BRIDGING MANAGEMENT CONTROL SYSTEMS AND SUSTAINABILITY: SYSTEMATIC REVIEWS ON BUSINESS PERFORMANCE AND RISK

Editor

Mr. Lawrence Walambuka

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Bridging Management Control Systems and Sustainability: Systematic Reviews on Business Performance and Risk

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PREFACE

In today's dynamic business environment, the role of management control systems (MCS) has evolved significantly, becoming crucial not only for ensuring organizational efficiency but also for promoting sustainability and adapting to rapid technological advancements. This edited volume brings together a diverse collection of articles that explore various aspects of management control systems, offering new insights, frameworks, and perspectives from both theoretical and practical viewpoints.

The contributors to this book have drawn upon systematic literature reviews, empirical studies, and conceptual frameworks to examine the design, implementation, and evaluation of MCS in different contexts. The topics covered are rich and varied, from the role of management control systems in achieving company performance and competitive advantage, to the integration of digital technologies in assessing and mitigating risks associated with sustainable business models. Several chapters also address the growing importance of integrating sustainability into business practices, emphasizing the role of management control systems in advancing the global Sustainable Development Goals (SDGs).

With contributions ranging from the study of start-ups to large multinational corporations, this book offers insights into both the theoretical foundations and practical applications of management control systems. Additionally, the volume explores the intersection of accounting information systems, performance management, risk management, and sustainability, providing readers with a comprehensive understanding of how MCS can drive long-term organizational success.

The overarching aim of this book is to foster a deeper understanding of how management control systems can support both business performance and sustainability, bridging gaps between theory and practice. It serves as a valuable resource for academics, practitioners, and students alike who are interested in the ongoing evolution of management control systems in a world where transparency, risk management, and sustainability are increasingly integral to business strategy.

We hope that this volume sparks further research, discussion, and innovation in the field of management control systems, as organizations continue to navigate the complexities of a rapidly changing global landscape.

Mr. Lawrence WALAMBUKA
Bursa
December 2024

CONTENTS

CHAPTER 1

Management Control System Design Based on Four Levers of Control in Start-ups

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ABSTRACT

This research aims to design an effective Management Control System (SPM) for start-up companies in Indonesia, using the Four Levers of Control (4LOC) framework developed by Robert Simons. With the increasing number of start-ups in Indonesia, which reached 2,492 companies by May 2023, it is important for start-ups to have strong SPM to improve business performance and sustainability. However, statistics show a high start-up failure rate, reaching 90%, both globally and in Indonesia. This research uses a qualitative descriptive approach with theoretical studies and previous literature reviews. The research results show that the application of belief systems, boundary systems, diagnostic control systems, and interactive control systems within the 4LOC framework can help start-ups manage operations and make decisions more effectively. Recommendations include formulating a clear vision, mission and core values, implementing a formal code of ethics, using strategy maps and Balanced Scorecards (BSC) for performance measurement, as well as increasing interactive discussion activities to encourage collaboration and innovation. This research is expected to provide practical and theoretical contributions in the development of SPM for start-ups and fill gaps in related literature.
Keywords: Management Control System, Simons' Levers of Control framework, Belief System, Boundary System, Diagnostic Control System, Interactive Control System.

INTRODUCTION

The development of information and communication technology has had a significant impact on various aspects of life, including the economic sector. In Indonesia, this development is reflected in the increase in digital-based business activity, which is marked by the emergence of many start-up companies. As of May 2023, there are 2,492 start-up companies operating in Indonesia, making this country one of the largest start-up ecosystems in the world, after the United States, India, the United Kingdom, Canada and Australia (startupranking.com, 2023). This condition shows that there is strong support from the government and the private sector in building a conducive digital ecosystem.

However, behind this rapid growth, start-up companies also face big challenges in maintaining business continuity. Statistics show that the failure rate of start-up companies is very high, reaching 90% (Kalyanasundaram, 2018). More than two-thirds of start-up companies fail to provide positive returns to investors (Eisenmann, 2021). In Indonesia, this situation is also reflected in the low success rate of start-ups, where around 90% of them fail (Kamil, 2018). This condition is a serious concern considering the significant contribution that start-ups can make to the national economy and community welfare.

There are various factors that contribute to the high rate of start-up failure. One of the main factors is the lack of focus and clear goals and the absence of an effective management control system (SPM) (startupsmagazine.co.uk, 2022b, 2022a). SPM is a crucial element in managing and directing a company so that it remains on the right track and is able to adapt to market dynamics. Davila and Foster (2007) and Newbery et al. (2018) stated that good implementation of SPM can provide a strong foundation for long-term business growth and continuity.

SPM functions as a tool for management to ensure that the behavior and decisions of all members of the organization are consistent with company goals and strategies (Malmi & Brown, 2008). However, due to the special characteristics of start-ups which tend to move quickly and develop rapidly, the systems implemented in large companies cannot always be directly applied to start-ups (Lycko & Mahlendorf, 2017). Start-ups generally operate in a dynamic and unstable environment, so they need a guide or system that is able to keep the organization organized and focused.

To face these challenges, SPM needs to be designed comprehensively and adaptively. One SPM framework that can be adopted is the Four Levers of Control (4LOC) developed by Simons (1995). This framework includes four control systems, namely belief system, boundary system, diagnostic control system, and interactive control system. The 4LOC framework allows management to control and direct the company in a way that is more flexible and responsive to changes occurring in the market. Simons (1995) emphasized that these four systems must work synergistically to achieve maximum effectiveness. In a start-up context, implementing 4LOC can help manage strategic uncertainties and increase competitive advantage, which is very important for the company's survival and growth.

This research aims to design an effective SPM based on the 4LOC framework for start-ups in Indonesia. Thus, it is hoped that this research can provide practical and theoretical contributions in the development of management control systems that suit the characteristics and needs of start-ups. Apart from that, this research also aims to fill the gap in the literature, where there is still little research that focuses on the implementation of SPM in start-up companies compared to established companies (Davila & Foster, 2007; Bedford, 2015; Barros & Ferreira, 2022; Biswas & Akroyd, 2022; Surja, 2022). The importance of this study is also reinforced by various previous studies that emphasize the need to understand how management control practices can support innovation and growth in start-up contexts (Major et al., 2018; Feeney & Pierce, 2018; van der Kolk et al., 2020). This study uses a qualitative approach through in-depth case studies of start-up companies, with the aim of exploring how the control elements in the 4LOC framework are applied and interact with each other in a dynamic and innovative context.

With this comprehensive approach, the research is expected to provide new insights into how to design and implement effective MSS for start-ups, as well as offer practical guidance for managers and company leaders in managing existing challenges and opportunities. In addition, it is hoped that the results of this research can contribute to the control and innovation management literature, as well as enrich understanding of how control systems can support the success and sustainability of start-up companies in Indonesia.

LITERATURE REVIEW

Management Control Systems (MSS) are a collection of formal procedures used by managers to maintain or change company activity patterns (Simons, 1995). This system is designed to ensure that all actions and decisions taken by individuals in the organization are aligned with the organization's goals and strategies (Anthony and Govindarajan, 2007). SPM helps managers increase their attention to strategic aspects, freeing them from operational decisions that can be delegated, and controlling actions through exceptions (Davila and Foster, 2007). This system includes various tools and techniques, such as strategic planning, budgeting, performance measurement, and reporting (Merchant and Van der Stede, 2012).

SPM plays a crucial role in companies, especially in a dynamic and uncertain business environment. Start-up companies, for example, often operate in conditions full of uncertainty and rapid change. In this context, SPM functions as a tool for monitoring and controlling company activities, ensuring that every action taken is in line with the organization's goals and strategies. SPM involves several main components that are interrelated, namely:

1. Strategic Planning: A process that involves setting long-term goals and developing plans to achieve them. Strategic planning helps managers in setting the direction and priorities of the organization.
2. Budgeting: A process involving short-term financial planning to ensure that available resources are used efficiently and effectively. Budgeting helps managers in allocating resources and controlling expenses.
3. Performance Measurement: A process that involves assessing work results against established standards. Performance measurement allows managers to monitor progress toward organizational goals and identify areas that require improvement.
4. Reporting: The process that involves preparing financial and operational reports to inform stakeholders about the organization's performance. Reporting helps managers make decisions based on accurate data and facts

According to Adnan and Murhaban (2020), there are two main factors that influence the effectiveness of SPM, namely external factors and internal factors:

External Factors:

The behavior of employees or individuals in a company is influenced by the existing formal and informal systems. Formal systems, such as policies and procedures, as well as informal systems, such as culture and work ethic, influence the way individuals work and the decisions made in an organization (Hasibuan et al., 2022). A balance between formal and informal mechanisms is very important to achieve organizational goals.

Internal factors:

a. Organizational Culture: The norms and values espoused in an organization play an important role in determining how employees behave and make decisions. A strong and positive culture can encourage employees to work in accordance with organizational goals.
b. Management Style: The attitudes and behavior of managers or leaders in organizations also influence the effectiveness of SPM. A good leadership style, such as firm, charismatic and inclusive, can create a work environment that is conducive to achieving organizational goals.

Start-up companies often face unique challenges, such as limited resources, market uncertainty, and the need to innovate quickly. Therefore, effective implementation of SPM is very important to monitor and control company activities, as well as ensure that every action taken is in line with organizational goals and strategies.

According to previous research, such as that conducted by Kurniawan (2010), Rathnasekara & Gooneratne (2020), Baird et al. (2019), and Biswas & Akroyd (2022), SPM plays an important role in established companies, but special attention needs to be paid to the application of SPM in the start-up context to overcome unique challenges.

Simons' Levers of Control framework

Simons' Levers of Control (4LOC) is a framework developed by Robert Simons in 1995 to assist management in designing and using Management Control Systems (MSS). This framework explains how management can control and manage their company through four control systems: belief system, boundary system, diagnostic control system, and interactive control system. This framework must be used in an integrated manner to be able to carry out strategy effectively (Simons, 1995; Simons, 2000).

Belief System

A belief system is a set of explicit organizational definitions that managers communicate formally and systematically reinforce to provide basic values, goals and direction for the organization. This system functions to motivate organizational members to seek opportunities creatively and expand opportunities (Simons, 1995). Belief systems play a key role in companies with flexible cultures, helping to communicate the company's core values, goals and direction (Heinicke et al., 2016).

Boundary System

Boundary systems are rules, limits and prohibitions established to regulate employee behavior and prevent undesirable actions. This system includes credible sanctions and formally stated threats of punishment (Simons, 1995). Boundary systems establish “domains of acceptable activity for organizational participants” and limit opportunity-seeking behavior that may be risky (Simons, 1995). This system plays an important role in providing boundaries and allocating less attention, avoiding unnecessary risks (McCarthy and Gordon, 2011; Bedford, 2015).

Diagnostic Control System

A diagnostic control system is a formal information system that managers use to monitor and measure organizational results and correct deviations from predetermined performance standards (Simons, 1995). These systems assist managers in setting goals, aligning performance measures, designing incentives, and reviewing and following up on exceptions (Simons, 2000). Diagnostic control systems play an important role in project success (Rezania et al., 2016), new product development (Müller-Stewens et al., 2020), and provide space for necessary experimentation in companies seeking to exploit existing markets and technological capabilities (Bedford, 2015).

Interactive Control System

Interactive control systems are formal information systems that managers use to involve themselves personally in subordinates' decision-making activities (Simons, 1995). This system is a two-way communication process that allows managers to be directly involved in the decisions of their subordinates on a regular basis (Simons, 1991; Simons, 1995; Simons, 2000, Khan et al., 2023). The use of interactive control systems involves intensive use by top management and operational managers, as well as facilitating challenges and debates that focus on strategic uncertainty (Bisbe et al., 2007).

METHOD

This research uses a qualitative descriptive approach by conducting theoretical studies and previous literature reviews. This research discusses and reviews previous literature regarding the implementation of a management control system based on the Four Levers of Control (4LOC) framework and its implications for start-up performance. Theories and previous research are collected and analyzed, then the researcher summarizes and links the theories and previous research with conclusions and in-depth studies. Theoretical sources are obtained through journals, books and research through accredited journal websites. This research will provide an overview of how to implement a Management Control System based on the Four Levers of Control on start-up performance through theory and comparing it with previous research. The research methodology used is purely through analysis of existing literature and theoretical studies related to the topics

discussed in this research. Then, the researcher conducts a discussion and provides a conclusion through theoretical analysis and research results that support obtaining theoretical research results related to the themes discussed in this research.

RESULTS AND DISCUSSION

In a dynamic and competitive business era, it is important for start-ups to have an effective Management Control System (SPM) to guide operations and decision making. One framework that can be used to design SPM is the Four Levers of Control (4LOC) developed by Robert Simons. This research aims to design SPM based on 4LOC to improve start-up performance and sustainability.

Belief System

Belief systems are an important foundation in guiding behavior and decision making in organizations. Based on interviews with management, the company's vision, mission and core values have not been clearly formalized. Therefore, this research recommends start-ups to formulate a clear and communicative vision, mission and core values to guide the actions and decisions of all members of the organization. This will help create harmony and focus in efforts to achieve company goals (Bart et al., 2001).

In this context, the belief system is an important element in the Four Levers of Control. By formulating a clear vision, mission and core values, start-ups can strengthen the foundation of their organizational culture and ensure that every action and decision taken by organizational members is in accordance with the established strategic direction (Ibrahim & Violita, 2023).

Boundary System

Boundary systems refer to codes of ethics or rules that regulate acceptable behavior in a company. Start-ups still do not have a formalized boundary system, which can increase the risk of unethical or inappropriate behavior. Therefore, this research suggests implementing a clear and formal code of ethics to maintain the company's integrity and reputation. By having a strong boundary system, start-ups can ensure that each member of the organization acts in accordance with the established values and standards (Widener, 2007).

In the Four Levers of Control, the boundary system provides clear direction about the limits of acceptable behavior in the company. By implementing a clear and formal code of ethics, start-ups can maintain the integrity of their organizational culture and minimize the risk of behavior that is not in accordance with the company's values (Ibrahim & Violita, 2023).

