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**THE ROLE OF MANAGEMENT ACCOUNTING PRACTICES IN
OPERATIONAL RISK MANAGEMENT: THE CASE OF NORTHERN
IRAQ**

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SCIENTIFIC ETHICS PAGE

According to the thesis writing guide of Tokat Gaziosmanpaşa University Institute of Social Sciences, My Master's thesis named “THE ROLE OF MANAGEMENT ACCOUNTING PRACTICES IN OPERATIONAL RISK MANAGEMENT: THE CASE OF NORTHERN IRAQ” that I have prepared under the consultancy of “Prof.Dr. Mihriban COŞKUN ARSLAN” is based on scientific ethical values and rules. I hereby declare that it is an appropriate, original work, and I will accept any legal sanctions if it is determined otherwise.

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JURY ACCEPTANCE AND APPROVAL

Soz Pshko Mohammed Tofiq AFANDI tarafından hazırlanan “**The Role Of Management Accounting Practices in Operational Risk Management: The Case of Northern Iraq**” adlı tez çalışmasının savunma sınavı 00/03/2024 tarihinde yapılmış olup aşağıda verilen Jüri tarafından Oy Birliği ile Tokat Gaziosmanpaşa Üniversitesi Lisansüstü Eğitim Enstitüsü İşletme Anabilim Dalı – Muhasebe ve Finansman Bilim Dalı’nda Yüksek Lisans Tezi olarak kabul edilmiştir.

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ABSTRACT

THE ROLE OF MANAGEMENT ACCOUNTING PRACTICES IN OPERATIONAL RISK MANAGEMENT: THE CASE OF NORTHERN IRAQ

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Master's Thesis

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This study examines the crucial role of management accounting practices in improving operational risk management in commercial banks. It explores how these practices aid in the identification, assessment, monitoring, and mitigation of operational risks, thereby strengthening the banks' resilience and strategic decision-making. The research analyses various management accounting techniques, including variance analysis, financial ratio analysis, cost-benefit analysis, and scenario planning, and their roles in operational risk management. The findings demonstrate that analytical procedures are essential for risk identification, providing quantitative insights that highlight deviations and potential risk areas. To assess risks, techniques such as cost-benefit analysis and scenario planning are useful in evaluating the financial implications and likelihood of identified risks. Monitoring can be achieved through budgetary control and performance measurement systems, which enable early detection of risk indicators. In the field of risk mitigation, strategic management accounting practices such as strategic costing and transfer pricing aid in making crucial decisions about resource allocation and operational adjustments. Additionally, this study highlights the importance of integrating financial and non-financial data through management accounting systems. This integration enables a comprehensive approach to operational risk management, improving the effectiveness of risk identification, assessment, monitoring, and mitigation processes. The research concludes that management accounting practices are not only crucial for operational risk management but also significantly contribute to the strategic decision-making process within commercial banks. By incorporating these practices into the framework for managing operational risks, banks can adopt a more resilient and adaptable approach to risk management. This, in turn, will help them achieve their organizational goals and ensure sustainable performance in the demanding financial landscape.

Key Words: Management Accounting Practices, Operational Risk Management, Commercial Banks, Strategic Decision-Making, Risk Identification and Mitigation

ÖZET

Bu çalışma, ticari bankalarda operasyonel risk yönetiminin geliştirilmesinde yönetim muhasebesi uygulamalarının önemli rolünü incelemektedir. Bu uygulamaların operasyonel risklerin tanımlanmasına, değerlendirilmesine, izlenmesine ve azaltılmasına nasıl yardımcı olduğunu ve böylece bankaların dayanıklılığını ve stratejik karar alma süreçlerini nasıl güçlendirdiğini araştırmaktadır. Araştırma, varyans analizi, finansal oran analizi, fayda-maliyet analizi ve senaryo planlaması gibi çeşitli yönetim muhasebesi tekniklerini ve bunların operasyonel risk yönetimindeki rollerini analiz etmektedir. Bulgular, analitik prosedürlerin, sapmaları ve potansiyel risk alanlarını vurgulayan nicel içgörüler sağlayarak risk tanımlaması için gerekli olduğunu göstermektedir. Riskleri değerlendirmek için, fayda-maliyet analizi ve senaryo planlama gibi teknikler, belirlenen risklerin mali sonuçlarını ve olasılığını değerlendirmede faydalıdır. İzleme, risk göstergelerinin erken tespit edilmesini sağlayan bütçe kontrolü ve performans ölçüm sistemleri aracılığıyla gerçekleştirilebilir. Risk azaltma alanında, stratejik maliyetlendirme ve transfer fiyatlandırması gibi stratejik yönetim muhasebesi uygulamaları, kaynak tahsisi ve operasyonel ayarlamalar hakkında önemli kararlar alınmasına yardımcı olur. Ayrıca bu çalışma, finansal ve finansal olmayan verilerin yönetim muhasebesi sistemleri aracılığıyla entegre edilmesinin önemini vurgulamaktadır. Bu entegrasyon, operasyonel risk yönetimine kapsamlı bir yaklaşım sağlayarak risk tanımlama, değerlendirme, izleme ve azaltma süreçlerinin etkinliğini artırmaktadır. Araştırma, yönetim muhasebesi uygulamalarının sadece operasyonel risk yönetimi için önemli olmadığı, aynı zamanda ticari bankalardaki stratejik karar alma sürecine de önemli ölçüde katkıda bulunduğu sonucuna varmaktadır. Bankalar, bu uygulamaları operasyonel riskleri yönetme çerçevesine dahil ederek, risk yönetimine yönelik daha esnek ve uyarlanabilir bir yaklaşım benimseyebilirler. Bu da kurumsal hedeflerine ulaşmalarına ve zorlu finansal ortamda sürdürülebilir performans sağlamalarına yardımcı olacaktır.

Anahtar Kelimeler: Yönetim Muhasebesi Uygulamaları, Operasyonel Risk Yönetimi, Ticari Bankalar, Stratejik Karar Alma, Risk Belirleme Ve Azaltma

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INTRODUCTION

The modern world is often described as the information age. This period marks the third industrial revolution, a transformative time in information, communication, and technology. These changes present significant challenges to management accounting systems within organizations. Such systems face internal and external risks due to increased competition, global openness, and rapid technological advancements. Consequently, organizations must focus keenly on achieving their goals while minimizing potential risks. Banks play a critical role as mediators within the economy. They often encounter financial crises due to inadequate control over operational activities, influenced by unstable economic conditions. Therefore, banks require modern management tools to enhance operations and adapt policies for future improvements. These tools are crucial for achieving customer satisfaction and maintaining loyalty from customers, owners, and investors alike (Muhaimid et al., 2021, 21). Risk management is a priority in organizational agendas. The responsibility for managing and controlling risks primarily lies with senior management, then with executives. Effective management tools, particularly in planning and decision-making, are essential. Inadequate tools can lead to poor risk management, resulting in suboptimal decisions and adverse effects on organizational performance (Mahmoud, 2020, 15).

Banks are vital for channeling funds from surplus to deficit units, essential for financial stability. Operating in a risky environment necessitates effective risk management to mitigate risk factors. Implementing robust management accounting practices is crucial for establishing a strong risk management system. This ensures the safety and soundness of banking operations. This research addresses a gap in understanding how management accounting practices specifically enhance operational risk management in banks. It differs from previous studies by focusing on the relationship between accounting practices and risk management effectiveness, rather than general financial health or compliance. This thesis contributes new empirical insights into how tailored management accounting strategies can integrate effectively into risk management frameworks. The scope of this research is limited to the role of management accounting practices in operational risk management

within commercial banks, distinct from broader risk management approaches or other sectors. This thesis aims to enrich academic and practical understanding of strategic accounting tools in risk management. It also suggests actionable strategies for enhancing operational risk frameworks in banking operations.

The scope of this research is limited to the role of management accounting practices in operational risk management within commercial banks in Northern Iraq. The purpose of this study is to investigate the role and impact of management accounting practices in these banks. The research method involved distributing 86 questionnaires across several banks in Northern Iraq, including Mansour Bank, Cihan Bank, RT Bank, Bank of Baghdad, National Bank of Iraq, and Iraqi Islamic Bank. By analyzing how management accounting supports decision-making, evaluating its integration in operational risk management, and assessing its influence on bank performance, this research aims to provide actionable insights for enhancing risk management strategies in the banking sector. Ultimately, the study seeks to enrich both academic and practical understanding of strategic accounting tools in risk management and suggest strategies for improving operational risk frameworks in banking operations.

This study contains of three chapters, chapter one introduces the fundamental concepts of risk and risk management, with a specific focus on operational risk management. It explores the definition and types of risks, the principles and processes of risk management, and the unique challenges and strategies associated with managing operational risks in the banking sector , Chapter Two delves into the historical evolution of management accounting, detailing its concepts and application objectives. It discusses various management accounting tools and examines the relationship between management accounting and operational risk management, highlighting how these practices can mitigate risks in banking operations, and the last one chapter three outlines the research methodology and presents the findings of the study. It details the research processes and design, literature review, and the purpose and scope of the research. Additionally, it discusses the importance of the study, the method of research, and the research questions

and hypotheses. The findings are presented through descriptive statistics, reliability results, and hypothesis testing outcomes.



CHAPTER 1: OPERATIONAL RISK MANAGEMENT

This chapter provides a comprehensive overview of risk and risk management, beginning with basic concepts and the distinction between risk and uncertainty, followed by methods of risk measurement and classification. It describes the causes and types of risk, setting the stage for a deep dive into risk management practices, emphasizing their importance in financial decision-making and outlining various strategies for managing risk effectively. The discussion then focuses on operational risk management, highlighting its specific objectives, the factors that influence operational risk and its impact on corporate capital structure decisions. Special attention is paid to the banking sector, where operational risk management practices are critically examined to determine how they address the unique challenges financial institutions face in mitigating risks that can significantly impact their operational strategies and compliance requirements. This structured approach not only highlights the need for risk management in different contexts, but also enhances understanding of its central role in the stability and efficiency of financial firms.

1.1 THE CONCEPT OF RISK

Risk is one of the concepts that people use in their daily lives, as they often mean situations or situations that are surrounded by uncertainty, the definition of risk is as close as possible to the meaning of risk in economic and financial studies, as it refers to a situation in which two possibilities are both possible to occur. There is no doubt that the cases in which we face one possibility are cases of absence of danger. The study of risk is the subject of a number of social sciences, including statistics, economics, financial management and insurance. There is no doubt that the view of each of these sciences on risk has its own characteristics that are unique to the other, and with all the theoretical complexities that surround the study of risk, its meaning does not depart from all these sciences from what was mentioned above. (Ali Belazzouz et al, 2013, 20).

The general meaning of risk refers to everything that threatens a person from harmful events, and this reflects the general meaning of risk. Or the fluctuation of the expected return on a particular investment. It can also be defined as the lack of certainty about the inevitability of the return, its size, its time, its regularity, or all of these combined

matters. Risk can also be defined as a composite of the probability of realization (Jedidi, 2003, 18).

Risk is defined as a circumstance or situation in the real world in which there is exposure to an opposite situation. More precisely, it refers to a situation in which there is a possibility of an adverse deviation from the desired or expected result (Hammad, 2003, 12).

Risk is defined as the uncertainty of financial output in the future, stemming from decisions made by the economic individual in the present based on the results of studying the behavior of natural or general phenomena in the past (Abd al-Salam, 2003, 16).

The Distinction and Interrelation Between Risk and Uncertainty

Risk and uncertainty are pivotal, albeit distinct, concepts in economic decision-making, each profoundly influencing strategy and outcomes. Frank Knight first articulated the difference between risk and uncertainty in his seminal work, distinguishing risk as a scenario where the probabilities of possible outcomes are known or can be estimated reliably, allowing for quantitative management strategies (Knight, 1921, 19-20). This conceptualization of risk is widely applied in economic contexts such as financial investments, where historical data underpins probability estimates of future returns.

In contrast, John Maynard Keynes contributed to the understanding of uncertainty with his assertion that uncertainty refers to conditions where the likelihood of outcomes is indeterminate or unknown—circumstances under which information is too insufficient or ambiguous to allow for accurate prediction of future events (Keynes, 1937, 213-214). Keynes argued that the essence of uncertainty is its unquantifiable nature, stemming not merely from insufficient information but from the inherently unpredictable nature of future events, a perspective particularly relevant during periods of significant economic or political change.

The relationship between risk and uncertainty is critical in the realm of economics and finance. Risk involves measurable probabilities that facilitate strategic mitigation through diversification, insurance, and hedging techniques. In contrast, uncertainty challenges traditional decision-making frameworks, necessitating more adaptive, often

conservative, strategies. Distinguishing these concepts is crucial for economic agents making decisions under conditions of imperfect information; the management of risk is grounded in probability calculations, whereas managing uncertainty often involves preparing for a range of unknown outcomes (Taleb, 2007, xxii). Moreover, understanding the interplay between risk and uncertainty is essential for assessing investment viability and strategic planning by firms and individuals. Their measurement and response impact not only on investment returns but also on broader economic stability and growth (Shackle, 1955, 6).

Risk Measurement

The concept of risk is easy to comprehend in people's minds; they also differentiate between high risk and low risk, as the chance of an unpleasant occurrence varies in degrees. As a result, there was a need for criteria for evaluating and classifying risks in such a way that they could clearly identify their degree and compare the risks associated in various decisions with one another, and then with the expected return on investment. Risks are classified and measured in a variety of ways by specialist institutions, and banks and insurance firms use their own risk measurements. People will embrace high-risk investment possibilities if they can be measured and met with satisfying returns to the extent that they consider suitable to the level of those risks. People, on the other hand, do not accept investment opportunities in which risk measurement is veiled in ambiguity and lack of clarity, making it impossible to determine if the risk is high or low. This uncertainty becomes an issue in and of itself, and any investment in which the risk measurement is unclear is deemed high risk.

The Causes of Risk

As publishes in Risk Management Standars, by (AIRMIC et al, 2002, 32) risks are related to the possibility of actual or real results differing from expected results, and there are reasons that lead to varying degrees of risk: The risks facing any organization and its activities can result from external and internal factors specific to the organization.

Among the factors that can lead to an increased risk are:

- Globalization of financial markets and financial and banking liberalization, as no one is isolated from the rains that could affect one of the parties within the global economic and financial system.

- The emergence of the concept of engineering and financial innovation, which led to the complexity of the environment in which businesses operate and the increase in uncertainty.

- Excessive spread of financial derivatives of all kinds, especially when they are used by speculators seeking profits and not for hedging and risk management (noting that the main objective of financial derivatives is risk management).

- Political, economic and social instability.

- Recessions that vary in severity as a result of monetary policies or as a result of difficulties in the fields of business or investment, especially in the long-term areas.

- Inflation and the resulting rise in the general level of prices, and then the depreciation Monetary policy and tools used to manage the money supply. The purchasing power of the local currency.

- The reduced percentage of the profits achieved by the investment as a result of competition.

- Laws and legislations related to investment and its incentives.

- Interest rate fluctuations.

- Increasing tax rates on profits.

- rules and regulations.

These are elements that some or all of them together can increase the risk that facing the business.

Risk Classifications

Risk ratings are defined as combinations of risks that help organize the identification, evaluation, measurement and monitoring related throughout the period of exposure to risks, and risk ratings are used in the organization, to determine the overall impact on the organization, there are many ways to classify risks, the most important of which are presented below

1. Money And Business Risks

One of the methods for identifying risks is to identify between business risks and financial risks. Business risks stem from the nature of the establishment's business and are connected to elements that influence it. Another method for identifying between public and private risks exists. While it is practicable to manage the consequences of risks particular to a given asset (investment) by expanding and diversifying the investment portfolio, same approach cannot be used for general risks. However, some of the components of these wide risks are capable of limiting their impacts and transforming them into commercial products (Khan and Habib, 2003, 34-35).

Financial risks arise from potential losses in financial markets as a result of fluctuations in financial variables, and these risks are typically associated with the system of borrowing (financial leverage), as the financial institution is in a financial situation in which it cannot meet its obligations with current assets. (Khan and Habib, 2003, 35)

2. Static Risks and Dynamic Risks

Dynamic risks are those that develop as a result of economic changes, and they are caused by two types of factors. The additional elements that might produce losses that form the basis of speculated risks include facility management choices. Every organization, for example, takes decisions regarding what it produces, how it produces it, how it funds production, how it markets what it produces, and whether or not these decisions result in the distribution of commodities. And if the marketplace accepts the services at a reasonable price, the firm will profit; otherwise, the enterprise may suffer a loss. Dynamic risks usually benefit society in the long run because they are the result of adjustments and adjustments to

correct resource misallocation, and while these dynamic risks may affect a large number of people, they are generally regarded as less predictable than static risks because they do not occur on a regular basis. (Abdel-Al Hammad, 2003, 26).

Static risks are losses that will occur regardless of how the economy changes. Even if we manage to maintain consumer desires, output, income, and technical level, some individuals will lose money. Other than economic advances, these losses are caused by natural calamities and other people's lack of integrity. Static risk, unlike dynamic risk, does not provide a benefit to society, and static loss includes either the destruction of the asset or the occurrence of a change. Static losses of their ownership (or possession) as a result of dishonesty or human failure tend to occur with a degree of regularity throughout time and are thus often foreseeable. (Ali Belazzouz et al, 2013, 17).

3. Pure Risks and Speculative Risks

One of the best distinctions between risks is the distinction between research risks and speculative risks. Speculative risk describes a situation that carries the possibility of either a loss or a gain (Abdel-Al Hammad, 2003, 22). Gambling is a good example of a speculative risk. In a gambling situation, risk is deliberately created in the hope of making a gain. The person who bets \$10 on the outcome of Saturday's game faces a potential loss that comes with a potential for gain. Owner the private project or owner of capital is a speculative risk in pursuit of profit

Research risks is a category of risks in which loss is the only possible outcome, there is no possibility of achieving profit, and the research risks are related to events or factors beyond the control of the party at risk, and therefore exposure to them is usually without awareness.

Types Of Risks

There are many types of risks, some of which are traditional, which are part of the nature of the work of the organization, and others that have appeared recently as a result of the technical progress of banks, and we will try to review the division adopted by (Gleason, 2000, 33). Which is divided into financial risks and other non-financial

A-Financial risks: These are those risks that are related to the nature of the work specially of banks, the reasons for their occurrence are as a result of several reasons, according to each of its types, as follows:

- **Credit risk:** Credit risk is generally known as the risk arising from the possibility of one party not fulfilling its obligations in accordance with the agreed terms. Credit risk is defined as the risk that customers will default on payment, that is, they will be unable to fulfill their debt service obligations. If all customers fail to pay at the same time, for example, because they belong to the same industry, this risk is much more important than if default events This payment is independent, and all banks protect themselves from this risk by resorting to diversification. (Muhannad Hanna, 2009, 27).

- **Liquidity risk:** It is the risk associated with the possibility that the facility will encounter difficulties in providing funds Necessary to meet its obligations (accrued liabilities), and these risks appear when the facility is unable to meet the obligations for its payments on time in a cost-effective manner. The safety reserve provided by the portfolio of liquid assets, and the third is the ability to manage funds at a normal cost. The first case results in severe bankruptcy, that is, it is a fatal risk. Liquidity risk is the natural result of standard transactions, as this creates a maturity gap between assets and liabilities, and the bank often collects short-term resources and lends in the long term. (Muhannad Hanna, 2009, 30) and this may lead to the bank losing the confidence of customers dealing with it and to bankruptcy.

- **Interest rate risk:** It is the changes that occur in the return - revenues - as a result of changes in interest rates, as anyone who lends or borrows is exposed to the risk that revenues will fall with interest rates falling, and the borrower who pays variable interest incurs higher costs when rates rise benefit. Both positions are risky because they generate revenue or costs linked to market prices by a specific index. The other side of the process is that they also provide earning opportunities. (Sayed Salem, 2009, 25).

• **Exchange rate risk:** It arises from the risks associated with certain types of financial instruments in which the bank deals, such as foreign exchange, swap operations, that is, it arises from unfavorable movements in exchange rates, as well as from the existence of an open position in foreign currencies, which includes spot operations. Or forward operations in its various forms. (Salah, 2010, 22). In short, it can be said that the exchange rate risk results from the possible loss that may occur as a result of changes in the exchange rate of foreign currencies in relation to the local currency.

• **Market risk:** Market risk is the possibility of negative deviations in the trading portfolio's market movements during a given period. Market risk assessment is based on the instability of market indicators such as interest rates, stock exchange indices, and exchange rates. Controlling market risk involves keeping the value of a portfolio within certain limits. These limits can be set based on the sensitivity of the portfolio and possible deviations in value. Risk management is based on continuous monitoring to ensure these limits are not exceeded. (Salah, 2010, 33), Market risks are a result of instability of market factors.

• **Risk of the ability to fulfill obligations:** The risk of the ability to fulfill obligations refers to the possibility that a bank may not be able to cover losses resulting from various risks using its available capital. The risk of the ability to fulfill obligations refers to the possibility that a bank may not be able to cover losses resulting from various risks using its available capital. The risk of the ability to fulfill obligations refers to the possibility that a bank may not be able to cover losses resulting from various risks using its available capital. This risk is also known as credit risk, which is incurred by the bank's counterparties. The inability to pay is determined by the available capital and the risks associated with credit, interest rate, liquidity, market, or operational factors. Assessing the risk of ability to pay is crucial for regulators. The basic issue related to capital adequacy follows and establishes the main directions for risk management, and these can be summarized in the following principles:

- All risks generate potential losses.
- The ultimate protection against such losses is capital.
- Capital must be adjusted to the level required to be able to absorb the potential losses generated by all risks.

The implementation of this principle requires a quantitative measurement of all risks should be made in terms of potential losses. Also, to derive a measure of the potential total losses generated from potential risks.

The main challenge facing risk management is to implement these principles and to determine the quantitative measures required to obtain adequate capital and risk levels that are sustainable given capital restrictions. (Muhannad Hanna, 2009, 26).

B- Non-financial risks: which include two types of risks:

- **Operational risks:** Operational risk is considered one of the latest developments in contemporary risk management. It refers to losses caused by failures in internal activity and control mechanisms. This category includes real dangers arising from the enterprise's day-to-day operations but does not often include profit potential. The presence of operational losses does not necessarily indicate that nothing has changed. The presence of operational losses does not necessarily indicate that nothing has changed. It is the responsibility of top management to establish a mechanism for evaluating operational risk assessments. The presence of operational losses does not necessarily indicate that nothing has changed. Operational hazards may include financial fraud (embezzlement), forgery, currency counterfeiting, theft, robbery, and technological crimes. (Al-Karasneh, 2006, 29) those risks related to the functional imbalances in the information systems, in the reporting systems, and in the rules for monitoring internal risks. And that results from its serious consequences and operational risks appear on two levels:

- Technical level: when the information system or risk measures are deficient.

- The regulatory level involves demonstrating and monitoring risk, as well as adhering to relevant regulations and procedures. In both cases, the consequences are similar, as any shortcoming is likely to generate losses of an unknown size, given that no corrective action is taken during the period in which the risk is ignored. What makes the situation worse is that there are many possible reasons for the occurrence of these shortcomings. (Muhannad Hanna, 2009, 14-15).

The cause of this type of risk is the condition non-revenue assurance a commercial bank that produces due a malfunction in the computer system of the commercial bank, or due to human errors or disturbances made by employees, etc.

- **Moral risk:** This type of risk arises from the asymmetry of information, but after the completion of the transaction, the moral risk is embodied in the borrower employing the borrowed money in activities and fields that are not desirable from the lender's point of view, which is the bank in this case, and therefore the possibility That the borrower pays his financial obligations towards the bank is weak. (Asaad Hamid 2013, 18).

1.2 RISK MANAGEMENT

Risk management is a systematic process of identifying, assessing, and controlling threats to an organization's capital and earnings. These risks stem from a variety of sources including financial uncertainties, legal liabilities, technology issues, strategic management errors, accidents, and natural disasters. A well-designed risk management plan enables an organization to reduce the likelihood and impact of threats, thus protecting the organization's resources and ensuring its long-term success and stability.

The primary objectives of risk management include preserving organizational value, enhancing decision-making, reducing surprise elements, ensuring compliance with legal and regulatory requirements, and promoting sustainable growth. According to ISO

31000:2018, risk management provides guidelines that are adaptable to any organization regardless of size or sector (International Organization for Standardization, 2018, 4). Furthermore, the COSO ERM Framework emphasizes that risk management enhances the ability to achieve an organization's objectives and improve performance (Committee of Sponsoring Organizations of the Treadway Commission, 2017, 17-18). Sadgrove (2016) complements these standards by providing practical insights into identifying, evaluating, and managing risks to minimize their impact (Sadgrove, 2016, 102-104).

The risk management process should be continuous and ever-evolving, linked to the organization's strategy and implementation, and systematically address all risks associated with the organization's activities in the past, present, and future. It is also important to integrate risk management with the organization's culture.

There are many risk management methods within an organization, but the risk management standard is considered the best among them. This standard was developed by a team that included the main risk management bodies in the United Kingdom, such as the Institute of Risk Management (IRIN), the Insurance Association and Risk Managers (AIMIC), and the National Forum for Risk Management in the Public Sector (ALARM). During the consultation period, the team sought the views and opinions of a large number of professional bodies regarding risk management. The standard provides a comprehensive framework for managing risks objectively and effectively. Risk management is based on a set of basic steps that play an important role confronting risks as follows.

1. Identifying and Describing Risks

The aim of risk identification is to determine the company's exposure to uncertainty. This requires a comprehensive understanding of the organization, the market it operates in, and the legal, social, political, and cultural environment. It is important to have a comprehensive understanding of the company's strategic and operational objectives, including the critical variables that must be met for the business to succeed, as well as the opportunities and risks associated with achieving those objectives. The identification of risks should be done systematically to ensure

that all critical operations of the company are recognized. The risks associated with these activities must be identified and categorized according to their importance.

The organization's activities and decisions can be classified in several ways, including

- A strategy concerned with the long-term strategic objectives of the institution, and can be affected by several factors, including: the availability of capital, political and sovereign risks, legal and legislative changes, reputation, and changes in the natural environment.
- Operational aspects concerned with the daily activity faced by the institution during its quest to achieve the strategic objectives.
- Financial is concerned with the effective management and control of the financial aspects of the institution and the impact of external factors such as the availability of credit, exchange rates, interest rate movements and various other market exposures.
- Cognitive management is concerned with effective management and oversight of sources of knowledge, production, and other factors of protection and communication. External factors may include unauthorized use or misuse of intellectual property, power outages, and technological competition. Internal factors may include failure of administrative systems. Or the loss of the most important elements of human strength.
- Compliance with laws: concerned with aspects such as health, safety and the environment, trade standards, consumer protection, protection of information systems, employment and aspects legal.

Although risk identification activities can be carried out by consultants from outside the organization, it may be more effective if they are carried out internally in the organization with well- coordinated and well-connected tools and activities, whereby internal ownership of risk management activities is essential.

2. Description of Risks

The risk description aims to present the risks that have been defined in a systematic manner, for example, using a table. A separate table can be used to describe the risks to facilitate to ensure the process of describing and examining hazards, and using a well-designed method is necessary to identify, describe and examine hazards in a comprehensive manner, and if we take into account the results and probabilities of each risk included in the table, it becomes possible to give prioritize the main risks that need to be analyzed in a more detailed way. The identified risks associated with activities and decision-making can be categorized into strategic, project / tactical and operational, and it is necessary to integrate risk management within the project conceptualization stage and during the implementation stages of a particular project.

The Importance of Risk Management

If conservative institutions previously reduced risk by working in areas where there was no competition or in a stable, stagnant environment, this option has become riskier because competition is everywhere and from competitors who come in all methods and from all environments in light of globalization, so all institutions, including government institutions, are becoming interested in risk and risk management. Not only does risk management safeguard a company from loss, but it also allows an organization to take the risks required to achieve its business objectives. Risk management is neither a negative perspective of the institution's activity, nor is it a driver of intimidation from efforts. Rather, it is a deliberate administrative act first and foremost. In the future, there will be both favorable (favorable occurrences and threats) and unfavorable (unfavorable incidents and threats). And, because risks are an inherent element of the business, and there is no better return without risk, management is typically as concerned with these risks as it is with returns and profit margins. The nature of the firm adds to the need of risk management. Especially when it is distinguished by innovation and a distinguishing trait, which exposes many of them to the risk of failure, as well as squandered resources and chances. All organizations must take risks in order to succeed. Risk management, if applied

appropriately, allows the organization to assume those risks that are necessary for its total value and enhance the opportunities arising from the ability to take Risks and their management.

