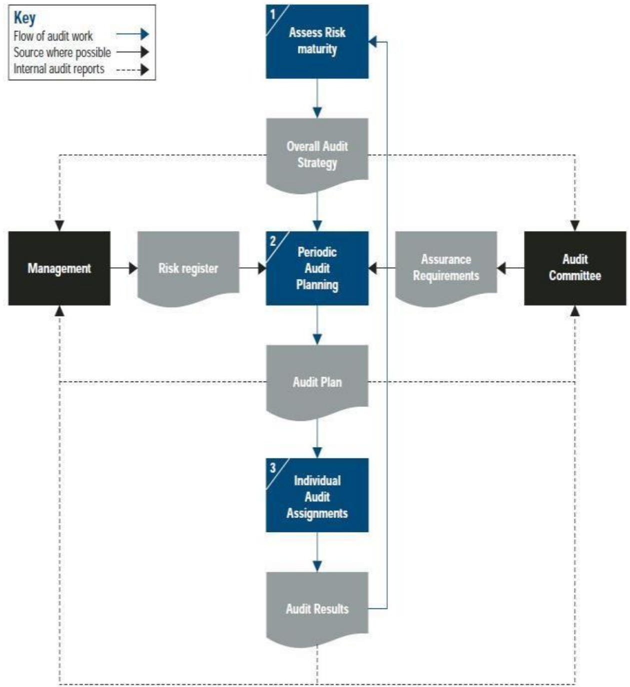
In order to properly undertake Risk-Based Internal Auditing (RBIA), internal auditors must possess a thorough comprehension of the organization's business, strategy, goals, and objectives. This enables the audit to concentrate on the most crucial areas of risk inside the bank. In order to align with the bank's strategy and effectively address its risks, it is essential for management and auditors to collaborate closely in the implementation of the risk-based audit approach.

Both the Institute of Internal Auditors in the United Kingdom and the Institute of Internal Auditors agree that implementing risk-based internal auditing goes through three stages: • Assessing the level of maturity of the organization's risk management process • Developing an audit plan • Conducting an individual assurance audit, which is confirmed by (Griffiths, 2006) [19].

This paper relies on the following framework prepared by the Institute of Internal Auditors in the United Kingdom[20] to explain the stages of implementing a risk-based audit as a basis for building a risk-based management audit.

The implementation and ongoing operation of the RBIA consists of three phases:

Stage 1: Risk maturity assessment
Get a summary of the degree to which the management and the board recognize, evaluate, control, and keep an eye on risks. For the purpose of audit planning, this indicates the risk register's dependability.
Stage 2: periodic planning for the audit
To determine and give importance to all the areas in which the Board requires unbiased confirmation, such as risk management methods, crucial risk management, and risk documentation and reporting, one might choose assurance and consulting assignments for a certain timeframe, often on an annual basis.
Stage 3: Individual review tasks Complete specific risk-based activities, such as risk mitigation for individuals or groups of hazards, to offer assurance on a portion of the risk management framework.



Source :Chartered Institute of Internal Auditors

4. HYPOTHESES DEVELOPMENT

Many banking regulatory authorities in the world have made risk-based internal auditing a mandatory requirement, according to (Kaya, 2010) [21]. International norms and standards are crucial in promoting the use of risk-based auditing. The Basel Committee on Banking Supervision (BCBS) and International Standards on Auditing (ISA) provide guidance to banks on the framework and standards for undertaking risk-based audits (Gortsos, 2023) [22]. As a crucial component of the risk management framework, risk-based internal audit ought to be set up as a separate department inside the bank. Selective transaction testing is used to check compliance and shift the focus of internal audit from transaction verification to system verification for risk management. Within the framework of the risk-based internal audit system, operationally dangerous zones (Ghosh, 2012) [18]. The adoption of risk-based auditing has highlighted the significance of evaluating the risks associated with both strategic and operational goals (Selim & McNamee, 1999) [8]. Below are the steps through which risk-based internal audit is implemented according to the IIA framework on which the current study was based.