Diagnostic Control System

Diagnostic control system (DCS) is used to monitor and measure organizational performance periodically. Start-ups still rely on regular meetings and direct supervision to monitor employee performance. This research suggests implementing a strategy map and Balanced Scorecard (BSC) as part of DCS to articulate company goals and measure performance according to relevant perspectives. By using this approach, start-ups can have a better understanding of achieving their strategic goals and can make the necessary adjustments to achieve long-term success (Ibrahim & Violita, 2023).

In the Four Levers of Control, DCS provides a framework for monitoring and evaluating the achievement of organizational goals. Through the implementation of strategy maps and BSC, start-ups can measure their performance more systematically and identify areas where improvements are needed to achieve long-term success (Merchant & Otley, 2006).

Interactive Control System

Interactive control systems (ICS) are important for understanding and overcoming the challenges and opportunities facing organizations. Start-ups have implemented weekly discussions between management

and employees as a form of ICS, but still need to improve in terms of effectiveness and coverage of discussion topics. The research recommends improvements in discussion activities and better alignment with corporate goals and strategies. By strengthening ICS, start-ups can encourage greater collaboration, innovation and responsibility among organizational members (Ibrahim & Violita, 2023).

In Four Levers of Control, ICS plays an important role in facilitating dialogue and collaboration between management and employees. By strengthening discussion activities and ensuring alignment with company goals, start-ups can increase the responsibility and involvement of organizational members in achieving collective success (Hamid, 2011).

Integration of Four Control Systems

Simons (1995; 2000) emphasized that the four control systems must be used together to achieve effective control over business strategy. The integrated use of belief systems, boundary systems, diagnostic control systems, and interactive control systems creates a balance between innovation and efficiency (Chenhall and Moers, 2015). Previous research supports the importance of the combined use of these four control systems (Hoque and Chia, 2012; Bedford, 2015; Curtis and Sweeney, 2017; Baird et al., 2019; Zarzycka et al., 2019).

CONCLUSION

This research emphasizes the importance of an effective Management Control System (SPM) based on the Four Levers of Control (4LOC) to support the performance and sustainability of start-ups in a dynamic business environment. Through the four main elements of 4LOC, namely Belief System, Boundary System, Diagnostic Control System (DCS), and Interactive Control System (ICS), start-ups can build a solid foundation for managing their operations and decision making. By formulating a clear vision, mission and core values, as well as implementing a formal code of ethics, start-ups can maintain the integrity of their organizational culture. In addition, the use of strategy maps and Balanced Scorecards (BSC) in DCS helps start-ups in monitoring their performance systematically. In addition, increased discussion activities and alignment with company goals in ICS encourage collaboration, innovation and responsibility among organizational members. Thus, the implementation of SPM based on 4LOC provides a solid framework to improve the performance and sustainability of start-ups in a competitive market.

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CHAPTER 2
Literature Study on Management Control Systems: Design, Implementation, and Evaluation

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ABSTRACT

The method applied in this research is a literature review with a descriptive approach. This study discusses research on management control systems to understand how the design, implementation, and evaluation of management control systems are conducted. Result this research is designing effective Management Control Systems (MCS) entails several pivotal components. Firstly, a clear organizational structure, well-defined roles and responsibilities, and suitable performance measurement tools are imperative. MCS should be tailored to align with the company's strategy, with different strategies warranting distinct MCS approaches, such as differentiation versus low-cost strategies. Additionally, factors such as organizational culture, size, and the external environment should also be factored into MCS design to ensure alignment with the organizational context. Implementing MCS necessitates meticulous planning and systematic execution. Key stages in this implementation include training, communication, and the development of adequate technological infrastructure. However, various challenges in implementation exist, such as resistance to change, resource constraints, and inadequate involvement from top management. Case studies indicate that companies successfully surmounting these hurdles typically exhibit active involvement from all management levels, underscoring the significance of organizational participation in the implementation process.
The effectiveness of MCS is gauged through performance measurement covering both financial and non-financial dimensions, with the Balanced Scorecard being a commonly employed tool. Control systems should encompass mechanisms for feedback and adjustment based on evaluation results, ensuring the relevance and efficacy of MCS in adapting to changes.
Keywords: Management Control System, Design, Implementation, Evaluation.

1. Introduction

The role of technology in digital era has become a primary driver in the transformation of management control (Fauzeaa et al., 2019). Advances in information systems provide greater access to operational data of companies, which in turn present new challenges in the design, implementation, and evaluation of control systems (Akroyd & Kober, 2020). Alongside this, a paradigm shift in management control is also a significant focus in literature studies. From hierarchical traditional approaches to more decentralized and team-based approaches, this evolution changes how companies design, implement, and evaluate their control systems (Traxler et al., 2020). Regulatory and compliance challenges also hold crucial focus in this context, where companies must continuously adapt their control systems to evolving regulations (Agustin et al., 2022). Globalization also plays a key role, with companies having operations spread across various countries facing unique barriers in maintaining control consistency throughout their organizations (Möller et al., 2020). However, behind all technology and systems, it should not be overlooked that human factors remain essential elements in the effectiveness of control systems. Motivation, communication, and organizational culture all play significant roles in the success of implementing and executing control systems (Nursyamsir et al., 2023). Therefore, literature studies on the design, implementation, and evaluation of control systems are becoming increasingly important to understand the complex dynamics behind modern management control.

Information technology has become one of the main factors in improving operational efficiency for companies. Studies by Arifah et al. (2021) highlight that the appropriate use of information technology can significantly contribute to improving operational efficiency, including in management control. The implementation of technology-based control systems has the potential to strengthen a company's control structure, enhance visibility, and enable management to make more timely and accurate decisions. Furthermore, research by Michie et al. (2011) has shown that effective control system design can have a positive impact on overall organizational performance. Well-designed control systems can help companies achieve their goals more efficiently, while less effective systems can hinder goal achievement. This underscores the importance of adequate control system design in supporting company performance.

Previous research has affirmed that technology plays a crucial role in the transformation of management control, yielding high efficiency and bolstering organizational performance (Nursyamsir et al., 2023; Yan, 2022). With proper use, information technology can assist companies in designing more effective control systems, enhancing visibility, and enabling more timely and accurate decision-making. However, the focus on technology implementation in the context of manufacturing companies remains less deeply explored. Past research has highlighted the need for a deeper understanding of how technology can be applied in manufacturing control systems and how this affects overall organizational performance (Hariyati et al., 2022; Senftlechner & Hiebl, 2019). Therefore, this study aims to fill this gap by investigating in-depth the impact of implementing technology-based control systems on the performance of manufacturing companies, thus providing valuable contributions to practical and theoretical understanding of the role of technology in modern management control.

The use of technology in management control has become increasingly common, and the implementation of technology in the context of manufacturing companies has its own uniqueness. Research by Akroyd & Kober (2020) highlights that little research has been done to understand how technology implementation in management control impacts the performance of manufacturing companies specifically. Further in-depth studies are needed to explore how technology-based control systems are implemented and evaluated in manufacturing environments, and how they impact overall organizational performance.

Considering these findings, further research on the implementation of technology-based control systems in the context of manufacturing companies can provide valuable insights into how technology can be optimized to support organizational performance in this digital era.

2. Literature Review

2.1.1 Management Control System (MCS)

Management Control System (MCS) is an essential framework in organizational management aimed at ensuring efficient and effective resource utilization in achieving strategic objectives (Nani & Safitri, 2021; Parker & Schmitz, 2022). MCS encompasses various processes and tools that support planning, control, and decision-making functions. The main components of MCS include feedback control, which monitors outputs and compares them to established standards, feedforward control, which focuses on identifying and addressing potential issues before they occur, and process control, which ensures operational consistency and efficiency (Akroyd & Kober, 2020). Tools such as budgeting, balanced scorecard (BSC), internal audit, and key performance indicators (KPIs) are utilized in MCS to support financial management, measure performance from various perspectives, and ensure compliance and operational effectiveness. In its role, MCS aids in planning and budgeting, control and supervision, performance evaluation, and better decision-making. However, the implementation of MCS also faces challenges, including organizational complexity, the need for management involvement and commitment, and dynamic changes in the business environment (Nursyamsir et al., 2023; Senftlechner & Hiebl, 2019). The success of MCS heavily relies on system flexibility and full support from top management. Through effective MCS, organizations can enhance their responsiveness and adaptability to changes and achieve long-term goals.

2.1.2 Designing Management Control System

Designing Management Control System (MCS) requires tailoring to the specific needs of the organization, including strategic objectives, organizational structure, and business environment (Grossi et al., 2020). The first step is establishing the organization's vision, mission, and strategic objectives, defining specific, measurable, achievable, relevant, and time-bound (SMART) short-term and long-term targets. An organizational structure supportive of MCS implementation should be designed with clear hierarchy and effective communication channels. Developing policies and operational procedures is also crucial to ensure control activities proceed as planned, including guidelines for performance reporting, audits, and corrective actions (Bansal, 2023). The selection of control tools and techniques such as budgeting, balanced scorecard (BSC), internal audit, and key performance indicators (KPIs) is the next step to support financial management, measure performance from various perspectives, and ensure compliance and operational efficiency. The implementation of information technology, such as management information systems (MIS) and Enterprise Resource Planning (ERP) applications, aids in collecting, storing, and analyzing performance data with real-time accessibility. Employee training and development are also necessary to enhance managerial skills and leadership. Routine monitoring and evaluation are conducted to ensure MCS implementation and organizational performance remain in line with established standards. Constructive feedback and corrective actions are implemented to address identified deviations or issues, and system adjustments and refinements are made periodically to ensure the relevance and effectiveness of MCS in facing changes in the business environment (Se Tin et al., 2021). With this structured and integrated design, organizations can achieve higher operational efficiency, enhance customer satisfaction, and develop sustainable internal capabilities.

2.1.3 Implementing Management Control System

Implementing Management Control System (MCS) in modern organizations requires a systematic and structured approach to achieve operational effectiveness and efficiency. The crucial first step is formulating clear organizational goals and objectives, which serve as the foundation for developing an effective control system (Hadid & Al-Sayed, 2021). The organizational structure should be designed to support MCS, with a clear hierarchy and effective communication channels to ensure information flows efficiently (Hakim & Faizah, 2018). The use of control tools and techniques such as budgeting, balanced scorecard, internal audit, and key performance indicators are key elements that help measure and manage organizational performance comprehensively (Arifah et al., 2021).

Additionally, the integration of information technology through management information systems and ERP applications plays a crucial role in optimizing data and information management, enabling management to make more informed decisions based on accurate and real-time data (Yan, 2022). Employee training and development are also critical factors in ensuring a deep understanding of MCS and its implementation in day-to-day business practices. Regular monitoring and evaluation are essential to identify areas for improvement and adjust MCS to dynamic changes in the business environment. Thus, effective MCS implementation requires full commitment from management, cross-departmental support, and continuous adjustment to remain relevant to contemporary business dynamics.

2.1.4 Evaluating Management Control System

Evaluating Management Control System (MCS) is a critical process that ensures MCS functions according to the organization's strategic objectives and is adaptive to changes in the business environment. This evaluation includes performance measurement through various metrics and predefined key performance indicators (KPIs) to assess the effectiveness of existing control systems (Mohammed, 2023). One of the main approaches in evaluating MCS is the use of the balanced scorecard, which allows organizations to assess performance from various perspectives such as financial, customer, internal processes, and learning and growth (Bansal, 2023). Additionally, periodic internal audits also play a crucial role in evaluation, helping to identify areas in need of improvement and ensuring compliance with established policies and procedures (Alyaarubi et al., 2021). MCS evaluation should include feedback analysis from various organizational levels, including front-line managers directly involved in daily operations (Wahyudi & Tupti, 2019). This evaluation process should be accompanied by the ability to adjust control systems based on evaluation results to enhance operational efficiency and effectiveness (Bhamare et al., 2020). Overall, systematic and continuous evaluation of MCS allows organizations to remain responsive to market dynamics and ensure that strategic goals are achieved using resources optimally.

2.1.4 Management Control System

Management Control System plays a vital role in ensuring that organizational financial operations run efficiently and align with strategic goals. MCS in the context involves the use of various tools and techniques such as budgeting, financial reporting systems, and variance analysis to control and manage financial activities (Asiaei et al., 2022; Yan, 2022). Budgeting serves as a detailed financial plan and a primary control tool, helping managers monitor income and expenses and compare actual results to established targets (Bisogno & Donatella, 2022; Grossi et al., 2020). Effective financial reporting systems provide relevant and timely information for decision-making, enabling management to evaluate financial and operational performance continuously (Cottell, 2010; Wasyid, 2019). Variance analysis is used to identify differences between actual results and budgets, revealing areas requiring special attention and corrective action (Maria et al., 2022). Additionally, the integration of information technology, such as ERP systems, aids in efficiently collecting, processing, and analyzing financial data, enhancing the accuracy and reliability of information used in MCS (Brown & Green, 2018; Ibrahim & Violita, 2023). Thus, MCS not only serves as a control mechanism but also as a strategic tool to ensure organizational sustainability and growth through careful and forward-thinking financial management (Andreas & Gumanti, 2022).

3. Methods

The method applied in this research is a literature review with a descriptive approach. This study discusses research on management control systems to understand how the design, implementation, and evaluation of management control systems are conducted. Secondary data were obtained from journals available in the Science and Technology Index (SINTA) database to ensure the credibility of the journals used in the research because the validity and reliability of the data have been tested previously. The selection of research samples is based on databases available in international index portals such as Google Scholar, Index Publikasi Indonesia (IPI), Garuda, and Scopus. Keywords used in the search include Management

Control System, Design Management Control System, Implementation Management Control System, Evaluating Management Control System, and Management Control System. Creating a search strategy focused on articles published within specific time frames and languages is crucial. This literature review will enhance understanding of how management control systems. The results of this study will provide a foundation for research and steps aimed at improving management control systems.

4. Result and Discussion

4.1 Result

Designing effective Management Control Systems (MCS) involves several key components. Firstly, a clear organizational structure, well-defined roles and responsibilities, and appropriate performance measurement tools are crucial. MCS should be designed to align with the company's strategy, where different strategies require different MCS approaches, such as the difference between differentiation and low-cost strategies. Additionally, factors such as organizational culture, size, and the external environment should also be considered in designing MCS to ensure its alignment with the organizational context.