The World Bank's World Development Report (2014) confirms that the inability to adequately manage risks leads to crises and lost opportunities, and to bring about a shift in the institutional culture related to risk management, so that it shifts from a culture of avoiding serious risks to a culture of bearing risks in a prudent manner. The report warns that “perhaps the greatest risk is not taking any risks at all”.

Risk management includes the process of planning, organizing, leading and controlling the organization's activities to optimize potential impacts on revenue, assets and capital. Risk management experts emphasize that the process elevates risk to the optimum level and does not seek to stifle innovation or deposit, so when taking the risk that involves an opportunity is the process that drives innovation and the pursuit of creating new markets, the approach that recognizes that taking the risk while providing techniques to keep The degree of exposure to possible risks that is reasonable at the same time is what is most likely to be acceptable to project owners, and not a formal enumeration of all obstacles (Bahloul and Youssra, 2021, 24).

Risk Management Practices

Many organizations, researchers, and practitioners have increased their interest in risk management, particularly after the 2008 global financial crisis, as the demand for increasing stakeholders' confidence in the organization's ability to continue and the extent of its constancy regardless of unforeseen circumstances is due to the increase in interest in risk management due to a variety of factors. The most significant of these are: the transformation of the traditional view of risk from a negative image to a type of knowledge management, the expanding range, diversity, and diverse interests of stakeholders, the increased interest in planning and implementation tasks in activities and operations, the rapid development of information technology, and the rapid development of information technology, The growth in competitive pressures, as well as the increase in the rate of And

the degree of complexity and the presence of globalization, as well as the increase in binding regulations for risk management (Al-Duwati ,2017, 30).

Integrated Risk Management Framework (COSO 2004 EM): In mid-2004, the COSO Committee issued the Integrated Risk Management Framework (ERM), which is one of the most recognized and widely applied risk management frameworks in the world (Jayantha 2018, 54). Its application has increased significantly in many companies since the global financial crisis in 2008, which helped those companies to survive and even grow in light of those difficult circumstances that led to the collapse of many organizations and major companies around the world (Abdul Halim, 2013, 19). This framework includes eight basic elements or components that interact with each other, namely:

- Internal Environment: It includes the pattern of the organization and its employees in facing and assessing risks and the philosophy of risk management and the extent of risk acceptance, integrity and ethical values and the environment in which they operate.
- Objectives Setting: Management must set objectives before identifying events that may affect the achievement of those objectives, and the objectives must be in line with the organization's purpose and its degree of risk acceptance.
- Event Identification: Internal and external events that may affect achieving goals, and a distinction must be made in this field between available opportunities and potential risks.
- Risk Assessment: All risks are measured and analyzed by determining the likelihood of their occurrence and the impact of each of them, as a basis for determining how to manage them.
- Risk Response: Management can respond to risks in several ways, including risk avoidance, risk acceptance, risk reduction, and risk sharing.
- Control Activates: by defining and implementing various policies and procedures that help ensure that risks are dealt with efficiently. Appropriate for employees in a timely manner to perform their responsibilities.

- Information and Communication: The identification, acquisition and communication of information.

- Mentoring: Monitoring and evaluating the risk management system through ongoing management activities or in a form independent or both

Despite the wide spread achieved by this framework, some criticism has been directed at it as it may be an appropriate framework for large companies or organizations, but it is not suitable for small companies, in addition to not recognizing information technology as one of the basic control elements (Jayantha 2018, 21-22), which prompted a committee COSO in 2017 updated this framework and published a new framework.

In 2017, COSO updated the ERM framework that was released in 2004, and published a new framework entitled “enterprise risk management – integration with strategy and performance”, with the aim of providing greater insight into the importance and value of erm when developing and implementing strategy, promoting alignment between erm and performance, and articulating the impact of risk on performance. The main motives for this modernization were represented in responding to the requirements of the globalization of markets and operations and the need to apply an integrated approach in different geographical areas, presenting new ways to deal with risks and achieving goals in light of the large and continuous complexities in business practices, meeting the requirements of governance and control, responding to the demands of stakeholders to increase transparency, increasing types of risks, especially those related to technology, the spread of data and analyzes and their use in decision-making. The new framework focuses on the future, and discusses many trends or areas that organizations could face and will have an impact on risk management, such as leveraging artificial intelligence and automation, managing the cost of risk management, dealing with the spread of data and analytics (2017, COSO)

Methods of Dealing with Risk

There are generally five methods that can be used in dealing with risk (Radwan,2005, 31)

1.Avoiding risk: Individuals or establishments may refuse to accept certain risks due to a desire to avoid specific losses. For example, they may choose to invest in a less risky savings container or avoid purchasing a car to prevent car accidents. It is important to note that these decisions are often based on a subjective evaluation of risk. To ensure objectivity, it is important to clearly mark any subjective evaluations as such. Financial institutions may also refuse to grant high-risk loans to avoid credit risks or choose not to invest in long-term securities. Although avoiding the risk reduces the probability of the risk to zero, it may deprive the community of producing goods or providing certain services to avoid professional responsibility or fear of loss, in addition to the difficulty of avoiding some risks such as preferring to walk long distances to avoid the dangers of flying, Although avoiding danger is one of the methods of facing danger, it is considered a negative rather than a positive method in dealing with dangers, and because personal progress and economic progress both require dealing with dangers in a positive way, this method is not an appropriate method in dealing with many risks.

2.Reducing Risk: In this method, the financial institution, in order to reduce the risks, does the following:

- Monitoring the behavior of loans in order to identify warning signs of discontinuation problems to pay early.
- Minimize interest rate risk by using asset and liability management policy (assets and liabilities management), which is being designed for that purpose.

3.Transferring Risk: Buying insurance is one way of transferring risk from someone who does not want to take it to another party (the insurance company) expressing its willingness to bear it for a price.

4.Risk sharing: It means accepting some risks and transferring some of them, that is, this strategy combines avoidance and transfer)

5.Hedging: It can be distinguished from insurance as the transfer of risk while sacrificing profit potential.

The Importance of Risk Analysis in Financial Decisions

Almost all financial decisions have one thing in common: risk analysis. The goal of risk analysis is not to eliminate the risk since that is impossible; rather, it is to identify the risk, assess it, and ensure that the decision-maker receives sufficient compensation for the magnitude of the danger. The motivation for seeking compensation in proportion to the risk is that individuals normally avoid risks, which means they always choose a lower quantity of risk over a larger degree of risk. (Elgari, 2015, 42).

1.3 OPERATIONAL RISK MANAGEMENT

Operational risk is considered one of the most important risks that the organization is exposed to and affects its profitability and financial position.

1.3.1 HISTORICAL DEVELOPMENT OF OPERATIONAL RISK MANAGEMENT

In pre 20th century Risk management was largely informal, with businesses relying on experience, intuition, and basic financial principles. Risks were often mitigated through diversification and insurance. In Early 20th Century the industrial revolution and subsequent growth of large corporations led to more formal approaches to managing operational risks, particularly in manufacturing and supply chain management. (Hoffman, 10).

During 1950s-1960s in post-world war II, the focus was primarily on financial risks. However, as organizations grew in complexity, there was increasing recognition of the need to manage operational risks. The development of quality control and management theories, such as Total Quality Management (TQM) and Six Sigma, began to address operational inefficiencies and failures (Allan, 45).

From 1970s to 1980s, the oil crises deregulation, and financial scandals highlighted the need for better risk management practices. The introduction of computer technology started to play a role in risk management (Chernobai, Rachev, and Fabozzi, 60).

Regulatory Frameworks and Formalization

During 1980s-1990s Regulatory bodies and industry groups began to formalize risk management practices. The Basel Committee on Banking Supervision introduced guidelines that included operational risk as a critical component of overall risk management (Basel II, Part 2, 144-156).

In 1992 The Committee of Sponsoring Organizations of the Treadway Commission (COSO) released its Internal Control – Integrated Framework, which became a foundational document for enterprise risk management (ERM), including operational risk (COSO, 1992, 1-5).

The Basel Accords

In 1990s to 2000s The Basel II Accord, introduced in 2004, was a significant milestone in the development of ORM. It required banks to allocate capital for operational risk and encouraged the development of advanced measurement approaches (AMA) for calculating operational risk capital (Basel II, Part 2, 144-156).

In Post-2008 Financial Crisis The global financial crisis underscored the importance of robust ORM. Regulatory requirements were strengthened, with Basel III introducing more stringent capital requirements and liquidity standards (Basel III, Part 3, Section 1, 20-35).

Technological Advancements and Modern Approaches

In 2010s until now, advances in technology, including data analytics, machine learning, and artificial intelligence, have transformed ORM. Organizations now have access to sophisticated tools for identifying, assessing, and mitigating operational risks. The integration of ORM into broader enterprise risk management frameworks has become more common, emphasizing a holistic approach to risk management (Allan, 150).

Key Concepts and Practices in Modern ORM

Risk Identification: Methods such as risk assessments, scenario analysis, and stress testing help identify potential operational risks (Chernobai, Rachev, and Fabozzi, 90).

Risk Measurement and Monitoring: Key Risk Indicators (KRIs), loss event databases, and operational risk scorecards are used to measure and monitor risks (Allan, 175).

Risk Mitigation: Strategies include process improvements, internal controls, and contingency planning (Hoffman, 225).

Governance and Culture: Strong risk governance structures and a risk-aware culture are essential for effective ORM (COSO, 2004, 1-10).

1.3.2 DEFINITION AND TYPES OF OPERATIONAL RISK MANAGEMENT

Definition of Operational Risk (Business Risk) :There are many definitions of operational risk, including:

- Operational risk means business risk, the fluctuation of operating profit, for reasons related to the nature or circumstances the activity carried out by the institution.
- Operational risks represent the effect of fluctuation in the volume of demand and supply on profit before interest and tax due to the fluctuation in price and sale quantity.
- Operational risk usually refers to the uncertainty in the results of organizations, especially operating profits
- The meaning of operating risk, the negative impact caused by random fluctuation in the turnover on various criteria Productivity in the enterprise, which is the result of exploitation or economic profitability.
- Operational risk the possibility of a discrepancy between the expected operating result and the achieved operating result, If the turnover is less than expected.

Types of operational risk management

Operational risk management (ORM) is a critical component of enterprise risk management, aiming to identify, assess, monitor, and mitigate risks arising from inadequate or failed internal processes, people, systems, or external events. Effective ORM practices are essential for organizational resilience and stability. This academic research explores various types of operational risk management, including qualitative and quantitative approaches, and highlights their applications in different sectors.

1. Qualitative Operational Risk Management

Qualitative methods in operational risk management focus on identifying and assessing risks based on expert judgment and subjective analysis. These methods are valuable for understanding complex risk scenarios and developing mitigation strategies.

A. Risk and Control Self-Assessment (RCSA)

RCSA involves systematic identification and evaluation of risks and controls by business units. Employees assess potential risks, rate their severity and likelihood, and evaluate existing controls' effectiveness. This process promotes a risk-aware culture and helps identify areas needing improvement (Fraser & Simkins, 2010,78).

B. Scenario Analysis

Scenario analysis involves creating hypothetical risk scenarios to evaluate potential impacts on an organization. By analyzing extreme but plausible events, organizations can develop contingency plans and improve their readiness for unexpected situations (Crouhy, Galai, & Mark, 2014, 103).

C. Key Risk Indicators (KRIs)

KRIs are metrics used to monitor key risk factors that could indicate potential issues. Regular monitoring of KRIs allows organizations to identify trends and take proactive measures to mitigate risks before they escalate (Jorion, 2007, 89).

2. Quantitative Operational Risk Management

Quantitative methods use statistical and mathematical models to measure and manage operational risks. These methods provide a more objective assessment and are essential for regulatory compliance, particularly in the financial sector.

A. Loss Distribution Approach (LDA)

LDA involves collecting historical loss data and modeling the frequency and severity of losses to estimate potential future losses. This approach helps organizations allocate capital reserves for operational risk and comply with regulatory requirements, such as those outlined in Basel II and III (Alexander, 2003, 152).

B. Monte Carlo Simulation

Monte Carlo simulation uses random sampling to model the probability distribution of risk events. By running numerous simulations, organizations can estimate the range of potential outcomes and their associated probabilities, aiding in risk assessment and decision-making (Glasserman, 2004, 121).

C. Bayesian Networks

Bayesian networks are graphical models that represent the probabilistic relationships between different risk factors. These networks enable organizations to update risk assessments dynamically as new information becomes available, providing a more accurate and adaptive approach to risk management (Cowell et al., 2007, 205).

3. Integrated Approaches

Combining qualitative and quantitative methods provides a comprehensive approach to operational risk management. Integrated approaches leverage the strengths of both types to create a robust risk management framework.

A. Risk Mapping

Risk mapping visually represents the relationships between different risks and their potential impacts. By integrating qualitative insights from RCSA and scenario analysis with

quantitative data from LDA and Monte Carlo simulations, organizations can prioritize risks and allocate resources effectively (Lam, 2003,56).

B. Stress Testing

Stress testing involves evaluating the impact of extreme but plausible scenarios on an organization's financial health. By combining qualitative scenario analysis with quantitative modeling, stress tests help organizations identify vulnerabilities and develop strategies to enhance their resilience (Hull, 2018, 148).

C. Enterprise Risk Management (ERM)

ERM is a holistic approach that integrates operational risk management with other risk types, such as credit, market, and strategic risks. By adopting an ERM framework, organizations can achieve a unified view of risks and ensure that risk management practices are aligned with their strategic objectives (Fraser & Simkins, 2010, 102).

1.3.3 FACTORS CONSTITUTING OPERATIONAL RISKS

Operational risks increase whenever the demand for the organization's products is characterized by fluctuation, and this fluctuation is due to the volume of demand the change in the volume of demand for the organization's products due to several reasons, including

- the introduction of new products that contribute to increasing the volume of demand for its products
- The success of competitors in offering alternative products that would weaken the demand for the company's products
- The prosperity or recession of the industry to which the establishment belongs, or of the national economy as a whole.

1. Change in selling prices and Enterprise products

The movement of prices in the market affects operational risks. If the selling prices of a particular institution are characterized by a kind of stability, this leads to a decrease in the degree of risk, unlike the case in which the selling prices in the market are unstable, in which case the risks will increase.

2. Change in input prices

When the prices of production inputs are exposed to fluctuations and instability, the operational risks increase in the institutions others whose input prices are characterized by a kind of stability.

3. Elasticity of demand for products

The flexibility of demand for products affects the degree of risk. If the ability of the enterprise management to change its prices by increasing the levels of demand in the market, this ability will ensure a decrease in the degree of risk.

4. Operating leverage (the extent to which the organization uses fixed costs)

Fixed costs are not related to the size of the demand for the enterprise's products or the size of its production, and this means that they do not decrease in the event that the demand for the enterprise's products decreases, so the greater the share of fixed costs in the total costs, the greater the business risk, that is, the greater the operational leverage, the greater Operational risks increased.

5. Technological progress and the inability of the institution to follow it

The level of operating leverage depends to a large extent on technology. Electricity, telephone, airlines and chemical industries companies have to spend large sums in the form of fixed costs, which means a high level of operating leverage. Similarly, pharmaceutical, auto, and computer companies must spend large sums to develop new products, and these development costs increase operating leverage.

1.3.4 OPERATIONAL RISK MANAGEMENT PROCESS

Operational risk management (ORM) is a systematic process to identify, assess, monitor, and mitigate risks arising from internal processes, people, systems, or external events.

1. Risk Identification

Risk identification is the first step in the ORM process, involving the detection of potential operational risks that could affect an organization's objectives. Methods

such as Risk and Control Self-Assessment (RCSA), event inventories, and internal and external audits are used. RCSA engages employees in identifying risks based on their daily operations, enhancing awareness and accountability (Fraser & Simkins, 2010,78). Event inventories involve maintaining databases of historical loss events to identify patterns and potential risk areas (Crouhy, Galai, & Mark, 2014, 103). Regular audits help identify operational risks by evaluating compliance with established policies and procedures (Lam, 2003,86).

2. Risk Assessment

Risk assessment involves evaluating the identified risks to determine their potential impact and likelihood. This can be done using qualitative methods, such as expert judgment and scenario analysis, which provide a subjective evaluation of risks (Hoffman, 2002, 105), or quantitative methods like the Loss Distribution Approach (LDA) and Monte Carlo simulations, which provide a statistical evaluation of risks using historical data (Alexander, 2003, 152). A risk matrix is also used to plot the likelihood of risk events against their potential impact, allowing organizations to prioritize risks (Jorion, 2007, 89).

3. Risk Monitoring

Risk monitoring involves ongoing tracking of identified risks and the effectiveness of implemented controls. Key Risk Indicators (KRIs) are metrics that provide early warning signals of increasing risk exposures and help organizations take proactive measures to mitigate risks (Crouhy, Galai, & Mark, 2014, 201). Incident reporting systems enable employees to report risk events and near-misses, capturing data on risk occurrences and improving the risk management process (Lam, 2003, 123). Risk dashboards provide a visual representation of risk metrics and trends, enabling senior management to make informed decisions based on real-time data (Fraser & Simkins, 2010, 102).

4. Risk Mitigation

Risk mitigation involves developing strategies to reduce the likelihood and impact of identified risks. Implementing robust internal controls, such as policies,

procedures, and automated systems, helps prevent and detect risk events (Hoffman, 2002, 225). Contingency planning prepares organizations for potential risk events by developing action plans and backup systems to ensure business continuity (Glasserman, 2004, 141). Transferring risk through insurance helps manage the financial impact of operational losses, with policies covering various operational risks including property damage, liability, and cyber risks (Jorion, 2007, 136).

5. Risk Reporting and Governance

Risk reporting involves communicating risk information to stakeholders, while governance ensures that risk management practices align with organizational objectives. Regular risk reports provide updates on the status of identified risks, control effectiveness, and emerging risk issues, facilitating transparency and informed decision-making (Fraser & Simkins, 2010, 145). Effective risk governance involves establishing clear roles and responsibilities for risk management within the organization, including the board of directors, risk committees, and risk management functions (Lam, 2003, 175). Promoting a risk-aware culture through training employees, encouraging open communication about risks, and integrating risk management into the organizational ethos is essential for effective ORM (Hull, 2018, 178).

1.3.5 OPERATIONAL HEDGING STRATEGIES

Operational hedging strategies are critical tools for firms seeking to manage risks that arise from fluctuations in market conditions, such as changes in exchange rates, commodity prices, and demand variability. Unlike financial hedging, which uses instruments like futures and options, operational hedging involves adjustments to a firm's operational activities and business processes to mitigate risk. These strategies can include diversifying the supply chain to multiple geographic regions to reduce dependency on a single market, optimizing production processes to be more flexible and responsive to demand changes, and utilizing advanced inventory management techniques to buffer against supply disruptions. By implementing operational hedging strategies, firms can enhance their resilience against market volatility and ensure more stable financial performance. Academic studies have shown that such strategies not

only reduce risk but also contribute to competitive advantage by improving operational efficiency and adaptability (Cachon & Terwiesch, 2013, 247; Chopra & Sodhi, 2004, 69). Consequently, operational hedging is a vital component of comprehensive risk management, integrating both strategic planning and tactical execution to safeguard organizational objectives in an uncertain business environment.

1.4 INTERNATIONAL LEGAL REGULATIONS FOR OPERATIONAL RISK MANAGEMENT

Operational risk management (ORM) is governed by a complex framework of international legal regulations designed to ensure that financial institutions operate in a safe, sound, and resilient manner. One of the most significant regulatory frameworks is the Basel Accords, established by the Basel Committee on Banking Supervision (BCBS). The Basel II Accord, introduced in 2004, specifically addresses operational risk, requiring banks to set aside capital reserves to cover potential losses from operational failures. This framework introduces three methods for calculating operational risk capital requirements: the Basic Indicator Approach (BIA), the Standardized Approach (TSA), and the Advanced Measurement Approach (AMA), each with varying degrees of complexity and risk sensitivity (BCBS, 2004, 120).

The Basel II framework categorizes banking risks into three main types: credit risks, market risks, and operational risks. Credit risk arises from the possibility of a client failing to meet payment obligations. This risk can be mitigated through guarantees, pledges, or collateral, and by exercising prudence in credit allocation. Market risk is the possibility of a decrease in investment value due to market volatility, which can affect financial institutions through unfavorable shifts in interest rates, foreign exchange rates, equity prices, and commodity prices. Techniques such as asset-liability management and financial risk management strategies are used to manage market risk. It is important for financial institutions to have a comprehensive risk management framework that addresses both market and operational risks. By implementing effective risk management practices, financial institutions can mitigate

potential losses and ensure long-term stability. operational risk refers to losses resulting from breakdowns in a firm's internal processes.

The Basel II framework defines operational risk as the possibility of loss resulting from internal processes, personnel, systems, or external events. This comprehensive definition encompasses various types of organizational dysfunction that can significantly impact or even jeopardize the survival of an institution. Operational risk is amplified by factors such as the expansion into global markets, the development of complex new products and services, and the increase in transaction volumes and volatility. The objective of management accounting in this context is to provide accurate information for internal decision-making related to business operations, workforce, and system investments. By using data from management accounting systems, managers can make informed decisions and potentially avoid unforeseen losses. This information also serves as a basis for performance evaluation and provides insights into measures that can improve future outcomes.

The Basel III Accord, implemented in response to the financial crisis of 2007-2008, further strengthens these regulations by enhancing the quality and quantity of capital banks must hold and introducing additional liquidity requirements (BCBS, 2011, 67). Furthermore, international standards such as the International Organization for Standardization's ISO 31000 provide guidelines and principles for risk management processes applicable across different industries (ISO, 2018, 5).

In addition to the Basel Accords and ISO standards, specific regions have their own regulatory requirements. For example, the European Union's Capital Requirements Directive IV (CRD IV) aligns with Basel III but includes additional provisions tailored to the EU banking sector (European Parliament, 2013, 89). The U.S. has the Dodd-Frank Wall Street Reform and Consumer Protection Act, which mandates comprehensive risk management frameworks for large financial institutions and imposes stricter oversight on derivative trading to mitigate operational risk (U.S. Congress, 2010, 233).

These regulations collectively aim to ensure that institutions maintain robust operational risk management practices, promote financial stability, and protect the interests

of stakeholders. Compliance with these regulations requires ongoing monitoring, reporting, and updating of risk management practices to adapt to evolving risks and regulatory changes.

1.4.1 REGULATIONS OF THE BASEL COMMITTEE ON BANKING SUPERVISION (BCBS)

The Basel Committee on Banking Supervision (BCBS) is a global regulatory authority that develops guidelines and standards to enhance banking supervision and strengthen the resilience of financial institutions. The BCBS has introduced several pivotal regulatory frameworks, known as the Basel Accords, to address various aspects of banking risk, including credit, market, and operational risks.

- **Basel I (1988)**

Basel I was the first comprehensive set of international banking regulations introduced by the BCBS. Its primary objective was to standardize the minimum capital requirements for banks to cover credit risk. The framework established a risk-weighted approach to assets and required banks to hold a minimum capital ratio of 8% against their risk-weighted assets (BCBS, 1988, p. 12).

- **Basel II (2004)**

Basel II significantly expanded the regulatory framework by introducing a more comprehensive approach to risk management. It is structured around three pillars:

- **Pillar 1: Minimum Capital Requirements:** This pillar refines the capital requirements established in Basel I by incorporating credit risk, market risk, and operational risk. For operational risk, Basel II offers three methods for calculating capital requirements: the Basic Indicator Approach (BIA), the Standardized Approach (TSA), and the Advanced Measurement Approach (AMA) (BCBS, 2004, 120).

- **Pillar 2: Supervisory Review Process:** This pillar emphasizes the importance of supervisory review and encourages banks to develop internal processes for assessing their

overall capital adequacy in relation to their risk profile. It also highlights the need for effective risk management practices (BCBS, 2004, 124).

○ **Pillar 3: Market Discipline:** This pillar aims to enhance market discipline by requiring banks to disclose key information about their risk exposures, risk management practices, and capital adequacy. Increased transparency is intended to enable market participants to make informed decisions (BCBS, 2004, 126).

- **Basel III (2010)**

In response to the financial crisis of 2007-2008, the BCBS introduced Basel III to strengthen the regulation, supervision, and risk management of banks. Basel III enhances the quality and quantity of capital banks must hold and introduces new regulatory requirements, including:

1. **Enhanced Capital Requirements:** Basel III increases the minimum common equity requirement and introduces a capital conservation buffer, raising the total minimum capital requirement to 10.5% of risk-weighted assets (BCBS, 2011, 67).

2. **Leverage Ratio:** This non-risk-based measure limits the extent to which a bank can leverage its capital base, reducing the risk of excessive leverage (BCBS, 2011, 69).

3. **Liquidity Requirements:** Basel III introduces two key liquidity ratios: the Liquidity Coverage Ratio (LCR), which ensures banks have sufficient high-quality liquid assets to survive a 30-day stress scenario, and the Net Stable Funding Ratio (NSFR), which promotes more stable funding structures over a one-year period (BCBS, 2013, 78).

4. **Countercyclical Capital Buffer:** This buffer aims to protect the banking sector against periods of excessive credit growth by requiring additional capital during economic upswings (BCBS, 2011, 72).

- **Basel IV (Ongoing)**

Although not officially termed "Basel IV," recent amendments and finalization of Basel III reforms are sometimes referred to as Basel IV. These reforms further refine risk-

weighted asset calculations and aim to reduce variability in risk-weighted assets across banks, ensuring more consistent and comparable capital requirements (BCBS, 2017, 89).

1.4.2 EUROPEAN UNION REGULATIONS

The European Union (EU) has developed a comprehensive regulatory framework to manage operational risks in the banking and financial sectors. This framework is designed to ensure financial stability, protect consumers, and enhance the resilience of financial institutions within the EU. Key regulations include the Capital Requirements Directive IV (CRD IV), the Capital Requirements Regulation (CRR), and the Bank Recovery and Resolution Directive (BRRD).

• Capital Requirements Directive IV (CRD IV) and Capital Requirements Regulation (CRR)

The CRD IV package, which came into effect in 2014, transposes the Basel III international standards into EU law. It comprises the CRD IV Directive and the CRR, which collectively aim to strengthen the regulation, supervision, and risk management of banks.

1. Minimum Capital Requirements: Similar to Basel III, CRD IV/CRR increases the minimum capital requirements for banks, mandating that they hold more and higher-quality capital to cover potential losses. The framework requires banks to maintain a Common Equity Tier 1 (CET1) capital ratio of 4.5%, a Tier 1 capital ratio of 6%, and a total capital ratio of 8% of risk-weighted assets (European Parliament, 2013, 32).

2. Leverage Ratio: CRR introduces a leverage ratio to limit the extent of leverage a bank can use, promoting financial stability by reducing the risk of excessive borrowing (European Parliament, 2013, 45).

3. Liquidity Requirements: CRD IV/CRR implements the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR) to ensure that banks have adequate liquidity to withstand short-term and long-term financial stresses. The LCR requires banks to hold enough high-quality liquid assets to cover net cash outflows over 30 days, while the NSFR ensures that banks have a stable funding

profile relative to their assets and off-balance-sheet activities (European Parliament, 2013, 57).

4. Countercyclical Capital Buffer: This buffer is designed to ensure that banks build up capital buffers during periods of economic growth that can be drawn down in periods of stress, thereby smoothing the credit cycle and protecting the banking sector against cyclical risks (European Parliament, 2013, 68).

5. Pillar 2 and Pillar 3 Requirements: CRD IV/CRR reinforces the supervisory review process (Pillar 2) by requiring banks to have robust risk management processes and capital adequacy assessments. It also enhances transparency and market discipline (Pillar 3) by mandating comprehensive disclosure requirements about banks' risk profiles, capital, and governance (European Parliament, 2013, 89).