4.1 Assessing risk maturity (ARM)

Internal auditors evaluate risk on their own, taking into account the goals of the audited activity (Reding et al., 2009: 13–22 [23] ; Pelletier, 2008: 73–76) [24]. Stages of assessing and grading pre-identified and categorized hazards that might impede the company from accomplishing its objectives make up risk assessment. The auditor might conduct tests in the audit program to significant control points as a consequence of the risk assessment. The business processes and organizational structure dictate the techniques employed in risk assessment. (Pehlivanlı 2010) [25].
Aside from areas the audit committee has designated as high risk, the auditor should concentrate on management's attention to risks and results when analyzing risks, as well as company objectives, organizational changes, and management structure. According to (Benli, V. F., & Celayir, D, 2014) [26], risk assessment must to be taken into account at every stage of the organizational structure of the firm as well as the operations of any subsidiaries. One or more of the qualitative or quantitative approaches employed in the evaluation are utilized to measure risks in terms of potential and implications. Following that, a risk matrix is used to organize the risks that need to be monitored (Pehlivanlı 2010) [25].With the use of one or more qualitative or quantitative approaches employed in the assessment, risks are quantified in terms of potential and repercussions. Next, using a risk matrix, the risks that need to be quantified are grouped (Pehlivanlı 2010)

[25]. As per John Hall, there exists an array of risk assessment approaches and no mandatory structure to adhere to. Succinctness, uniformity of language, formal organization in the risk rating system, and general message clarity are attributes of well-written risk assessments.
In light of the preceding debate, we investigate whether or not internal auditors at banks in Yemen carry out the risk assessment phase. Through the following hypothesis:
H1: Risks are assessed by the internal audit department in Yemeni banks at the bank, departments, branches and activities levels.

4.2 Periodic audit planning (PAP)

According to (Pitt, 2014) [27] an annual audit plan is a set of engagements that includes a clear evaluation of the audit environment and takes into consideration strategic risks and important organizational initiatives. The nature of the work outlined in the internal audit strategy and charter should be reflected in annual plans, which should also balance resource and financial restrictions. Additionally, the audit plan needs to be adaptable, perceptive, pertinent, forward-looking, risk-oriented, and in line with the company strategy, according to (Aditya et al., 2018) [28] and (Kotb et al., 2020) [29].
(Paterson, 2015) [30] A typical method for creating an audit plan is to create an audit universe comprising of important areas that are auditable, and then categorize this universe according to a number of factors, including risk, interest from management, and duration since the last audit. and evaluate the control environment in addition to determining if work is necessary to ensure regulatory compliance. The Board of Directors and senior management will then receive the draft audit plan for review and approval. As per (Pitt, 2014) [27] choosing auditable areas may be done accurately and transparently by using a risk-based approach in audit planning.
In light of the preceding debate, we investigate whether or not internal auditors at banks in Yemen carry out the audit plan phase. Through the following hypothesis:
H2: The internal audit plan is prepared according to the risk-based audit methodology at the bank, departments, branches and activities levels.

4.3 Individual audit assignments (IAA)

The execution stage of individual risk-based tasks in internal audit is crucial for delivering assurance on the risk management framework. This phase involves performing specific audit tasks designed to assess and mitigate individual or group risks within the organization. By taking a risk-based approach, internal auditors focus on identifying and evaluating risks based on their importance and likelihood of occurrence, allowing them to effectively prioritize their efforts (Coetzee, 2016) [31].
Internal auditors also play a key role in evaluating the effectiveness of risk mitigation strategies implemented by the organization. Through their assessments, auditors provide valuable insights into the adequacy of controls and processes in place to manage risks (Zhou et al., 2018) [32]. This assessment helps organizations strengthen their risk management framework by identifying areas for improvement and recommending appropriate actions to address weaknesses (Sarens and Bilde, 2006) [33].
In light of the preceding debate, we investigate whether or not internal auditors at banks in Yemen carry out the Individual risk-based tasks phase. Through the following hypothesis:
H3: Individual risk-based tasks are implemented by the internal audit department in Yemeni banks at the bank, departments, branches and activities levels.