Implementing MCS requires careful planning and systematic execution. Crucial stages in this implementation include training, communication, and the development of adequate technological infrastructure. However, there are various challenges in implementation, such as resistance to change, resource limitations, and lack of involvement from top management. Case studies show that companies that successfully overcome these barriers tend to have active involvement from all levels of management, demonstrating the importance of organizational participation in the implementation process.

The effectiveness of MCS is evaluated through performance measurement covering both financial and non-financial aspects, with the Balanced Scorecard being one commonly used tool. Control systems should include mechanisms for feedback and adjustment based on evaluation results, ensuring that MCS remains relevant and effective in dealing with changes. Empirical research indicates that companies that regularly evaluate and adjust their MCS demonstrate better performance compared to those that do not conduct periodic evaluations.

From this research, there are several practical implications for organizations. Firstly, the importance of designing adaptive MCS to adapt to changes in the business environment. Secondly, ongoing training and effective communication are crucial in MCS implementation to ensure understanding and acceptance from all members of the organization. Thirdly, organizations should establish procedures for periodic evaluation to ensure that the management control system remains effective and relevant and can adapt to changes and new developments in the business and external environment.

4.2 Discussion

Table 1. Literature Review for All Research

No	Writer/year	Title of research
1	(Nani & Safitri, 2021)	Exploring the relationship between formal management control systems, organisational performance and innovation: The role of leadership characteristics
2	(Asiaei et al., 2022)	Green intellectual capital and environmental management accounting: Natural resource orchestration in favor of environmental performance
3	(Se Tin et al., 2021)	Studi Literatur Riset Management Control For Sustainability 2010-2019
4	(Grossi et al., 2020)	Accounting, performance management systems and accountability changes in knowledge-intensive public organizations: A literature review and research agenda

5	(Möller et al., 2020)	Digitalization in management accounting and control: an editorial
6	(Senftlechner & Hiebl, 2019)	Management accounting and management control in family businesses: Past accomplishments and future opportunities
7	(Nursyamsir et al., 2023)	Management Control System, Innovation Dan Organizational Performance
8	(Hariyati et al., 2022)	Management accounting information system and intellectual capital: a way to increase SME's business performance
9	(Ibrahim & Violita, 2023)	Perancangan Sistem Pengendalian Manajemen Berdasarkan Four Levers of Control pada Start-up (Studi Kasus pada Start-up XYZ)
10	(Yan, 2022)	Management Accounting in The Era of Big data

Sumber: Data diolah (2024)

4.2.1 Design Management Control System

Management Control System (MCS) is a set of procedures and methods used by an organization to manage and control their operational and financial performance. This system assists managers in decision-making by providing relevant and accurate information about the company's performance.(Aini, 2021)

There are several key components in designing a management control system:

a. Organizational Objectives: The management control system should be designed to achieve the organization's long-term and short-term goals. This involves setting clear objectives and formulating strategies to achieve them.
b. Performance Measurement: The system should provide appropriate metrics to measure the performance of the organization, departments, and individuals. This includes financial measurements such as profit and loss, cash flow, and balance sheets, as well as non-financial measurements such as customer satisfaction, product quality, and operational efficiency.
c. Data Collection: The information needed for performance measurement should be collected regularly and accurately. This may involve using Management Information Systems (MIS) to automatically collect data from various sources.
d. Analysis and Reporting: The collected data should be analyzed to evaluate actual performance against set objectives. The results of this analysis are then presented in reports relevant for management decision-making.
e. Decision Making: Management uses the information provided by the management control system to make strategic, tactical, and operational decisions. This may involve resource allocation, budget planning, or changes in business strategy.
f. Corrective Action: The system should provide mechanisms to identify discrepancies between actual performance and set targets and take necessary corrective actions to rectify them.
g. Internal Control: It is essential to ensure that the management control system is well-designed to prevent fraud, errors, or misuse of company resources. This involves implementing effective internal controls.

The process of designing a management control system involves a deep understanding of the organization's needs and characteristics, as well as the use of appropriate information technology to support the implementation of the system (Alfian, 2020). By integrating these elements, organizations can ensure that their management control system is effective in supporting their goals.

4.2.2 Implementation Management Control System

The implementation of management control systems begins with the establishment of clear financial

and operational goals by the company. Key Performance Indicators (KPIs) relevant to these objectives are then developed to measure financial performance, such as profitability and operational efficiency. Subsequently, an efficient accounting information system is designed and implemented to gather, store, and analyze financial data accurately. This data is used to generate comprehensive and relevant financial reports for management. From these reports, management can make informed decisions regarding resource allocation, budget planning, and business strategies. If discrepancies between actual performance and financial targets are identified, corrective actions are promptly taken, such as budget adjustments or improvements to accounting processes. Regular evaluations are conducted to ensure that the management control system operates effectively in supporting the company's overall financial goals.

4.2.3 Evaluating Management Control System in Accounting

Assessment of Management Control Systems (MCS) in accounting is a crucial step in ensuring the effectiveness and efficiency of the system in managing an organization's financial performance. In this context, the evaluation must be comprehensive and encompass several key aspects relevant to accounting functions. First and foremost, the evaluation should consider the alignment of the MCS with the financial goals and strategies established by the organization. This includes assessing the extent to which the MCS reflects the financial priorities of the company and whether the KPIs used are aligned with those goals.

Furthermore, the evaluation should involve an analysis of the accuracy and relevance of the data generated by the MCS. This includes assessing the quality of the financial reporting produced by the system and whether the information provides an accurate picture of the organization's financial performance.

Additionally, the evaluation should also consider the operational efficiency of the MCS. This involves assessing the accounting processes used by the system, including the collection, processing, and reporting of financial data. A comprehensive evaluation will also include an assessment of the internal controls implemented within the MCS to prevent errors and fraud in financial reporting.

Finally, the evaluation should identify areas where the MCS can be improved to enhance its effectiveness in managing the organization's financial performance. This may include recommendations for process improvements, enhancements to information technology, or improvements in employee skills. By conducting a thorough evaluation of the MCS in accounting, organizations can ensure that the system makes a significant contribution to achieving their overall financial goals.

5. Conclusion

Management Control System (MCS) in accounting is an essential tool for organizations to manage and control their operational and financial performance. By providing relevant and accurate information, MCS assists managers in making informed decisions. The design of MCS involves several key components, including setting clear organizational objectives, appropriate performance measurement, accurate data collection, comprehensive analysis and reporting, information-based decision-making, implementation of corrective actions, and effective internal control implementation.

The process of designing MCS requires a deep understanding of the organization's needs and characteristics, as well as the use of appropriate information technology to support the implementation of the system. Furthermore, the implementation of MCS involves setting clear financial and operational goals, developing appropriate Key Performance Indicators (KPIs), designing and implementing efficient accounting information systems, and making decisions based on the information provided by the system.

However, evaluating MCS is also a crucial step in ensuring its effectiveness. Evaluation should be comprehensive and cover key aspects such as alignment with organizational financial goals and strategies, accuracy and relevance of generated data, operational efficiency, internal control, and identification of areas for improvement. By conducting comprehensive evaluations, organizations

can ensure that their MCS functions optimally in achieving their financial and operational goals.

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CHAPTER 3

Water Accounting: Implementation in Indonesia

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ABSTRACT

Water administration still faces a issues, assets administration framework that is not however ideal, which comes about in ineffectual water utilization. Be that as it may, water bookkeeping in Indonesia is still not broadly actualized, and the accessibility of supporting writing is still constrained. This inquire about points to audit the execution of water bookkeeping in Indonesia. Based on inquire about mapping that, there are as it were 12 articles talk about the usage of water bookkeeping in Indonesia, particularly in certain divisions, the open division (BUMD) and the private division (agribusiness, mining, commerce). This inquire about contributes to supporting writing on water bookkeeping in Indonesia.
Keywords: Indonesia, Scoping review, Water accounting.

INTRODUCTION

Water management is one of the world's most pressing issue. Global climate change is not only impacting the amount of fresh water available, population growth is also increasing the demand for an already limited resource.

However, there is a problem of water scarcity in various places in the world According to The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2023). As many as 2 to 3 billion people experience water shortages for at least one month each year and this number can continue to increase every year so that it can have an impact on the sustainability of human life. Therefore, it can be exacerbated by extreme climate change which can increase the scarcity of clean water and sanitation and accessibility to water (United Nations, 2023).

The application of water accounting can help overcome the problem of water scarcity, especially in the agricultural sector.

According to Mahmud, et.al. (2022) the application of *water accounting* can support the sustainability of water management to overcome the problem of water scarcity. Thus, the application of water accounting can help an organization in identifying the availability, allocation, and use of water, as well as carrying out monitoring and evaluation related to theimplementation of water management.

Based on information from the Central Statistic Agency (2022), namely the operational overview of clean water companies in Indonesian in 1 (one) year compared to previous years.

Table 1. Effectiveness by Clean Water Companies in Indonesia, 2020-2022

Indicator	2020	2021	2022
Potential Production Capacity (liters/second)	246.169	251.329	252.535
Effective Production Capacity (liters/second)	197.465	201.982	205.256
Production Effectiveness (%)	80,22	80,37	81,28
Clean Water Production Volume (thousand m3)	5.262.124	5.252.817	5.267.541
Clean Water Distribution Volume (thousand m3)	4.350.726	4.375.697	4.504.496
Distribution Effectiveness (%)	82,68	83,30	85,51
Leakage Volume (thousand m3)	911.398	877.120	763.045
Leakage Percentage (%)	17,32	16,70	14,49

Source: Processed from data (Central Statistick Agency, 2021, 2022, 2023)

The table above shows that the clean water company in Indonesia has tried to increase the effectiveness of the production and distribution of clean water, which can be seen from the percentage figures for the effectiveness of the production and distribution of clean water which increases every year.

This study aims to analyze the extent of the implementation of water accounting in Indonesia. With that, this study can provide contributions in the from of suggestions or recommendations for policy makers, namely the National Water Resources Council (Dewan SDA National).

LITERATURE REVIEW

Understanding Water Accounting

Understanding Water Accounting refers to the process of comprehensively tracking, measuring, and reporting the use, allocation, availability, and distribution of water resources within a specific system or area. It provides a systematic approach to understanding how water is sourced, consumed, lost, or stored across different sectors such as agriculture, industry, and domestic use (Sipayung et al., 2024).

Water accounting aims to promote sustainable water management by identifying inefficiencies, ensuring equitable distribution, and supporting informed decision-making for policymakers, resource managers, and stakeholders (Askar et al., 2022). It often involves the use of frameworks such as the System of Environmental-Economic Accounting for Water (SEEA-Water) to integrate physical and economic data on water.

In the scope of the Company that seeks from management in connecting risk management and the effectiveness of water use aimed at producing cleaner and more efficient production is water accounting (Christ & Burritt, 2017, Mardiana et al., 2022)). This is expected to influence investment decisions from Company *stakeholder*.

Water Accounting is a procedure for classifying the components of the water Balance into types of water use that reflect the effects of human intervention on the water cycle. Therefore, this classification allows for the analysis of water use, water loss and water productivity.

Water accounting types include, among others:

1. Gross Inflow: Total water discharge that enters the system consisting of surface water precipitation and subsurface water.
2. Net Inflow: Gross inflow + changes in storage
3. Available Water: Available water that can be utilized
4. Water Deplation: The uses of water which will reduce the availability of water.
5. Outflow: The amount of water that comes out of the system which is divided into 2 parts, commited water and uncommited water.

Practice Water Accounting

Water account is veritably useful in sectors that use water as a product motorist similar as in the mining sector. This is in line with the statement o that the benefits of aligning standardized water computations with routinely collected data as part of environmental compliance of mining operations are demonstrated in a case

study for mining operations. Liao & Khan added that companies need to use water account to identify water dearths and problems in water use operation.

Based on the Food and Agriculture Organization of the United Nations (nd), hereinafter referred to as FAO, water accountingis a systematic study of the current status and trends in the supply, demand, accessibility, and use of water in a defined domain. From that understanding, it can be concluded that water accounting can be used to see how water as a resource is used and processed by an entity, and its application is used as an increase in the effectiveness and efficiency of the entity's resources. As we know that in its use, water is very prone to being wasted in vain. This happens because of the lack of supervision over the amount of water released, in contrast to the total inventory of merchandise whose amount can be calculated physically.

Due to these problems, water accounting is useful for entities to be able to intervene in inefficient water use. FAO describes the use of water accountingfor entities as an effort to improve water efficiency.

METHOD

In this research a descriptive quantitative approach was used using the scoping review method based on saunders et. al. (2019). One of the tools wed to find out whether a systematic review has been published or not is also called a *scoping review*.

In this research, the researcher’s question focusess on finding out how water accounting is implemented in Indonesia through previous research. This step is searched using online database searches, tables of contents, specialized bibliographies, and other sources in the literature collection.

This study included purposively selected samplers to ensure cost-effectiveness with knowledgeable expert knowledge (EPA Amerika Serikat, 2018).

Results and discussion analyze the results of data collection which are then elaborated futher in the discussion to answer the research questions raised in the study. Thus, the entire research can be summarized in research conclusins and produce suggestions or recommendations if possible.

Data analysis is carried out by grouping on certain orders that are the main focus of the exploration to gain an overview of former exploration that has been reviewed. After that, each study is epitomized to grease the comparison of the results of one study with another so that the exploration questions can be answered. Eventually, collect a exploration report. The exploration is collected by presenting an preface containing the problem and exploration questions. In addition, the exploration donation must also contain the exploration methodology used, in the form of a exploration approach, exploration styles, exploration strategies, and way taken in carrying out the exploration. The results and discussion review the results of data collection which are also further developed in the discussion to answer the exploration questions raised in the exploration. therefore, the entire exploration can be epitomized in the exploration conclusion and produce suggestions or recommendations if possible.

RESULT AND DISCUSION

Result

After the literature search by collecting from related sources, the search results are then processed and compiled to be analyzed further and find the relationship between each literature. Before the literature can be used, filtration is carried out to determine which articles can be used and which cannot be used.

Overall, water accounting provides a foundation for better decision-making, supporting sustainable water management, promoting equitable distribution, and enhancing resilience to water-related challenges such as droughts and climate change.