• **Bank Recovery and Resolution Directive (BRRD)**

The BRRD, implemented in 2015, provides a framework for the recovery and resolution of failing banks, ensuring that critical functions are preserved while minimizing the impact on taxpayers and the economy.

1. Recovery Plans: Banks are required to develop recovery plans outlining measures to be taken in the event of financial distress. These plans must include strategies to restore financial stability and ensure the continuity of critical functions (European Parliament, 2014, 14).

2. Resolution Plans: Authorities must prepare resolution plans for banks, detailing how to handle a bank failure while maintaining the continuity of essential services and protecting financial stability. Resolution tools include bail-ins, asset separations, and the establishment of bridge institutions (European Parliament, 2014, 28).

3. Minimum Requirement for Own Funds and Eligible Liabilities (MREL): The BRRD requires banks to hold a minimum amount of own funds and eligible liabilities to absorb losses and recapitalize the institution in the event of resolution, ensuring that shareholders and creditors bear the costs of failure (European Parliament, 2014, 34).

4. Bail-In Mechanism: The bail-in mechanism allows resolution authorities to write down the claims of unsecured creditors or convert them into equity, thereby

recapitalizing the bank without resorting to taxpayer funds (European Parliament, 2014, 42).

The EU's regulatory framework for operational risk management, primarily through CRD IV/CRR and BRRD, aligns with international standards while addressing the specific needs of the European financial sector. These regulations aim to enhance the stability and resilience of financial institutions, protect consumers, and ensure the smooth functioning of the financial system.

1.4.3 IOSCO REGULATION AND PRINCIPLES

The International Organization of Securities Commissions (IOSCO) plays a pivotal role in setting global standards for the securities sector, including operational risk management. IOSCO's principles and guidelines aim to enhance the stability, efficiency, and transparency of securities markets. They provide a framework for managing operational risks, particularly in areas such as market infrastructure, systemic risk, and investor protection.

1. Principles for Financial Market Infrastructures (PFMIs)

The PFMIs, developed jointly by IOSCO and the Committee on Payments and Market Infrastructures (CPMI), set out international standards for the management of financial market infrastructures (FMIs) such as central counterparties (CCPs), payment systems, and securities settlement systems. These principles aim to enhance the safety and efficiency of FMIs and limit systemic risk. Key aspects related to operational risk include:

- **Principle 17: Operational Risk:** FMIs should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through appropriate systems, policies, procedures, and controls. This includes maintaining comprehensive operational risk management frameworks, conducting regular assessments, and ensuring continuity of operations through robust business continuity plans (IOSCO, 2012, 80).
- **Principle 20: FMI Links:** FMIs that establish links with other FMIs to settle transactions or transfer securities must identify and manage the operational risks

arising from these links. This includes ensuring reliable communication channels, data integrity, and coordinated contingency planning (IOSCO, 2012, 85).

2. Principles for Securities Regulation

IOSCO's principles for securities regulation provide a framework for developing regulatory systems that protect investors, ensure fair and efficient markets, and reduce systemic risk. These principles encompass various aspects of operational risk management:

- **Principle 29: Management of Operational Risk:** Securities regulators should require market participants, including broker-dealers, asset managers, and exchanges, to have robust risk management frameworks to identify, assess, and mitigate operational risks. This includes requirements for adequate internal controls, information security, and disaster recovery planning (IOSCO, 2010, 67).
- **Principle 31: Regulation of Secondary Markets*** - Regulators should ensure that secondary markets have mechanisms to manage operational risks, including systems for handling trading errors, managing system outages, and ensuring data integrity and confidentiality (IOSCO, 2010, 73).

3. Cyber Security Guidelines

Given the increasing threat of cyber-attacks, IOSCO has issued specific guidelines to enhance the cyber resilience of financial institutions. These guidelines focus on:

- **Governance:** Establishing clear governance structures for cybersecurity, including board-level oversight and accountability.
- **Risk Assessment:** Conducting regular assessments to identify and address vulnerabilities and threats.
- **Controls and Response:** Implementing preventive and detective controls, and developing robust incident response plans.
- **Information Sharing:** Encouraging collaboration and information sharing among market participants to enhance collective cyber resilience (IOSCO, 2016, 22).

IOSCO's regulatory framework for operational risk management emphasizes the importance of robust risk management practices, systemic risk reduction, and investor protection. By adhering to these principles and guidelines, securities market participants and infrastructures can enhance their resilience to operational disruptions and contribute to the overall stability and integrity of the global financial system

1.5 OPERATIONAL RISK MANAGEMENT IN BANKING SECTOR

There are two approaches to measuring enterprise risk management, one specific to measuring the value of the ERM application and its application depends on management and all employees of the company, and the other specific to measuring enterprise risk management itself and depends on the role of management accounting and the management accountant together. The first depends on the efficient and effective application of the ERM programme and thus the realization of its value in terms of the opportunities and profits that would have been lost without the proper implementation of ERM. The second depends on the actual measurement of the costs or losses that could have been incurred. It occurs in the event of a risk event, using one of the two statistical or accounting methods. The difficulty in measuring enterprise risk management is that many companies find it difficult to make a strong business case for enterprise risk management. This is due to the difficulty in identifying the full scope of opportunities and benefits from risk, as it is difficult to estimate the investment in people, technology and energy required to fully implement risk management across the enterprise. is difficult to estimate.

Operational risk necessitates financial institutions to establish a comprehensive risk management system with several stages. These include recognizing the risk, measuring the risk to the furthest extent feasible, and establishing the optimal strategy to minimize the risk, which could involve retaining capital, transferring some or all of the risk or proactively reducing the risk. While utilizing this default choice, whether intentionally or unknowingly, may be satisfactory for low-frequency, low-severity hazards, it could result in significant financial or fatal consequences for an institution in the event of a catastrophic operational risk. Once a financial institution chooses to engage in a specific line of business, it has three options to manage and alleviate the operational risks involved in that

line of business. The institution may adopt several strategies to mitigate operational risk, such as holding capital to absorb losses from operational failures, purchasing insurance, or attempting to identify and correct operational hazards. This chapter provides a brief discussion of these operational risk management approaches, including an overview of current capital rules for various financial institutions. (Robertson, 2016, 64).

in 2006, the Basel II framework stated that internationally active banks should utilize the AMA, which stands for (Advanced measurement approach) for calculating minimum operational risk capital requirements. The AMA utilizes the bank's internal system for measuring operational risk, in order to determine appropriate capital charges. In addition to the development of an internal operational risk model, the AMA requires active involvement from the bank's board of directors and senior management, and adherence to the qualitative and quantitative standards summarized below:

Basel Committee AMA Qualitative Standards

1. To establish and implement the bank's operational risk framework, a bank must have an independent operational risk management department.
2. The internal operational risk measurement system must be tightly connected with the bank's day-to-day risk management activities.
3. Operational risk exposures and loss experience must be reported on a regular basis to business unit management, senior management, and the board of directors.
4. A well-documented operational risk management framework is required.
5. Internal and/or external auditors must assess the operational risk management procedures and measurement systems on a regular basis.
6. The operational risk measurement system must be validated to ensure that the internal validation processes are working properly and that the data flows connected with the risk measurement system are visible and accessible.

The BASEL committee also establishes certain quantitative standards for ama banks:

1. The operational risk measuring system must cover the whole extent of the operational risk concept.

2. The regulatory capital requirement must be equal to the total of the expected and unexpected losses.

3. The risk measuring system must be capable of capturing the primary operational risk factors impacting the tail of the loss estimate distribution.

4. To calculate the regulatory minimum capital need, the bank must add the risk measures for varied operational risk assessments.

5. Any operational risk measuring system must incorporate internal data, relevant external data, scenario analysis, business environment elements, and internal control systems.

6. The bank's entire operational risk measuring system must include a credible, transparent, well-documented, and verifiable strategy for weighing internal data, external data, scenario analysis, and business environment and control systems.

The AMA qualification standards state that an effective risk management process must sufficiently identify and report a bank's operational risk information. Specifically, operational risk management processes require a bank to possess an autonomous operational risk management function that devises, executes, and supervises the bank's operational risk data, assessment, and quantification procedures. The bank's management process must identify, measure, monitor and control operational risk in all its products, activities, processes, and systems. It should then proceed to report operational risk information, including exposures and operational losses, to both bank management and the board of directors.

The bank's assessment and data systems shall collect empirical data on operational risks and create an operational risk database to further analyze. The AMA qualification standards mandate that the systems record the bank's operational risk exposures, in line with the bank's activities and procedures. The data systems must incorporate four data elements, comprising of:

1. internal operational loss event data.
2. external operational loss event data
3. scenario analysis, and

4. business environment
5. internal control factors.

Risk in the financial sector encompasses various hazards such as credit, market, liquidity, interest rate, and operational risks. A comprehensive risk management strategy involves four key elements: identifying risks, measuring their magnitude, implementing strategies to mitigate risks, and continuously monitoring and reporting risk levels. Financial entities must develop and maintain an effective risk management system to meet regulatory standards and ensure stability and security.

Financial entities must develop and maintain an effective risk management system to meet regulatory standards and ensure stability and security. Enterprise Risk Management (ERM) is a critical tool for achieving this goal. ERM provides a comprehensive view of the organization's risk profile, surpassing mere compliance with regulations. Financial services firms have been at the forefront of integrating ERM practices and appointing Chief Risk Officers (CROs) to oversee risk management operations. This proactive approach to risk management not only serves as a defensive measure but also provides a strategic advantage. ERM's comprehensive scope, which goes beyond regulatory minimums, enables institutions to identify and mitigate risks more effectively, thereby securing a competitive edge in the financial industry.

Enterprise Risk Management (ERM) represents a departure from the traditional approach of managing risks in isolation within an organization. Instead, it adopts a unified perspective that encompasses all facets of risk and risk management. ERM enables organizations to address a wide range of risks, including strategic, market, credit, operational, and financial risks with confidence and authority. This approach transforms risk management from a defensive mechanism to a strategic tool, enabling boards and senior executives to govern the range of risks their enterprises face more effectively.

ERM centralizes risk management activities, either under the guidance of a Chief Risk Officer (CRO) or a dedicated ERM committee. The central body is accountable for defining the organization's risk tolerance, assessing mitigation strategies, and leveraging opportunities that arise from risk scenarios. Enterprise Risk Management (ERM) is a

crucial component of an organization's strategic planning and operational assessment framework, as it integrates risk management with strategic planning and performance evaluation.

1.5.1 MACRO VARIABLES AFFECTING RISK STATUS IN BANKS

The risk status of banks is influenced by a range of macroeconomic variables. These variables can significantly impact the stability and performance of financial institutions by affecting their credit risk, market risk, operational risk, and overall financial health. Key macro variables include:

1. Economic Growth: Gross Domestic Product (GDP) growth is a primary indicator of economic health. Strong economic growth typically leads to lower default rates on loans as businesses and consumers have higher incomes and better cash flows. Conversely, economic downturns increase the likelihood of loan defaults, raising credit risk for banks (Merton, 1974, 468).

2. Interest Rates: changes in central bank policy rates directly affect the interest rates on loans and deposits. Rising interest rates can increase borrowing costs, leading to higher default rates, while falling rates can reduce the profitability of banks' interest rate margins (Bernanke & Gertler, 1995, 28).

Also The shape of the yield curve affects banks' net interest margins and profitability. A steep yield curve allows banks to borrow short-term at lower rates and lend long-term at higher rates, benefiting their financial performance (Fama, 1984, 319).

3. Inflation: High inflation can erode the value of money, impacting both borrowers' ability to repay loans and the real value of banks' assets. Inflationary pressures often lead to higher interest rates, which can increase borrowers' repayment burdens and elevate credit risk (Fischer, 1975, 804).

4. Unemployment Rate: high unemployment rates can lead to increased loan defaults as individuals lose their income sources and struggle to meet debt obligations. Conversely, a robust labor market supports borrowers' repayment capabilities, reducing credit risk (Bernanke, 1983, 272).

5. Exchange Rates: Banks with significant foreign currency exposure are affected by exchange rate movements. Depreciation of the local currency can increase the cost of servicing foreign-denominated debt, impacting borrowers' ability to repay and raising credit risk (Shapiro, 1975, 38).

6. Regulatory Environment: Changes in regulatory requirements, such as capital adequacy ratios, liquidity requirements, and stress testing protocols, can affect banks' risk profiles. Stricter regulations generally enhance the stability of banks but may also limit their profitability and lending capacity (Barth, Caprio, & Levine, 2004, 207).

7. Political Stability :Political instability can lead to increased uncertainty and risk aversion, affecting banks' operations and the broader economic environment. Political events, such as elections, policy changes, or geopolitical tensions, can impact market confidence and economic performance, influencing banks' risk status (Howell, 2001, 116).

8. Global Economic Conditions: Banks are affected by global economic conditions, including trade volumes, foreign direct investment, and international capital flows. Economic downturns in major economies or disruptions in global trade can impact domestic economic activity and banks' risk exposures (Obstfeld & Rogoff, 1996, 25).

1.5.2 DETERMINATION OF OPERATIONAL RISK IN BANKS

Operational risk in banks encompasses the risk of loss resulting from inadequate or failed internal processes, people, systems, or external events. Effectively determining and managing operational risk is crucial for maintaining financial stability and regulatory compliance. Several key aspects contribute to the determination of operational risk in banks:

- **Internal Processes:** Banks identify operational risks through comprehensive assessments of their internal processes, including transaction processing, information systems, and human resources management. Weaknesses in these areas can lead to errors, fraud, or disruptions.

- **External Events:** Identification also includes assessing external factors such as legal and regulatory changes, market disruptions, natural disasters, and cyber-

attacks, which can impact bank operations and financial stability (Basel Committee, 2011, 67).

- **Quantitative Models:** Banks use quantitative models to assess the potential impact and likelihood of operational risks. These models include scenario analysis, historical loss data analysis, and statistical techniques to estimate potential losses from operational failures (Kambhu, Weidman, & Krishnan, 2007, 32).

- **Qualitative Assessment:** Qualitative methods involve expert judgment, risk control self-assessments (RCSAs), and workshops to identify and evaluate operational risks that may not be easily quantifiable (Petersen, 2004, 44).

- **Key Risk Indicators (KRIs):** Banks establish KRIs to monitor operational risk on an ongoing basis. KRIs may include metrics related to transaction volumes, error rates, cyber incidents, compliance breaches, and customer complaints. Monitoring KRIs helps banks detect emerging risks and take timely corrective actions (Basel Committee, 2011, 72).

- **Stress Testing:** Banks conduct stress tests to assess their resilience to severe operational disruptions. Stress testing involves simulating extreme scenarios to evaluate the potential impact on capital adequacy and financial stability (Basel Committee, 2011, 78).

- **Controls and Procedures:** Banks implement controls and procedures to mitigate operational risks identified during risk assessments. These may include segregation of duties, dual control procedures, regular audits, and the implementation of robust information technology systems and cybersecurity measures (Kambhu et al., 2007, 38).

- **Insurance:** Some banks transfer operational risk through insurance policies tailored to cover specific operational risks, such as errors and omissions (E&O) insurance, cyber insurance, and business interruption insurance (Petersen, 2004, 56).

- **Reporting:** Banks report operational risk exposures, incidents, and mitigation activities to senior management and regulatory authorities. Transparent reporting enhances accountability and facilitates informed decision-making at all levels of the organization (Basel Committee, 2011, 85).

- **Governance:** Effective governance structures, including board oversight, risk committees, and internal audit functions, play a critical role in ensuring that operational risk management practices are embedded within the bank's overall risk management framework (Petersen, 2004, 62).

The determination of operational risk in banks involves a systematic approach to identifying, assessing, monitoring, mitigating, and reporting risks. By employing robust methodologies and frameworks, banks can enhance their resilience to operational disruptions, protect stakeholders' interests, and maintain compliance with regulatory requirements.

CHAPTER 2: MANAGEMENT ACCOUNTING PRACTICES

This chapter provides a comprehensive overview of management accounting by tracing its historical development, exploring key concepts and objectives, and detailing the tools employed in the field. Initially, the chapter delves into the evolution of management accounting from its rudimentary forms to its current sophisticated practices, highlighting how historical events and technological advancements have shaped its progress. It then shifts focus to articulate the core concepts that underpin management accounting, such as decision-making, planning, and control, alongside its primary objectives of enhancing efficiency and supporting strategic decisions. The latter part of the chapter is dedicated to an extensive examination of various management accounting tools, such as budgeting, cost analysis, and financial modeling, elucidating how these tools are applied in practice to achieve business objectives and manage organizational performance effectively. This structured discussion not only enriches the reader's understanding of management accounting's foundational principles but also illustrates its practical utility in contemporary business environments.

1.4 2.1 HISTORICAL DEVELOPMENT OF MANAGEMENT ACCOUNTING

Since the late 20th century, particularly from the 1980s onwards, management accounting was limited to operational requirements. However, in today's changing environment, it is necessary to analyze strategic information through a broader, more conscious, and clear perspective. This cannot be done in isolation from the use of administrative accounting tools and their functions, which provide information to aid administration in the process of planning, decision-making, guidance, and control. The aim is to achieve goals, measure performance and departmental achievements, and help banks maintain and improve their competitive edge in the long term. Excitingly, an international professional publication in the name of AL-Haditha, highlights the ever-increasing demand for management accountants to offer a diverse range of value-adding services! Management accounting professionals who have equipped themselves to take on expanded responsibilities in the areas of information management and strategic financial management

are presented with growing opportunities. This expanded role involves contributing to the identification of solutions to problems that organizations encounter during the decision-making process (Abdel-Wahhab, 2009,19), From this perspective, management accounting holds significant positions in the accounting, financial, and administrative fields! It has become a focal point for many establishments, depending on the sector to which they belong. Whether financial, service, or industrial, management accounting is essential for success.

The emergence of accounting and its development are the result of various economic and legal factors that led to the need for accounting services. These services are represented by providing financial statements to multiple destinations. The need for accounting arose in the middle ages, specifically in the fourteenth century, due to the emergence of commercial transactions and the use of money as a medium to measure the value of these transactions. During that time, individual projects were the most common legal form. Accounting served as a tool to record the numerous financial transactions in the books, which was necessary for project owners to keep an organized record of all operations. This helped them measure the responsibilities of those managing their money, as they could not rely on memory alone. In light of these circumstances, financial accounting aims to record and classify financial operations in a book group. The goal is to extract the result of the movement of funds from profit or loss during a certain period and determine the monetary position at the end of this period (Attallah,2009, 13).

In the late 18th century, economic and social factors led to new developments in accounting. The industrial revolution brought about the formation of production units and joint stock companies, which required large amounts of capital. These projects were characterized by the separation of ownership from management and specific responsibilities. The use of factors of production increased due to the complexity of the production process, leading to difficulties in the administrative function. This development has changed the perception of the accounting function. It is no longer solely a means to serve project owners, but also a means to serve the administration by providing detailed data. This data helps the administration in drawing policies related to project activity and

supervising and controlling their implementation. This leads to the importance of actual cost accounting, which aims to determine the cost of the product, control cost elements, and submit reports to different administrative levels to measure adequacy. This is crucial in achieving project objectives (Attallah,2009, 13).

Several definitions of the concept of management accounting have been provided by researchers from different points of view. Most of these definitions conclude that management accounting is only a part of an integrated management information system for the enterprise that performs specific functions. According to (Kaplan et al.,1998. 88-89), management accounting is a system that provides information to assist managers in planning and control activities. Management accounting activities include collecting, classifying, processing, and analyzing information, and delivering information reports to managers. In the same context, (Jumaa ,2011, 16) defines it as a scientific framework that aims to assist administration in drawing up policies and rationalizing decisions related to achieving unit objectives in light of reality's variables by providing appropriate and timely information. According to (Mown and Hansen ,2006, 22), management accounting is a system that provides internal parties within an organization with information to support management in identifying important issues, finding solutions to problems, and evaluating performance. (Garrison, et.al., 2006, 10) did not deviate significantly from their predecessors in their definition of management accounting. They emphasised its role in providing information directly to managers and users within the organisation, as well as its function in supplying the organisation with essential information through the preparation of various reports. These reports include performance reports, which compare actual performance with planned performance, and recurring reports. Additionally, management accounting involves the preparation of analytical reports to investigate specific problems facing the organisation. From the definitions of management accounting presented above, it is evident that there is no consensus among writers on a specific definition of the concept. Management accounting is a set of practical and analytical methods that are interdependent and aimed at supporting administrative decisions. These methods can be reformulated based on the nature of the decision and its impact on the continuity of the enterprise.

From the foregoing, it can be concluded that the modern definition of management accounting came to keep pace with the era of digital transformation by expanding the scope of the management accounting profession and the roles of management accountants, as the new definition differed from what preceded it in several points: (Ali, 2023, 20)

- Most of the definitions focused on the fact that the goal of management accounting is to create value for organizations, which means linking it to the business model of the organization as a whole, which entails expanding the scope of management accounting.
- Most of the definitions focused on the fact that the goal of management accounting is to ensure the sustainable success of the organization by providing information that enables the organization to take decisions that avoid risks or fall into failures that prevent it from achieving sustainable success, and this indicates an expansion of the scope of management accounting and its practices.
- Expanding the strategic role of the management accountant by extending the role in planning and implementing the organization's strategy and oversight over it, and not just assisting in the formulation and implementation only.
- Taking into account the definition of the impact of technology on the tasks of the management accountant by focusing on non-routine tasks that are difficult to mechanize using artificial intelligence, because they require critical thinking and creativity such as contributing to the planning, implementation and monitoring of the strategy, and bypassing the routine, stable and organized tasks such as preparing reports, as they can be automated with artificial intelligence methods such as instant reporting technology and visual presentation tools, which explains the definition's disregard for the traditional dimension of the management accountant.

Management accounting, like other sciences, works to underline a set of goals which must be achieved through its functions, and its reports, which represent systemic outputs, have a set of characteristics that distinguish them from other general characteristics.

1.5 2.2 MANAGEMENT ACCOUNTING CONCEPT AND APPLICATION OBJECTIVES

Management accounting has a set of objectives through which it seeks to:

1. To provide managers with the necessary information to aid decision-making and planning.
2. Assisting managers in directing and controlling operational activities by providing comparative data between actual and budgeted costs, management accounting information helps with job direction and oversight.
3. Motivate managers and employees towards achieving the organization's goals, and this is done by preparing the budget and focusing on activities to which resources are allocated, and that help achieve the organization's goals and those of its employees.
4. Measuring and evaluating the performance and achievement of the institution's departments, divisions, and various employees to achieve the purposes of the institution.
5. Evaluating the competitive position of the institution and working with the rest of the other departments to maintain a good competitive position for the enterprise in the long run.

The Main Functions of The Management Accountant

The management accountant in the organization performs the following tasks:

1. Collecting information related to the various functions and administrative levels in the organization.
2. Analyzing information, including tabulating and classifying information into consistent groups.
3. Evaluating the information, determining the appropriate and inappropriate ones, excluding the latter and arranging the former according to the degree of their importance to management.
4. Displaying information in the form of reports in a way that helps management to make decisions. (Abdel Moneim, 2017, 21)

The scope of management accounting encompasses the economic sector, focus, quantitative measurement, and time span. Its general objective is to generate value for stakeholders by rationalizing the decision-making process. Regarding the economic sector, the private sector uses a narrow management accounting system that is limited to industrial activity. However, the scope of management accounting has expanded to include all activities, whether industrial, service or environmental, in both the private and government sectors. On one hand, management accounting systems can be narrow or wide in scope. Narrow systems provide information about short-term operational decisions within the facility, while wide systems provide information about all operational and strategic activities both inside and outside the facility. This is because the ever-changing economic environment affects the information needs of managers. The development of management accounting systems that focus on modern financial and non-financial methods is crucial. This approach showcases competence and expertise in the field of management accounting, and acknowledges the importance of incorporating both traditional and modern methods to achieve optimal results. While the narrow-band system only reflects traditional financial information, the large-scale system includes both traditional financial data and modern non-financial data, as well as cost or financial accounts (such as discounted cash flows, economic value added, and activity-based costing). It is worth noting that the large-scale system reflects the time span. (zamil and mohmed 2021, 16).

In order to continue to add value to the facility and a successful career, the management accountant needs to be armed with new knowledge, skills and abilities to be able to adapt, and respond to changing and emerging technology. Complete with the decision-making function at all administrative levels in the facility, i.e. the management accountant fully participates in the decision-making process, especially in the field of strategic planning (Zamil, 1992, 12).

The role of the management accountant is summarized as follows: (bashikh and obid, 2022, 18)

1-Providing the necessary information in a timely manner to take various administrative and investment decisions, and carry out strategic planning operations.

2-Producing appropriate information for the purposes of measuring performance and directing operations, in addition to motivating all managers and employees to direct their efforts towards achieving the company's goals.

3-Provide a basis for cost management by comparing actual results to planned targets It has and standard costs, in addition to evaluating the performance of employees and operational processes in the company

4-Studying the financial and competitive situation of the company and re-evaluating its plans and objectives in the light of its current performance and future vision with the aim of ensuring proactive and preventive management against rapid changes in the external environment.

5-Taking the appropriate strategic steps for the growth of the company and negotiating them in order to expand the scope of traditional management accounting and its contribution to the analysis of the main issues facing the company.

6-Efficient risk management by developing fraud prevention and internal control systems within the company, in addition to cost-benefit analysis and evaluation of the preventive measures used in it

In view of the importance of the role of the management accountant in improving the reputation and credibility of the company and its management, it was necessary to pay attention to his level of job satisfaction. The evolution of the management accountant's role from traditional financial tasks to a broader administrative involvement correlates with higher job satisfaction and lower turnover rates. Research by (Horton,2020, 29-30) indicates that management accountants engaged in administrative support, such as strategic planning and performance management, report greater job satisfaction than their juniors who are less involved in decision-making and direct support of business managers. Further, a study by (Zotorvie et al.,2017, 25) confirms that increased employee involvement, empowerment, and autonomy enhance job satisfaction and commitment. In addition to the level of participation of the management accountant and the quality of the tasks that he must perform, job satisfaction is affected by many other factors, including the realization of

value, quality and achievement in the work environment, which can have an impact on the areas of job performance and job satisfaction, as found by the results of a study (Moyes et al., 2008, 23) showed that value creation played an important role in determining job satisfaction and turnover. Management is also one of the basic necessities for the company's work, which affects the level of satisfaction of the management accountant in it. According to the study (Koh et al., 2017, 27), which was conducted in public accounting firms, the leadership style must be adapted and provide support and motivation for employees to participate and cooperate with them, in order to achieve higher levels of satisfaction. career, creating a positive work environment and raising a sense of belonging and loyalty to the company. (bashikh and obid, 2022, 16)

1.6 2.2 MANAGEMENT ACCOUNTING TOOLS

This section of this paper will delve into an array of management accounting tools that are pivotal in facilitating decision-making processes and enhancing operational efficiencies within organizations. These tools encompass both traditional and contemporary methodologies that are essential for detailed financial analysis, strategic planning, and effective cost management. The discussion will cover various techniques ranging from budgetary control and variance analysis to more advanced practices such as activity-based costing and the balanced scorecard. By examining each tool's application and impact, this paper aims to provide a thorough exploration of their contributions to organizational success and decision-making precision. This exploration is intended to offer insights into the effective implementation and strategic benefits of these management accounting tools in contemporary business environments.

- **Financial statement and ratio analysis**

Financial statement and ratio analysis is an indispensable tool in management accounting, providing a robust framework for evaluating the financial health and operational performance of an organization. Through the systematic examination of financial statements, including the balance sheet, income statement, and cash flow statement, managers are equipped with critical insights into the organization's financial status. This analysis aids in assessing aspects such as

profitability, liquidity, and solvency (White et al., 2003, 58). Ratio analysis extends this evaluation by quantifying financial outcomes into key performance indicators, such as the current ratio, return on equity, debt-to-equity ratio, and gross margin. These ratios transform complex financial data into understandable metrics, enabling managers to benchmark their performance against industry standards, identify trends, diagnose underlying issues, and track operational efficiency over time (Higgins, 2012, 41). Moreover, the strategic application of financial statement and ratio analysis aids in decision-making processes, supports strategic planning, and facilitates risk management by providing a data-driven foundation for forecasting and budgeting (Penman, 2010). Organizations that effectively utilize this tool can optimize their financial performance, enhance competitiveness, and strategically position themselves for sustainable growth.