4.4 Bank activity and ownership

According to (Castanheira et al., 2010) [4], foreign businesses and listed corporations have a strong correlation with the implementation of risk-based auditing. However, they point out that during the audit planning stage, factors like firm size, industry, and private or public sector are not thought to be significant indications for implementing a risk-based audit. However, according to other research (Koutopis and Tsamis, 2009)[13]; Allegrini & D'Onza, 2003) [17], organizational culture, industry, and firm size all have a significant role in encouraging the use of risk-based auditing in yearly and individual audit planning. When it comes to risk based audits, branch offices are examined based on their business size, the significance of their operations, and the degree of risk they face. High-risk branch offices, high-risk operations, and high-frequency audits are given priority in risk-based auditing.

This leads to the following hypotheses:
H4: There are statistically significant differences in the application of risk-based internal audit in Yemeni banks due to the bank's activity (commercial, Islamic)
H5: There are statistically significant differences in the application of risk-based internal audit in Yemeni banks due to bank ownership (national, foreign)

5. Methodology and results

The study adopted on the descriptive approach, as the analytical description approach was used to cover the theoretical framework related to the extent of application of risk-based internal audit in Yemeni banks, while the statistical description approach was used to cover the field framework related to the extent of application of risk-based internal audit in Yemeni banks from By using the questionnaire tool to collect data from the Bank of Yemen.

5.1 The study sample

According to the Central Bank of Yemen [34], the number of licensed Yemeni banks is 18 banks (excluding microfinance banks). In fact, data was collected from the heads of internal audit in banks, where the questionnaire was distributed to the heads of internal audit or their representatives in Yemeni banks as the unit of analysis for this study. According to the Basel Committee on Banking Supervision (2012) [35], the heads of internal audit are directly responsible for designing and implementing internal audit methodologies in banks, including risk-based auditing. They also possess comprehensive knowledge of procedures, objectives, and the extent to which the bank is committed to implementing this type of audit. This makes their responses accurately reflect reality due to their specialized knowledge and direct responsibility for applying and supervising the implementation of audit methodologies. From the researcher's perspective, this enhances the quality, consistency, and accuracy of the collected data.
A total of 18 questionnaires were distributed to the heads of internal audit in Yemeni banks, with one questionnaire allocated to each bank as a unit of analysis. Out of the 18 distributed questionnaires, 12 valid responses were retrieved, representing a response rate of 67%.

5.2 Survey Design

To achieve the study objectives, the researcher developed and constructed the survey questionnaire utilizing relevant literature and consulting with experienced professionals in both academic and professional fields. This questionnaire consisted of two parts:
Part One: This part pertained to demographic data and information related to the respondents of the study themselves. It included information about the respondents of the study, such as their positions in the auditing department, job titles, educational qualifications, experience, and professional certifications.
Part Two: This part contained a set of fifteen items reflecting the extent of implementation of risk-based internal auditing in banks, extracted from studies by (Vijay Kumar Khanna2008،)[15] ,(Koutoupis & Tsamis, 2009) ،[10] (Allegrini & D'Onza, 2003) [17]. These items served as the study variables.
The Likert five-point scale was used, with respondents choosing from five alternatives for each item: Fully applied and rated (5), Applied at the management level (4), Applied at the branch level (3), Applied at the task level (2), Not applied (1), to measure the extent of implementation of risk-based internal auditing in Yemeni banks.

5.3 Validity and Reliability Testing

1. Validity Testing:
After preparing the initial form of the questionnaire, it was essential to ensure its logical validity, i.e., its ability to measure the intended purpose. The researcher validated it with several academic experts to ensure the content validity and that the questionnaire items measured the intended variables clearly, accurately, and comprehensively. Based on reviewers' feedback, the questionnaire was revised accordingly.
2. Reliability Testing:
To measure the reliability of the questionnaire, which indicates the consistency of results if the research is repeated under similar conditions using the same questionnaire, Chronbach's Alpha coefficient was utilized. This coefficient was used to determine the reliability of the tool, where the reliability of each dimension was

ISSN NO: 2249-3034

measured independently. Then, the Alpha value was calculated for the collection of items, as illustrated in the table1.

Table 1: Reliability (Cronbach's Alpha)

Variables	Number of paragraphs	Cronbach's alpha
Assessing risk maturity	5	0.93
Periodic audit planning	4	0.94
Individual audit assignments	6	0.70

The results obtained using the statistical package (SPSS), as shown in the table above, show that all items of the three dimensions have high credibility. As for the value of Cronbach's Alpha, for the three axes, it is (0.93) for the first axis and (0.94) for the first axis. The second, and (0.70) for the third axis, and this is considered strong stability because it is greater than (0.60), whereas the coefficient is considered weak if it is less than (0.60).