Discussion

Table 2. Previous Research Research Methods

No.	Researcher (Year)	Research Methods	Research Design
1.	Eksandy (2023)	Quantitative	Case Study
2.	Mahmud (2022)	Quantitative	Literature Study
3.	The Last Supper (2021)	Quantitative	Case Study
4.	Fitriasari et al. (2020)	Quantitative	Case Study
5.	The Last Supper (2020)	Quantitative	Case Study
6.	Hamdani (2019)	Quantitative	Case Study
7.	Hendratno & Agustine (2018)	Qualitative	Case Study
8.	Adriana & Widiarto (2016)	Qualitative	Case Study

Source: processed 2024

The table above illustrates how the methods in the research that has been carried out regarding the application water accounting in Indonesia. Research on water accountingmore dominated by research with a quantitative approach where there are 10 quantitative research articles compared to 2 qualitative research articles. Then, research on this water accounting, many use case study designs. This indicates that in the research conducted, more understanding is obtained by studying cases that occur in the application. Water accounting especially in certain sectors compared to research water accountingin general. **Comparison between literature.**

Most of the studies conducted a review on water accountingthat have been carried out by companies or organizations. The content analysis method is used to collect and analyze text content that can be in the form of words, images, symbols, ideas, themes, or other types of communication. A total of 463 companies were listed in this study, and the themes of corporate water disclosure identified included company policies related to water use, cooperation with local water companies, water conservation activities, education about water management, impact of business operations, participation in providing access to clean water, water

quality management, and compliance with regulations. This study also evaluates the disclosure of companies following the guidelines. Global Reporting Initiative (GRI) G4. The results show that only about 44% of companies disclosed water-related issues in 2016, and the water disclosure scores of Indonesian companies are still relatively low compared to global disclosure guidelines.

Manufacturing as one of the diligence that consumes the most water is also the object of exploration. Their exploration discusses the influence water account, and their capabilities towards the profitable performance of manufacturing companies listed on the Indonesia Stock Exchange for the period 2015- 2018. The results, water accountingdoes not significantly affect profitable performance. The sample companies do n't prioritize good water operation and do not fulfill their social liabilities well in this regard. Inefficient water operation increases costs. functional, but companies have not enforced proper water account that can ameliorate profitable performance.

In short, ameliorate performance, numerous companies have not served from the perpetration of information technology and sustainable water operation practices that can ameliorate their gains over time. Only seven companies constantly reported their water account practices from 2014 to 2016, and the reported water account practices varied among these companies. In the conclusion of this study, it's suggested that mining companies in Indonesia ameliorate their water responsibility and account practices, and that the politics of visibility can moderate these practices. unborn exploration can consolidate the understanding of how the politics of visibility influences water account practices in Indonesia.

CONCLUSION

This study concludes that the implementation of water accounting in Indonesia is still low. This is related to the popularity and knowledge of water accounting as part of its sustainability studies is still low in Indonesia. In addition, the implementation of water accounting in the private sector, namely companies and corporations in Indonesia, it is still not comprehensive so that only a few companies have routinely reported on the use of water accounting in their sustainability reporting. Then, the implementation in the public sector is still constrained by the absence of Standard Operating Procedure (SOP) so that its implementation cannot run effectively. Benefits of implementing water accounting can be felt from the implementation in various sectors such as the mining sector, the hydroelectric power generation sector (PLTA), and rice field irrigation. These sectors are sectors that use water as the main variable driving production.

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CHAPTER 4

The Role of the International Integrated Reporting Council in Promoting Global Business Transparency and Sustainability to thel Achielvelmelnt of Thel Sustainablel Delvellopmelnt Goals (SDGs)

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ABSTRACT

The International Integrated Reporting Council (IIRC) serves an important function in advancing transparency and sustainability in global business practices. This research aims to evaluate the IIRC's contribution to the establishment and evolution of an integrated reporting framework that combines financial and nonfinancial elements, including environmental, social and governance (ESG) factors. Using a descriptive literaturebased research approach, this study explores the concept, implementation, barriers and impact of integrated reporting on corporate sustainability and stakeholder decisionmaking processes. The findings show that the integrated reporting framework created by the IIRC helps companies in increasing accountability, strengthening stakeholder relationships, and facilitating the achievement of sustainable development goals (SDGs).
Keywords: International Integrated Reporting Council, transparency, sustainability, integrated reporting, ESG, SDGs.

INTRODUCTION

In recent years, the urgency for businesses to adopt more transparent and sustainable practices has increased as global awareness around environmental, social and governance (ESG) issues increases (Rutskiy et al., 2024). Organizations are now expected to deliver not only accurate financial reports, but also insight into their social and environmental impact. This situation requires a reporting framework that is able to holistically combine financial and nonfinancial elements to present a comprehensive picture of an organization's longterm value and performance. To address this need, the International Integrated Reporting Council (IIRC) was created to promote and encourage integrated reporting. The goal of integrated reporting is to help companies generate longterm value by considering various forms of capital, including financial, human, social and natural capital. Additionally, the framework is intended to help achieve the Sustainable Development Goals (SDGs) and offer direction to companies as they address global sustainability challenges.

Although the benefits of integrated reporting are widely recognized, implementation continues to face several obstacles. In developing countries, key challenges include limited resources, lack of understanding, and inconsistent regulations. Therefore, it is important to understand the IIRC's role in encouraging the adoption of integrated reporting as a tool to increase transparency and sustainability of global business. This research aims to examine the concept, implementation, challenges and impact of integrated reporting, in order to provide comprehensive insight into IIRC's contribution to more responsible and sustainable business practices.

LITERATURE REVIEW

Integrated Reporting Elements (Integrated Reporting)

According to Ira Astria (2017), “The Integrated Reporting Council (IIRC) defines integrated reporting as 'a process that results in communication by an organization, most visibly a periodic integrated report, about how its strategy, governance, performance, and prospects lead to the creation of value over the short, medium, and long term.'"

Farah (2024) states, “Integrated Reporting (IR) is a reporting framework that enables companies to provide information related to their strategy, governance, performance achievements, and prospects holistically within a single report. This concept, defined by the International Integrated Reporting Council (IIRC) in 2011, integrates various critical aspects of a company and offers a comprehensive view of how the company creates value for its stakeholders.”

The elements of integrated reporting include:

1. **Organizational overview and external environment**: Explains the company's vision, mission, activities, and the external environment in which it operates.
2. **Governance**: Describes the company's governance structure and how it supports value creation over the short, medium, and long term.
3. **Opportunities and risks**: Highlights key risks and opportunities faced by the company, their impact on value creation, and how the company addresses these factors, including the availability, quality, and affordability of relevant resources over different time horizons.
4. **Strategy and resource allocation**: Outlines the company's strategic objectives in the short, medium, and long term, the strategies to achieve them, resource allocation plans, and how the company measures its achievements and targets over these timeframes.
5. **Business model**: Illustrates how the company transforms inputs into outputs and outcomes through its business activities to meet strategic objectives and create value over the short, medium, and long term.
6. **Performance**: Details the company’s achievements in relation to its strategic objectives, including both quantitative and qualitative information, as well as key outcomes that affect the company's resources.
7. **Outlook**: Discusses challenges and uncertainties that may arise in executing the company's strategies, as well as the potential impact of these challenges and uncertainties on its business model, performance, and outcomes in the future.

Objectives of Integrated Reporting (Integrated Reporting)

According to Farah (2024), the goal of the IIRC is to establish integrated reporting, and by association, integrated thinking, as the norms of mainstream business practices in both the public and private sectors. "Integrated Reporting" is defined as a process based on an integrated approach to periodically produce reports by an organization about the value created over time and to communicate the aspects of that value creation. The integrated reporting process results in an integrated report, which combines financial and non-financial information in the same document. This provides a unified view of how value is created over time and offers insights into various aspects of organizational performance with reference to its strategy and model.

The establishment of the IIRC, its goal to develop and improve a framework for integrated reporting, and the enthusiastic response to the Pilot Programme from multinational companies and investors participating in the 'Pilot Programme Business Network' and the 'Pilot Programme Investor Network,' confirm the growing interest in integrated reporting. According to Tineke Lambooy (2016), this indicates that integrated reporting is not merely viewed as a reporting tool but also as a strategic approach to creating sustainable value. By integrating financial and non-financial information into a single framework, companies can be more transparent in describing how they create long-term value while demonstrating their commitment to responsible business practices. The support from various business networks and investors further underscores the relevance of integrated reporting in addressing global sustainability challenges.

Challenges in Implementation

According to John Dumay (2017), "One of the main barriers identified in implementing integrated reporting is the misunderstanding of what integrated reporting actually means. With multiple integrated reporting models such as those proposed by the King Reports (King III and King IV), *One Report* by Eccles and Krzus, and the Integrated Reporting Framework by the IIRC, practitioners are often confused about which version to use. The fundamental difference between the King Reports and the IIRC's framework lies in their objectives and scope. The King Reports emphasize corporate governance involving various stakeholders, while the IIRC's framework focuses more on financial capital providers."

This misunderstanding has led to the perception that integrated reporting is mandatory in certain contexts. However, in practice, the King Reports only provide recommendations based on principles and outcomes without requiring explicit adherence to any framework. This confusion is exacerbated by regulatory frameworks, such as in South Africa, where integrated reporting is not explicitly required to comply with a particular framework. Companies can produce reports that align with the governance principles of King III or IV without necessarily adopting the IIRC framework. This lack of clarity and alignment in integrated reporting guidelines hinders its widespread adoption. This misperception also impacts how organizations view the value and benefits of integrated reporting. Many companies perceive it as an additional administrative burden rather than a strategic tool for enhancing transparency and accountability. The lack of training and practical guidance for implementing integrated reporting in line with applicable frameworks further exacerbates this challenge.

Moreover, the mismatch between investor expectations and the needs of other stakeholders worsens the confusion. For instance, while the IIRC framework targets financial capital providers, other stakeholders such as local communities, employees, and regulators may have different informational needs. This makes it challenging for companies to prepare an integrated report that simultaneously addresses these diverse interests.

Additionally, technical challenges, such as integrating financial and non-financial data and relying on technology to support more sophisticated reporting, also pose significant barriers. Companies lacking adequate infrastructure or resources often struggle to meet the expected standards of integrated reporting. As a result, integrated reporting has yet to be optimally adopted as a global standard for improving business transparency and sustainability.

Impact of Integrated Reporting on Corporate Performance

Integrated Reporting (IR) has a significant impact on corporate performance through a more holistic approach. IR combines both financial and non-financial information into a single report, providing a

comprehensive view of how a company creates long-term value. The positive impacts of IR implementation can be observed across various aspects of corporate performance, from increased transparency to better decision-making.

One of the greatest benefits of integrated reporting is the enhancement of internal understanding regarding sustainability. By integrating environmental, social, and governance (ESG) factors into their reports, companies can more easily identify and manage risks and opportunities related to sustainability (Siregar et al., 2024). This enables better decision-making, not only from a financial perspective but also from social and environmental standpoints.

Moreover, integrated reporting enhances corporate accountability to stakeholders, including investors, customers, and the public. By providing more comprehensive information about social and environmental impacts, companies can strengthen trust and loyalty among stakeholders. This can also attract more investment, as investors increasingly seek companies that pay attention to ESG factors and have a sustainable business model.

However, the implementation of IR also presents challenges, particularly in terms of the quality and accuracy of the data presented. To fully realize its positive impacts, companies must ensure that the information included in the integrated reports is relevant, accurate, and reliable. Therefore, the adoption of integrated reporting should be accompanied by training and the development of adequate information systems.

Overall, the impact of IR on corporate performance is multifaceted, leading to improved internal understanding of sustainability, stronger relationships with stakeholders, and better decision-making practices that contribute to long-term value creation.

METHODS

This research uses a literature-based descriptive approach to analyze the role of the International Integrated Reporting Council (IIRC) in promoting transparency and sustainability of global business. A descriptive approach was chosen to comprehensively understand the integrated reporting framework and its application in a global context. Meanwhile, the literature method is used to extract information from various relevant academic and practical sources.

RESULT AND DISCUSSION

Result

Research Findings

In recent years, the growing global awareness of environmental, social, and governance (ESG) issues has driven companies to adopt more transparent and sustainable practices. Organizations are now expected not only to deliver accurate financial reports but also to provide insights into their social and environmental impacts. This situation calls for a reporting framework capable of holistically combining financial and non-financial elements to present a comprehensive view of an organization’s long-term value and performance.

To address this need, the International Integrated Reporting Council (IIRC) was established to promote and encourage integrated reporting. The aim of integrated reporting is to help companies create long-term value by considering various forms of capital, including financial, human, social, and natural capital. Furthermore, this framework is designed to support the achievement of the Sustainable Development Goals (SDGs) and to guide companies in addressing global sustainability challenges (Sari et al., 2024).

Despite the widely recognized benefits of integrated reporting, its implementation still faces numerous obstacles, particularly in developing countries. Key challenges include limited resources, lack of understanding, and inconsistent regulations. Additionally, misunderstandings about the meaning of integrated reporting are a major hindrance. For instance, reporting frameworks such as the King Reports (King III and IV) are often mistakenly perceived as mandatory requirements, although these frameworks are principle-based recommendations.

Many companies also view integrated reporting as an additional administrative burden rather than as a strategic tool to enhance transparency and accountability. Technical challenges, such as the integration of financial and non-financial data and the need for advanced technologies to support such reporting, further complicate implementation. The lack of infrastructure and resources often poses significant barriers for

companies to meet the standards of integrated reporting.

This research demonstrates that integrated reporting is not merely a reporting tool but also a strategic approach to creating sustainable value. By integrating financial and non-financial information within a single framework, companies can enhance transparency in illustrating how they create long-term value. This also reflects their commitment to responsible business practices.Support from various business networks and investors, such as the Pilot Programme Business Network and Pilot Programme Investor Network, further underscores the relevance of integrated reporting in addressing global sustainability challenges. Therefore, it is essential to improve understanding, provide practical guidance, and develop infrastructure to support the adoption of integrated reporting.

Overall, this research highlights the critical role of the IIRC in driving the adoption of integrated reporting as a tool to enhance transparency and business sustainability on a global scale. By addressing existing challenges, integrated reporting has the potential to become an effective global standard for promoting more responsible and sustainable business practices.