- **Budgetary control and budgeting**

Budgetary control and budgeting are central elements in management accounting, serving as critical tools for guiding and monitoring organizational performance. The budgeting process involves the formulation of detailed financial plans that outline the expected revenues and expenditures for a future period, providing a financial framework within which the organization operates (Horngren et al., 2015, 423). Budgetary control complements this process by continuously comparing actual financial outcomes with these predetermined budgets to identify variances, which managers analyze to make informed adjustments in operational tactics and strategy (Drury, 2018, 347).

This integrative approach not only facilitates disciplined spending and financial consistency but also aligns individual and departmental objectives with broader corporate goals. The dynamic nature of budgetary control allows organizations to respond proactively to changing economic conditions, market dynamics, and internal business needs. Effective implementation of budgeting and budgetary control significantly enhances decision-making capabilities, supports strategic planning, and contributes to overall financial stability and growth (Bhimani et al., 2020, 191).

- **Standard costing and variance analysis**

Standard costing and variance analysis are vital tools in management accounting, facilitating cost control and performance evaluation. Standard costing involves setting predetermined costs for products or services, which serve as benchmarks for measuring actual performance (Drury, 2018, 305). This method simplifies cost control by establishing expected cost norms, which help in budgeting and pricing strategies. Variance analysis complements this by examining the deviations between actual costs and standard costs. These variances are analyzed to understand the reasons behind them—whether they arise from differences in price, efficiency, or volume (Hansen et al., 2009, 450).

The strategic use of standard costing and variance analysis allows managers to identify areas of inefficiency, providing actionable insights that can lead to cost reductions and improved operational performance. By highlighting favorable and unfavorable variances, managers can make informed decisions to optimize resource usage and adjust production processes (Horngren et al., 2015, 889). Consequently, these tools not only support managerial decision-making but also enhance the organization's overall financial health.

- **Cost-benefit analysis**

Cost-benefit analysis (CBA) is a systematic approach used in management accounting to evaluate the financial impacts of business decisions. This method quantifies and compares the expected benefits and costs associated with a project or investment, facilitating informed decision-making (Drury, 2018, 312). By assigning monetary values to the potential outcomes—both positive and negative—CBA provides a clear basis for assessing the viability and economic value of various options. This enables organizations to prioritize projects based on their potential to enhance profitability and strategic alignment (Bhimani et al., 2020, 210).

The process involves detailed enumeration and valuation of all costs and benefits over the life of a project, including direct, indirect, and intangible items. The resulting data help managers to not only justify investments but also to optimize resource allocation and mitigate financial risks. Furthermore, cost-benefit

analysis supports transparency and accountability by providing a robust framework for evaluating the economic rationale behind decisions (Horngren et al., 2015, 930). Through effective application, CBA enhances strategic planning and promotes efficiency within organizations.

- **Relevant costing**

Relevant costing is a crucial management accounting tool specifically used in decision-making processes. This approach focuses on the costs that are relevant and directly attributable to a specific management decision, disregarding any sunk costs or costs that do not vary with the decision at hand (Drury, 2018, 321). Relevant costing aids managers in evaluating alternative options, such as pricing decisions, product mix selections, and make-or-buy decisions, by providing a clear financial picture of the incremental costs and benefits associated with each option (Horngren et al., 2015, 872).

The core principle behind relevant costing is its emphasis on future costs and revenues that are expected to change as a result of the decision. This method enhances decision-making efficiency by streamlining the analysis to only those elements that are essential for a specific decision context (Bhimani et al., 2020, 230). Consequently, relevant costing serves as a powerful tool for optimizing business strategies, improving resource allocation, and increasing overall organizational effectiveness.

- **Relevant cost control and cost**

Relevant cost control and cost management are essential tools in management accounting, designed to enhance organizational efficiency and effectiveness. Relevant cost control focuses on monitoring and managing costs that are pertinent to specific decision-making scenarios, ensuring that only costs that affect decisions are considered (Drury, 2018, 298). This approach helps organizations avoid spending on unnecessary or non-incremental costs, thus optimizing resource allocation. Cost management complements this by providing a broader framework for cost reduction and efficient use of resources across all areas of the business (Horngren et al., 2015, 930).

Together, these tools assist managers in identifying cost-saving opportunities, implementing strategic cost practices, and maintaining competitiveness in changing market conditions. Effective cost management strategies ensure that firms maintain control over their finances, focusing on areas that contribute directly to their strategic goals and bottom line (Bhimani et al., 2020, 221). By prioritizing relevant costs and continuously managing them, companies can improve their operational and financial performance, ultimately leading to sustained business success.

- **Statistical analysis**

Statistical analysis in management accounting plays a crucial role in enhancing decision-making and operational efficiency. By applying statistical methods to financial data, managers can uncover patterns, predict trends, and derive meaningful insights that inform strategic planning and performance improvement initiatives (Horngren et al., 2015, 948). Techniques such as regression analysis, hypothesis testing, and variance analysis are used to analyze cost behavior, demand forecasting, and revenue management, providing a quantitative basis for complex decision-making processes (Bhimani et al., 2020, 254).

The integration of statistical tools allows organizations to move beyond traditional descriptive analytics to more predictive and prescriptive analytics, facilitating deeper understanding of business dynamics and enhanced predictive capabilities (Drury, 2018, 589). This approach not only helps in identifying cost drivers and assessing risk but also in optimizing resource allocation and improving financial performance through data-driven strategies.

- **Productivity analysis**

Productivity analysis is a pivotal management accounting tool that measures the efficiency and effectiveness of resource utilization within an organization. It involves the assessment of the output produced relative to the input used, often examining factors such as labor, materials, and capital. By quantifying productivity levels, managers are equipped to make informed decisions about operational

improvements, cost management, and strategic planning (Drury, 2018,512). This analysis helps organizations identify areas where productivity can be enhanced, contributing to improved profitability and competitive advantage (Horngren et al., 2015, 630).

Moreover, productivity analysis supports continuous improvement initiatives by providing a baseline for measuring the impact of changes in production processes and techniques. It also plays a crucial role in motivating staff and aligning the workforce with corporate goals through transparent performance metrics (Bhimani et al., 2020,290). Ultimately, productivity analysis fosters a culture of efficiency that drives cost savings and enhances value creation across the organization.

- **Total Quality Management**

Total Quality Management (TQM) is a comprehensive and structured approach to organizational management that seeks to improve the quality of products and services through ongoing refinements in response to continuous feedback. As a management accounting tool, TQM integrates financial measurement with quality performance metrics to provide a holistic view of organizational efficiency and effectiveness (Horngren et al., 2015, 870). This approach emphasizes the importance of customer satisfaction and aims to reduce costs associated with poor quality through preventive measures and continuous improvement processes (Bhimani et al., 2020, 312).

By fostering an organizational culture that promotes quality in every aspect of processes and products, TQM helps firms not only to meet specific standards but also to exceed customer expectations, thereby enhancing competitive advantage. Furthermore, TQM involves all employees in the quality improvement process, making it a cross-functional endeavor that contributes to increased employee engagement and productivity (Drury, 2018, 658). This systematic approach to quality ensures that firms are operationally efficient and aligned with their strategic objectives.

- **Strategic Management Accounting**

Strategic Management Accounting (SMA) is a dynamic subset of management accounting that focuses on providing management with financial and non-financial information to support strategic decision-making processes. SMA extends traditional management accounting beyond operational measures to include information that is strategically relevant, such as competitor analysis, industry trends, and market conditions (Drury, 2018, 711). This approach assists managers in crafting strategic initiatives that align with long-term organizational goals and enhance competitive advantage (Bhimani et al., 2020, 325).

The effectiveness of SMA lies in its ability to integrate financial data with strategic business insights, facilitating a deeper understanding of market dynamics and enabling proactive management of future potentials and risks (Horngren et al., 2015, 890). By focusing on the strategic aspects of business, SMA helps firms adapt to changing environments, innovate, and maintain sustainability in their business models. It effectively bridges the gap between financial management and strategic planning, ensuring that financial decisions are made with a broad, strategic perspective.

- **Activity-Based Costing**

Activity-Based Costing (ABC) is a refined methodology for allocating costs to products and services, based on the activities that drive costs or consume resources. Unlike traditional costing methods, ABC provides a more accurate and detailed measure of product and service costs by analyzing the relationships between costs, activities, and outputs. This approach enhances cost transparency and helps organizations pinpoint cost-saving opportunities by identifying non-value-added activities (Drury, 2018, 321). As a management accounting tool, ABC is particularly useful in complex environments where product lines are diverse and overhead costs are significant (Horngren et al., 2015, 166).

Implementing ABC allows firms to make better pricing, outsourcing, and process improvement decisions by providing a clearer picture of the cost behaviors associated with specific activities. Additionally, it supports strategic planning by aligning activities with corporate strategies, focusing on customer value and

competitive differentiation (Bhimani et al., 2020, 211). Overall, ABC facilitates a deeper understanding of how organizational processes affect costs and profitability, leading to more informed decision-making and improved financial performance.

- **Benchmarking**

Benchmarking is a management accounting tool that involves comparing business processes and performance metrics to industry bests or best practices from other companies. By identifying areas where gap exists between a company's performance and the industry leaders or innovators, benchmarking provides a target for improvements and strategic insights for gaining competitive advantage (Drury, 2018, 192). This process often encompasses several dimensions, including time, cost, and quality, driving organizations toward the refinement of their operations and services (Horngren et al., 2015, 583).

The strategic utilization of benchmarking enables companies to understand the industry standards and to develop plans to meet or exceed these standards, thereby enhancing customer satisfaction and business performance. It not only helps in setting goals and expectations but also in deploying efficient practices that significantly reduce operational inefficiencies (Bhimani et al., 2020, 290). Benchmarking can lead to substantial improvements in various areas such as cost control, product development, and customer service by fostering a culture of continuous learning and adaptation.

- **Economic Value Added**

Economic Value Added (EVA) is a performance metric based on the notion that true business profitability occurs when additional wealth is created for shareholders, and costs of capital are surpassed. EVA is calculated by subtracting a company's cost of capital from its net operating profit after taxes (NOPAT), thereby offering a clear picture of the value created beyond the required return on investment (Drury, 2018, 712). As a management accounting tool, EVA assists in measuring the financial performance by considering not just operational results but also the capital employed to achieve those results, thereby aligning managerial decisions with shareholder value (Horngren et al., 2015, 578).

Implementing EVA can drive organizational focus towards value creation, as it prompts managers to consider both revenues and the capital costs associated with generating those revenues. It is used as a comprehensive performance indicator to assess if managerial actions are adding to the market value of the company, encouraging decisions that enhance profitability while judiciously managing resources (Bhimani et al., 2020, 325). Therefore, EVA is not merely an accounting measure but a central tool for strategic decision-making, capital budgeting, and operational management, fostering a financial discipline that aligns with corporate strategy.

- **The Balanced Scorecard**

The Balanced Scorecard (BSC) is an influential management accounting tool that provides a comprehensive framework for tracking organizational performance against strategic goals. Developed by Kaplan and Norton, the BSC incorporates both financial and non-financial performance indicators, thus presenting a balanced view of organizational performance across four key perspectives: financial, customer, internal business processes, and learning and growth (Kaplan & Norton, 1996, 75). This multidimensional approach facilitates an integrated assessment of performance, enabling companies to translate strategic objectives into operational actions (Drury, 2018, 629). By using the Balanced Scorecard, organizations can monitor short-term financial results while simultaneously tracking progress in building the capabilities and acquiring the intangible assets they need for future growth. Such an approach helps managers to not only focus on achieving financial outcomes but also on fostering the drivers of future success, thereby aligning investment in people, technology, and innovation with the financial goals of the business (Horngren et al., 2015, 345). The BSC thus serves as a vital tool for linking performance measurement to strategic management, which in turn encourages continuous improvement and value creation across all aspects of the organization.

- **Business planning**

Business planning is a fundamental management accounting tool that involves the detailed formulation of a company's short-term and long-term strategies. This planning process enables organizations to articulate their vision, set achievable objectives, and develop actionable strategies to achieve these goals. It encompasses a variety of financial and operational aspects, including budgeting, forecasting, and resource allocation, which are critical for guiding corporate decisions and managing future uncertainties (Drury, 2018, 15). Through effective business planning, management can anticipate future financial needs, assess potential risks, and evaluate strategic alternatives (Horngren et al., 2015, 920).

The practical implementation of business planning not only aligns with strategic objectives but also ensures operational efficiency and financial stability. It helps managers to make informed decisions by providing a framework that links financial data with competitive strategies. Furthermore, this tool promotes organizational alignment and communication, ensuring that all levels of the organization understand and contribute towards the strategic goals (Bhimani et al., 2020, 195). Thus, business planning is integral to both the strategic and operational facets of an organization, driving coordinated efforts towards enhanced performance and competitiveness.

- **Business strategy**

Business strategy, as a management accounting tool, is essential for defining the long-term direction of an organization by aligning its financial goals with operational tactics. This strategic approach helps companies to determine their competitive advantage in the market, identify growth opportunities, and allocate resources effectively to maximize shareholder value. Management accountants play a crucial role in this process by providing relevant financial insights and data analysis, supporting strategic decision-making (Drury, 2018, 202). By integrating business strategy with management accounting practices, firms can ensure that their strategic plans are financially viable and are supported by accurate, data-driven forecasts (Horngren et al., 2015, 890).

The formulation of business strategy involves assessing the external market environment as well as internal capabilities, thereby requiring a comprehensive analysis of both financial and non-financial factors. Management accounting tools such as SWOT analysis, PESTEL analysis, and Porter's Five Forces model are often employed to support these assessments, providing a structured way to analyze competition and market dynamics (Bhimani et al., 2020,118). Consequently, business strategy not only guides a company through competitive landscapes but also prepares it to respond swiftly to changes, ensuring sustainability and profitability in the long term.

- **Value Chain Analysis**

Value chain analysis is a strategic management accounting tool that dissects a company's activities to identify areas of value creation and potential competitive advantages. By examining each stage of the production process—from inbound logistics to operations, outbound logistics, marketing, sales, and service—firms can pinpoint where they can reduce costs, optimize efficiency, or enhance product value (Porter, 1985, 39). This analysis helps organizations understand their internal capabilities and how they contribute to customer satisfaction and business profitability.

In management accounting, value chain analysis is used not only to assess and streamline operations but also to align cost management with the creation of customer value. This holistic view of operations and strategy enables companies to make informed decisions that reinforce their competitive position in the market (Drury, 2018, 321). It allows managers to focus on those activities that are crucial to delivering a competitive advantage, thereby ensuring that resources are allocated to maximize strategic benefits (Horngren et al., 2015, 156).

- **Capital budgeting techniques**

Capital budgeting techniques are critical management accounting tools that guide organizations in making investment decisions with long-term implications. These techniques assess the viability and profitability of projects or investments by considering the potential returns and associated risks. Common methods include

Net Present Value (NPV), Internal Rate of Return (IRR), Payback Period, and Profitability Index, each providing unique insights into the financial benefits of proposed investments (Drury, 2018, 375). For instance, NPV calculates the difference between the present value of cash inflows and outflows, offering a dollar amount expected to be gained or lost from the investment, which helps in making direct comparisons between multiple projects (Horngren et al., 2015, 486).

These capital budgeting techniques play a pivotal role in strategic planning by ensuring that the capital invested will yield the maximum return possible under given economic conditions. By rigorously analyzing the cash flows associated with investment opportunities, management accountants provide essential data that help senior management make informed, strategic decisions regarding which projects to pursue. This contributes significantly to a company's long-term financial health and its ability to achieve strategic goals (Bhimani et al., 2020, 210).

- **Target costing**

Target costing is a proactive cost-management tool widely used in management accounting to control the costs of products throughout their life cycles. This approach involves setting a target cost by subtracting a desired profit margin from a competitive market price before the product is designed. The fundamental goal is to ensure that the cost structure allows for achieving profitability while meeting market demands and customer expectations (Horngren et al., 2015, 330). By implementing target costing, companies encourage cross-functional collaboration among development, engineering, and accounting teams to design products that not only meet quality and customer satisfaction standards but also align with cost objectives.

This technique supports strategic decision-making by aligning product development with financial performance goals right from the start, unlike traditional costing methods that tackle costs during or after the development phase. It helps firms maintain competitiveness in industries where prices are driven by market conditions rather than internal cost-plus calculations (Drury, 2018, 219). Target

costing is particularly effective in environments where cost reduction and efficient resource utilization are critical for maintaining profitability and market share.

- **Variable costing**

Variable costing is a management accounting tool that focuses on the costs directly variable with production volume, primarily direct materials, direct labor, and variable manufacturing overhead. This costing method excludes fixed manufacturing overhead from product costs, treating it as a period cost that is expensed in the period it is incurred. This approach provides clear insights into how changes in production levels affect profitability and facilitates more effective decision-making regarding pricing, product design, and profit planning (Horngren et al., 2015, 205).

By implementing variable costing, managers can better analyze the impact of fixed costs on the overall financial performance, which is particularly useful for short-term decision-making scenarios such as determining the minimum price at which a product can be profitably sold. This method enhances the ability of management to make informed decisions by providing data that reflects only the costs that are relevant to production, thereby simplifying the analysis of cost behavior and operational efficiency (Drury, 2018, 180). Variable costing is instrumental in industries where production levels fluctuate significantly, as it allows for a more flexible and dynamic approach to cost management and profitability analysis.

- **Total costing**

Total costing, also known as full costing, is a comprehensive management accounting tool that allocates all costs of production to the product, including both variable and fixed costs. This method encompasses direct materials, direct labor, and both variable and fixed manufacturing overheads, providing a complete picture of the total expense involved in producing an item (Horngren et al., 2015, 189). By incorporating all costs into product pricing, total costing facilitates more accurate profit calculations and financial reporting, ensuring compliance with financial accounting standards.

This approach is particularly beneficial for long-term strategic planning and external reporting purposes. It helps organizations understand the full cost of production, aiding in setting sales prices that cover all incurred costs and ensure sustainable profitability. Additionally, total costing enables businesses to accurately assess their financial health by reporting all costs associated with production, thereby avoiding the underestimation of product costs that can occur with variable costing (Drury, 2018,165). This method is essential for companies in industries with high fixed costs, where overlooking these costs can lead to financial misjudgments.

- **Transfer costing**

Transfer costing, commonly referred to as transfer pricing, is a management accounting tool used to determine the price at which goods and services are transferred between divisions within the same company. This practice is crucial for internal transactions in decentralized organizations, helping to establish prices for inter-departmental sales that reflect fair market value (Horngren et al., 2015, 698). The main objective is to ensure that each division's performance is evaluated fairly, facilitating better strategic and operational decision-making.

By using transfer pricing, companies can optimize their overall tax liabilities by setting transfer prices in a way that allocates profit between different jurisdictions in a tax-efficient manner. It also encourages profit centers to compete effectively and operate efficiently, as it creates a more market-like environment within the company (Drury, 2018, 621). Properly implemented transfer pricing policies promote goal congruence, prevent conflicts among divisions, and align subsidiary performance with corporate objectives. This tool plays a significant role in cost management, resource allocation, and performance evaluation in multinational corporations.

- **Responsibility accounting**

Responsibility accounting is a vital management accounting tool that assigns accountability for financial results and outcomes to individual managers or departments based on their respective areas of control. This approach enables organizations to track financial performance at various levels, ensuring that

managers are accountable only for the costs, revenues, or profits over which they have direct control (Horngren et al., 2015, 512). By aligning the accounting system with the managerial structure of the organization, responsibility accounting facilitates effective decision-making, performance evaluation, and enhances organizational control.

This system supports decentralized decision-making by empowering managers with authority and responsibility for their operations, thereby improving motivation and performance. Additionally, it helps in pinpointing areas of inefficiency and success, allowing for targeted improvements and rewarding successful management practices (Drury, 2018, 390). Responsibility accounting plays a crucial role in planning, budgeting, and performance measurement, making it an indispensable tool for managers aiming to optimize business operations and achieve strategic goals.

- **Customer profitability**

Customer profitability analysis and competitor analysis are critical management accounting tools that aid businesses in understanding market dynamics and internal performance metrics. Customer profitability analysis focuses on calculating the profit margin and net profit each customer or customer segment brings to the company. This insight helps companies tailor their marketing strategies, prioritize customer service efforts, and optimize resource allocation (Horngren et al., 2015, 452). By identifying the most and least profitable customers, businesses can refine their customer base to enhance overall profitability.

Competitor analysis, on the other hand, involves evaluating the strengths and weaknesses of current and potential competitors within the market. This analysis provides crucial strategic data about market trends, competitor strategies, and market positions, enabling companies to develop competitive strategies in pricing, product development, and market positioning (Drury, 2018, 220). Both tools are essential for strategic planning, helping businesses maximize their competitive advantage and profitability by making informed decisions based on comprehensive financial and market analysis.

1.7 2.4 MANAGEMENT ACCOUNTING AND OPERATIONAL RISK MANAGEMENT

Management accounting as a type of accounting faces great challenges at the present time. The rapid and successive changes in the business environment and its sharpness and strength of competition, the increase in conditions of uncertainty and the large number of internal and external threats and risks, especially after the existence of the international information and communication network, are imposed on the management accounting system. To keep pace with these changes and challenges, by providing information that can support and assist the decision organizations to improve their efficiency and maintain their competitiveness, otherwise management accounting loses its value (Al-Beltagy 2016, Abdul Rasid, et al, 2014, 16,22)

Despite what was confirmed by many studies such as (Al-Shishini, 2013; 2011. Abdul Rasid, et al.; White, 2004, 20, 14, 23) on the necessity of widening the scope of management accounting to include risk management through accumulated experiences in the field of internal control and various branches of knowledge for the purpose of managing organizational risks in the enterprise, and the expansion of the role of management accountants to include participation in risk management by contributing to the study of risks associated with achieving results and goals Desirable and contributing to strategic planning risk management. However, the practical reality shows that the current role of management accountants in the risk management process is limited. Executive directors, risk managers, and internal auditors believe that the knowledge, skills, and capabilities of management accountants are not sufficient to play a greater role in risk management (Culasso et al., 2016, 18). Therefore, the importance of developing the management accounting function and increasing the knowledge, skills and competencies of management accountants and expanding the scope of their work to include playing a pivotal role in analyzing, evaluating, managing, reporting and monitoring risks, in order to strengthen the status and importance of the management accounting function in business organizations and add value to them.

The Changing Role of The Management Accountant in Light of The Increasing Risks Facing Business Organizations

The rapid and successive changes in the business environment, arising from the speed of change in information and communication technology, and the openness of global markets as a result of the accession of many countries of the world to the World Trade Organization, led to an increase in the intensity and dynamism of competition, and business organizations facing many challenges and risks in their internal and external environment. This required organizations to make changes in their administrative and accounting systems that are compatible with those changes, and to ensure facing threats and risks and taking advantage of the expected opportunities in the future activity environment (Al-Kashif, 2007, 42-43).

There is no doubt that the changes that have taken place in the business environment have also led to a change in the structure of the management's information needs, which necessitated the need for management accounting, as the most important source of management information, to develop its concepts and tools to keep up with these needs, as it is no longer limited to the traditional role of management accounting sufficient. And appropriate to the current business environment, and to meet the needs and requirements of management and various stakeholders, which expanded the role and field of management accounting towards adding value to business organizations, and playing an active role in evaluating and improving risk management processes.

In confirmation of this, the Institute of Management Accountants introduced in 2008 a new definition of management accounting, defining it as “a profession involving partnership in managerial decision-making, setting planning and performance management systems, and providing expertise in the field of financial reporting and control to assist management in formulating and implementing the organization’s strategy.” (2008).

In view of this definition, we find that he has focused on the importance of the management accountant’s job in recent years, as the management accountant can play a vital role in adding value to the organization through participating effectively in

administrative decision-making, setting up planning systems and performance management. It also focused on three important components, namely:

- assisting in the formulation and implementation of the organization's strategy to help it succeed and add value.
- the work of the management accountant within the management team (senior management and decision makers).
- the necessity of having a set of skills, knowledge and competencies among management accountants that qualify them to work within the management team.

It can be said that, in light of globalization and technological development, and the consequent significant change in the nature of business and the increase in risks, the task of the management accountant is no longer limited to providing the necessary information to help the management to make various decisions, but has become part of the integrated management team that seeks to add More value to business organizations through effective participation in planning, control and strategic and operational decision-making, which led to an improvement in the quality of information provided by management accounting. In the same context, studies showed that the role of the management accountant has changed from the traditional role that focuses on analyzing historical financial information and presenting it to senior management to help it evaluate performance and make decisions, to the role of a business partner who plays an influential role. By participating in administrative decision-making, coordinating between senior management and the executive authorities within the organization, and providing information related to the implementation of the strategy, as well as future information, by possessing a set of social and problem-solving skills, including the ability to interact, communicate, and provide support to subordinates, colleagues, and superiors. The study also emphasized that there are motives or drivers that led to this change in the role of the managerial accountant, the most important of which are: globalization, decentralization, management accounting innovations, modern information technology, cultural organizational norms, choice. human resource selection preferences, top management expectations, task changes, preferences.

It also documented many accounting studies and reports (for example: CGMA 2014; ACCA 2016; Dahal 2019, Yassin and El Guindy, 2017; Goretzki, et al. 2013; Pietrzak and Wnuk-Pe1,2015), which took place in recent years, and others, the ongoing and continuous shift in the management accounting function, which led to it becoming more oriented towards strategic thinking, and shifting its interest to strategic activities with greater added value. The advanced responsibilities of management accounting now include value creation, with farsightedness and future foresight through intelligence in the use of information, and the work of management accountants as business partners with a strategic direction, which organizations benefit from to obtain competitive advantages in a business environment where risks and competition are increasing rapidly (Zamil, 2019).

Management Accounting in Banking Sector

Management accounting undoubtedly plays a crucial role in the efficient and effective management of institutions and companies, particularly in light of the rapid changes occurring in the modern business environment. Its positive impact on activity performance is undeniable. Due to the impact of globalization on the economic system, cost information systems and management accounting have evolved beyond the mere measurement and analysis of costs. They now encompass a deeper concept of cost management through the use of various subsystems or accounting methods. This is crucial in meeting present and future challenges. This is because of its impact on meeting current and future challenges, as well as its role as a modern management tool that assists in planning and controlling costs throughout the life cycle of a product or service. This contributes to achieving the objectives required to face the competition that companies and institutions currently encounter.

Due to the impact of globalization on the economic system, cost information systems and management accounting have evolved beyond the mere measurement and analysis of costs. They now encompass a deeper concept of cost management through the use of various subsystems or accounting methods. This is crucial in meeting present and future challenges. This is because of its impact on meeting current and future challenges, as well as its ability to assist management in cost planning and control throughout the product

or service's life cycle. This aids in achieving the necessary objectives to compete with other companies and institutions.

Furthermore, the outdated performance systems and standards of traditional management accounting fail to offer a comprehensive overview of the organizational performance of such companies. This is because they lack the ability to provide performance indicators and measures that enable modern companies to evaluate their internal and external performance. As a result, modern management accounting methods are necessary.

The institution must find appropriate ways to maintain its efficient administrative structure in order to implement advanced strategies, as establishing and maintaining a competitive advantage often depends more on the relationship between the institution's capabilities and skills than on the individual performance of each one (Abu Muhsin, 2009, 14-15).

The International Federation of Accountants (1989) defined management accounting as "the process of identifying, measuring, accumulating, analyzing, preparing, interpreting and communicating information (whether financial or operational) that is used by management for planning, evaluating and controlling within an organization and for ensuring the use of its resources and accountability for it" in IFAC (1998). Conventional definition of the subject provided by the International Federation of Accountants in 1989. The International Federation of Accountants (IFAC) issued the revised International Management Accounting Practice (IFAC, 1998) just nine years later, when the scope had been significantly broadened. from any business. In a dynamic and competitive environment, management accounting is the part of the management process that focuses on adding value to organizations through the effective use of human resources.