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5.4 Descriptive Analysis of Study Items

The One Sample T-test was utilized to analyze the questionnaire items. A positive item indicates agreement among the sample members with its content if the significance level (Sig) is less than 0.05 and the response strength is greater than 60%. Conversely, a negative item indicates disagreement among the sample members with its content if the significance level (Sig) is less than 0.05 and the response strength is less than 60%. If the significance level is greater than 0.05, the sample opinions on the item are considered neutral.
To determine the Likert scale's length (lower and upper bounds), the range (5 - 1 = 4) is divided by the number of cells in the actual scale. This value is then added to the lowest value in the scale or by the scale degree, which is one, to determine the upper limit of the cell. Therefore, the length is as follows in the table 2.
The items on the questionnaire were analyzed using the One Sample T-test. A positive item indicates that the members of the sample agree with its content if the significance level (Sig) is less than 0.05 and the response strength is greater than 60%. On the other hand, a negative item indicates that the members of the sample disagree with its content if the significance level (Sig) is less than 0.05 and the response strength is less than 60%. Sample opinions on the item are neutral if its significance level is greater than 0.05.
The length of the cell to determine the Likert scale (lower and upper bounds) according to the range (5 - 1 = 4) is divided by the number of cells in the actual scale. Next, this value is added to the lowest value in the scale or by the scale degree, which is one. Finally, the upper limit is determined by adding this value to the scale degree.

Table 2: Level of Response Scale on Study Constructs

Level	Range	Scale Degree
First	From (1) to less than (1.80)	Not Applied
Second	From (1.81) to less than (2.60)	Applied at the Task Level
Third	From (2.61) to less than (3.40)	Applied at the Branch Level
Fourth	From (3.41) to less than (4.20)	Applied at the Management Level
Fifth	From (4.21) to less than (5)	Applied at the Bank Level

Regarding the agreement of the respondents and the closeness of their answers regarding a specific answer to the paragraph, and the extent of the divergence and dispersion of their answers, the researcher used the standard deviation to determine this.

5.5 Testing Hypotheses

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1. Do Yemeni banks apply risk-based internal auditing at all stages of auditing (risk assessment, planning, Individual missions)? And at which level (bank, management, branches, tasks, not applied)?
Table 3 presents descriptive statistics of the study sample's opinions in the researched banks regarding the items of the variable "Extent of Application of Risk-Based Internal Auditing in Yemeni Banks," which consisted of (11) items.

Table (3): Means and Standard Deviations for the Level of Application of Dimensions of Risk-Based Internal Auditing in Yemeni Banks.

Variables	SMA	standard deviation	Level of Response
Assessing risk maturity	3.7833	.68468	Applied at the Management Level
Periodic audit planning	3.7083	.68948	Applied at the Management Level
Individual audit assignments	3.7917	.49810	Applied at the Management Level

The results shown in Table (3) indicate that the level of application of dimensions of risk-based internal auditing in Yemeni banks was at the management level, where the means ranged between (3.7083 - 3.7917). This suggests that the researched banks apply risk-based internal auditing at the management level, albeit to varying degrees.

2- Are there statistically significant differences in the application of risk-based internal auditing in Yemeni banks attributed to the bank's nature (commercial, Islamic)?

To test this question, an independent samples t-test will be used as follows:

The table includes the results of the independent samples t-test to determine the differences in sample responses regarding the application of dimensions of risk-based internal auditing in Yemeni banks based on the bank's nature:

Table (4): Results of independent samples t-test between sample responses regarding the application of dimensions of risk-based internal auditing with its dimensions according to the nature of the bank.