This research explores the role of the International Integrated Reporting Council (IIRC) in promoting global business transparency and sustainability through the adoption of integrated reporting (IR). The findings emphasize several key points:

Integrated Reporting as an Internal Driver

Although integrated reporting is commonly associated with external reporting, its primary drivers are internal. Organizations benefit from IR as a tool to foster internal understanding of sustainability and align their strategies, governance, and performance toward long-term value creation.

Practical and Policy Implications

The study highlights the following:

1. Practical Implications: IR promotes integrated thinking within organizations, improves internal communication, and enhances the quality of information disclosed. Companies are encouraged to adopt policies that prioritize sustainability reporting and focus on improving non-financial reporting standards.
2. Policy Implications: Governments and regulators should create supportive policies to encourage IR adoption. These policies can incentivize organizations and integrate sustainability into reporting standards, fostering a broader cultural shift toward transparency.

Stakeholder Roles in Promoting IR

Various stakeholders, including companies, investors, governments, communities, and academics, play a critical role in promoting IR. The IIRC facilitates collaboration between these stakeholders to ensure IR adoption aligns with sustainability goals and enhances global business accountability.

Challenges in Implementation

1. Companies face challenges such as limited resources, lack of understanding, and the complexity of integrating financial and non-financial data.
2. Regulatory inconsistencies across regions hinder the widespread adoption of IR.
3. Misconceptions about IR being an administrative burden rather than a strategic tool delay its acceptance.

Outcomes and Opportunities

Integrated reporting is shown to improve organizational transparency, accountability, and stakeholder trust. It also provides organizations with a framework to address global sustainability challenges while enhancing their ability to create value over the long term.

Discussion

Table 1. Literature Review for All Research

No	Authors	Year	Title of the Paper	Research Objective	Key Findings	Research Methodology
1	Lucia Biondi, John Dumay, David Monciardin	2018	Using the International Integrated Reporting Framework to	Analyzes the ability of companies to comply with the EU Directive	Integrated reporting can help meet the EU Directive 2014/95/EU	Qualitative Analysis & Case Study

			comply with EU Directive 2014/95/EU: Can we afford another reporting façade?	2014/95/EU through integrated reporting and its impact on report reliability	requirements, but there is a risk of "reporting façade" if not properly implemented	
2	John Dumay, Cristiana Bernardi, James Guthrie	2019	Barriers to implementing the International Integrated Reporting Framework: A contemporary academic perspective	Identifies key barriers in implementing integrated reporting from a contemporary academic perspective	Major barriers include lack of understanding, technical challenges, and unclear regulations hindering the adoption of integrated reporting	Literature Review & Interviews
3	Tineke Lambooy, Rosemarie Hordijk, Willem Bijveld	2014	Communicating Corporate Social Responsibility: Perspectives and Practice	Analyzes how companies communicate their social responsibility through reporting and CSR practices	Companies use various approaches to communicate CSR, with some being more transparent and integrated	Case Study & Interviews
4	Tianyuan Feng, Lorne Cummings, Dale Tweedie	2017	Exploring 'integrated thinking' in integrated reporting - an exploratory study in Australia	Studies integrated thinking in integrated reporting in Australia	Integrated thinking helps create more holistic and in-depth reports, though there are still challenges in practice	Exploratory Study & Qualitative Research
5	Marek Reuter, Martin Messner	2015	Lobbying on the integrated reporting framework: An analysis of comment letters to the 2011 discussion paper of the IIRC	Analyzes the responses to the IIRC 2011 discussion paper on integrated reporting	Significant lobbying by various stakeholders led to changes in the proposed integrated reporting framework by IIRC	Document Analysis & Comment Study
6	Yaismir Adriana Rivera-Arrubla, Ana Zorio-Grima, María A. García-Benau	2017	Integrated reports: disclosure level and explanatory factors	Analyzes the disclosure level in integrated reports and the factors influencing it	Higher levels of disclosure are linked to factors such as stricter regulations and stakeholder awareness	Data Analysis & Case Study

Practical and Policy Implications

Although commonly relates to external reporting practices, its rise in practice is mainly driven by internal needs of organisations. As discovered in early research on the IR concept .“there does not appear to be a significant external demand for integrated reporting” and “the main drivers are likely to be internal”, as IR “can be helpful in building internal understanding of and support for sustainability”. Such an internal dimension is represented by integrated thinking. The focus of most recent academic research analyses early evidence of integrated reports in practice, by assessing the quality of the information they provide, as well as the impacts of IR on corporate reporting needs and external users (john, 2017)

Research shows that although Integrated Reporting (IR) is often associated with external reporting practices, its implementation is more frequently driven by the internal needs of organizations. As early research on the IR concept found, "there does not appear to be a significant external demand for integrated reporting" and "the main drivers are likely to be internal," as IR can help build internal understanding and support for sustainability.

Practical Implications:

1. Improved Internal Understanding: Organizations need to understand that the main benefit of integrated reporting is to enhance internal awareness and understanding of sustainability and improve communication within the company. Therefore, companies should focus on implementing integrated thinking that involves various internal stakeholders in the strategic decision-making process.
2. Developing Internal Policies: To support the transition to integrated reporting, companies may consider creating internal policies that prioritize sustainability reporting. This involves training staff on the importance of reporting that not only focuses on financial data but also includes relevant social and environmental information.
3. Improving Information Quality: Based on recent research analysis, it is essential for companies to improve the quality of the information provided in integrated reports, ensuring that the data presented is relevant, accurate, and useful for internal decision-making. This will also help meet the needs for more transparent external reporting.

Policy Implications:

1. Regulations Supporting IR: Governments and regulators can adopt policies that encourage the implementation of integrated reporting, not only for external transparency purposes but also to facilitate internal understanding and support for sustainability within organizations. This could include incentives for companies that adopt integrated reporting as a standard in their reporting.
2. Internal-Based Approach in Reporting Standards: Policymakers should consider facilitating the development of reporting standards that not only focus on external reporting needs but also integrate the internal needs of organizations. This may include drafting guidelines for integrated thinking in company strategies and operations, as well as developing frameworks to assess the impact of sustainability in an internal context.

The Role of Stakeholders in Promoting Integrated Reporting

The International Integrated Reporting Council (IIRC) plays a central role in promoting integrated reporting as a tool to enhance business transparency and sustainability. In its efforts, the IIRC collaborates with key stakeholders, including:

1. Organizations/Companies: Adopt the integrated reporting framework to improve transparency in financial, social, and environmental performance while creating long-term value.
2. Investors: Utilize integrated reports to evaluate companies' sustainability performance, thereby fostering trust and informed investment decisions.
3. Regulators and Governments: Incorporate the integrated reporting framework into national policies and regulations to establish better transparency standards.
4. Communities and the Public: Assess companies' social and environmental impacts through the information provided in integrated reports.
5. Academics and Researchers: Support the development and dissemination of integrated reporting through research, education, and conceptual innovation.

Through close interactions among these stakeholders, the IIRC ensures that integrated reporting functions not only as an external reporting tool but also as a means to drive internal understanding, enhance transparency, and foster cultural shifts toward sustainability in business practices.

CONCLUSION

This research underscores the pivotal role of the International Integrated Reporting Council (IIRC) in fostering transparency and sustainability in global business practices through the promotion of integrated reporting (IR). Integrated reporting serves as a transformative approach, enabling organizations to align their strategies, governance, and performance with long-term value creation while addressing global sustainability challenges.

1. **Internal Benefits of Integrated Reporting**
   IR is not solely a tool for external reporting but primarily driven by internal needs. It fosters integrated thinking, improves internal communication, and enhances organizational focus on sustainability, ultimately supporting strategic decision-making.
2. **Role of Stakeholders**
   Collaboration among stakeholders—companies, governments, investors, communities, and academic institutions—is essential for successful IR adoption. The IIRC plays a crucial role in bridging these diverse interests and driving a unified agenda for transparency and accountability.
3. **Implementation Challenges**
   Despite its benefits, IR faces barriers such as limited resources, regulatory inconsistencies, and a lack of awareness about its strategic potential. Addressing these challenges requires concerted efforts from policymakers, businesses, and supporting institutions.
4. **Practical and Policy Implications**
   Organizations should integrate IR into their operations to build internal understanding and promote sustainability. Policymakers, on the other hand, must establish supportive frameworks and incentives to encourage its widespread adoption and ensure consistency across regions.
5. **Impact on Sustainability and Transparency**
   Integrated reporting not only enhances the quality and relevance of corporate reporting but also strengthens stakeholder trust. By embedding sustainability into business practices, IR empowers organizations to contribute meaningfully to the achievement of global sustainability goals.

The adoption of Integrated Reporting (IR), as championed by the IIRC, represents a significant shift in corporate accountability. By integrating financial and non-financial information into a cohesive framework, IR enables organizations to better communicate their value creation processes while aligning their operations with environmental, social, and governance (ESG) priorities. This shift encourages organizations to adopt a more holistic view of their business operations, promoting transparency and accountability. Integrated thinking across departments becomes a core element, ensuring that sustainability is incorporated into decision-making and strategic planning at all levels. Organizations that embrace IR are better equipped to anticipate and respond to emerging risks and opportunities, which not only supports sustainable practices but also enhances their competitiveness in an ever-evolving market landscape. Furthermore, the IIRC's framework offers a universal standard that harmonizes sustainability reporting across industries and regions, reducing fragmentation and enabling comparability. This standardization provides investors, regulators, and other stakeholders with the necessary tools to make informed decisions, fostering greater accountability and trust in business practices. The research also highlights the critical role that Integrated Reporting plays in contributing to the achievement of the Sustainable Development Goals (SDGs). By encouraging businesses to measure and disclose their environmental and social impacts, IR supports collective global efforts to address sustainability challenges. Overall, the findings emphasize that adopting IR is not just a compliance task but a strategic necessity for modern organizations. It enables businesses to be more transparent, resilient, and aligned with the needs of their stakeholders and the broader environment, ultimately driving a more sustainable future.

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CHAPTER 5

Supply Chain Risk Management in Manufacturing Companies: A Systematic Literature Review and Conceptual Framework

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ABSTRACT

Supply Chain Risk Management (SCRM) in manufacturing companies has become an important focus in the increasingly complex era of globalization. This Systematic Literature Review aims to explore and synthesize the latest approaches in managing manufacturing supply chain risk through a comprehensive analysis of 30 major articles published between 2018 and 2024. The study reveals that SCRM is no longer just a traditional risk mitigation effort, but rather a holistic strategy that integrates digital technology, organizational innovation, and a multidimensional approach. Important conclusions show that technological, cultural, and strategic elements including cutting-edge technologies like machine learning, IoT and digital twins are essential to effective risk management. Cross-geographic studies indicate that risk characteristics vary across industries, with factors such as top management support, regulatory pressure, and organizational adaptability playing critical roles. This study offers a comprehensive framework that helps manufacturing companies develop resilient, efficient, and adaptive supply chain risk management strategies in a dynamic global business environment.

Keywords: Digital Technology, Manufacturing, Supply Chain Resilience, Supply Chain Risk Management, Organizational Innovation, Risk Mitigation.

1. Introduction

The modern industry is becoming increasingly competitive due to its rapid development. Every business must be able to grow and change to compete in today's market. Many businesses have concluded in recent years that the best strategy to compete in the global market is to concentrate on their core capabilities and outsource non-critical business operations either domestically or abroad (Größler et al., 2013). To remain competitive, most businesses operate as part of a globally interconnected supply chain network rather than separately (Lanza G et al., 2019).

SuOne of the most crucial elements in promoting prosperous company development is supply chain management. According to I.N. Pujawan (2017), a supply chain is a collection of companies that collaborate to create, sell, and deliver items in response to consumer demand. An effective supply chain management system is required to optimize supply chain performance and deliver superior products that positively affect business development (Cahyolaksono, 2020). Through the integration of several supply chain operations, supply chain management seeks to enhance the long-term performance of each link in the overall supply chain. (Magdalena & Vannie, 2019).

The complete supply chain network and all its relationships are now considered in supply chain risk management, not just dyadic or triad relationships (Putri et al., 2022). Because of this, supply chain risk management is becoming more and more popular in both academic and practical settings. (Zsidisin & Henke, 2019). Good management is needed to support the complexity of today's supply chain procedures. However, in reality, supply chain management is challenging because every step in the supply chain flow carries the risk of negative consequences (Haykal et al., 2020). Risk is the chance of an outcome resulting in a loss or opportunity based on the anticipated outcome of the current handling. Supply chain risk management is becoming increasingly important, especially in the manufacturing industry where the added value of a company is sometimes less than one-third.

Supply chain management has changed as a result of trends such as lean management techniques, outsourcing, shorter product life cycles, and just in time delivery. As a result, in a globally interconnected economy, risk management has become increasingly important. A company’s supply chain flow is not risk free due to complex supply chain procedures. According to Marchell et al. (2023), supply chain flow risks often have detrimental effects in the short and long term. For example, suppliers may not be able to meet all requests on time, which can hinder production; production errors may occur due to machine breakdowns, resulting in substandard products; and distribution may be hampered by the lack of a transportation fleet with high delivery frequencies and inadequate delivery scheduling procedures. The essence of corporate management is the formulation of organizational goals and the achievement of those goals through managerial decision making (Scheibe & Blackhurst, 2018).

Risk and risk-taking are essential components of business, as Smallman noted more than 20 years ago, especially when it comes to decision-making in dynamic systems (Wieland & Durach, 2021). The successful operation of the supply chain depends heavily on risk management, particularly for multinational corporations that must contend with a variety of risks and competitive advantages. Better risk management, less damage, and increased supply chain resilience can all result from risk estimation. When certain distributors and suppliers are unable to meet their obligations, the supply chain network is instantly impacted. This study aims to identify gaps and possible future research topics on supply chain risk management in manufacturing organizations in addition to attempting to synthesize existing information.