IFAC (2002) defines management accounting practice (MAP) as the set of interrelated perspectives, orientations to action, uses in the management process, work technologies employed, and functional arrangements used in the management process of

organizations to ensure ongoing value creation through the efficient and effective use of resources.

Various explanations for the use and results of management accounting in organizations have been proposed in the literature. Adopting an institutional theory approach, MAP is viewed as a set of institutionalized routines that establish an understanding of organizational activities through accounting policies and procedures (Scapens, 1994, 150). Management accounting is a common practice in many organizations, involving tasks such as budget preparation, performance monitoring, and report production. (Burns, 2000, 55) analyzed accounting changes from the perspective of old institutional economics, suggesting that accounting is an 'institution' that is comprehensible to a particular social group.

Burns and Scapens use the concepts of habits, routines and institutions to illustrate how MAP can become habitual and institutionalized. As the environmental conditions of organizations change, new accounting techniques and processes are introduced into the system. These policies and processes are modified and updated to meet the demands of the new environment. They eventually become part of the organization's activities as a result of the institutionalization process (Scapens, 1994, 160-161).

According to institutional theory, users of management accounting information may refer to it when managing their assigned operational activities. Over time, this information may become institutionalized in the organization and become part of its culture. Therefore, the types of MAPs used may facilitate the implementation of management initiatives, such as service quality initiatives.

Furthermore, the institutional theory approach implies that the institutionalized MAP is shaped by and influences other institutions in the organizational environment. These may include business plans, organizational policies, reporting, and performance monitoring and budget development through well-defined rules or procedures. The adoption of MAPs can have an impact on the effectiveness of quality procedures. In this context, Macintosh and (Scapens ,1990, 98) claim that MAPs provide an interpretive

paradigm for making sense of organizational actions. The authors used (Giddens'1984, 67) idea of social structures and saw MAP as a mechanism capable of generating action.

According to (Giddens, 1984, 98), social structures generate human behaviors that occur in particular time-space situations and are always associated with particular issues. These generative structures typically have three structural properties:

- (1) the structure of meaning, which provides general interpretative schemes for people to interpret events and attach meaning to actions, thus supporting communication within organizations;
- (2) the structure of legitimation, which provides norms to sanction certain forms of behaviors;
- (3) the structure of dominance, which provides ways for management to exercise power.

Understanding the assumptions behind these structural qualities is critical in setting expectations about the possible function of MAP in supporting corporate strategies such as quality management systems.

The contingency hypothesis can also be used to explain the use of MAP. The contingency theory of organizations suggests that the relationship between an organization's characteristics and its performance is dependent on particular situational circumstances. According to this view, management accounting methods and systems cannot be applied universally, and management accounting procedures and information systems must be designed to serve the strategic objectives of organizations (Johnson and Kaplan, 1987, 30; Shank and Govindarajan, 1993, 24). More specifically, the implementation of management control systems and the use of MAPs must successfully complement the organization's business plan (Otley, 1992, 33). A good fit between an organization's environment, strategy, structures and systems can lead to excellent organizational performance (Govindarajan, 1988, 29).

The literature has used the resource-based perspective of the organization (Barney et al., 2001, 25) to explain how management accounting systems impact organizational

capacities. According to this viewpoint, organizations are collections of resources, and those seeking a competitive edge must identify and use resources that are valuable, scarce, distinctive, and non-substitutable. Organizational capabilities are acquired or developed through various methods (Day, 1994, 42). Management accounting systems, including both diagnostic and interactive systems, can effectively strengthen these competencies (Bisbe and Otley, 2004, 36). The use of performance measurement tools for these two reasons would, according to (Simons, 1995, 86) levers of control theory, enable positive growth by creating a tension between predictable target achievement and creativity.

Commercial banks and competitive financial organizations are continually evolving. (Koch et al., 2006, 25) corroborate this claim by pointing out that savings and loan associations, brokerage firms, insurance companies, and investment banks provide goods and services that were formerly associated with commercial banks. Commercial banks, in turn, provide insurance, real estate, and investment banking services that they were previously refused. According to (Saunders et al, 2008, 42), the distinctions between these institutions are being reduced by competitive factors, deregulation (loosening of laws controlling the banking industry), and evolving financial and commercial technology. As a result, in order to stay competitive, a company should identify the items in which it has a market advantage and deliver customer services that set it apart from its competitors. Furthermore, (Carenys et al., 2008, 28) observe that deregulation, which has long been the norm in the financial sector, has allowed the arrival of new rivals. The study argue that deregulation has allowed financial firms more leeway in terms of pricing and product mix. The study observes that enterprises in the banking industry have seen the departure of the protectionist environment of controlled prices and the emergence of new rivals, while also facing dangers and possibilities. To stay appealing to consumers, an organization's management must have a thorough understanding of its markets, customers, and goods, as well as the motivation to seek out new competitive advantages. In order to remain competitive in their business and maximize profits, bank management, in collaboration with the management accounting division, must utilize competitive bank management abilities. (Koch et al 2006, 41) have identified critical bank management concerns that may

boost competitiveness. Adapting to a changing banking environment; reviewing bank performance and establishing profitability and risks; managing interest rate risks; controlling the cost of funds, bank capital, and liquidity; managing credit issued to clients; and managing the investment portfolio are all examples of these. These concerns will now be addressed one by one.

The International Federation of Accountants (IFAC, 1998) provides a definition of management accounting, describing it as the process of identifying, measuring, accumulating, analyzing, preparing, interpreting, and communicating information (both financial and operational) for use in planning, controlling, and effectively utilizing resources by management. Over the years, the focus of management accounting has transitioned from its primary role of cost determination and financial control towards creating value through the efficient use of resources (Abdel-Kader and Luther, 2008; Suzana et al. 2005).

The IFAC (1998) framework identifies four distinct stages in the evolution of management accounting. Before 1950, the majority of companies concentrated on cost determination and financial control. The predominant data sources were financial records, including income statements, balance sheets, and cash flow statements. The application of ratio analysis, financial statement analysis, and budgeting has gained popularity as management accounting information is expressed in quantitative and financial terminology. There was an increased focus on internal operations, specifically production capacity (Abdelkader and Luther, 2008, 4). During the second phase of development (1950-1965), the emphasis shifted to offering information for administrative planning and control. In this phase, accounting and management accounting methods were introduced to support decision analysis, such as marginal costing, standard costing, cost-volume-profit (CVP) analysis, break-even analysis and transfer pricing. However, "administrative controls were focused on internal management and manufacturing instead of environmental and strategic considerations" (Abdelkader and Luther, 2008: 4). Therefore, the practice of management accounting remained centered on the manufacturing sector, with control activities being more reactive than proactive.

CHAPTER 3: RESEARCH METHODOLOGY AND FINDINGS

This chapter serves as a critical juncture in this dissertation, detailing the comprehensive framework and procedures employed in the investigation. This chapter begins by elucidating the research process and design, followed by an extensive review of the relevant literature, which sets the academic context for the inquiry. It further articulates the purpose and scope of the research, underscoring its significance and potential contribution to the field. The methodological approach adopted is systematically described, paving the way for a clear exposition of the research question and the hypothesis under examination. The chapter culminates in the presentation of the findings, which are pivotal not only for validating the research hypothesis but also for enhancing the scholarly understanding of the topic.

3.1 Research Processes and Design

Utilizing predominantly quantitative methods, the study focused on the examination of the role of management accounting practices in operational risk management within commercial banks in northern Iraq. The decision to employ quantitative data aimed to bolster the generalizability of findings, adhering to standardized procedures in sample selection. This standardization, in turn, served to enhance the reliability of findings and mitigate the impact of investigator and subject biases. The research objectives were framed in consideration of the research problem and questions, emphasizing a systematic and rigorous approach to contribute to a scholarly understanding of the subject matter.

1.8 3.2 LITERATURE REVIEW

This section presents a systematic examination of the existing empirical research in the fields of management accounting, risk management, and specifically, their convergence in operational risk management. The aim is to delineate the current state of knowledge, identify patterns, and highlight gaps within these interrelated areas of study, thereby setting a foundation for further research. Through a detailed analysis of these areas, this section seeks to contribute to a holistic understanding of how enhanced accounting practices can not only support but also drive effective risk management frameworks. By critically reviewing existing literature and synthesizing diverse findings, this chapter will illuminate

potential trajectories for future research and practice in these critical fields of business management.

Empirical Studies on Management Accounting

In exploring the dynamic role of management accounting within various business environments, recent research highlights how these practices are pivotal in enhancing organizational performance, managing risk, and improving service quality across different sectors. This review will delve into several empirical studies that collectively underscore the evolution and application of management accounting techniques. From focusing on the healthcare sector in Malaysian health tourism to risk management in financial institutions, and the influence of modern technology such as Enterprise Resource Planning (ERP) systems on accounting practices, each study contributes unique insights into how management accounting practices are integral to strategic decision-making and operational efficacy. Such an analysis not only sheds light on current practices but also proposes forward-looking approaches that aim to refine and expand the role of management accounting in contemporary business contexts.

Theorising Management Accounting Practices and Service Quality: The Case of Malaysian Health Tourism Hospital Destinations by Woan. (2017)

This research provides valuable insights into the relationship between management accounting and service quality management in enhancing the performance of destination hospitals that consider quality initiatives a strategic priority. The findings suggest that effective management accounting practices can significantly contribute to the improvement of service quality in destination hospitals. The study highlights the pivotal role of management accounting practices in managing various aspects of service quality in the healthcare sector. Building upon Anthony Giddens' (1984) theory of social structure, this study offers a fresh perspective on the institutional approach to investigating the function of management accounting in healthcare contexts. The research maintains grammatical precision and adheres to established academic norms in structure, formatting, and language use, striving for clarity, brevity, and impartiality in its discourse.

The study examines common management accounting practices and assesses their effect on enhancing service quality. It highlights the significance of clear and impartial communication, establishing logical connections between ideas, and avoiding any form of bias. This research provides empirical evidence on how management accounting practices, influenced by varying social structures, support quality and performance enhancement efforts within hospitals.

Additionally, the research emphasizes that management accounting practices play a crucial role in successfully implementing quality initiatives. These practices enable important functions such as communication, exercising power, and establishing norms to regulate behavior, all of which are essential for enhancing management processes and analytical evaluations. The study indicates that destination hospitals could benefit greatly from implementing these accounting practices. This includes not only basic techniques but also more advanced methods to fully achieve the potential of quality initiatives.

Management Accounting and Risk Management Practices in Financial Institutions by Rasid and Rahman (2009)

The aim of this research was to evaluate the management accounting and risk management practices of 72 financial institutions in Malaysia. The focus was on the adoption levels of various practices and their effectiveness in managing operational risks. The results showed that the most widely adopted practices were those categorized as stage 1 under the IFAC's (1998) framework, indicating a preference for established management accounting methods. This was followed by practices developed post-1995. Regarding risk management, many institutions have implemented an Enterprise Risk Management (ERM) framework, either in full or in part. This is mainly due to regulatory pressures for improved risk management systems.

The study shows that established management accounting practices are highly effective in managing operational risks. These practices aid in identifying, analyzing, and communicating management information, which is crucial for planning, control, decision-making, and embedding risk management across the organization. This has two important

implications. Firstly, financial data continues to play a dominant role in decision-making processes despite the usage of external, future, and non-financial information. Secondly, it highlights the complementary nature of management accounting and risk management as essential tools in enhancing corporate performance management systems within financial institutions.

The study suggests that the Central Bank should encourage the implementation of advanced management accounting systems and ERM as strategic measures to ensure compliance with regulations and gain a competitive advantage. However, the study has limitations, including its cross-sectional design, which captures data at a single point in time, and its reliance on top management for data, which may not fully represent the broader organizational perspective. Furthermore, the limited scope of this study to Malaysian financial institutions restricts its applicability to other industries or countries. The research solely focuses on the current state of practices and perceptions regarding their effectiveness. Future studies could explore the correlation between management accounting practices and ERM implementation, as well as their combined impact on performance.

Evaluating The Use of Risk Management in Modern Management Accounting in Order to Manage the Cost of The Value Chain by Hubaishi, (2020)

This study surveys the emerging trend in managerial accounting for the management of operational risks in industrial firms. This includes identifying internal and external value chain risks, employing modern management accounting techniques to manage the costs of those risks, and recognizing the crucial role of management accountants in assessing and revealing operational risks. Participation in the efficient and effective decision-making process, alongside conducting an applied study on the textile sector in Egypt, is essential to determine the significance of modern management accounting methods in the risk management process. Additionally, it is crucial to examine the role of the risk management process in managing the cost of the value chain. Technical term abbreviations must be explained when they are first used to ensure comprehension. The use of objective, value-neutral language with consistent technical terms and passive tone is recommended to maintain objectivity. Conventional structure must be followed,

including common academic sections, and titles should be factual and unambiguous. A balanced approach should be taken to avoid bias. Grammatical correctness should be adhered to, and the text should be free from spelling and punctuation errors. The study noted that modern management accounting methods underpin the risk management process with an emphasis on efficient and effective value chain cost management. The process necessitates the involvement of management accountants in evaluating, quantifying and disclosing risks, as well as making informed decisions with stakeholders. Modern administrative practices in accounting encompass the use of risk management to achieve cost management objectives and optimal utilization of available industrial resources. Attention to risk culture is vital and should be embedded within industrial objectives, including prompt response and increased awareness among management, workers and relevant stakeholders. Ultimately, these actions form the basis of a clear and specific risk management process. The conducted study highlights the significance of risk management in cost management of the value chain. Furthermore, it emphasizes the importance of modern management accounting techniques in efficiently and effectively managing risks for industrial businesses. The study successfully outlines the importance of integrating risk management into the overall management strategy of industrial companies. One operational risk is accepting all the studied groups, despite their differences. degree of this being achieved according to the job level and field of work.

Capability Of Applying Modern Principles of Administrative Accounting at National Banks in The Gaza Strip: An Analytic Applied Study by Mohsen and Muhammad, (2009)

This study aimed to examine the potential application of modern accounting management methods in National banks within the Gaza Strip. The study utilized a descriptive analytical approach. To attain the study objectives, a questionnaire was devised and disseminated among the participating banks. There are seven national banks operating within the Gaza Strip and 45 questionnaires were administered, of which 38 were recovered, resulting in an 84.45% response rate. Descriptive analysis, Sign test, Mann-Whitney test, and Kruskal-Wallis test were employed. The study yielded a set of findings,

with the most significant being: Firstly, Palestinian banks operating in the Gaza Strip possess modern information systems and internal expertise that allow them to effectively utilize management accounting methods. This serves as a positive indication of a strong application infrastructure. Secondly, national banks operating in the Gaza Strip acknowledge the importance of hard work and taking serious measures towards enhancing financial performance through the application of modern management accounting methods. The operational financial information flow for cost systems stems from activities-based costing (ABC). The ABC serves as a database for the continuous development and improvement of services, with the goal of achieving the Balanced Scorecard (BSC) and Activity-Based Budgeting (ABB) system. These results are intended to enhance returns through optimal resource investment, ensuring the bank operates actively in a competitive environment.

The study produced several recommendations, with the two most significant being: firstly, managers in national banks must raise awareness concerning modern management accounting methods and their crucial role in providing relevant information for decision-making and planning. Secondly, there is a necessity to recruit qualified and technically proficient personnel capable of handling modern management accounting methods in an efficient and effective manner, and to be active within banks. Third: Enhancing the organizational structure of banks and defining powers and responsibilities in accordance with modern management accounting methods. Fourth: The need to conduct training courses for staff of national banks operating in the Gaza Strip, particularly for officials and senior management, on accounting methods in general and modern management accounting methods in particular. The courses will outline the benefits of these methods and their implementation mechanisms.

The Effect of Using Enterprise Resource Planning Systems on Management Accounting Practices By (Bashikh and Obaid, 2022)

This study seeks to investigate the effects of enterprise resource planning (ERP) systems on management accounting practices, particularly the role and satisfaction of management accountants in Saudi Arabian companies. Technical terms will be explained

when first used, and the language will remain impartial and formal, devoid of colloquialisms or ornamental phrasing. To achieve this aim, an analytical descriptive approach was utilized by administering a questionnaire to a random sample of 200 workers in financial, accounting, and management positions in companies that implement ERP systems in Saudi Arabia. Adequate structure, clear progression, and coherent connections between statements will be prioritized. Any biases will be avoided by refraining from using phrases such as 'evidence suggests' or 'results indicate.' Spelling conventions and vocabulary in adherence to British English will be maintained, and grammatical errors, spelling mistakes, and punctuation errors will be corrected. The study has produced several findings, the most significant of which is that the use of enterprise resource planning systems influences the role of management accountants, leading to a decrease in the performance of repetitive duties and an increase in analytical tasks. As a result, management accountants are able to participate more in managerial responsibilities, utilize their individual skills, and ultimately enhance their overall job satisfaction. The sample participants' responses have generally confirmed the impact of enterprise resource planning systems on management accountants. Based on the findings, it is recommended that companies adopt enterprise resource planning systems and improve the systems' support of management accountant role and satisfaction, ensuring compliance with company requirements and objectives to achieve strategic and effective growth.

A Proposal Approach to Develop the Role of Management Accounting in Risk Management in Business Organizations (Mahmoud, 2020)

This study aims to develop strategies to enhance the contribution of management accounting to risk management processes in Egyptian companies. The language used in the paper is neutral, objective, and avoids biased or emotional expressions. The structure is clear, direct, and logical, with a sequential flow of information. Abbreviations and technical jargon are defined upon their initial mention. The research topic's significance is underscored by a descriptive and straightforward title. The document maintains a formal tone and adheres to British English conventions in grammar, spelling, and punctuation.

Effective risk management requires an understanding of various risks and both traditional and contemporary risk management methods, including professional standards and publications. Enterprise Risk Management (ERM) is a beneficial approach that offers a comprehensive perspective on risk and identifies management opportunities. Management accountants are increasingly seen as vital in risk management due to escalating organizational risks. Competencies are essential for supporting ERM. Effective management accounting in risk management relies on specific tools and requirements. A field study involving industrial company management accountants listed on the Egyptian Stock Exchange and accounting professors was conducted to test the hypotheses.

The study shows that management accountants can significantly improve ERM by resolving conflicts between traditional and ERM approaches, educating on ERM, conducting benchmarking for risk identification, gathering best practice information, assisting in evaluating risk mitigation alternatives, and fostering a risk management culture. The study also recommends integrating ERM with Balanced Scorecards and budgeting. Success in risk management through management accounting depends on the support of top management and the board, as well as improved knowledge and skills of managerial accountants. The research suggests the establishment of a management accountant institute in Egypt. It is important for management accounting to have the necessary resources to effectively support ERM. It advocates for listed joint stock companies to have dedicated risk management departments and stresses ongoing management accountant training in risk management.

Empirical Studies on Risk Management

Risk management is a critical area of study that seeks to understand and mitigate the potential downsides in various business sectors. This section will explore a series of empirical studies that examine how risk management practices influence organizational performance across different industries and geographical contexts. The studies encompass a diverse range of environments, from the financial sectors in Ghana and Islamic finance to operational challenges at international airports and firms' overarching strategies. They assess how effectively risk management can contribute to organizational success, with

some focusing on how it serves as a mediator for competitive advantage or is influenced by factors such as financial literacy. By analyzing these studies, we aim to derive a nuanced understanding of how risk management not only protects but also enhances firm value in a complex and rapidly evolving business landscape.

Enterprise Risk Management Practices and Firm Performance, The Mediating Role of Competitive Advantage and The Moderating Role of Financial Literacy By (Yang Et Al, 2018)

This study investigates the mediating effect of competitive advantage on the relationship between enterprise risk management practices and SME performance, as well as the moderating effect of financial literacy between enterprise risk management practices and competitive advantage. Data is collected from 304 SMEs operating in Pakistan's emerging market using a structured questionnaire. Structural Equation Modeling (SEM) in the Analysis of Moments Structures (AMOS) is used to test the proposed hypotheses. The findings suggest that implementing enterprise risk management practices has a considerable influence on attaining competitive advantage and enhancing SME performance. Competitive advantage plays a partially mediating role in the correlation between enterprise risk management practices and SME performance. Moreover, the impact of enterprise risk management practices on competitive advantage is substantially moderated by financial literacy. Companies are recommended to adopt formal enterprise risk management procedures to attain a competitive edge and superior performance. Senior executives must possess sufficient financial knowledge to execute risk management practices effectively, thereby establishing a competitive position in the marketplace.

Impact Of Risk Management on The Performance of Commercial Banks in Ghana: A Panel Regression Approach By (Tamakloe Et Al, 2023)

This study aimed to investigate the impact of risk management on the performance of commercial banks in Ghana. Quantitative research was employed, using secondary data from the annual financial reports of the chosen banks. A purposive sample of seven commercial banks was selected. According to the 2017 Ghana Banking Survey, the seven

commercial banks chosen represented over 50% of Ghana's financial market based on industrial deposits proportion, which was a criterion for their selection. The study results demonstrate that only operational risk, among the four types of risks assessed (i.e., credit risk, operational risk, liquidity risk, and market risk), had a significant impact on bank performance. Operational risk accounted for 99.24% of the variance in bank performance. Additionally, a significant impact on bank performance was observed through total risk management, explaining 74.74% of the variance in bank performance. Given text already adheres to the principles or lacks context: Since operational risk appears to exert far more influence on bank performance in Ghana than any other risk factor, it is recommended that banks, regulators, and policymakers place more emphasis on curbing operational risks when designing their risk management programs, as this particular risk, among all the other risk types examined, seems to be the one that exerts the greatest influence on banking performance.

Developments In Risk Management in Islamic Finance: A Review By (Al Rahahleh, 2019)

This study was an investigation is to examine recent developments in risk management in literature regarding Islamic finance and banking. The research analyses the key aspects of risks linked with Islamic banks when compared to the risks associated with traditional banks to ascertain the degree to which Islamic banks execute efficient risk containment strategies. The study examines key analyses of the core aspects of Islamic finance and banking alongside an examination of the crucial features of risk management in IBs in contrast to conventional banks. Technical terms are defined when used for the first time. The text is written in clear, concise sentences with a logical flow of information. The language is formal, value-neutral and avoids any subjective evaluation. Bias is avoided through the use of hedging. The text is free from grammatical, spelling and punctuation errors. It conducts a comparative analysis of the two banks in relation to the types, characteristics and extent of risk exposure. A comparative literature review approach is combined with a tabular methodology approach to analyses the data. The findings suggest insufficient backing for the development of Shariah-compliant products owing to a lack of

risk management proficiency in Islamic banks. The conclusion drawn is that compared to conventional banks, Islamic banks are more prone to risk due to their product characteristics, contractual arrangements, legal costing, corporate governance practices, and liquidity infrastructure. The study investigates the factors influencing the credit risk of Malaysian Islamic banks. It reveals that the level of bank capital and financing expansion exert a significant negative effect on Islamic banks' credit risk in Malaysia.

Economic And Financial Risk Management For Digital Islamic Finance (Shatnawi and Lataifa, 2023)

The study seeks to examine the management of economic and financial risks in digital Islamic finance. The research question formulated is: Can economic and financial risks in digital Islamic finance be effectively managed? The study is structured into three main sections. The first section provides an introduction to the concept of economic and financial risk management, including the objectives and tasks involved. The subsequent section is focused on... The first section provides an introduction to the concept of economic and financial risk management, including the objectives and tasks involved. The text, which aimed to explore digital Islamic finance, discussed its advantages and risks, particularly in terms of economic and financial management applications. The text, which aimed to explore digital Islamic finance, discussed its advantages and risks, particularly in terms of economic and financial management applications. The third section focused on the latter subject in greater detail, emphasizing the importance of risk management. To accomplish this objective, the study deployed both descriptive and inductive methods, drawing on applicable imagery to enhance clarity and engagement. The study has determined that the concept of digital Islamic financing can be implemented, and the potential hazards of said financing can be controlled.

The Role of Risk Management Programs in Dealing with Risks at International Airports By (Al Baldawi and Hassan, 2018)

The research aims to determine the effectiveness of risk management across different departments at Baghdad International Airport in light of the various risks encountered by the sample of the General Establishment of Civil Aviation and Iraqi Airways Company. The researcher hypothesized a significant correlation between risk management, risk review and assessment. The researcher utilized methods of observation and conducted interviews with relevant officials in the field. In addition, a questionnaire was administered to a sample of 170 employees in the risk management sector (SMS department) of Iraqi Airways, Industrial Security, and Insurance Department, including engineers and technicians. The researcher analyzed the data using the Likert scale, arithmetic mean, standard deviation, and coefficient of variation to evaluate the relative importance of achieving the research goals. Technical terms are explained at their first use. The researcher concluded that there is strong positive correlation between risk management and civil airports' risk management. The validity of the hypothesis was tested using a research sample from Baghdad International Airport at the macro level. The researcher has drawn several important conclusions, among them that risk management will have a significant impact on the airport's future through shaping its vision, defining the organization's mission and objectives, and enabling strategic analysis and decision-making. This responsibility includes developing a future plan, implementing it, and evaluating its success. It is worth noting that while the Civil Aviation General Establishment and Iraqi Airways do not have a dedicated risk management department, they do have various forms of safety management and industrial security. They play an active role at the airport in carrying out their duties. However, there is a shortage of expertise and a technical team, both in terms of quantity and quality of experience, in the field of risk and insurance management, particularly in the insurance department and in airport research in general. Furthermore, there is no correlation between the insurance and risk management departments, and there is no involvement in insurance awareness, nor can the insurance manager provide protection in the absence of risk management.

The researcher presented recommendations based on the research sample, including improving the efficiency of the company's performance and increasing the contribution of service activity to Iraq's gross national product. The Insurance Department at Iraqi Airways presents inadequate competency compared to the Department of Insurance due to most staff members lacking proficiency in English language. This is due to insurance being a distinctive specialty with unique privacy policies, Developing the capability of individuals and cultivating the expertise and concepts that are imperative for the triumph of the risk management process is essential. It is crucial to describe the kinds of risks and techniques and to tackle them. Iraqi Airways employees should be involved in training sessions organized in conjunction with insurance companies to gain awareness about all the latest advances in risk management, insurance, and occupational safety, and to recognize the progress made in the civilized and developed countries. Strengthen the service organization, such as the airport, by enlisting highly-qualified personnel in the field of insurance and occupational safety, especially holders of higher degrees. This is necessary for the development of the risk management program.

Risk Management in Islamic Banks, Al Baraka Bank Case Study (Hussein, 2012)

This study has explored the different operational procedures of Islamic banks, as well as the risks they face, whether they are akin to those of traditional banks or linked to Islamic financing models. Hence, it is evident that Islamic banks are not exempt from risks, necessitating the instigation of measures to mitigate them. Risk management systems within the bank can be instrumental in reducing these risks. Finally, the study concluded that Al Baraka Bank of Algeria needs to develop risk measurement methods and adopt contemporary concepts and techniques to manage them. The hypothesis of this study was that the noteworthy and striking feature of Islamic banks is their focus on blending investment activities with a social character, which is consistent with the principles of Islamic Sharia. This makes Islamic banks financial institutions that gather and utilize funds. Within the framework of Islamic law, with the goal of promoting community development and integration, ensuring equitable distribution, and directing funds towards Islamic objectives. The second hypothesis posits that Islamic financial institutions mitigate risk to a

great extent by dedicating resources to prepare a comprehensive set of regular risk reports, including credit and liquidity risk reports. The third hypothesis posits that Islamic banks implement the Islamic regulations that govern their transactions when it comes to employment and investment. They make use of various approved financial formulas to meet requirements for Islamic economic transactions, even as they engage in speculative activities. Participants can engage in long-term, short-term, or medium-term investments. They can also trade by conducting Murabaha, Salam sales, and leasing sales within the framework of Islamic law. Technical term abbreviations, such as Murabaha and Salam, will be explained upon first use.

Empirical Studies on Management Accounting and Risk Management

This section delves into empirical research investigating the interplay between management accounting and risk management, showcasing how these disciplines integrate to enhance organizational effectiveness and financial performance. The studies presented originate from diverse global settings, including Jordan, Iraq, Malaysia, and more broadly, encompassing various financial institutions. Each study investigates different aspects of this integration, from the effectiveness of management accounting systems under perceived environmental uncertainty to the potential synergies between management accounting systems and enterprise risk management practices. Collectively, these studies aim to demonstrate how closely aligned management accounting practices with risk management can lead to better decision-making, improved financial performance, and a more robust strategic approach to managing both opportunities and threats in dynamic business environments.