Independent Samples Test										
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ARM	Equal variances assumed	.780	.398	.228	10	.824	.10000	.43861	-.87727	1.07727
	Equal variances not assumed			.302	9.595	.769	.10000	.33058	-.64082	.84082
PAP	Equal variances assumed	1.947	.193	.801	10	.442	.34375	.42928	-.61274	1.30024
	Equal variances not assumed			1.141	7.607	.289	.34375	.30136	-.35749	1.04499
IAA	Equal variances assumed	.131	.725	-.394	10	.702	-.12500	.31746	-.83235	.58235
	Equal variances not assumed			-.410	6.777	.695	-.12500	.30497	-.85097	.60097

ISSN NO: 2249-3034

The table above illustrates the results of the independent samples t-test, indicating no significant differences in sample responses regarding the application of dimensions of risk-based internal auditing in the researched banks based on the bank's nature. This means that the sample responses in all banks were in the same direction. The researcher concludes from this that there are no statistically significant differences in the application of dimensions of risk-based internal auditing in Yemeni banks attributed to the bank's nature (commercial, Islamic).

3- Are there statistically significant differences in the application of risk-based internal auditing in Yemeni banks attributed to the bank's ownership (national, international)?
To answer this question, an independent samples t-test will be used as follows:
The table includes the results of the independent samples t-test to determine the differences in sample responses regarding the application of dimensions of risk-based internal auditing in Yemeni banks based on the bank's ownership:
Table (5): Results of independent samples t-test between sample responses regarding the application of dimensions of risk-based internal auditing with its dimensions according to the bank's ownership.

Independent Samples Test										
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ARM	Equal variances assumed	1.318	.278	-.473	10	.647	-.26000	.55013	-1.48576	.96576
	Equal variances not assumed			-1.098	9.000	.301	-.26000	.23674	-.79554	.27554
PAP	Equal variances assumed	.480	.504	.733	10	.480	.40000	.54566	-.81582	1.61582
	Equal variances not assumed			1.507	8.583	.168	.40000	.26536	-.20476	1.00476
IAA	Equal variances assumed	.417	.533	.630	10	.543	.25000	.39686	-.63427	1.13427
	Equal variances not assumed			.832	2.042	.491	.25000	.30046	-1.01786	1.51786

The table above illustrates the results of the independent samples t-test, indicating no significant differences in sample responses regarding the application of dimensions of risk-based internal auditing in the researched banks based on the bank's ownership. This means that the sample responses in all banks were in the same direction.
The researcher concludes from this that there are no statistically significant differences in the application of dimensions of risk-based internal auditing in Yemeni banks attributed to the bank's ownership (national, international).

6. DISCUSSION

The results indicate that the three stages of risk-based internal auditing - risk maturity assessment, periodic audit planning, and individual audit assignments - are implemented at the departmental level in Yemeni banks and not at the level of the entire bank. This means that the efforts of the audit department are focused on applying risk-based auditing to specific departments within the bank (such as credit management, cash

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management, compliance management, etc.) instead of implementing it comprehensively, covering all activities and operations across the organizational levels of banks (the bank as a whole, departments, branches and tasks). However, the non-comprehensive application of risk-based auditing is not limited to less developed countries such as Yemen, where (Allegrini & D'Onza, 2003) [17] found that risk-based internal auditing was comprehensively applied at all levels only in a small percentage of large institutions in Italian companies. Which reflects the challenges facing many establishments in implementing risk-based auditing, including Yemeni banks.

This non-comprehensive application ignores the potential interactions between risks that may exceed the boundaries of these departments, which makes the application of risk-based audit limited in effectiveness and does not help the bank achieve its objectives effectively. (Coetzee & Lubbe, 2014) [11] explained that risk-based auditing should be comprehensive to include all organizational levels of the organisations, as the lack of integration in the vision of risks leads to gaps that may threaten institutional stability. In addition, (Griffiths, 2006) [19] agrees that the true effectiveness of auditing depends on its integration with the bank's general strategy, so that it reflects the risks that affect the achievement of the institution's main objectives.

The results also indicate that there are no statistically significant differences between the nature of the bank's activity (commercial, Islamic) or its ownership (national, foreign), which is consistent with the results of the study (Castanheira et al. 2010) [4] which found that the size of the establishment and the type of its activity are not an indicator of the implementation of risk-based auditing.