2. Literature Review

The researcher reviews previous studies related to the topic of this research in this section. The significance and application of the key ideas of this research are set out in the first subsection and include:

2.1 *Supply Chain Management* (SCM)

Supply chain management, or SCM, is the process of organizing and keeping an eye on each stage of the acquisition and purchase of product inventory, conversion and distribution, and logistics. Coordination and cooperation with other agents, including clients, middlemen, suppliers, and third-party service providers, should also be taken into account. One element of the supply chain is the integration of all parties directly or indirectly involved in satisfying client demand (Purba et al., 2020). External suppliers, intermediaries or factories that produce finished goods, distributors, seller, and consumer demand, and asset

transportation are the five main components of the supply chain (Mateo and Anich 2018).

Risk management has become increasingly important in today's global corporate environment. The act of recognizing, evaluating, and mitigating risks that affect a company's goals is known as risk management, according to Hopkin (2018). This requires the identification, assessment, and reduction of potential hazards within the company. Risk-based strategy, which focuses on identifying and evaluating risks according to their potential impact and likelihood of occurrence, is one of the most frequently used methodologies in risk management. Risk-based strategy enables companies to determine the most important risks and allocate resources efficiently to manage them, claim Kaplan and Mikes (2020); and Mardikaningsih (2024). However, risk management requires recognizing, assessing, and organizing appropriate preventive measures to reduce or eliminate the adverse effects of current hazards. Risk management helps in the identification, assessment, and control of hazards associated with a company's services. Risks such as system failure, data security, or non-compliance with regulations can affect the quality and sustainability of services a business offers to its clients.

2.2 *Supply Risk in Manufacturing Supply Networks*

Providing the right amount of the right type of material at the right time, location, quality, and cost is no longer the primary concern of supply management. Instead, to maintain competitiveness and ensure strong inbound supply performance, it is also important to apply the right supply concept to the various commodities shipped (Maksum, 2021). The primary objective of risk management programs is to support organizational management in guaranteeing business continuity and long-term competitive advantage in order to avert crises and possible bankruptcies. In the context of supply networks, supply risks are defined as the degree of unpredictability and seriousness of occurrences as well as the outcomes of any activities that adversely affect the performance of inbound supplies regarding its intended value. Inbound supply disruptions and failures can happen for a number of reasons (Ivanov, 2021). Businesses must be aware of these risks to manage them successfully.

3. Methodology

The Systematic Literature Review (SLR) is the research methodology employed in this study. To make the facts presented more thorough and balanced, SLR will be quite helpful in combining different pertinent study findings. Thorne claims that this Systematic Literature Review will be very helpful in synthesizing different pertinent research findings so that the data offered are more thorough and balanced (Krath et al., 2021). Research literature reviews are conducted for various purposes, including providing a theoretical background for further research, studying the breadth of research on an interesting topic, or answering practical questions by understanding what is related to the problem to be raised. This study was carried out using a systematic literature review, also known as a systematic review, which use the PRISMA technique (Preferred Reporting Items for Systematic Reviews and Meta Analyses) to identify, evaluate, and interpret all findings on a research issue. Meta analyses and systematic reviews are effective methods for compiling the evidence on a given subject. It will be challenging to evaluate the reliability and worth of these research, though, if they are not widely publicized. PRISMA gives authors a guide to follow, guaranteeing that their research is presented in an accurate and thorough way.

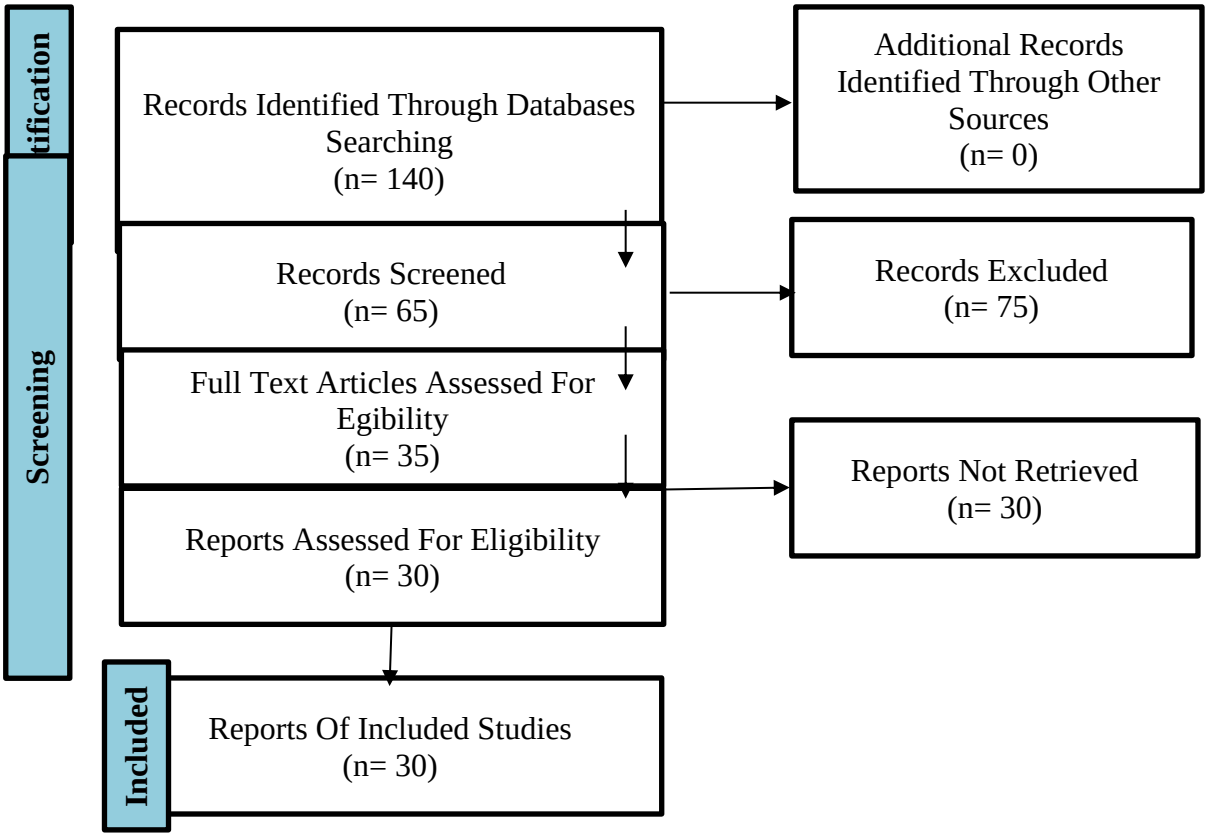

Figure 1. Identification Of Studies Via Databases
Source: Authors

3.1 Selecting Database

The first stage in performing a systematic literature review (SLR) is to carefully choose online databases to use as research literature. The goal of this selection procedure is to find conference proceedings, articles, and other pertinent publications that fit the particular research issue and field of study. The SLR's chosen sources are as follows:

1) Scopus (https://www.scopus.com/home.uri)
2) Science Direct (https://www.sciencedirect.com)
3) Emerald Insight (https://www.emerald.com/insight)
4) Google Scholar (https://scholar.google.com)
5) MDPI (https://www.mdpi.com)

3.2 Constructing Keywords

The author's controlled vocabulary will make up the keywords utilized in a database. The researcher may better understand the extent of the keywords and create search strings that will be applied to the database by using this controlled vocabulary, which also indicates the article's primary topic. The researcher refines the search results by using the boolean operators AND, OR, and NOT while creating the search string. The best keyword combination is found by applying these strategies, which results in the intended answer to the research query. "Supply Chain or Risk Management" and "Supply Chain Management Or SCM" are two examples.

3.3 Inclusion And Exclusion Criteria

Guidelines for choosing which studies or material to inclusion (include) and which to exclude (exclusion) are known as inclusion and exclusion criteria in research. These standards aid in making sure that the information or literature utilized in a study satisfies requirements that are suitable for the goals of the

investigation and the requirements of the methodology.

Table 1. The Inclusion and Exclusion Criteria

Inclusion Criteria	- Publications from 2018–2024 - Have important consequences or advance our knowledge of the relationship between organizational behavior and agency. - Case studies, empirical research, and comprehensive literature reviews are all included. - Research that uses a solid and reliable approach is included. - Full text is accessible.
Exclusion Criteria	- Research or literature that is not directly related to organizational behavior or agency theory is excluded. Research with flaws in methodology that could compromise the reliability of the results - Newer research has outpaced earlier research. - Limited to works of literature that are not translated or available. - No full text is available.

Source: Authors

3.4 Data Extraction

If all of the data that satisfies the criteria has been categorized for all of the data that is currently available, data extraction can be completed. Following the screening procedure, it is possible to determine with certainty how many of the data extraction results still satisfy the criteria for additional analysis. Obtaining significant discoveries by extracting data from various research. The 140 papers from all database sources were examined to obtain data for this systematic review. Additionally, out of 140 papers, 65 were chosen for the study based on the abstract, title and data screening criteria about the 2018–2024 publication year range. In addition, 30 articles were chosen for this study after thorough evaluation and investigation. The data extraction procedure is depicted in the following table:

Table 2. Number Of Studies On Selected Sources

Data Sources	Studies Found	Study Candidates	Selected Studies
Science Direct	90	50	22
MDPI	20	5	3
Google Scholar	30	10	5
Total	**140**	**65**	**30**

Source: Authors

4. Results And Discussion

4.1 Result

Several previous studies were used to conduct the literature review. However, thirty key publications were used as references when researching supply chain risk management in industrial companies. Table 3 below contains a list of these articles:

Table 3. Previous Research Table

No	Author and Year	Title	Theory	Method	Results
1	Ulrich Vidal et al (2024)	Sustainable and risk-resilient circular supply chain: A Peruvian paint manufacturing supply chain model	Fuzzy set theory	Qualitative	According to the results, the best options are Distributor 1, Manufacturer 2, and Supplier 1, and the most important elements are efficiency (CSC1), safety (RR3), and other considerations. This study is unique since it applies and adapts to the paint manufacturing supply chain sector while concentrating on sustainability, resilience, and the circular economy. One unique addition is the adaptation of well established approaches to sector specific problems, offering useful instruments for strategic decision-making. By using an integrated approach based on fuzzy DEMATEL and fuzzy AHP techniques to a Peruvian paint company, this study offers valuable perspectives on criteria for noteworthy management improvements, promoting sustainability and a circular economy locally.
2	Shazrul Ekhmar Abdul Razak et al (2024)	Sustainability risk management: Are Malaysian companies ready?	Contingency theory	Quantitative, The number of questionnaires distributed was 407 questionnaires with a response rate of 29%.	Using the contingency theory as a guide, this study aims to investigate how contextual factors may affect a company's preparedness to adopt sustainable risk management. Between July and December 2020, questionnaires were sent in order to gather data. A total of 407 surveys were sent out, and 29% of them were answered. The findings demonstrated that the application of sustainability risk management is favorably and significantly impacted by sustainability strategy, firm size, top management support, and regulatory pressure. The results also add to the body of theoretical knowledge by providing policymakers with important information about the variables influencing a company's preparedness to adopt SRM.

No	Author and Year	Title	Theory	Method	Results
3	Esrat Farhana Dulia & Syed A.M. Shihab (2024)	An integrated supply chain network design for advanced air mobility aircraft manufacturing using stochastic optimization	-	Quantitative	The eVTOL supply chain differs from conventional supply chains due to stringent quality standards, a shortage of eVTOL part vendors, a shortage of skilled personnel and equipment, and contract renegotiations with major aerospace suppliers. The growing AAM aircraft industry adds uncertainty to eVTOL manufacturing costs, eVTOL demand, and supplier prices and capabilities, exacerbating EMs' supply chain planning challenges.
4	Idiano D'Adamo et al (2024)	A strategic and social analytics model for sustainable packaging in the cosmetic industry	Social influence theory	Quantitative the MCDA and an online survey	A multi-criteria method was used in this study since it has been widely recognized in the literature for its effectiveness in evaluating and contrasting choices across numerous, often contradictory criteria. The second is to provide a social study to assess customers' beliefs, actions, preferences, and financial preparedness for eco-friendly packaging. The results show that professionals prefer refillable packaging, whereas consumers prefer recyclable packaging.
5	Md. Rezaul Karim et al (2024)	Analyzing the factors influencing sustainable supply chain management in the textile sector	Stakeholder Theory &Institutional Theory, Theories of transaction cost economics and closed-loop supply chain	Quantitative	These 10 elements were then analyzed to identify the most influential ones using the Interpretative Structural Modeling (ISM) approach with contextual linkage generation. It was discovered that community organizations and environmental groups had the most influence out of all the factors with the biggest driving force.
6	Dharmendra Hariyani et al (2024)	Stakeholders' perspectives and performance outcomes of sustainable market-focused manufacturing system in Indian manufacturing organizations	ISGLSAMS approach: Stakeholder Theory	Quantitative	The study also looks at the relationships between the different ISGLSAMS performance outcomes. The perspectives of ISGLSAMS stakeholders and ISGLSAMS are better understood by practitioners thanks to this study. In order to (i) create policies and roadmaps for the successful implementation of ISGLSAMS and (ii) promote the growth of more sustainable manufacturing firms in India, this study offers a basis for practitioners, policy makers, organizations, and value chain partners.
7	Sharmin Julie et al (2024)	Examining the effects of stakeholder forces on sustainable practices in the Bangladeshi garment industry	Stakeholder theory or institutional theory	Qualitative	The results show the factors that are now facilitating and impeding the Bangladeshi apparel sector. The study also identifies three opposing forces that affect SSCM implementation and involve trade-offs: financial gains, employee empowerment, and global image. This study highlights the disparities across various stakeholder groups, acknowledges the opposing dynamics that exist, and expands on previous studies on SSCM in the Bangladeshi textile industry.
8	Alok Bihari Singh et al (2024)	Navigating Uncertainty: Cutting-Edge Approaches in Process Control and Monitoring for Risk Mitigation in Supply Chain Management	-	Qualitative	The study's findings highlight the revolutionary potential of Internet of Things sensors, digital twins, and machine learning algorithms for proactive risk assessment and mitigation, offering a way to protect supply networks in the face of uncertainty.
9	Ahmad Obidat et al (2023)	Assessing the effect of business intelligence on supply chain agility. A perspective from the Jordanian manufacturing sector	Resource Based View (RBV)	Quantitative	The findings of this study are expected to assist organizational administrators in making more informed decisions on the usage of BI to establish an agile supply chain.
10	Muhammad Turki Alshurideha et al (2023)	The impact of cyber resilience and robustness on supply chain performance: Evidence from the UAE chemical industry	Cyber Resilience	Quantitative	It was discovered that supply chain performance was significantly improved by the degree of SC and cyber resilience. The study's conclusions are constrained by the current hypothetical model assessment in one industry. It is advised that longitudinal research be used to examine different businesses. It is necessary to have a varied system of defensive and detecting measures.
11	Barween Al Kurdi et al (2023)	Impact of supply chain 4.0 and supply chain risk on organizational performance: An empirical evidence from the UAE food manufacturing industry	Organizational Performance, Supply chain risks	Quantitative	According to the study's findings, supply chain risk and supply chain 4.0's substantial impact on enhancing organizational performance are strongly correlated. This study's primary focus is supply chain 4.0's application in industrial companies. The model can be adjusted to represent various global businesses, such as those in the service or retail industries. The results assist companies in making better judgments regarding supply chain 4.0 implementation.