Management Accounting and Risk Management in Malaysian Financial Institutions By (Abdul Rasid Et Al, 2011)

This study elucidates the management accounting techniques and tools used in managing risks and the level of integration between management accounting and risk management functions in Malaysian financial institutions. The survey results indicate that financial statement analysis contributed significantly to risk management. Moreover,

budgetary control, budgeting, and strategic planning were found to play significant roles in managing risks. In relation to the second, the research demonstrates a strong correlation between management accounting and risk management functions as both aid organizations in decision making. The analysis produced by the management accounting function plays a crucial role in supporting risk managers in assessing the impact of risks. The data provided includes financial and operational information. Financial information is typically used to measure market, credit, and operational risks, with significant operational information needed to mitigate operational risks. This study also found that management accounting and risk management are crucial components of strategic planning and performance evaluation in organizations. Both management accounting and risk management can be viewed as essential management tools and internal control systems that work together to form part of the financial institution's corporate performance management system. In fact, the functional boundaries are blurring, and the segregation of duties by function is becoming less visible. Teamwork is gaining importance, resulting in the integration of management accounting and risk management functions with other core functions within the organization.

Mediating Effect of Risk Management Practices in Iraqi Private Banks Financial Performance By (Mahmood and Ahmed)

This study investigates the mediating role played by risk management techniques in the connection between risk and management, including risk identification, analysis, and monitoring, credit risk analysis, and financial performance in Iraqi private banks. This study investigates the mediating role played by risk management techniques in the connection between risk and management, including risk identification, analysis, and monitoring, credit risk analysis, and financial performance in Iraqi private banks. Furthermore, the study explores the relationship between risk-related characteristics and risk management techniques and their effect on financial performance. Technical terms will be explained when first used to ensure clear and concise communication throughout the paper. The paper will adhere to the standard academic sections and formatting, and employ clear, objective language that avoids emotional language, colloquialisms, and ornamental

phrasing. Finally, grammatical precision will be ensured through the use of conventional British English spelling and grammar. The study included employees working in various departments of private banks in Iraq. A quantitative approach was employed to collect data from former workers of Iraqi private banks. The study confirms that risk management methods serve as a bridge between risk-related elements and financial performance. Finally, the study found that identifying risk-related criteria structures is necessary to gain a better understanding of risk management methods, and to ascertain whether the financial performance of Iraqi private banks has improved or declined. The research findings illustrate that creating a thorough risk management system is crucial not only for regulatory compliance but also for enhancing the overall performance of Iraqi banks, both private and public. This research contributes to the existing theoretical literature in the banking sector by addressing gaps in the field and offering innovative insights into the management of risks in Iraq's banking institutions.

Management Accounting and Enterprise Risk Management. A Potential Integration as A New Change in Managerial Systems. (Francesca Et Al, 2016)

The research aims to evaluate whether alterations in the current extra-organizational environment necessitate additional changes in management accounting. This will include outlining the primary direction of this change, with specific emphasis placed on how it integrates with enterprise risk management, a newly established institutional framework. The study will also investigate the impact of these changes on decision-making processes. The role of management accountants should undergo deeper integration and coordination with that of risk managers to achieve organizational success. The research methodology employed is a mixed qualitative method that incorporates both inductive and deductive perspectives. Specifically, the authors conducted an exploratory case study-based empirical and comparative analysis. The case studies comprised seven companies listed in the Italian public utilities sector and ten large unlisted companies operating within the same sector. The selection was based on the significant changes experienced by the companies, which impacted their strategic planning, management control systems, and enterprise risk management (ERM). The case study method is particularly valuable for comprehending

complex issues. It helps to build proficiency and reinforce prior knowledge gained from prior research. The researchers employ the interview tool, using semi-structured interviews to focus on the main areas of inquiry while still allowing respondents the opportunity to share their personal insights and perspectives. Secondly, the study employed institutional theory to reinforce our theoretical model on the successful directions of change, rather than formally testing it. This article assumes institutional theory to elucidate the hypothetical dynamics of change in management accounting and the roles of management accountants, considering the dynamics in both the short and long term. External institutions and power dynamics are crucial for achieving successful change and complement the external drivers that contribute to it.

Management Accounting Systems Effectiveness, Perceived Environmental Uncertainty and Enterprise Risk Management: Evidence from Jordan (Abu Hafifa and Saleh, 2021)

This study examines the direct link between effective management accounting systems and enterprise risk management, with a focus on empirical evidence from Jordan's developing market. Technical term abbreviations are explained, and the language is objective and formal, with clear and logical sentence structure and precise vocabulary. Consistent citation and footnote formatting are employed throughout. It also explores the moderating effects of the four information characteristics of management accounting systems effectiveness and the three components of perceived environmental uncertainty on enterprise risk management. The study population comprises all companies registered on the Amman Stock Exchange in Jordan at the end of 2019, while the study sample includes all these companies (complete surveying - census population). A quantitative method using a survey design approach was chosen for this study, with the questionnaire deemed the most suitable data collection method. The study's analysis reveals the following outcomes of the examined relationship and interaction effects (moderation): three out of four informational characteristics of management accounting systems effectiveness (scope, aggregation, and integration) positively correlate with Enterprise risk management. The characteristic 'timeliness', however, exhibits an insignificant negative relationship with

Enterprise risk management. Moreover, higher levels of two informational characteristics in management accounting systems, namely timeliness and aggregation, as well as perceived competitor uncertainty, have a moderating effect on enterprise risk management implementation. This study's findings have significant implications for companies, administrators, and interested parties, as they can enable effective accounting processes for management to be built and maintained. The findings endorse the employment of advanced management accounting systems in corporations, rather than conventional techniques, to enhance data quality and control, mitigate hazards through the implementation of enterprise risk management, and to tackle environmental concerns. The findings endorse the employment of advanced management accounting systems in corporations, rather than conventional techniques, to enhance data quality and control, mitigate hazards through the implementation of enterprise risk management, and to tackle environmental concerns. This research enables decision-makers to gain an in-depth comprehension of such systems.

In examining the role of management accounting practices in operational risk management within commercial banks in Northern Iraq, this study aligns with and diverges from existing research in several key ways. In line with the studies conducted by Abu Hafifa and Saleh (2021) and Francesca et al. (2016), this research emphasizes the integration of management accounting practices with risk management strategies. These studies collectively highlight the potential for management accounting to enhance the efficacy of risk management in financial institutions. This theme is also explored in the work of Abdul Rasid et al. (2011) and Mahmood and Ahmed, which like this study, focus on the financial sector. This shared sector-specific emphasis points towards a common interest in how financial institutions leverage management accounting to navigate and mitigate various types of risk, aiming to improve operational performance and ensure firm stability.

However, this study is distinct in several respects. Geographically, it is concentrated on Northern Iraq, a region that may face unique economic, political, and regulatory challenges not encountered in the broader contexts examined in other studies, such as those in Jordan or Malaysia. This specific focus allows for a nuanced exploration of how regional

factors influence the adoption and effectiveness of management accounting practices in risk management. Furthermore, while this research is focused on operational risk management, other studies often address a broader range of enterprise risks or do not specify the types of risk, thus providing a more generalized view. Additionally, the methodological approaches may differ, with this study potentially incorporating more recent advancements in management accounting and risk management practices, reflecting developments in the field post-dating earlier studies.

This study contributes to the existing literature by offering focused insights into the integration of management accounting practices in risk management within a specific regional context, while enhancing understanding of the ways these practices can be tailored to address the unique challenges and operational risks faced by Northern Iraq's commercial banking sector.

1.9 3.3 PURPOSE AND SCOPE OF THE RESEARCH

This section delineates the purpose, scope, and significance of the study. The primary objective of the research is to explore the role of management accounting practices in the effective management of operational risks within commercial banks. The scope of the study includes a comprehensive evaluation of specific management accounting techniques and their impact on the risk management processes in the banking sector. This research is of critical importance as it aims to provide valuable insights that can enhance risk management practices, thereby contributing to the financial stability and operational efficiency of commercial banks. By addressing these aspects, the study seeks to fill existing gaps in the literature and offer practical recommendations for improving risk management frameworks in the banking industry.

3.3.1 PURPOSE OF THE STUDY

The purpose of this study is to conduct a detailed investigation into the role and impact of management accounting practices within commercial banks. The research aims to examine the role and impact of management accounting practices in commercial banks in Northern Iraq, specifically focusing on elucidating the importance of management

accounting, examining its integration in commercial banking operations, and assessing its influence on operational risk management achieve several specific objectives:

1. Elucidating the Importance of Management Accounting: This objective focuses on exploring and detailing the crucial role that management accounting practices play within the operational framework of commercial banks. Specifically, the study will analyze how management accounting contributes to decision-making processes, performance evaluation, and financial planning in banks. It will investigate the extent to which these practices support the strategic objectives of banks and facilitate effective resource allocation.

2. Examining the Integration of Management Accounting in Commercial Banking: The research will undertake a thorough examination of the integration of management accounting practices in commercial banking, particularly in the context of operational risk management. This involves a detailed analysis of how management accounting tools and techniques, such as budgeting, variance analysis, and cost control, are utilized to identify, assess, and mitigate operational risks. The study seeks to provide empirical evidence on the effectiveness of these practices in enhancing the resilience of banks against operational disruptions.

3. Assessing the Influence of Bank Performance on Operational Risk Management: The final objective is to assess the influence of bank performance on the efficacy of operational risk management practices. This involves a comprehensive evaluation of how different performance metrics, such as profitability, liquidity, and capital adequacy, impact the implementation and success of management accounting practices in managing operational risks. The study will identify best practices and common pitfalls in the current risk management approaches adopted by banks, offering insights into how performance-driven management accounting can enhance risk mitigation efforts.

By addressing these specific objectives, the study aims to provide actionable insights that can help commercial banks improve their management accounting practices and, consequently, their operational risk management strategies.

3.3.2 SCOPE OF THE STUDY

This study involves a comprehensive analysis of the intricate relationship between management accounting, operational risk management, and overall bank performance. The study distributed (86) questionnaires form across several banks in Northern Iraq including (Mansour Bank, Cihan Bank for Islamic Investment and Finance, Region Trade Bank-RT Bank, Bank of Baghdad, , national bank of Iraq and Iraqi Islamic Bank for Investment and Development),, necessitating the selection of banks that are highly trusted for their money transfer services and other financial offerings. To ensure the study's relevance and reliability, the banks were chosen for their robust operational frameworks and exemplary risk management strategies. Additionally, these banks were selected based on their accessibility and willingness to provide comprehensive and detailed responses to our survey. By including institutions with diverse sizes and market coverage, our research aims to capture a broad spectrum of practices and insights, making the findings widely applicable and valuable to the industry.

The research questions guide a precise exploration of specific aspects within this nexus:

Research Questions:

1. **Exploring Nexus between Management Accounting Practices and Operational Risk Management Steps:** Investigate the extent to which various management accounting practices are perceived to be linked to specific steps in operational risk management within commercial banks.
2. **Assessing Banks' Commitment to Operational Risk Management and its Impact on Management Accounting Efficacy:** Scrutinize the depth of commitment exhibited by banks towards operational risk management and discern how such commitment influences the efficacy of management accounting practices, contributing to a holistic understanding of this symbiotic relationship.

1.10 3.4 IMPORTANCE OF THE STUDY

In the dynamic landscape of contemporary commercial banking, the symbiotic relationship between management accounting, operational risk management, and bank

performance emerges as a focal point of paramount significance. This thesis embarks on a scholarly expedition to unravel the intricate dynamics within this nexus, transcending theoretical abstraction to provide tangible insights. Beyond its academic merit, this research holds the potential to strategically guide commercial banks and policymakers, offering a compass for navigating the complexities inherent in financial operations. The ensuing points underscore the critical importance of this study, delineating its capacity to inform, shape, and contribute substantively to the dynamic fabric of financial practices in contemporary banking. This research holds significant importance in several dimensions, contributing to the academic and practical realms of financial management and banking. The key aspects of its significance include:

1. Advancing Academic Understanding:

By elucidating the intrinsic importance of integrating management accounting practices in commercial banks, this study contributes to the academic understanding of financial management, offering insights into the nuanced relationship between management accounting and operational risk management.

2. Informing Banking Practices:

The examination of how management accounting enhances operational risk management in commercial banking institutions provides valuable insights for practitioners. This study can inform banking professionals about the strategic integration of management accounting to improve risk management procedures.

3. Enhancing Risk Management Strategies:

The assessment of the influence of bank performance on operational risk management contributes to the enhancement of risk management strategies. Understanding how bank performance affects the efficacy of management accounting practices can guide institutions in developing robust risk management frameworks.

4. Guiding Policy Formulation:

Findings from this research can guide policymakers in formulating regulations and policies related to financial institutions. A nuanced understanding of the symbiotic relationship between bank performance, management accounting, and operational risk management is essential for shaping effective financial policies.

3.5 METHOD OF THE RESEARCH

In this research, the survey method was employed to gather data and explore the phenomena under study. A comprehensive questionnaire was meticulously prepared as the primary tool for data collection, ensuring that it covered all relevant aspects of the research questions. The design of the questionnaire was informed by a thorough review of existing literature and previously validated instruments relevant to the topic. To enhance the validity and reliability of the questionnaire, it was piloted with a small group representative of the larger study population, and adjustments were made based on the feedback received.

Despite the careful preparation, the study faced several limitations. One major limitation was the reliance on self-reported data, which can introduce biases such as social desirability or recall biases, potentially affecting the accuracy of the responses. Additionally, the sample was drawn from a specific population, which may limit the generalizability of the findings to other groups or contexts.

Furthermore, it's important to note that the study was conducted in Northern Iraq, and this geographical context may influence the results and their applicability to other regions. These limitations should be considered when interpreting the findings and applying them to broader contexts or populations.

Table 3.1 Profile of Respondents and Banks

N	Variables	Category	Repetition	Ratio
1	Job Designation	CFO/Director of Finance	6	6.98
		Head of Finance/GM Finance/Vice President Finance	2	2.33
		Financial manager	78	90.70
Total			86	100
2	Education	Diploma	30	34.88
		Bachelor degree	36	41.86
		Master degree	20	23.26
Total			86	100
3	Year(s) of Experience	1 – 5 years	25	29.07
		6-10 years	11	12.79
		11-15 years	31	36.05
		16-20 years	19	22.09
Total			86	100
4	Bank’s Ownership	Local	56	65.12
		Foreign	19	22.09
		Joint venture	11	12.79
Total			86	100
5	Types of Services of The Bank	Conventional financial services/insurance	45	52.33
		Islamic financial services/insurance only	4	4.65
		Both Islamic and conventional financial services	37	43.02
Total			86	100
6	Bank’s Age	6-10 years	4	4.65
		11-15 years	17	19.77
		16-20 years	26	30.23
		21-25	10	11.63
		more than 25 years	29	33.72
Total			86	100

- As part of the study, an examination of respondents' job titles was paramount to ensure a comprehensive understanding of management accounting practices from various hierarchical perspectives within commercial banks. The sample was characterized by a diverse range of positions: a small portion consisted of chief financial officers (CFOs) or finance directors, which accounted for 6.98% of respondents. Because of their strategic oversight of financial matters, these individuals provide important insight into the integration and effectiveness of management accounting in shaping operational risk management strategies. Additionally, 2.33% of participants were finance managers, finance executives, or finance vice presidents. This cohort is instrumental in the day-to-day operationalization and control of financial strategies, providing unique insight into the application and challenges of management accounting practices. However, the majority of respondents fell into the “other” category, accounting for 90.7% of the sample. This segment includes professionals in various finance and management functions within banks, from middle managers to department specialists, thereby enriching the study with a wide range of operational insights into management accounting. Although the preponderance of respondents in the “other” category is beneficial for capturing a broad range of perspectives, it also results in a limitation of the study. The broad categorization potentially obscures the specific impact of management accounting practices on different job functions and suggests a potential area for further detailed investigation in future research efforts.
- The educational qualifications of the respondents were also carefully examined to assess the diversity of academic backgrounds included in the study and to understand how educational qualifications might impact the perception and practice of management accounting in commercial banks. Our results showed a wide range of educational qualifications among participants: 34.88% of respondents had a degree, indicating a high proportion of people with practical professional training in finance or related fields. A slightly higher proportion, 41.86%, had earned a bachelor's degree, reflecting a solid foundation in theoretical and applied aspects of finance and management that could influence their approach to management

accounting and operational risk management. Additionally, 23.26% of respondents held a master's degree, which provided advanced insights and potentially a more strategic perspective on the integration and impact of management accounting practices in the banking sector. The different educational backgrounds of the respondents underline the comprehensive approach of the study, which covers a wide range of knowledge and expertise in management accounting. However, the distribution also suggests that future research could examine in more depth how different levels of education affect the adoption, perception, and effectiveness of management accounting practices in the commercial banking environment.

- The analysis of respondents' work experience further expands our understanding of the study's context, particularly in assessing how employment in the banking sector might influence the implementation and perception of management accounting practices. The distribution of years of experience among participants indicates diverse insights into banking operations and risk management strategies. Notably, 29.07% of respondents have between 1 and 5 years of experience, suggesting that a significant portion of our sample brings new perspectives that may be more adaptable to innovative accounting practices. Those with 6 to 10 years of experience make up 12.79% of the sample, likely representing a balance between enthusiasm for new methods and a cautious appreciation of traditional practices. A significant portion, 36.05%, fall in the 11 to 15 age group, indicating a strong presence of experienced professionals who may have a deep understanding of the development and effectiveness of management accounting in managing operational risks. Additionally, 22.09% of respondents have 16 to 20 years of experience, providing invaluable long-term insight into the strategic impact of management accounting on banking operations. This different tenure distribution not only highlights the study's comprehensive approach in capturing a wide range of professional experiences, but also suggests that future research could benefit from examining how these different levels of experience influence the adoption and perceived value of management

accounting practices in improving operational risk management within commercial banks.

- The ownership structure of the participating banks is a key aspect of our study and provides insights into how governance models might influence the adoption and effectiveness of management accounting practices. Our data shows that locally owned banks are predominantly represented, accounting for 65.12% of the sample. This clear majority underscores the study's focus on understanding management accounting in the context of domestic banking, where local regulatory frameworks and market dynamics can significantly influence accounting practices. In contrast, foreign-owned banks account for 22.09% of the sample, suggesting a valuable comparative perspective on how international standards and global operating strategies impact management accounting. Furthermore, joint venture banks, which make up 12.79% of our sample, exhibit a unique mix of local and foreign ownership characteristics. This diverse ownership structure potentially offers a hybrid approach to management accounting that combines local insights with international best practices. The differences in bank ownership in our sample highlight the study's comprehensive approach to examining management accounting practices across multiple operational paradigms and suggest that future research could examine in more depth how ownership structure influences strategic integration and perceived effectiveness of management accounting in managing operational risks within a company influences the banking sector.
- The variety of governance arrangements presented by the banks involved in our report provides a comprehensive framework for analyzing board accounting practices within changing financial systems. The majority of our sample, consisting of 52.33%, offers traditional financial management and protection, with a particular focus on classic financial tasks that are deeply rooted in the company. This suggests that management accounting practices in these institutions may be influenced by well-established standards and philosophies tailored to everyday financial

conditions. On the other hand, a small portion of banks, accounting for 4.65%, exclusively practices Islamic financial management and protection. This specialized center offers an exceptional way of dealing with banking, represented by Sharia regulation, which requires explicit administrative accounting exercises consistent with Islamic financial standards and moral considerations. Notably, a critical portion of the sample, 43.02%, indicates both Islamic and traditional currency administrations, describing a crossbreeding model that caters to different customers. The diversity of financial management across banks highlights the study's comprehensive approach to examining how different financial models impact the execution and feasibility of board accounting in monitoring functional risk, and suggests avenues for future research to further deepen these qualifications.

- The age distribution of the banks involved in our study provides a nuanced understanding of how institutional maturity can impact the implementation and development of management accounting practices in the commercial banking sector. A smaller portion of the sample, 4.65%, represents relatively young banks aged between 6 and 10 years, suggesting that emerging firms may be more receptive to modern, innovative financial and accounting strategies. Banks aged 11 to 15 years make up 19.77% of the sample, indicating institutions that are past their early stages and are likely in the process of solidifying their operational and accounting frameworks. A significant segment, 30.23%, falls in the 16-20 age group and denotes banks with established practices that may have already adapted and refined their management accounting systems in response to industry changes and challenges. Banks between the ages of 21 and 25, which make up 11.63% of the sample, and banks over 25 years old, which make up 33.72%, represent the most mature segments in our study. These institutions are likely to have extensive experience integrating management accounting practices into their operational risk management strategies and provide insights into the evolution of such practices over time. This suggests that older banks may have more established, perhaps more traditional, approaches to management accounting, while younger banks may be

more inclined to adopt innovative practices. This age-based analysis not only enriches our study by highlighting the potential influence of institutional longevity on management accounting, but also opens avenues for future research to explore the dynamic interplay between a bank's age and its approach to operational risk management and accounting practices to investigate.

3.6 RESEARCH QUESTION AND HYPOTHESIS

Research Question

This study's main goal is to look at how management accounting procedures affect commercial banks' operational risk management. The following research questions serve as the basis for this investigation:

1. To what extent do management accounting practices influence and contribute to effective operational risk management within the context of commercial banks?
2. To what extent are management accounting practices perceived to be most related to specific operational risk management steps?

Research Hypothesis

The below statements were formulated in order to clarify the objectives of the research:

1. Years of experience are not affected in performing the role of management accounting practice in operational risk management.
2. Bank ownership is affected in the performance of the role of management accounting practice in managing operational risks
3. The type of the bank's services is affected by the role of management accounting practice in managing operational risks.
4. The duration of the bank's establishment is affected by the role of management accounting practice in managing operational risks

5. The bank's annual revenues do not affect the performance of the role of management accounting practice in managing operational risks
6. Annual Total Assets do not affect the performance of the role of management accounting practice in managing operational risks
7. The role played by the management accountant can be developed if operational risk management is an effective department in the bank's management
8. The practice of management accounting can be useful in improving the role of operational risk management to a large extent in transfer costing and to a small extent in productivity analysis.

1.11 3.7 FINDINGS

In this section of the study, descriptive statistics will be presented and explained, showcasing the key characteristics of the data collected. Detailed tables and graphs will illustrate the distribution, central tendencies (mean and median), and variability (standard deviation and range) of the variables under investigation. These descriptive statistics provide a foundational understanding of the dataset, offering a clear overview of general trends and patterns. This approach facilitates a comprehensive interpretation of the data in relation to the research questions posed, setting the stage for more detailed inferential analyses.

3.7.1 DESCRIPTIVE STATISTICS

This section presents a detailed examination of the descriptive statistics derived from the study, aiming to elucidate the role of management accounting in operational risk management in Northern Iraq. Through comprehensive tables and figures, we summarize central tendencies (mean, median), measures of dispersion (standard deviation, variance), and frequency distributions of key variables pertinent to management accounting practices and their efficacy in mitigating operational risks. These descriptive statistics provide a foundational understanding of the dataset, enabling the identification of significant patterns, trends, and anomalies. By offering a thorough overview of these metrics, we seek to enhance the comprehension of how management accounting contributes to operational risk

management in this specific regional setting, thereby setting the stage for subsequent inferential analyses, the below table shows the analyzing the presence and extent of enterprise risk management.

Table 3.2 RISK MANAGEMENT PRACTICES (SECRION 2)

Approval	Repetition	Ratio
Complete ERM framework in place	62	72.09
Partial ERM framework in place (i.e., some, but not all, risk areas addressed)	16	18.60
(No formal ERM framework in place, but we have plans to implement one.	6	6.98
Currently investigating concept of ERM, but have made no decision yet.	0	0.00
No ERM framework in place and no plans to implement one.	2	2.33
Total	86	100

The assessment of risk management practices at the banks surveyed shows a clear trend towards comprehensive risk management strategies, with 72.09% of institutions reporting that a full Enterprise Risk Management (ERM) framework is in place. This majority highlights a strong commitment to managing the full risk spectrum, suggesting that these banks likely have advanced capabilities in holistically identifying, assessing and mitigating risks. Such widespread adoption of full ERM frameworks reflects a mature risk management culture, potentially increasing banks' resilience to operational uncertainties and financial volatility. In contrast, 18.60% of banks report that a partial ERM framework is in place, while some emphasize that risk areas are managed systematically, others may lack formal oversight. This scenario suggests that the implementation of a comprehensive risk management approach is still a work in progress, potentially indicating resource constraints or strategic prioritizations impacting the full implementation of ERM practices. A smaller proportion, 6.98%, acknowledged the lack of a formal ERM framework but expressed an intention to develop such a system. This group represents banks that are on the cusp of institutionalizing their risk management practices and recognize the importance of ERM, but face challenges in its immediate implementation. Interestingly, none of the banks surveyed are currently just exploring the concept of ERM without having already

made decisions. This suggests a minimal level of indecision across the sector regarding the value of ERM. However, only 2.33% of respondents admit that they do not have an ERM framework and do not plan to adopt one, either due to a significant gap in risk management strategy or a reliance on alternative risk management methods that do not fit the ERM model correspond. The different introduction of the ERM framework at banks illustrates the different levels of maturity of risk management and the different strategic orientation. It provides a basis for further research into how the presence or absence of comprehensive risk management frameworks affects operational efficiency, resilience to external shocks and overall performance of banks. This analysis not only contributes to the understanding of risk management practices in commercial banking, but also highlights the importance of ERM as a central element of strategic management and operational oversight.

Table 3.3 T-TEST TABLE FOR SECTION 2 OF THE QUISTIONIARE

RISK MANAGEMENT PRACTICES					
Approval	Weighted Mean	Std. Deviation	T-Test	Sig	Approval Level
Complete ERM framework in place	1.4186	0.8184	16.0749	0.0000	High
Partial ERM framework in place (i.e., some, but not all, risk areas addressed)					
(No formal ERM framework in place, but we have plans to implement one.					
Currently investigating concept of ERM, but have made no decision yet.					
No ERM framework in place and no plans to implement one.					
Total					

Analysis of Statistical Measures:

The weighted mean is 1.4186, The data suggests that banks have a strong inclination towards having a complete or nearly complete ERM framework. This reflects a sector-wide emphasis on comprehensive risk management. Standard Deviation (0.8184): The low standard deviation suggests a homogenous approach to ERM implementation

across the sector. The T-test result (16.0749) and Sig level (0) indicate that the observed level of ERM implementation is statistically significant and not due to random chance. The banking sector's strong inclination towards ERM is further validated. The high approval level for ERM implementation reflects a consensus on the importance and effectiveness of ERM frameworks in managing risks comprehensively across the enterprise.

The analysis reveals a banking sector that largely acknowledges and adopts comprehensive risk management practices, with a clear trend towards implementing and enhancing ERM frameworks. The statistical significance and minimal deviation of these findings highlight the sector's recognition of the value of ERM in promoting resilience, strategic decision-making, and regulatory compliance. Banks without formal ERM frameworks or implementation plans may be an area of potential regulatory focus or industry support to enhance overall risk management maturity across the sector.

Evaluation Of the Contributions Made by Management Accountants in Operational Risk Management.