7. Conclusions

The purpose of this research is to study the extent of application of risk-based internal audit in Yemeni banks since the Central Bank issued in 2010 the Yemeni banks governance guide, which obligated Yemeni banks to implement risk-based audit.
The results show that the level of application of risk-based internal audit in Yemeni banks was at the departmental level and to varying degrees between banks. There are also no statistically significant differences regarding the application of risk-based internal audit stages in banks due to the type of bank activity (commercial, Islamic) or bank ownership (national, foreign).

LIMITATION AND Future Research

The present research has some limitations, which should be mentioned. The research sample was confined to the heads of internal audit at Yemeni banks, while it would have been preferable to include members of bank audit committees and senior management to ensure findings that are more general.
Additional, since 2011, the year after the Central Bank of Yemen released the governance guidance for Yemeni banks in 2010, Yemen has been undergoing political instability that has led to a civil conflict. This might affect how risk-based internal auditing is implemented in Yemeni banks. As a result, future studies must examine how these factors affect the implementation of risk-based internal audit.

References

[1] Xiangdong, W. (1997). Development trends and future prospects of Internal Audit. Managerial Auditing Journal, 12(4/5), 200–204. https://doi.org/10.1108/02686909710173885

[2] Fazal, H. (2014, March 16). What is substantive audit approach / vouching approach?. PakAccountants.com. https://pakaccountants.com/what-is-substantive-approach/

[3] Yazdaniyan, S. M., & Dastgir, M. (2019). A Study of Risk-Based Auditing Obstacles. DOAJ (DOAJ: Directory of Open Access Journals). https://doi.org/10.22067/ijaaf.v3i1.81919

[4] Castanheira, N., Lima Rodrigues, L., & Craig, R. (2010). Factors associated with the adoption of risk‐based internal auditing. Managerial Auditing Journal, 25(1), 79‐98. https://doi.org/10.1108/02686901011007315

[5] Messier, W. F. (2014). An approach to learning risk-based auditing. Journal of Accounting Education, 32(3), 276–287. https://doi.org/10.1016/j.jaccedu.2014.06.003

[6] Developing a risk-based Internal Audit Plan. (n.d.). https://www.theiia.org/globalassets/documents/content/articles/guidance/practice-

ISSN NO: 2249-3034

guides/developing-a-risk-based-internal-audit-plan/pg-developing-a-risk-based-internal-audit-plan.pdf

[7] Zainal Abidin, N. H. (2017). Factors influencing the implementation of risk-based auditing. Asian Review of Accounting, 25(3), 361–375. https://doi.org/10.1108/ara-10-2016-0118

[8] Selim, G., & McNamee, D. (1999). The risk management and internal auditing relationship: Developing and validating a model. International Journal of Auditing, 3(3), 159–174. https://doi.org/10.1111/1099-1123.00057

[9] Matyjewicz, G., & D'Arcangelo, J. R. (2004). "ERM-based auditing." Internal Auditing, 19(6), 4–18.

[10] Koutoupis, A. G., & Tsamis, A. (2009). Risk based internal auditing within Greek banks: A case study approach. Journal of Management & Governance, 13(1–2), 101–130. https://doi.org/10.1007/s10997-008-9072-7

[11] Coetzee, P., & Lubbe, D. (2014). Improving the efficiency and effectiveness of risk - based internal audit engagements. International Journal of Auditing, 18(2), 115 - 125. https://doi.org/10.1111/ijau.12016

[12] Tuti Dharmawati, Wa Ode Muhardiana, Ayu Puspita Rini, Ulvy Restiana Parintak, & Sri Ardita Vitara Sartono Farihu. (2024). Analysis of the role of risk based audit in banking. Journal of International Multidisciplinary Research, 2(6), 445–456. https://doi.org/10.62504/jimr629

[13] Alzuela, J. M. B. (2003). La gestión de riesgos en entidades financieras. Partida doble, (150), 62-65.

[14] j4admin. (n.d.). Guide to bank governance in the Republic of Yemen. fiu. https://www.fiu.gov.ye/index.php/ar/2023-10-29-09-33-00/2023-10-29-09-37-29/2023-11-01-17-07-47

[15] Al-Amoudi, A. A., & Kulaib, S. A. bin. (2020, April 1). Factors affecting the role of the internal auditor towards risk management in Yemeni banks. Al-Andalus journal for Humanities & Social Sciences | EBSCOhost.