No	Author and Year	Title	Theory	Method	Results
12	Nihayatul Maskuroha et al (2023)	Green human resource management and green supply Chain Management on Sustainable performance of nickel mining companies in Indonesia	Islam's ethical principles	Quantitative	Five of the six hypotheses put forth were empirically supported by the data processing results using structural equality modeling. According to the study's findings, nickel mining businesses in North Maluku may enhance their sustainability performance by using green supply chain management, health, safety, and environmental culture practices, as well as green human resource management.
13	Mohammad Kanan (2023)	Investigating the relationship between information quality, system quality, service quality, and supply chain performance in the manufacturing sector of Saudi Arabia: An empirical study	The DeLone and McLean information	Quantitative	These findings add to the corpus of existing research by emphasizing unique characteristics that influence supply chain performance in the Saudi industrial sector. Because it discusses how important it is to invest in information management systems, provide excellent services, and continuously evaluate and improve supply chain efficiency, this study has several ramifications for professionals working in the manufacturing industry. By focusing on these areas, organizations can improve supply chain results and increase their competitiveness.
14	Roberta Pellegrino et al (2024)	The role of supply chain integration in the risk management of circular economy: a multiple case study in the furniture industry	-	Qualitative research	The findings could help companies move toward a CE business model, better manage CE risks through integrative practices, and increase overall efficiency especially in terms of costs by optimizing and using environmentally friendly waste products
15	ChaoShang et al (2023)	A decision support model for evaluating risks in the digital economy transformation of the manufacturing industry	Digital economy transformation	Quantitative	Thus, this study's objective is to examine the key issues surrounding evolving enterprises in the context of the digital economy. To do this, this work develops a decision support model for evaluating risks in the digital transition of the industrial sector. This methodology is used to assess the weights and ranks of the numerous hazards related to the digital transformation of the industrial sector.
16	Nanyang Zhao et al (2023)	Impact of supply chain digitalization on supply chain resilience and performance: A multi-mediation model	Dynamic capability theory	Quantitative	The proposed association is validated using survey data collected from 210 Chinese manufacturing firms. The results help identify how supply chain digitization and resilience could improve supply chain performance in a volatile environment. The three supply chain resilience capabilities absorption (before to disruption), reaction (during disruption), and recovery (post-disruption) are highlighted for their diverse roles and their differing impacts on supply chain performance. The findings also lend credence to the notion that absorptive, response, and recovery capacities operate as mediators between supply chain performance and digitalization.
17	Amin Vafadarnikjoo et al (2023)	A novel grey multi-objective binary linear programming model for risk assessment in supply chain management	Grey systems theory	Quantitative	The results showed that the best risk mitigation techniques to lessen the effects of underqualified staff, unconventional leadership, IT system failures, insufficient ability to generate high-quality products, and strained customer relations are ongoing training and development and vulnerability analysis of IT systems. The results help practitioners control supply chain risks.
18	Carmen Gonz´alez-Zapatero et al (2024)	Is supply chain risk mitigation affected by organisational design? The roles of organic structures and cultures	Contingency theory	Quantitative	By starting a conversation about the significance of organizational design as a tool for supply chain risk management, this study adds to the body of knowledge on SCRM. This study specifically highlights the beneficial synergistic impact of many design features (structural and cultural). Additionally, this study gives managers knowledge about how to use organizational design as an extra tool for supply chain risk management.
19	Moh'd Anwer AL-Shboul (2023)	Enabling manufacturing firms' supply chain performance in the Middle East region through boosting the quality of multi-directional relationship, and supply chain risk dilution: A moderated-mediation model	The relational view theory (RVT)	Quantitative	The results of the study show that flexibility and reliance have a direct, favorable, and statistically significant effect on lowering supply risk, which improves supply chain performance for manufacturing companies, especially small and medium-sized enterprises. The study's conclusions indicate that manufacturing companies can reduce possible supply risks in their operational processes by forging solid strategic alliances with reliable, certified, high-performance, and adaptable suppliers, even though they do not demonstrate a statistically significant effect on the relationship between dependency and supply risk mitigation.

No	Author and Year	Title	Theory	Method	Results
20	Md. Asfaq Jamil et al (2024)	A structural equation modeling framework for exploring the industry 5.0 and sustainable supply chain determinants	This study develops a theoretical model that combines all factors and sub-factors of Industry 5.0 (I5.0), Sustainable Supply Chain Practices (SSCP), Sustainable Supply Chain Performance (SCP), and Supply Chain Risk (SCR) in the electronics industry	Quantitative	Structural Equation Modeling (SEM) was used in this work to support the suggested connections between the different constructs, including Industry 5.0 innovation, Sustainable Supply Chain Practices (SSCP), Sustainable Supply Chain Performance (SCP), and Supply Chain Risk (SCR). The results of the Structural Equation Modeling research show that Industry 5.0 technology can directly improve supply chain performance and reduce supply chain risk by using Sustainable Supply Chain Practices.
21	Shahanaj Sultana et al (2024)	Analyzing Supply Chain Risks and Resilience Strategies: A Systematic Literature Review	-	Qualitative	This study examines the different kinds of supply chain risks and identifies ways to mitigate them from the standpoint of the original equipment manufacture sector. In order to identify risks and strategies, a thorough literature analysis is carried out. Additionally, some recommendations are made for how to integrate these results into the supply chain for the manufacturing of original equipment.
22	Saminal Komal & Sameh (2024)	Supply Chain Management Strategies Approach for the UK Textile Industry	-	Quantitative	The variables for which marginal changes are seen in relation to digitalization in sensitivity analysis at different levels of weight fluctuations include the development of key suppliers, supplier capability audits, and long-term orientation with suppliers. At every degree of variance, supply base optimization and purchasing integration have changed. Purchasing and manufacturing strategy was a key component in accomplishing the supply chain management's long-term goal. The three companies that participated in the study offered compelling proof that purchasing and manufacturing strategies are equally important for successful digitalization, identification, and delivery.
23	Daniel Crîstiu et al (2023)	Multi-objective optimisation of a carbon capture and sequestration supply chain under seismic risk constraints. A case study considering industrial emissions in Italy	-	Quantitative, multi-objective MILP model	The findings indicate that, in relation to the economic optimum, the optimal seismic risk determines a total cost increase that ranges from 10% (for the 80% reduction aim) to 65% (for the 20% reduction target). In comparison to the approach that accepts onshore sequestration, considering solely offshore sequestration results in a cost increase of 20% to 30%. On the other hand, the seismic risk of the cost-optimal infrastructure is 1.5–18 times that of the safest chain.
24	Mehdi Najafi et al (2024)	Enhancing supply chain resilience facing partial and complete disruptions: The application in the cooking oil industry	Control Theory, Game Theory, Graph Theory,	Quantitative	In the network architecture of the Edible Oil Supply Chain (COSC), the suggested approach improves supplier resilience. Initially, we determine the factors that influence supplier resilience and introduce an Analytical Network Process (ANP)-based mechanism for assessing resilience. Additionally, a number of tactics are established to improve network resilience. In a similar vein, we show that significant gains in performance measures can result from the supply chain's adoption of suitable resilience tactics. For instance, the results show that the suggested mechanism can lower overall supply chain costs by up to 56% by adopting resilience strategies.
25	Assem Abu Hatab & Carl-Johan Lagerkvist (2024)	Perceived business risks and observed impacts of the Russian-Ukraine war among small- and medium-sized agri-food value chain enterprises in Egypt	Organizational Theory	Quantitative	Risks indicated by agrifood SMEs have a major impact on their actual company performance, as evidenced by the strong correlation we uncover between perceived business risks and observed impacts. This emphasizes how crucial it is to comprehend and successfully manage perceived risks in order to lessen the detrimental effects of external shocks, increase operational resilience, and boost overall performance. Additionally, the findings demonstrate that the effects of conflict are not limited to agrifood companies; they also affect many agrifood chain stages.
26	Binoy Debnath et al (2023)	Analyzing the critical success factors to implement green supply chain management in the apparel manufacturing industry: Implications for sustainable development goals in the emerging economies	Gray theory-based DEMATEL framework	Quantitative	The study first used the literature review to determine the CSFs. After expert confirmation, the gray-DEMATEL technique was finally used to analyze sixteen important CSFs. The findings indicated that "demand from buyers," "economic and tax benefits," and "government rules and regulations" are the three primary CSFs for applying GSCM techniques in the apparel manufacturing industry.

No	Author and Year	Title	Theory	Method	Results
27	Antonio Cimino et al (2024)	Enhancing internal supply chain management in manufacturing through a simulation-based digital twin platform	-	Quantitative	The main objective of this project is to design, develop, test, and validate a DT production planning platform for ISC management that is based on multi-plant simulation. The focus of the modular architecture is the Simulation-based Digital Twin module, which uses an object-oriented structure and allows for what-if analysis incorporating many scheduling rules and ISC parameters. This study has important practical implications since it enables proactive and intelligent decision-making for resource optimization and continuous improvement through scenario analysis and predictive analytics.
28	Longlong Ye et al (2024)	Enhancing Economic, Resilient, and Sustainable Outcomes Through Supplier Selection and Order Allocation in the Food Manufacturing Industry: A Hybrid Delphi-FAHP-FMOP Method	Fuzzy set theory	Quantitative	By incorporating risk management, low-carbon principles, and sustainable and resilient supply chain theory into a supplier selection framework, this study fills this vacuum in the literature. We create a decision-making model that is especially tailored for the food industry using the Delphi approach, fuzzy multiobjective programming (FMOP), and fuzzy analytical hierarchy process (FAHP). This study greatly accelerates the industry's green transformation by strengthening food manufacturers' competitive position and enhancing decision-making.
29	Caihong Liu (2022)	Risk Prediction of Digital Transformation of Manufacturing Supply Chain Based on Principal Component Analysis and Backpropagation Artificial Neural Network	Technology Organization Environment (TOE) Theory	Quantitative	The suggested BPNN model has a decent predictive impact, according to the results of model training using numerous data. Additionally, on the test set, our model is contrasted with the conventional artificial neural network (ANN) model. The comparison demonstrates that our model outperforms conventional models in risk prediction. The findings also demonstrate the value of the assessment index method and the reasonableness of the three main components that were chosen. The findings offer fresh perspectives for MSC's seamless digital transformation.
30	Marc Wiedenmanna & Andreas Größlerb (2021)	Supply Risk Exposure Measurement in Manufacturing Supply Networks: An Index Construction Approach	Risk Management Theory	Quantitative	An index-building process is used to fill this research deficit. An expert survey conducted among industrial organizations served as the basis for the data collection. The suggested index's use could stimulate more empirical studies and offer a deeper understanding of supply risk management and how it interacts with other firm-specific factors.

Source: Authors

In the context of today's manufacturing industry dynamics, supply chain risk management (SCRM) has become a critical strategic focus for the sustainability and competitiveness of companies. Several theories used in analyzing supply chain risk management include, there are several main approaches and theories used in analyzing and managing supply chain risk:

1. Contingency Theory

This theory emphasizes that there is no single perfect approach to managing risk. Instead, risk management strategies must be tailored to the specific context of the organization, including company size, industry, external environment, and internal capabilities. For example, in the study of Shazrul Ekhmar Abdul Razak et al. (2024), this theory is used to investigate how contextual factors such as sustainability strategy, top management support, and regulatory pressures affect a company's readiness to implement sustainable risk management.

2. Stakeholder Theory

This theory focuses on the importance of considering various groups that have interests in the supply chain, including suppliers, customers, employees, communities, and government agencies. Research by Md. Rezaul Karim et al. (2024) used this theory to analyze the influence of various groups, especially community organizations and environmental groups, in the implementation of sustainable supply chain management. This theory emphasizes that the success of risk management depends not only on the company's internal strategy, but also on the ability to negotiate and cooperate with various stakeholders.

Supply Chain Risk Management (SCRM) in manufacturing companies is an important domain that encompasses various strategic approaches to reduce risk, increase resilience, and optimize performance. Supply chain risk management is a critical aspect of the operational sustainability of manufacturing companies in an era of global uncertainty. In an increasingly complex and uncertain global context, supply

chain risk management has become a major focus for manufacturing companies. This complexity is evident from various recent studies that reveal unique challenges in each industrial sector, from advanced electronics manufacturing to the textile industry. According to research by Alok Bihari Singh et al. (2024), the supply chain's risk is becoming more complex, necessitating creative solutions that make use of state of the art tools like digital twins, machine learning algorithms, and Internet of Things sensors for proactive risk assessment and mitigation. One of the primary issues in SCRM is the variation in risk characteristics among industries.

For instance, Esrat Farhana Dulia and Syed A.M. Shihab's (2024) research on the supply chain for advanced electronics manufacturing (eVTOL) revealed particular difficulties such strict quality requirements, supplier limitations, a lack of experienced workers, and price volatility. This is supported by the cross-industry approach of Md. Rezaul Karim et al. (2024), who identified 45 parameters influencing sustainable supply chain management in Bangladesh's textile sector. It was discovered that strategic and cultural elements were crucial to risk management success. According to a study conducted in Malaysia by Shazrul Ekhmar Abdul Razak et al. (2024), the application of risk management was greatly impacted by regulatory pressure, top management support, firm size, and sustainable strategy. Technology is only one aspect of this complexity; organizational dedication and flexibility are equally important.