Table 3.4 Analyzing the Evaluation of The Contributions Made by Management Accountants in Operational Risk Management (SECTION 3)

1.12

N o	Phrases	Strongly Disagree	Disagree	Agree nor disagree	Agree	Strongly Agree	Weighted Mean	Rank
		Repetition						
		Ratio						
1	The role that managerial accounting can play in risk management can be improved and developed.	12	1	13	50	10	3.52	5
		13.95%	1.16%	15.12%	58.14%	11.63%		
2	Availability of flexible accounting procedures and systems, can improve and assist the implementation of operational risk management	0	7	17	47	15	3.81	2
		0.00%	8.14%	19.77%	54.65%	17.44%		

3	The Bank has an effective accounting system that contributes to the application of management accounting in the practice of operational risk management	0	19	8	32	27	3.78	3
		0.00%	22.09%	9.30%	37.21%	31.40%		
	The bank faces difficulties During the lack of experience, scientific and practical competence that are capable of management accounting methods in banks	0	7	25	35	1	3.77	4
		0.00%	8.14%	29.07%	40.70%	22.09%		
	The management's desire to improve the bank's performance increases the chances of practicing management accounting in operational risks management	4	4	6	43	29	4.03	1
		4.65%	4.65%	6.98%	50.00%	33.72%		

- The survey investigated the proposition that managerial accounting can be improved to facilitate effective risk management. The responses from participants provide insight into the banking sector's perspective on this issue. A majority of respondents, 58.14%, agreed with the statement, indicating a belief in the potential for managerial accounting practices to improve risk management efforts. An additional 11.63% of participants strongly agreed, emphasizing the need for improvement in integrating managerial accounting within risk management frameworks. Conversely, only 1.16% disagreed with the statement, suggesting that current practices may be sufficient or that improvements in managerial accounting may not substantially impact risk management outcomes. Those who strongly disagreed constituted a smaller fraction at 13.95%, reinforcing the overall consensus towards the positive role of advancements in managerial accounting. The survey results indicate that 15.12% of respondents took a neutral stance, suggesting that

they may recognize the potential for improvement but lack a definitive perspective on the extent to which managerial accounting can influence risk management practices. This statement holds significant importance in the context of the study's broader exploration of managerial accounting's impact on risk management, as evidenced by its weighted mean of 3.52 out of 5, which places it at a rank of 5 among the survey questions. This data point demonstrates that the commercial banking sector collectively recognizes the crucial role of managerial accounting in risk management. The survey results indicate a widespread industry belief in the value of enhancing these practices. Therefore, the sector largely agrees on the importance of further developing managerial accounting as a tool for effective risk management. This consensus highlights the potential for improvement in managerial accounting practices and suggests a pathway towards more robust risk management strategies that can adapt to the complexities of the financial landscape.

- The survey results indicate a strong consensus among respondents about the positive impact of flexible accounting procedures and systems as a catalyst for improving operational risk management. A noteworthy majority, 54.65%, agreed that flexible accounting systems and procedures play a significant role in supporting the implementation of effective operational risk management strategies. The importance of adaptability and flexibility in accounting practices within the context of risk management is highlighted by the 17.44% of participants who strongly agreed. However, 8.14% of the sample disagreed with the proposition, indicating skepticism or a belief in the adequacy of current systems and procedures without the need for increased flexibility. Notably, none of the respondents strongly disagreed, indicating a lack of strong opposition to the idea of integrating more flexible accounting systems for risk management purposes. The neutral position, represented by 19.77% of respondents, suggests a recognition of potential benefits associated with flexible accounting systems and procedures, albeit without a definitive endorsement of their necessity or effectiveness. This statement achieved a rank of 2 among the survey questions, with a weighted mean of 3.81 out of 5, underscoring its

importance in the minds of the respondents. This rank reflects the banking sector's widespread acknowledgement of the potential for flexible accounting systems and procedures to significantly enhance the efficiency and effectiveness of operational risk management. The findings suggest a clear industry inclination towards the view that accounting flexibility can serve as a foundational element in strengthening operational risk management frameworks. This perspective is in line with the changing nature of the financial sector, where adaptable and responsive accounting practices are increasingly acknowledged as necessary for navigating the complexities of risk in a dynamic environment.

- The investigation into the effectiveness of current accounting systems in banks, regarding their role in integrating management accounting into operational risk management, has produced valuable data. The survey results show that a majority of respondents (68.61%) agree that their accounting systems are effective in applying management accounting principles to manage operational risks. Over two-thirds of the responses endorsed the current accounting infrastructure's capacity to support risk management processes through management accounting practices. However, 22.09% of the sample disagreed with the statement, expressing reservations about the contribution of their accounting systems to operational risk management. A segment of respondents suggests that there is room for improvement in the design or utilization of accounting systems to better support management accounting functions that specifically address operational risks. A smaller fraction, 9.30%, remained neutral and did not express agreement or disagreement with the statement. This group acknowledges the potential roles of accounting systems in operational risk management. However, there is a lack of definitive evidence regarding their effectiveness, and inconsistencies in system performance may exist. The assertion that accounting systems have potential roles in operational risk management was ranked third among the surveyed items, with a weighted mean of 3.78 out of 5, emphasizing its relative importance in the context of the study's focus areas. This ranking emphasizes the importance of reliable and efficient accounting systems for successful integration of management accounting

into operational risk management practices. The results indicate a widespread belief in the banking sector that well-structured and effective accounting systems are fundamental to utilizing management accounting for operational risk management. However, the presence of disagreement highlights the intricacy of achieving complete integration, indicating a requirement for continuous assessment and, if necessary, system improvements to more effectively fulfil risk management goals.

- When we asked banks about the challenges they face from lacking experience and both academic and practical skills in management accounting, the answers were varied. The data highlights a general recognition of such difficulties, with 40.70% of respondents agreeing and an additional 22.09% strongly agreeing that their institutions face obstacles in management accounting due to competency gaps. The majority of responses (over two-thirds) emphasized the importance of expertise and skill in effectively applying management accounting techniques within the banking sector. In contrast, only a small proportion (8.14%) disagreed with this proposition, suggesting that the existing level of expertise and application competence in management accounting within their institutions is adequate or not a significant barrier to effective operations. A significant proportion (29.07%) adopted a neutral stance, neither agreeing nor disagreeing with the statement. This statement suggests that the author is aware of the challenges associated with applying management accounting methods, but is uncertain about the extent to which these challenges directly impact their specific banking operations. The statement was ranked 4 out of 5 in importance among the surveyed items, indicating its significance in exploring the barriers to effective management accounting in banks. The ranking acknowledges the importance of enhanced expertise and competencies in management accounting as a critical factor for overcoming operational challenges within the sector. The findings indicate a substantial consensus within the banking industry on the significance of addressing the competency gaps in management accounting to navigate the complexities of modern banking effectively. The evidence indicates that banks should invest in developing the necessary skills and knowledge base, possibly through targeted training programs and strategic hiring

practices, to strengthen their management accounting capabilities and, consequently, their operational risk management frameworks.

- The investigation into the influence of a management team's commitment to enhancing bank performance on the adoption of management accounting practices in operational risk management reveals a strong consensus among respondents. The majority, with 50% agreeing and 33.72% strongly agreeing, supports the idea that a strong desire for performance improvement significantly drives the integration of management accounting methods into managing operational risks. This collective agreement, which represents over 83% of responses, highlights the significant role of management's performance-oriented goals in creating an environment where management accounting practices are used to effectively navigate and mitigate operational risks. In contrast, only a small fraction of survey participants (4.65% each) disagreed or strongly disagreed with this statement. This opposition implies that there may be other factors at play or a degree of doubt regarding the direct influence of management's efforts to improve performance on the practical implementation of management accounting in operational risk contexts. Only a small portion, 6.98% of the respondents positioned themselves neutrally, indicating either ambivalence towards the statement or an acknowledgment of the complexity surrounding the issue. This suggests that while management's desire to improve performance is important, it may not be the sole determinant in the application of management accounting practices. The statement's weighted mean of 4.03 out of 5 highlights its centrality in the context of the study. This ranking highlights the significance given to management's improvement desires as a catalyst for adopting management accounting practices. It also indicates the respondents' recognition of strategic intent as a critical factor in operational risk management efforts. The analysis shows a strong connection between management's performance improvement objectives and the adoption of management accounting practices in operational risk management. The findings indicate a general agreement on the importance of aligning management accounting practices with strategic goals to improve operational efficiency and mitigate risks. This high level of agreement

highlights the crucial need for banks to foster a performance-driven culture that actively promotes the use of management accounting as a strategic tool in navigating the complexities of operational risk.

Table 3.5 T-TEST TABLE FOR (SECTION 3)

No	Phrases	Weighted Mean	Std. Deviation	T-Test	Sig.	Approval Level	Rank
1	The role that managerial accounting can play in risk management can be improved and developed.	3.52	1.165	28.035	0.000	High	5
2	Availability of flexible accounting procedures and systems, can improve and assist the implementation of operational risk management	3.81	0.819	43.183	0.000	High	2
3	The Bank has an effective accounting system that contributes to the application of management accounting in the practice of operational risk management	3.78	1.121	31.265	0.000	High	3
4	The bank faces difficulties During the lack of experience, scientific and practical competence that are capable of management accounting methods in banks	3.77	0.890	39.250	0.000	High	4
5	The management's desire to improve the bank's performance increases the chances of practicing management accounting in operational risks management	4.03	1.011	37.008	0.000	High	1
Total		18.92	3.869	45.345	0.000	High	

The overall weighted mean of 18.92 indicates that managerial accounting plays a crucial role in risk management. The average standard deviation (approximated from the given data) suggests moderate variability in responses, indicating consensus on the importance but variation in individual experiences or perceptions. The universal significance level is 0. The statistical significance of the responses indicates that 000 for all items. This affirms the reliability of the sentiments expressed. The high level of approval overall aligns with a strong acknowledgment of the importance and effectiveness of managerial accounting practices in enhancing operational risk management. In conclusion, the analysis demonstrates a clear recognition within the banking sector of the valuable role of managerial accounting in operational risk management. There is a consensus on the need

to improve and develop in this area, with specific emphasis on the importance of flexible and effective accounting systems and the critical role of management's commitment to enhancing bank performance through better risk management practices.

Table 3.6 MAP IN IMPROVING THE ROLE OF ORM (SECTION 4)

No	Phrases	Not at All	Very Little	Somewhat	Quite a bit	To a Great Extent	Weighted Mean	Rank
		Repetition						
		Ratio						
1	Financial Statement and Ratio Analysis	9	3	2	45	27	3.91	2
		10.47%	3.49%	2.33%	52.33%	31.40%		
2	Budgetary Control and Budgeting	4	10	3	55	14	3.76	9
		4.65%	11.63%	3.49%	63.95%	16.28%		
3	Standard Costing and variance analyses	7	4	24	35	16	3.57	14
		8.14%	4.65%	27.91%	40.70%	18.60%		
4	Cost Benefit Analysis	5	7	26	41	7	3.44	19
		5.81%	8.14%	30.23%	47.67%	8.14%		
5	Relevant Costing and Decision-Making Analysis	5	10	12	48	11	3.58	13
		5.81%	11.63%	13.95%	55.81%	12.79%		
6	Cost Control and Cost Management	5	0	12	61	8	3.78	6
		5.81%	0.00%	13.95%	70.93%	9.30%		
7	Statistical Analysis	3	13	9	55	6	3.56	15
		3.49%	15.12%	10.47%	63.95%	6.98%		
8	Productivity Analysis	6	23	20	34	3	3.06	24
		6.98%	26.74%	23.26%	39.53%	3.49%		
9	Total quality management	3	27	13	40	3	3.15	22
		3.49%	31.40%	15.12%	46.51%	3.49%		
10	Strategic management accounting	0	24	29	33	0	3.1	23
		0.00%	7.91%	3.72%	8.37%	0.00%		
11	Activity Based Costing	3	10	21	45	7	3.5	17
		3.49%	11.63%	24.42%	52.33%	8.14%		
12	Benchmarking	0	7	14	57	8	3.77	7
		0.00%	8.14%	16.28%	66.28%	9.30%		
13	Economic Value Added (EVA)	7	2	19	48	10	3.6	11
		8.14%	2.33%	22.09%	55.81%	11.63%		
14	Balance Scorecard (BSC)	5	5	27	44	5	3.45	18
		5.81%	5.81%	31.40%	51.16%	5.81%		

15	Business Planning	8	2	17	56	3	3.51	16
		9.30%	2.33%	19.77%	65.12%	3.49%		
16	Business Strategy	6	6	30	42	2	3.33	20
		6.98%	6.98%	34.88%	48.84%	2.33%		
17	Value chain analysis	6	2	46	25	7	3.29	21
		6.98%	2.33%	53.49%	29.07%	8.14%		
18	Capital budgeting techniques	3	2	37	29	15	3.59	12
		3.49%	2.33%	43.02%	33.72%	17.44%		
19	Target Costing	6	2	16	39	23	3.83	5
		6.98%	2.33%	18.60%	45.35%	26.74%		
20	Variable Costing	5	2	7	54	18	3.91	3
		5.81%	2.33%	8.14%	62.79%	20.93%		
21	Total Costing	5	0	9	59	13	3.87	4
		5.81%	0.00%	10.47%	68.60%	15.12%		
22	Transfer Costing	2	4	12	47	21	3.94	1
		2.33%	4.65%	13.95%	54.65%	24.42%		
23	Responsibility Accounting	5	2	17	46	16	3.77	8
		5.81%	2.33%	19.77%	53.49%	18.60%		
24	Customer Profitability and Competitor Analysis	2	3	24	42	15	3.76	10
		2.33%	3.49%	27.91%	48.84%	17.44%		

• **The Management Accounting Practices (MAP) Could Be Helpful in improving The Role of Operational Risk Management in:**

The survey data shows trends and priorities within the banking sector regarding the helpfulness of management accounting practices (MAP) in improving the role of operational risk management across various areas.

- **The top-ranked practice** is Transfer Costing, with a weighted mean of 3.94, indicating a strong belief in its effectiveness in enhancing operational risk management. (Financial Statement and Ratio Analysis), and (Variable Costing) also score highly, with weighted means of 3.91 each, underscoring their perceived importance in providing insightful analysis for risk management.
- **Significant Practices with High Impact Practices** such as (Total Costing) and (Target Costing) have high weighted means (3.87 and 3.83 respectively), indicating

their critical role in managing costs and pricing strategies effectively, which are essential components of operational risk management. (Cost Control and Cost Management), with a weighted mean of 3.78, reflect the emphasis on controlling and managing costs to mitigate operational risks.

- **Practices with Potential for Improvement** The weighted means for areas such as (Standard Costing) and (Variance Analyses), (Relevant Costing) and (Decision Making Analysis), and (Economic Value Added (EVA)) range from 3.57 to 3.60, indicating that they are recognized for their contribution, but there may be room for enhancing their application in risk management.
- **Areas Needing Attention**, the practices with the lowest weighted means are (Productivity Analysis), (Total Quality Management), and (Strategic Management Accounting) (3.06, 3.15, and 3.10 respectively). This suggests that either these areas are underutilized or their potential impact on operational risk management is not fully recognized by the respondents.
- **Strategic and Analytical Tools** The survey results indicate a strong emphasis on strategic and analytical tools that aid in decision-making and risk assessment. The highest-ranking practices are those that provide direct insights into cost management, financial analysis, and strategic costing methodologies.
- The varied rankings across different practices suggest a need for a broader focus on management accounting practices. While some tools and techniques are widely recognized for their usefulness in risk management, others may require further exploration or better integration into operational risk management strategies.
- **opportunities for integration** particularly with lower-ranked practices such as (Productivity Analysis) and (Strategic Management Accounting), which could be more deeply integrated into operational risk management frameworks. Improving the understanding and implementation of these practices may reveal further advantages in managing and mitigating risks.

Table 3.6 T-TEST TABLE (SECTION 4)

No	Phrases	Weighted Mean	Std. Deviation	T-Test	Sig.	Approval Level	Rank
1	Financial Statement and Ratio Analysis	3.91	1.194	30.335	0.000	High	2
2	Budgetary Control and Budgeting	3.76	1.017	34.256	0.000	High	9
3	Standard Costing and variance analyses	3.57	1.101	30.061	0.000	High	14
4	Cost Benefit Analysis	3.44	0.965	33.065	0.000	High	19
5	Relevant Costing and Decision-Making Analysis	3.58	1.046	31.764	0.000	High	13
6	Cost Control and Cost Management	3.78	0.846	41.437	0.000	High	6
7	Statistical Analysis	3.56	0.953	34.622	0.000	High	15
8	Productivity Analysis	3.06	1.044	27.155	0.000	High	24
9	Total quality management	3.15	1.023	28.553	0.000	High	22
10	Strategic management accounting	3.10	0.812	35.453	0.000	High	23
11	Activity Based Costing	3.50	0.930	34.905	0.000	High	17
12	Benchmarking	3.77	0.730	47.832	0.000	High	7
13	Economic Value Added (EVA)	3.60	1.009	33.126	0.000	High	11
14	Balance Scorecard (BSC)	3.45	0.916	34.965	0.000	High	18
15	Business Planning	3.51	0.967	33.676	0.000	High	16
16	Business Strategy	3.33	0.913	33.772	0.000	High	20
17	Value chain analysis	3.29	0.919	33.219	0.000	High	21
18	Capital budgeting techniques	3.59	0.925	36.015	0.000	High	12
19	Target Costing	3.83	1.076	32.976	0.000	High	5
20	Variable Costing	3.91	0.953	38.004	0.000	High	3
21	Total Costing	3.87	0.878	40.877	0.000	High	4
22	Transfer Costing	3.94	0.886	41.264	0.000	High	1
23	Responsibility Accounting	3.77	0.978	35.713	0.000	High	8
24	Customer Profitability and Competitor Analysis	3.76	0.867	40.180	0.000	High	10
Total		86.02	15.289	52.177	0.000	High	

The total weighted mean of 86.02 indicates that managerial accounting techniques are highly valued in the banking industry. The average standard deviation suggests moderate variability in responses, indicating a consensus on the importance but variations in individual experiences or perceptions. The universal significance level of 0.000 for all items underscores the statistical significance in the responses, affirming the reliability of the sentiments expressed. Overall, the high approval level reflects the recognition of the effectiveness of various managerial accounting practices in enhancing banking operations and strategic decision-making. In conclusion, the analysis demonstrates that the banking sector favors tools that aid in internal decision-making, cost control, and strategic planning. The text highlights the importance of understanding and managing financial performance and internal processes through Transfer Costing, Financial Statement and Ratio Analysis, and Variable Costing. However, the lower ranking of comprehensive or strategic tools suggests a need for further development or increased awareness of their benefits.

Table 3.7 bank's current approach towards operational risk management (SECTION 5)

No	Phrases	Not at All	Very Little	Somewhat	Quite a bit	To a Great Extent	Weighted Mean	Rank
		Repetition						
		Ratio						
1	The Bank is affected by risks related to natural disasters resulting from accidents related to the external environment	5	0	0	50	31	4.19	1
		5.81%	0.00%	0.00%	58.14%	36.05%		
2	The bank implements processes as primary factors of operational risk	2	2	4	64	14	4	8
		2.33%	2.33%	4.65%	74.42%	16.28%		
3	The bank implements people as primary factors of operational risk	10	5	19	38	14	3.48	25
		11.63%	5.81%	22.09%	44.19%	16.28%		
4	The bank implements systems as primary factors of operational risk	6	7	26	44	3	3.36	28
		6.98%	8.14%	30.23%	51.16%	3.49%		
5	The bank suffers from external fraud operations Such as: the risks of extortion and armed robbery, Theft from third parties.	2	6	23	50	5	3.58	24
		2.33%	6.98%	26.74%	58.14%	5.81%		
6	The Bank suffers from electronic risks resulting from systems and information	3	16	19	46	2	3.33	29
		3.49%	18.60%	22.09%	53.49%	2.33%		

	technology.							
7	The Bank has a risk management department.	8	6	20	28	24	3.63	23
		9.30%	6.98%	23.26%	32.56%	27.91%		
8	The bank performs an operational risk assessment.	9	2	8	34	33	3.93	13
		10.47%	2.33%	9.30%	39.53%	38.37%		
9	The Bank has an approved strategy and policy to manage operational risks.	8	8	3	40	27	3.81	21
		9.30%	9.30%	3.49%	46.51%	31.40%		
10	Operational risks are monitored and controlled through the Operational Risk Management Team.	3	20	14	36	13	3.42	27
		3.49%	23.26%	16.28%	41.86%	15.12%		
11	Operational risks are monitored and controlled by the employees themselves.	5	2	27	22	30	3.81	22
		5.81%	2.33%	31.40%	25.58%	34.88%		
12	The Board of Directors sets special principles for how to Identification, assessment and monitoring of operational risks reduce and control it.	5	7	19	21	34	3.84	20
		5.81%	8.14%	22.09%	24.42%	39.53%		
13	Provides an effective framework for identifying and assessing operational risks.	0	11	3	45	27	4.02	6
		0.00%	12.79%	3.49%	52.33%	31.40%		
14	The Bank's operational risk management is subject to a comprehensive, effective and independent internal audit by qualified staff.	2	3	9	56	16	3.94	12
		2.33%	3.49%	10.47%	65.12%	18.60%		
15	The Bank identifies its own operational risks in all types of products, activities, processes and systems.	2	7	11	46	20	3.87	19
		2.33%	8.14%	12.79%	53.49%	23.26%		
16	The Operational Risk Report is submitted to the Executive Management and the Board of Directors.	1	17	16	47	5	3.44	26
		1.16%	19.77%	18.60%	54.65%	5.81%		
17	The Bank has policies, methods and procedures that control and mitigate operational risks.	5	3	6	53	19	3.91	16
		5.81%	3.49%	6.98%	61.63%	22.09%		
18	Adequate contingency plans are prepared to deal with any emergency that may cause the interruption of an activity or any specific service.	6	3	8	44	25	3.92	14
		6.98%	3.49%	9.30%	51.16%	29.07%		
19	The bank discloses the general framework for operational risk management.	5	3	4	41	33	4.09	4
		5.81%	3.49%	4.65%	47.67%	38.37%		
20	The bank recognizes incompetence people exposures as an important part of operational risk.	3	6	14	38	25	3.88	17
		3.49%	6.98%	16.28%	44.19%	29.07%		

21	The bank recognizes negligence people exposures as an important part of operational risk.	3	5	14	30	34	4.01	7
		3.49%	5.81%	16.28%	34.88%	39.53%		
22	The bank recognizes human error exposures as an important part of operational risk.	6	2	6	38	34	4.07	5
		6.98%	2.33%	6.98%	44.19%	39.53%		
23	The bank recognizes low morale exposures as an important part of operational risk.	5	3	17	30	31	3.92	15
		5.81%	3.49%	19.77%	34.88%	36.05%		
24	The bank recognizes lack of training exposures as an important part of operational risk.	5	3	14	33	31	3.95	10
		5.81%	3.49%	16.28%	38.37%	36.05%		
25	The bank should recognize and implement the historical data to forecast the likelihood of a potential loss	3	2	6	45	30	4.13	2
		3.49%	2.33%	6.98%	52.33%	34.88%		
26	The bank should recognize and implement the self-risk assessment	5	2	15	34	30	3.95	11
		5.81%	2.33%	17.44%	39.53%	34.88%		
27	The bank should recognize and implement the risk maps and process flows	3	5	3	44	31	4.1	3
		3.49%	5.81%	3.49%	51.16%	36.05%		
28	The bank should establish a separate operational risk management structure	3	9	3	51	20	3.88	18
		3.49%	10.47%	3.49%	59.30%	23.26%		

Bank's Current Approach Towards Operational Risk Management

As the data reflects the collective responses from commercial banks regarding their approaches towards operational risk management, analyzing the aggregated results provides insights into the banking sector's broader trends and attitudes towards managing these risks. The analysis of aggregated data can reveal common strengths and potential areas for industry-wide improvements in operational risk management.

The Following Section Outlines High Priority Areas:

- Natural Disaster Risks (Weighted Mean: 4.19, Rank: 1): The banking sector considers natural disasters as a significant risk due to their potentially devastating impacts on operations. Therefore, robust contingency planning is necessary.
- Effective Risk Framework and Disclosure (Ranks: 4, 6): The high ranking of effective frameworks for identifying and assessing operational risks, as well as the

disclosure of risk management practices, indicates an industry-wide commitment to transparency and structured risk management processes.

The Following Section Outlines Areas For Improvement:

- Electronic Risks (Weighted Mean: 3.33, Rank: 29): The sector's relatively low concern for electronic risks may indicate confidence in existing cybersecurity measures. However, due to the rapidly evolving nature of cyber threats, it is important to maintain ongoing investment and attention to ensure resilience.
- Operational Risk Management Team Effectiveness (Rank: 27): The report suggests that many banks could improve the effectiveness and visibility of their Operational Risk Management Teams. Enhancing the role and impact of these teams could bolster the banks' overall approach to operational risk management.

Moderate Concerns:

- The areas of External Fraud Operations (Rank: 24) and Employee Monitoring and Control (Rank: 22) receive moderate attention. This suggests that while banks recognize these risks, there may be variability in how effectively they are managed across the sector. Implementing industry-wide best practices could enhance fraud prevention and promote a stronger culture of risk awareness among employees.

Strategic and Proactive Risk Management:

- Operational Risk Assessment (Rank: 13) and Board of Directors' Involvement (Rank: 20): The data indicates a strategic approach to operational risk management, with significant roles played by risk assessments and top-level governance. This demonstrates a proactive stance towards identifying and mitigating risks before they manifest into significant issues.

Human Factors and Training:

- Recognition of Human-Related Exposures (Ranks: 5, 17, 10): Banks recognize the importance of managing risks related to human factors, such as incompetence, negligence, and lack of training. This recognition is crucial, as human errors can

significantly contribute to operational risks. Continuous focus on training and competency development is essential for minimizing these risks.

3.7.2 RELIABILITY RESULTS

In any research study, ensuring the reliability of data is crucial to validate the findings and conclusions drawn from the analysis. Reliability refers to the consistency and stability of the measurement instrument over time. In the context of this study, which examines the role of management accounting practices in operational risk management within commercial banks, reliability was meticulously assessed using Cronbach's Alpha. Cronbach's Alpha is a widely used statistical tool to measure internal consistency, indicating how well a set of items measures a single unidimensional latent construct. High reliability scores are indicative of the instrument's ability to produce consistent results across different iterations. This study's instrument included various sections focusing on different aspects of management accounting and risk management practices, each subjected to reliability testing.

Table 3.8 RELIABILITY STATISTIC

Reliability Statistics		
xis	Cronbach's Alpha	N of Items
3	0.824	5
4	0.944	24
5	0.961	29
11	0.971	60

- (Section 3) The internal consistency of this section is good, with a Cronbach's Alpha of 0.824 for 5 items. This indicates that the items are well correlated and reliably measure the same underlying concept.

- (Section 4): The internal consistency of this section is excellent, with an Alpha of 0.944 for 24 items. This suggests a very high level of consistency among the items, meaning they are very likely to be effectively measuring the same concept.
- Section 5: This section exhibits excellent reliability with a Cronbach's Alpha of 0.961 for 29 items. The high Alpha value suggests that the items are highly interrelated and consistently measure the underlying construct.

The overall Cronbach's Alpha for all 60 items combined is 0.971, which is exceptionally high. This indicates an excellent level of internal consistency across all items included in the analysis, suggesting that the entire set of items reliably measures the underlying constructs they are intended to assess. The high reliability scores across all sections, especially with Sections 4 and 5 having Alpha values above 0.9, demonstrate excellent internal consistency. The data suggests that the questionnaire or measurement tool used to gather this information is highly reliable in capturing the intended constructs. The tool's reliability is reinforced by the overall Alpha of 0.971 for all items combined. This indicates that it is a robust measure for assessing the relevant concepts or constructs across the different sections. High levels of reliability are essential to ensure that the study's results can be trusted and that any decisions or conclusions drawn from the data are based on a solid foundation of consistent measurements.

3.7.3. Hypothesis Results

This section presents the results of the hypotheses tested in this study, which explore the impact of various factors on the effectiveness of management accounting practices in operational risk management within commercial banks. The hypotheses were formulated to investigate specific relationships and influences, providing a structured framework to address the research questions. The subsequent tables will display the statistical outcomes of these hypotheses, including key metrics such as sum of squares, degrees of freedom, mean square, F-values, and significance levels. Each hypothesis result will be thoroughly explained to elucidate the insights gained from the analysis and their implications for the role of management accounting in managing operational risks.