[16] Khanna, V. K., & Kaveri, V. S. (2008). Implementing Risk-Based Internal Audit in Indian Banks: An Assessment of Organizational Preparedness. The IUP Journal of Bank Management, 3, 23–47. https://econpapers.repec.org/article/icficfjbm/v_3a7_3ay_3a2008_3ai_3a3_3ap_3a23-47.htm

[17] Allegrini, M., & D'Onza, G. (2003a). Internal auditing and risk assessment in large Italian companies: An empirical survey. International Journal of Auditing, 7(3), 191–208. https://doi.org/10.1046/j.1099-1123.2003.00070.x

[18] Ghosh, A. (2012). chapter 24. In Managing Risks in Commercial and Retail Banking. essay, Wiley & Sons

[19] Griffiths, D. (2006), Risk Based Internal Auditing: An Introdution, available at: www.internalaudit. biz (accessed February 12, 2008).

[20] Chartered Institute of Internal Auditors

[21] Kaya HA (2010) I˙c¸ denetim. Edit€orler: Selami Sezgin Sevinc¸ Yaras¸ır Fatih Deyneli Elvan Teke, 20. Türkiye Maliye Sempozyumu Bildiriler Kitabı, pp 97–106)

[22] Gortsos, C. V. (2023). Key Institutional Aspects of the International Financial Architecture and an interim assessment. The European Banking Regulation Handbook, Volume I, 161–198. https://doi.org/10.1007/978-3-031-32859-6_3

[23] Reding, K. F., Sobel, P. J., Anderson, U. L., Head, M. J., Ramamoorti, S., Salamasick, M. & Riddel, C. (2009), Internal Auditing: Assurance and Consulting Services, 2nd edn, Altamonte Springs, FL: Institute of Internal Auditors Research Foundation.

[24] Pelletier, J. (2008), 'Adding risk back into the audit process', Internal Auditor, Vol. 65, No. 4, pp. 73–76.

[25] Pehlivanlı, D., & KİSHALI, Y. (2010, January). Risk odaklı ıç denetim VE IMKB Uygulaması. Muhasebe ve Finansman Dergisi (. e-Muhasebe ve Finansman Dergisi). https://app.trdizin.gov.tr/publication/paper/detail/TmpNME5qVTE=

[26] Benli, V. F., & Celayir, D. (2014). Risk based internal auditing and risk assessment process. European Journal of Accounting Auditing and Fianance Research, 2(7), 1-16.

[27] Pitt, S.-A. (2014). CHAPTER 12. In Internal Audit Quality: Developing a Quality Assurance and Improvement Program. essay, Wiley.

[28] Aditya, B. R., Ferdiana, R., & Kusumawardani, S. S. (2018). Requirement and potential for modernizing it risk universe in it audit plan. 2018 2nd International Conference on Informatics and Computational Sciences (ICICoS), 1–5. https://doi.org/10.1109/icicos.2018.8621808

[29] Kotb, A., Elbardan, H., & Halabi, H. (2020). Mapping of internal audit research: A post-Enron Structured Literature Review. Accounting, Auditing & Accountability Journal, 33(8), 1969–1996. https://doi.org/10.1108/aaaj-07-2018-3581

[30] Paterson, J. C. (2015). chapter 9. In Lean Auditing: Driving Added Value and Efficiency in Internal Audit (First). essay, Wiley.

[31] Coetzee, P. (2016). Contribution of internal auditing to risk management. International Journal of Public Sector Management, 29(4), 348–364. https://doi.org/10.1108/ijpsm-12-2015-0215

[32] Zhou, S., Simnett, R., & Hoang, H. (2018). Evaluating combined assurance as a new credibility enhancement technique. AUDITING: A Journal of Practice & Theory, 38(2), 235–259. https://doi.org/10.2308/ajpt-52175

[33] Sarens, G., & De Beelde, I. (2006). Internal Auditors' perception about their role in risk management. Managerial Auditing Journal, 21(1), 63–80. https://doi.org/10.1108/02686900610634766

[34] CBY. (n.d.-a). https://www.cby-ye.com/files/670f6596dc0ff

[35] Basel Committee. (2012, June 28). The internal audit function in Banks. The Bank for International Settlements. https://www.bis.org/publ/bcbs223.htm