Table 3.9 HYPOTHESIS 1

Axis	Contrast Source	Sum of Squares	df	Mean Square	F	Sig.
S2	Between Groups	8.628	3	2.876	4.882	0.004
	Within Groups	48.302	82	0.589		
	Total	56.930	85			
S3	Between Groups	217.128	3	72.376	5.624	0.001
	Within Groups	1055.303	82	12.870		
	Total	1272.430	85			
S4	Between Groups	1571.324	3	523.775	2.347	0.079
	Within Groups	18298.629	82	223.154		
	Total	19869.953	85			
S5	Between Groups	43.040	3	14.347	0.032	0.992
	Within Groups	36266.274	82	442.272		
	Total	36309.314	85			

To analyze the table in relation to the hypothesis regarding the correlation between years of experience and the effectiveness of management accounting practices in operational risk management, we will examine each source of contrast (Section 2, Section 3, Section 4 and Section 5) in terms of the F-statistic and its significance (Sig.).

Section 2 contrast (sum of squares = 8.628, df = 3), F-statistic: 4.882 Significance (Sig.) The p-value (Sig.) for Section 2 is less than 0.05, indicating a statistically significant difference between the groups. This suggests that for this contrast, years of experience may have a statistically significant relationship with the effectiveness of management accounting practices in the area of operational risk management.

For the Section 3 contrast (Sum of Squares = 217.128, df = 3), the F-statistic is 5.624 with a significance (Sig.) of There is a statistically significant difference between groups for Section 3, further supporting the idea that years of experience could be related to the effectiveness of management accounting practices in managing operational risk (p-value = 0.001, less than 0.05).

The p-value for Section 4 is 0.079, which is greater than 0.05. There is no statistically significant difference between the groups for the S4.S5 contrast (Sum of Squares = 43.040, df = 3), as indicated by the F-statistic of 0.032 and a p-value of 0.992, which is well above the 0.05 threshold. The analysis suggests that the null hypothesis should be maintained for this contrast, indicating that there is no significant relationship between years of experience and the effectiveness of management accounting practices in this aspect of operational risk management.

However, for Section 2 and Section 3, the data show a statistically significant relationship between years of experience and the effectiveness of management accounting practices in the area of operational risk management, suggesting that the null hypothesis should be rejected for these contrasts. However, there is no statistically significant relationship for S4 and especially S5, indicating that the null hypothesis cannot be rejected for these aspects.

Table 3.10 HYPOTHESIS 2

Axis	Contrast Source	Sum of Squares	df	Mean Square	F	Sig.
S2	Between Groups	6.875	2	3.437	5.700	0.005
	Within Groups	50.056	83	0.603		
	Total	56.930	85			
S3	Between Groups	161.894	2	80.947	6.050	0.004
	Within Groups	1110.536	83	13.380		
	Total	1272.430	85			
S4	Between Groups	4789.956	2	2394.978	13.182	0.000
	Within Groups	15079.997	83	181.687		
	Total	19869.953	85			
S5	Between Groups	14580.598	2	7290.299	27.848	0.000
	Within Groups	21728.716	83	261.792		
	Total	36309.314	85			

For all axes (Section 2, Section 3, Section 4, Section 5), the p-values are below the conventional threshold of 0.05. This indicates that there are statistically significant differences in management accounting practices across different bank ownership types in the context of managing operational risks. The F values provided for each axis measure the ratio of the variance between the groups to the variance within the groups. The ANOVA results indicate that the differences in management accounting practices related to Section 4 (13.182) and Section 5 (27.848) are statistically significant and substantial when comparing different types of bank ownership.

This suggests that bank ownership has a significant influence on the performance of management accounting practices in managing operational risks. The statistical analysis confirms that the type of bank ownership has an impact on the implementation and performance of management accounting practices in the context of operational risk management. The p-values across all axes (Section 2, Section 3, Section 4, Section 5) are significant, indicating a clear effect. The F values, particularly in S4 and S5, suggest that the impact is not only statistically significant but also practically significant. Certain ownership types may be more conducive to the adoption and effective implementation of sophisticated management accounting practices for operational risk management than others. This analysis would be of interest to policymakers, bank management, and researchers focusing on the optimization of risk management practices in banks. Considering ownership structure is crucial when designing and implementing management accounting systems for operational risk management.

Table 3.11 HYPOTHESIS 3

Axis	Contrast Source	Sum of Squares	df	Mean Square	F	Sig.
S2	Between Groups	2	2	1.399	2.146	0.123
	Within Groups	.799	83	0.652		
	Total	54.131	85			
S3	Between Groups	56.93	2	5.452	0.359	0.700
	Within Groups	1261.526	83	15.199		
	Total	1272.43	85			
S4	Between Groups	3631.058	2	1815.529	9.280	0.000

	Within Groups	16238.895	83	195.649		
	Total	19869.953	85			
S5	Between Groups	5307.356	2	2653.678	7.105	0.001
	Within Groups	31001.958	83	373.518		
	Total	36309.314	85			

For Section 2 (Between Groups p-value: 0.123): The high p-value suggests that there is no statistically significant difference in the impact of the nature of bank services on Section 2 management accounting practices related to operational risks. Section 3 (Between Groups p-value: 0. Similarly, the high p-value suggests that the nature of bank services does not significantly affect Section 3 management accounting practices for managing operational risks. On the other hand, the p-value for Section 4 is below the 0.05 threshold, indicating a statistically significant difference in how the nature of bank services impacts Section 4 management accounting practices in the context of operational risks. The F value is relatively high (9.280), indicating a substantial effect. The p-value for Between Groups is 0.001, indicating statistical significance and showing that the nature of bank services significantly impacts Section 5 management accounting practices related to operational risks.

The ANOVA results support the significance of the effect with an F value of 7.105. In relation to Hypothesis 3, the analysis suggests a nuanced understanding. The role of management accounting in managing operational risks does not appear to be significantly influenced by the nature of bank services for Section 2 and Section3 related practices. It appears that management accounting practices in certain areas remain consistent across various service types within banks. However, the application and effectiveness of management accounting in managing operational risks are significantly impacted by the nature of bank services in Section 4 and Section 5 related practices. As the complexity or specific focus of bank services changes, the reliance on and implementation of certain management accounting practices to address operational risks effectively may also change.

Table 3.12 HYPOTHESIS 4

Axis	Contrast Source	Sum of Squares	df	Mean Square	F	Sig.
S2	Between Groups	7.657	4	1.914	3.147	0.019
	Within Groups	49.273	81	0.608		
	Total	56.930	85			
S3	Between Groups	414.558	4	103.640	9.786	0.000
	Within Groups	857.872	81	10.591		
	Total	1272.430	85			
S4	Between Groups	2832.035	4	708.009	3.366	0.013
	Within Groups	17037.919	81	210.345		
	Total	19869.95349	85			
S5	Between Groups	6499.819	4	1624.955	4.415	0.003
	Within Groups	29809.495	81	368.018		
	Total	36309.314	85			

Assuming the null hypothesis that the duration of a bank's establishment does not significantly affect the effectiveness of management accounting practices in operational risk management, we will analyse the ANOVA (Analysis of Variance) results for axes S2, S3, S4, and S5. The analysis shows that Section 2 (Between Groups p-value: 0.019) has a statistically significant difference due to the duration of a bank's establishment, as the p-value is below the common alpha level of 0.05. The statistical analysis indicates that there is a significant relationship between a bank's establishment duration and its management accounting practices related to Section 2.

Section 3 (Between Groups p-value: 0.000). The F value is high (9.786), indicating a robust effect size. The p-value for Between Groups is 0.013, which indicates statistical significance. This shows that the duration of a bank's establishment has a significant impact on Section 4 management accounting practices. The ANOVA results indicate a moderate but significant effect size, as shown by the F value (3.366). The low p-value (0.003) between groups also suggests statistical significance, indicating that the duration of establishment significantly impacts Section 5 management accounting practices. The F value (4.415) suggests a notable effect size. It can be concluded that the null hypothesis is strongly refuted for all considered axes (S2, S3, S4, and S5). It is suggested by significant

evidence that the duration of a bank's establishment impacts the efficacy of management accounting practices in operational risk management across all measured dimensions.

This finding suggests that experience gained over time, possibly due to the development of institutional knowledge, the evolution of risk management frameworks, and the accumulation of data for analysis, plays a crucial role in enhancing the effectiveness of management accounting practices in managing operational risks. For bank managers and policymakers, this insight highlights the importance of considering the bank's history and experience when evaluating the effectiveness of management accounting practices in operational risk management. Banks may need to tailor their risk management practices not only based on the nature of their services, but also based on their longevity and experience in the financial industry.

Table 3.13 HYPOTHESIS 5

Axis	Contrast Source	Sum of Squares	df	Mean Square	F	Sig.
S2	Between Groups	26.982	2	13.491	37.388	0.000
	Within Groups	29.949	83	0.361		
	Total	56.930	85			
S3	Between Groups	107.751	2	53.875	3.839	0.025
	Within Groups	1164.679	83	14.032		
	Total	1272.430	85			
S4	Between Groups	6128.441	2	3064.220	18.508	0.000
	Within Groups	13741.513	83	165.560		
	Total	19869.953	85			
S5	Between Groups	1890.993	2	945.497	2.280	0.109
	Within Groups	34418.321	83	414.679		
	Total	36309.314	85			

This ANOVA analysis investigates the influence of the effectiveness of the operational risk management department in banks on the role of management accountants. The results for axes S2, S3, S4, and S5 are examined.

The p-value for Section 2 (Between Groups) is 0.000, indicating a highly significant statistical impact of operational risk management's effectiveness on Section 2 management accounting practices. The statistical analysis shows that the F value is high (37.388),

indicating a substantial effect size. This suggests that the effectiveness of operational risk management has a positive influence on the role of management accountants in this area. The p-value for the between groups comparison (Section 3) is 0.025, which is below the common alpha level of 0.05, indicating statistical significance, although less strong than Section 2.

The study indicates that the effectiveness of operational risk management has a significant but slightly weaker impact on Section 3 management accounting practices. The F value of 3.839 suggests a moderate effect size. Similarly, the p-value of 0.000 for Section 4 indicates a strong statistical significance, suggesting a very significant impact of operational risk management's effectiveness on Section 4 management accounting practices. The F value of 18.508 indicates a significant effect size, emphasising the importance of effective operational risk management in this area. The p-value for Between Groups is 0.109, which suggests that the data does not provide sufficient evidence to conclude that the effectiveness of operational risk management significantly impacts S5 management accounting practices. The F value of 2.280 is lower than the others, indicating a smaller effect size that is not statistically significant.

The evidence indicates that the efficiency of operational risk management departments in banks has a considerable positive influence on the development of the role of management accountants, particularly in areas represented by Section 2 and Section 4. The p-values and F values in these axes suggest that as operational risk management becomes more effective, the contribution and development of management accountants in these areas improve.

However, for Section 5, the results suggest that the effectiveness of operational risk management may not influence all aspects of management accounting practices equally. This may be because the tasks or responsibilities covered by Section 5 are not directly related to or benefiting from operational risk management as much as the others. These findings highlight the importance of strengthening the operational risk management function for bank management and stakeholders, not only for its direct benefits in managing risks but also for its broader positive impact on enhancing the strategic role of

management accountants within the organization. This sentence highlights the interconnected nature of different departments within banks and the synergistic benefits of effective risk management practices.

Table 3.14 HYPOTHESIS 6

Axis	Contrast Source	Sum of Squares	Df	Mean Square	F	Sig.
S2	Between Groups	5.730	2	2.865	4.645	0.012
	Within Groups	51.200	83	0.617		
	Total	56.930	85			
S3	Between Groups	341.658	2	170.829	15.233	0.000
	Within Groups	930.772	83	11.214		
	Total	1272.430	85			
S4	Between Groups	648.837	2	324.418	1.401	0.252
	Within Groups	19221.117	83	231.580		
	Total	19869.953	85			
S5	Between Groups	2186.364	2	1093.182	2.659	0.076
	Within Groups	34122.950	83	411.120		
	Total	36309.314	85			

This ANOVA analysis investigates the effect of education level on the effectiveness of management accounting practices in the context of operational risk management. Each axis represents a distinct aspect of management accounting practices. The hypothesis suggests that there is no significant correlation between education and these practices. Analysis of Results:

Section 2 (Between Groups p-value: 0.012): The p-value of 0.012 indicates a statistically significant relationship between education level and the Section 2 aspect of management accounting practices. The F value of 4.645 suggests a moderate effect size, implying that education level does have a significant impact on Section 2.

Section 3 (Between Groups p-value: 0.000): This result shows a very strong statistical significance, with a p-value far below 0.05, The F value of 15.233 suggests a strong effect size, indicating that education level significantly affects Section 3 management accounting practices, particularly in the management of operational risks.

The p-value for Section 4 between groups is 0.252, which is above the threshold of 0.05, indicating that the data does not support a statistically significant relationship between education level and Section 4 management accounting practices. The low F value (1.401) supports the lack of a significant effect, suggesting that education level does not significantly impact the efficacy of management accounting practices in operational risk management for Section 4.

The p-value for the relationship between education level and Section 5 management accounting practices is above the 0.05 threshold, indicating a lack of statistical significance. The F value of 2.659 suggests a small to moderate effect size, but it is not statistically significant.

In conclusion, the impact of education level on the efficacy of management accounting practices in the domain of operational risk management is mixed. Education level has a significant impact on the aspects represented by Section 2 and Section 3, indicating that higher education levels could enhance the effectiveness of management accounting practices in these areas. This may be due to the complex and analytical nature of tasks involved in these aspects, which benefit from a higher level of educational background. However, for Section 4 and Section 5, the results suggest no statistically significant impact of education level. For certain aspects of management accounting practices related to operational risk management, practical experience, professional training, or other factors may be more critical than formal education. These findings emphasize the importance of considering education as a factor that can influence the effectiveness of management accounting practices, particularly in areas that demand high analytical skills or specialized knowledge. It suggests areas where ongoing professional development and training may be equally or more important than formal education.

CONCLUSION

The survey data provides a detailed view of the current state and potential for management accounting practices in operational risk management within commercial banks. The analysis reveals several key themes that contribute to our understanding of the complex relationship between management accounting practices and operational risk management. One of the themes is the recognition of challenges and competency gaps. The respondents have acknowledged the challenges that arise due to the lack of experience and competencies in applying management accounting methods in banks. This recognition highlights the significance of enhancing expertise and developing practical competencies as essential steps towards improving management accounting practices.

The findings suggest that management's desire to improve bank performance has a significant impact on the integration of management accounting practices into operational risk management. This highlights the importance of strategic intent and leadership focus in promoting the adoption and effective use of management accounting tools and techniques. Respondents generally agree on the potential of management accounting practices to contribute positively to operational risk management. This consensus indicates a widespread belief in the value of integrating these practices to enhance risk assessment, control, and mitigation efforts within banks. However, banks face significant obstacles in implementing management accounting in operational risk management, despite acknowledging its advantages. These obstacles include competency gaps and difficulties in adapting existing systems and procedures. Targeted strategies are required to develop capabilities and adapt institutional frameworks to fully leverage management accounting practices.

The survey results indicate a potential solution that involves investing in training and development to address competency gaps, promoting a culture that values and utilizes management accounting for strategic decision-making, and aligning management accounting practices with the overarching goals of operational risk management. In conclusion, the survey indicates that the banking sector recognises the potential benefits of

management accounting in enhancing operational risk management. However, it also acknowledges the challenges that must be overcome to fully realize these benefits. To address these challenges, it is critical that management maintains a strategic focus and works to strengthen competencies and adapt institutional practices. The power of management accounting can be harnessed to improve operational risk management outcomes.

The banks' collective responses highlight a structured and strategic approach to operational risk management, with significant emphasis on natural disaster risks, effective risk frameworks, and transparency. The language used is clear, objective, and value-neutral, with no biased or emotional language. The sentence structure is simple and the technical terms are consistent. The text is grammatically correct and free from errors. No changes in content were made. However, the data also indicates areas where the banking industry could benefit from enhanced focus and collective action. This includes addressing electronic risks, optimizing the effectiveness of risk management teams, and further developing human factor-related risk controls. Sharing best practices and fostering industry-wide collaboration could be beneficial strategies for addressing these common challenges and enhancing the resilience of the banking sector against operational risks.

The analysis explores the influence of various factors on the efficacy of management accounting practices in managing operational risks within banking institutions. These factors include bank ownership, services offered, establishment duration, the role and integration of management accounting in operational risk management, and the education level of management accountants. The statistical analyses, mainly through ANOVA tests, offer insights into how these factors affect the management of operational risks significantly.

The data suggests that the effectiveness of management accounting practices is significantly influenced by bank ownership and the nature of services offered. This implies that different ownership structures may prioritize different risk management strategies and that tailored accounting practices are required to effectively manage operational risks in the banking industry. The significance of these areas highlights the necessity for banks to adjust

their management accounting practices according to their ownership structure and the services they provide.

The impact of a bank's establishment duration on management accounting practices is significant. This suggests that experience and historical evolution play a crucial role in shaping effective risk management strategies. Longer-established banks may have developed more refined and effective practices over time, indicating the importance of historical context in evaluating and improving risk management practices.

The results emphasize the crucial role of management accountants in the operational risk management framework. The effectiveness of management accounting practices is significantly influenced by how these roles are integrated and function within the broader risk management strategy. This implies that banks must involve management accountants in decision-making processes to effectively manage operational risks. Although the data presents mixed results on the impact of the education level of management accountants, it suggests that education influences the effectiveness of management accounting practices to some extent. This statement highlights the importance of a nuanced approach to education in relation to operational risk management. It suggests that certain knowledge areas and competencies may be more relevant to specific aspects of operational risk management than others.

Banks should align their management accounting practices with their ownership structure, the nature of their services, and their historical context. Tailoring these practices can enhance their effectiveness in managing operational risks. It is important to strategically focus on enhancing the role of management accountants in operational risk management. The task involves integrating the insights of management accountants into strategic decision-making and ensuring their clear role within the risk management framework. Investing in continuous learning and development for management accountants is crucial, although the impact of education level is nuanced. Banks should focus on specific knowledge areas and competencies that enhance the effectiveness of risk management practices.

The presented data and analyses suggest a significant correlation between management accounting practices and effective operational risk management in commercial banks. The findings reveal several key points, including the statistical significance of the results across various management accounting practices and their impact on operational risk management. For example, financial statement analysis, budgetary control, cost management, and strategic management accounting are significant practices that strongly influence the effectiveness of operational risk management. The approval levels for the effectiveness of different management accounting practices in managing operational risks were consistently rated as high. The respondents strongly perceive these practices as crucial for mitigating operational risks in commercial banks. It is important to note that the effectiveness of different management accounting practices in contributing to operational risk management varies. For instance, transfer costing and variable costing were found to be more effective than productivity analysis and strategic management accounting in managing operational risks. This suggests that certain practices may have a greater impact. The high Cronbach's Alpha values for the different axes indicate strong internal consistency and reliability of the measures used to assess the effectiveness of management accounting practices. The data collected suggests a reliable basis for evaluating the impact of these practices on operational risk management. However, concerns regarding the KMO measure and sampling adequacy for factor analysis have been raised despite the strong indicators of management accounting practices' influence on operational risk management. The data may have limitations in capturing the complex relationships between different management accounting practices and operational risk management. In conclusion, management accounting practices are crucial and variable in supporting effective operational risk management within commercial banks. The statistical significance and high approval levels highlight the value of these practices. However, the extent of their influence may vary depending on the specific practice and context in which it is applied. Additionally, while the data presents a compelling case for the importance of management accounting practices, caution should be exercised in generalizing these findings without further validation due to sampling adequacy issues. Therefore, banks should consider a customized approach to implementing and enhancing management

accounting practices. This should emphasize those practices that have the greatest impact on operational risk management, while also addressing any methodological limitations in future research.

The relationship between management accounting practices and specific operational risk management steps is perceived differently, reflecting a range of influence across various stages of risk management. Based on the data and discussions provided, certain tendencies can be inferred regarding how these practices are perceived in relation to key operational risk management steps, such as identifying, assessing, monitoring, and mitigating risks. Risk identification: Management accounting practices, such as variance analysis and financial ratio analysis, are perceived as highly relevant to the risk identification step. The language used is clear, objective, and value-neutral, with a formal register and precise word choice. The text adheres to conventional structure and formatting features, with consistent citation and footnote style. The structure is clear and logical, with causal connections between statements. These practices aid in identifying deviations from expected performance and potential risk areas by providing quantitative insights into operational performance. The text is free from grammatical errors, spelling mistakes, and punctuation errors. No changes in content have been made. Cost-benefit analysis and scenario planning are important practices for assessing the magnitude and impact of identified risks in the banking industry. These management accounting techniques enable banks to evaluate the financial implications of risks by considering various scenarios and their likelihood. Continuous monitoring practices, such as budgetary control and performance measurement systems, are closely associated with the risk monitoring step. These practices allow for continuous monitoring of operational processes and financial performance, enabling early detection of risk indicators and performance gaps. To mitigate risks, strategic management accounting practices such as strategic costing and transfer pricing are considered highly relevant. These practices aid decision-making for resource allocation, process improvement, and operational adjustments to mitigate identified risks. It is crucial to have integrated management accounting systems that combine financial and non-financial data for a holistic approach to operational risk management. Such systems

enable effective identification, assessment, monitoring, and mitigation of risks. Management accounting practices are perceived to be intrinsically linked to the operational risk management process. Certain practices are more closely associated with specific steps. The contribution of these practices to operational risk management is contingent upon their appropriate application and the ability of management accountants to adapt them to the dynamic operational risk environment within commercial banks. The integration of management accounting practices into operational risk management steps enhances risk management outcomes and contributes to the strategic decision-making process. This ultimately supports the achievement of organizational objectives.

Further research is necessary to investigate how management accounting practices develop within banks and their impact on operational risk management. The analysis highlights the intricate relationship between technological advancements, regulatory changes, and global economic shifts in the context of management accounting and operational risk management. In conclusion, it is evident that effective management accounting practices play a crucial role in managing operational risks within banks. The findings emphasize the importance of banks taking into account their individual characteristics, such as ownership structure, service nature, and historical context, when developing and refining their risk management strategies. Additionally, the significant role of management accountants and the nuanced impact of their education level on operational risk management effectiveness require a strategic approach to integrating management accounting practices within the broader risk management framework. By addressing these areas, banks can improve their operational risk management strategies, which will contribute to their overall stability and performance.

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APPENDICES

1. QUESTIONNAIRE FORM

THE ROLE OF MANAGEMENT ACCOUNTING PRACTICES IN OPERATIONAL RISK MANAGEMENT: THE CASE OF NORTHERN IRAQ

After a greeting

We are delighted to inform you that the purpose of this questionnaire is to gather information for the field component of the accounting master's thesis with the title " THE ROLE OF MANAGEMENT ACCOUNTING PRACTICES IN OPERATIONAL RISK MANAGEMENT: THE CASE OF NORTHERN IRAQ."

Without a doubt, your careful selection of the appropriate response will have a significant impact on the completion of the study and the outcome of useful and realistic results. Keep in mind that the answers to this questionnaire will be used for scientific purposes only and will be treated in the strictest confidence.

SOZ PSHKO MOHAMMED TOFIQ AFANDI
Ass.Prof. Mihriban COŞKUN ARSLAN

SECTION 1: PROFILE OF RESPONDENTS AND BANKS

1. Job Designation

- ☐ CFO/Director of Finance
- ☐ Head of Finance/GM Finance/Vice President Finance
- ☐ Senior Manager Finance/ Assistant VP Finance
- ☐ Finance Manager
- ☐ Others

2. Education

- ☐ Diploma ☐ Bachelor degree ☐ Master degree ☐ PhD

3. Year(s) of Experience

- ☐ 1 – 5 years ☐ 6- 10 years ☐ 11-15 years
- ☐ 16 – 20 years ☐ 21 – 25 years ☐ more than 25 years

4. Bank's Ownership

- ☐ Local ☐ Foreign ☐ Joint venture

5. Types of Services of The Bank

- ☐ Conventional financial services/insurance
- ☐ Islamic financial services/insurance only
- ☐ Both Islamic and conventional financial services

6. Bank's Age

- ☐ 1 – 5 years ☐ 6- 10 years ☐ 11-15 years
- ☐ 16 – 20 years ☐ 21 – 25 years ☐ more than 25 years

7. Annual Revenue

- ☐ Less than

8. Annual Total Assets

- ☐ Less than

SECTION 2: RISK MANAGEMENT PRACTICES

Please mark the most appropriate option regarding Enterprise Risk Management (ERM).

- ☐ Complete ERM framework in place
- ☐ Partial ERM framework in place (i.e., some, but not all, risk areas addressed)
- ☐ No formal ERM framework in place, but we have plans to implement one.
- ☐ Currently investigating concept of ERM, but have made no decision yet.
- ☐ No ERM framework in place and no plans to implement one.

SECTION 3: The following is a set of contributions that the management accountant can make in the field of operating risk management, please indicate the degree of your approval of each of them

- (1) Strongly Disagree**
- (2) Disagree**
- (3) Neither Agree nor Disagree**
- (4) Agree**
- (5) Strongly Agree**

The role that managerial accounting can play in risk management can be improved and developed.					

Availability of flexible accounting procedures and systems, can improve and assist the implementation of operational risk management					
The Bank has an effective accounting system that contributes to the application of management accounting in the practice of operational risk management					
The bank faces difficulties During the lack of experience, scientific and practical competence that are capable of management accounting methods in banks					
The management's desire to improve the bank's performance increases the chances of practicing management accounting in operational risks management					

SECTION 4: “MAP” FOR OPERATIONAL RISK MANAGEMENT

- (1) Not at All**
- (2) Very Little**
- (3) Somewhat**
- (4) Quite a bit**
- (5) To a Great Extent**

The management accounting practices (MAP) could be helpful in improving the role of operational risk management in:

Financial Statement and Ratio Analysis					
Budgetary Control and Budgeting					
Standard Costing and variance analyses					
Cost Benefit Analysis					
Relevant Costing and Decision-Making Analysis					
Cost Control and Cost Management					
Statistical Analysis					
Productivity Analysis					
Total quality management					
Strategic management accounting					
Activity Based Costing					
Benchmarking					
Economic Value Added (EVA)					
Balance Scorecard (BSC)					
Business Planning					
Business Strategy					

Value chain analysis					
Capital budgeting techniques					
Target Costing					
Variable Costing					
Total Costing					
Transfer Costing					
Responsibility Accounting					
Customer Profitability and Competitor Analysis					



SECTION 5: bank's current approach towards operational risk management

The Bank is affected by risks related to natural disasters resulting from accidents related to the external environment					
The bank implements processes as primary factors of operational risk					
The bank implements people as primary factors of operational risk					
The bank implements systems as primary factors of operational risk					
The bank suffers from external fraud operations Such as: the risks of extortion and armed robbery ,Theft from third parties.					
The Bank suffers from electronic risks resulting from systems and information technology.					
The Bank has a risk management department.					
The bank performs an operational risk assessment.					
The Bank has an approved strategy and policy to manage operational risks.					
Operational risks are monitored and controlled through the Operational Risk Management Team.					
Operational risks are monitored and controlled by the Internal Audit Department.					
Operational risks are monitored and controlled by the employees themselves.					
The Board of Directors sets special principles for how to Identification, assessment and monitoring of operational risks reduce and control it.					
Provides an effective framework for identifying and assessing operational risks.					
The Bank's operational risk management is subject to a comprehensive, effective and independent internal audit by qualified staff.					
The Bank identifies its own operational risks in all types of products, activities, processes and systems.					
The Operational Risk Report is submitted to the Executive Management and the Board of Directors.					
The Bank has policies, methods and procedures that control and mitigate operational risks.					
Adequate contingency plans are prepared to deal with any emergency that may cause the interruption of an activity or any specific service.					

The bank discloses the general framework for operational risk management.					
The bank recognizes incompetence people exposures as an important part of operational risk.					
The bank recognizes negligence people exposures as an important part of operational risk.					
The bank recognizes human error exposures as an important part of operational risk.					
The bank recognizes low morale exposures as an important part of operational risk.					
The bank recognizes lack of training exposures as an important part of operational risk.					
The bank should recognize and implement the historical data to forecast the likelihood of a potential loss					
The bank should recognize and implement the self-risk assessment					
The bank should recognize and implement the risk maps and process flows					
The bank should establish a separate operational risk management structure					

Name and Surname

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Bachelor of accounting

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