Digital technologies and artificial intelligence are emerging as transformative solutions in risk mitigation. Muhammad Turki Alshurideha et al. (2023) in their study of the UAE chemical industry revealed a significant positive impact between cyber resilience and supply chain performance, emphasizing the need for a diversified defense system. This innovative approach is reinforced by Caihong Liu's (2022) research which highlights the importance of digital transformation by utilizing advanced techniques such as Principal Component Analysis and Backpropagation Artificial Neural Networks. Nanyang Zhao et al. (2023) further explained that Supply Chain Risk Management involves three key capabilities: absorption, response, and recovery, which can be enhanced through digitalization. This is in line with the findings of ChaoShang et al. (2023) who identified key risks in digital transformation, such as lack of management involvement and market volatility.

Numerous studies from different regions corroborate this multifaceted strategy. Research conducted by Mohammad Kanan in the Saudi manufacturing industry in 2023 highlighted the value of funding information management systems, high-quality services, and ongoing assessment. González-Zapatero et al. (2024) also emphasized the importance of organizational design, arguing that supply chain risk management can be greatly impacted by structural and cultural traits.

A comprehensive strategy that incorporates digitization, organizational innovation, sustainable practices, and cutting-edge risk management techniques is required for modern supply chain risk management in manufacturing. The ultimate objective is to establish a supply chain that is robust, effective, and flexible in a dynamic and ever-changing global business environment. This paradigm offers a thorough viewpoint for negotiating the intricate terrain of supply chain risk management in international manufacturing by combining findings from several studies.

5. Conclusion

In industrial organizations, supply chain risk management, or SCRM, is a very dynamic and intricate strategic area. According to research, the success of SCRM depends on a comprehensive strategy that incorporates organizational, strategic, and cultural elements in addition to cutting edge technology like IoT, machine learning, and digital twins. With distinct risk characteristics for every business, the supply chain's risk is becoming increasingly complex. The success of risk management depends on a number of factors, including organizational flexibility, regulatory pressure, top management support, and firm scale. Artificial intelligence and digital technologies are emerging as game changing solutions, but their deployment calls for a strong organizational commitment.

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CHAPTER 6

The Role of Management Control Systems on Company Performance: A Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)

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ABSTRACT

This paper discusses the role of Management Control Systems (MCS) on company performance. This paper uses the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines for articles published in 2019 - 2025. This study analyzes 233 documents from various database sources and 41 selected papers as data references for this study. As a result, the management control system has a major role in company performance with various factors that influence it to important aspects in implementing the management control system in an organization or company.
Keywords: Management Control Systems, Company Performance, Systematic Literature Review.

1. INTRODUCTION

In the digital era, like today, it can facilitate companies and managers' systematically collecting, analyzing, and integrating data in a managerial manner. This is often referred to as a management control system. Management Control Systems are formal and information-based routines and procedures that managers use to maintain or change patterns in this organization's actions and activities, including planning, reporting, and monitoring systems (Osma, B. G. *Et al*,2022). Furthermore (Osma, B. G. *Et al*,2022) Explains that Management Control Systems (MCS) can provide information that allows the evaluation and identification of optimal strategies to meet company goals, aligning the entire organization's focus in achieving those goals. However, this is useful for a manager to shape the company's thinking and decision-making based on the information received, which will later affect how the company performs.

Various things related to the management control system in a company are related to organizational culture as stated by (Einhorn et al., 2024) that organizational culture is considered a contextual factor that influences the emphasis on the management control system (Einhorn et al., 2024). In addition, a management control system is expected to increase employee motivation to achieve company goals (Hanum et al., 2019). This is because good control from the company will encourage the creation of productive employee performance. However, in implementing a management control system, there must be internal challenges for the company, so there must be risk management to anticipate things that the company does not desire.

Moreover, to create an effective management control system (MCS), companies must pay attention to management aspects such as Balance Scorecard, performance measurement, and so on to make it easier for managers to carry out control based on indicators that have been set by the company such as Key Performance Indicators (KPI) and other indicators that are considered necessary for the company (Evadine. 2022). The opinion of (Franco-Santos et al., 2012; Tessier & Otley, 2012) is that MCS plays a vital role in people's behavior by focusing efforts on what is considered necessary for the company. The management control system should be adequately implemented to impact good company performance later.

2. LITERATURE REVIEW

2.1 Management Control System and Company Performance

According to Malmi and Brown (2008), a Management control system is a collection of processes and control mechanisms that management uses to achieve predetermined organizational goals and objectives. Management chooses this combination of controls according to their company's situation (Hasibuan et al., 2022). These control processes and mechanisms are not used separately but combined and used as a management control system (Jukka, 2023). Management control systems include rules, systems, values, practices, and other actions that management considers to influence employee behavior (Appiah et al., 2020). A proper management control system reflects good coordination between segments of the organization, from sub-units to each other.

Management control systems are valuable tools for collecting and using data to coordinate and prepare decision-making processes for planning and control across the company and monitor the behavior of managers and employees (Dana et al., 2021). Management control systems can strengthen the determination of business actors to operate socially and responsibly (Hasanudin et al., 2019). Management control systems affect company performance by managing, monitoring, and measuring the effectiveness of the company's strategy. Management control systems ensure that resources are used correctly and that organizational goals can be achieved. Companies can track the achievement of specific performance targets and take corrective actions if necessary with this system. Company performance results from managing many organizational and economic factors, and researchers have paid significant attention to how best to measure it (Bolton et al., 2024). Company performance is the company's overall success in achieving the strategic goals set by the company (Ekadjaja et al., 2021). Company performance is relevant in strategic management research (Selvam et al., 2016). Management control systems are essential for company performance. This control system helps manage and create innovation to achieve predictable goals and helps balance the fundamental organizational dilemma between flexibility and control (Farida & Setiawan, 2024).

2.2 The Role of Management Control Systems on Company Performance

Management control systems remain focused on behavior, which refers to any organizational setting where someone (superior or manager) attempts to control the behavior of others (subordinates or employees) to manage their performance (Pfister et al., 2022). As noted by Otley, (1999), it is crucial to understand what performance means both in an empirical setting and from a theoretical perspective. For example, performance can relate to individuals or collectives in financial and non-financial dimensions as well as sociological and psychological aspects.

Alignment of various actor interests to achieve overall goal alignment. It is increasingly noted that more than the study of management control systems is concerned with aligning self-interested individuals and organizational interests (Amdani et al., 2019). We must investigate how these interests align with external interests, namely how organizations build proportional behavior and protect human interests in facing a sustainable future (Atkins et al., 2019). The proper management control systems can help organizations better synchronize, measure, and manage management control systems, mainly social, environmental and economic impacts (Asiaei et al., 2022).

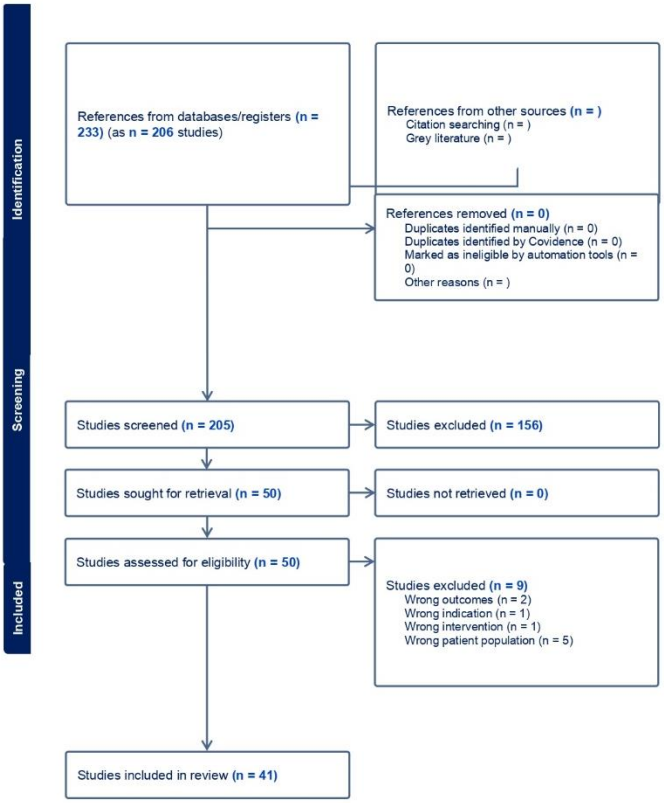
3. METHODOLOGY

This study applies the Systematic Literature Review (SLR) Approach. A *systematic literature review* evaluates, defines, and interprets all results related to a research problem to answer a series of questions (Sastypratiwi & Nyoto, 2020). The SLR method allows researchers to systematically review and identify journals that follow specific steps or protocols in each process (Suantara. et al., 2019). This method is supported by a structured analysis technique utilizing the Preferred Reporting Items for Systematic Review and the Meta-Analyses (PRISMA) method. This technique dramatically assists researchers in systematically analyzing and evaluating articles related to implementing management control systems on company performance, starting from the identification process, screening, eligibility, and the final stage.

The questions in this study are:

- RQ1: How do organizational characteristics (such as culture and structure) affect the effectiveness of management control systems in improving performance?
- RQ2: How can management control systems improve employee motivation and productivity in achieving organizational goals?
- RQ3: What challenges do companies face in implementing management control systems, and how do they affect company performance?
- RQ4: How does an adaptive management control system affect a company's competitiveness and innovation?
- RQ5: How can an effective management control system (MCS) be created for a company?

Figure 1. PRISMA Diagram for Obtaining Selected Studies



3.1 Select Database

In conducting this SLR study, we, the authors, selected various research literature, journals, and articles related to the questions we developed in this study. The sources chosen in this SLR are:

1. Emerald (https://www.emerald.com/insight/)
2. ScienceDirect (https://www.sciencedirect.com/)
3. Springer Nature Link (https://link.springer.com/)
4. Taylor&Francis (https://www.tandfonline.com/)
5. EBSCO (https://www.ebsco.com/)
6. Scindex (https://scindeks.ceon.rs/)
7. Sudoc (https://www.sudoc.abes.fr/cbs/xslt/)
8. Civilica (https://en.civilica.com/)

3.2 Building Keywords

In this study, keywords are built according to the topic to be discussed by using the words ("Influence", "and", also "Impact") to identify articles that are appropriate and relevant to the topic discussed so that they will later answer the questions from this SLR. Examples include ("The Influence of the Management Control System and its Impact on Company Performance",) in addition (to "The Influence of the Management Control System and Factors that Affect Company Performance) and also (An Effective Management Control System (MCS) for the Company). From these examples, we can build keywords appropriate for the SLR that discusses this management control system.

3.3 Inclusion and Exclusion Criteria

To produce good literature, an assessment that describes the suitability of a particular article to the topic discussed in this SLR is needed. This is useful for maintaining the quality of this study, making it credible and reliable, and answering questions well according to the literature that has been reviewed. The table below presents the detailed inclusion/exclusion criteria applied to this SLR.

Table 1. Inclusion and Exclusion Criteria

Inclusion Criteria	1. Focus on articles for the 2019-2024 period 2. English articles 3. Open access articles 4. From journal and conference publications 5. Articles whose objects are companies 6. Discussing management control systems and company performance
Exclusion Criteria	1. Period below 2019 2. Not in English 3. Not from journals and conferences 4. Articles whose objects discuss management control systems in MSMEs

Source: Authors

3.4 Data Extraction

This SLR examined 232 articles from all database sources. Furthermore, from 233 articles, this study selected 205 articles based on the title, abstract, and data screening criteria with a publication year range of 2019 - 2024. Then, this study examined several of these articles and finally selected 41 articles to be used in this study. The following table illustrates the data extraction process in this study:

Table 2. Data Extraction

Data Source	Data Found	Candidate Data	Selected Data
Emerald	16	16	16
Scincedirect	207	180	15
Springer Nature Link	5	5	5
Taylor & Francis	1	1	1
Sudoc	1	1	1
SCIIndex	1	1	1
Civilica	1	1	1
EBSCO	1	1	1
Total	233	206	41

Source: Authors

4. RESULT AND DISCUSSION

RQ1. How do organizational characteristics (such as culture and structure) affect the effectiveness of management control systems in improving performance?

As a relatively crucial internal factor, organizational culture is a starting point for designing a management control system. The alignment between organizational culture and the management control system influences the success of a management control system. Organizational culture is considered a contextual factor that influences the emphasis of the management control system (Einhorn et al., 2024). Organizational culture is an anchor point for the management system (Akroyd & Kober, 2020). Organizational culture influences how workers behave in their relationships with others and external stakeholders, influencing company practices. Each type of culture has a specific way of promoting control, allowing companies to align their management control systems with different organizational cultures and management philosophies, strategies, and styles. Consequently, because organizational culture "permeates the entire control system, influencing, and affecting it," managers must decide which management control system is most appropriate for their company based on the organization's values and strategies (Ferreira & Otley, 2009).

Organizational structure is a functional framework that aligns resources with organizational goals in business strategy and embodies organizational culture. It directly affects a company's ability to attract, engage, and retain employees. The organizational structure shows how the business is run, how changes are made, how job descriptions are created, how organizational communication works, and how strategic plans to increase employee engagement are made (Funminiyi, 2018).

RQ2. How can management control systems improve employee motivation and productivity in achieving organizational goals?

Organizations can use various types of control to motivate employees, with a comprehensive way to classify control based on the object of control. Motivation is divided into two, namely intrinsic and extrinsic employee motivation. It is called intrinsic motivation if someone does an activity because they find it exciting and get spontaneous satisfaction. In contrast, extrinsic motivation requires a relationship between the activity and a separable consequence, such as direct or verbal rewards. As a result, satisfaction does not come from the activity itself but from the extrinsic consequences it causes. According to van der Kolk et al. (2019), the management control system is vital in motivating employees to perform well. Personnel control helps employees develop competence and autonomy, while cultural control increases feelings of relatedness.

Control creates a robust environment for fostering feelings of competence and autonomy, while cultural control contributes more to feelings of relatedness. A sound management control system will enhance employee performance. A good control system allows managers to monitor and evaluate employee performance more systematically, provide helpful feedback, and ensure that company goals are achieved efficiently. A management control system will enhance organizational resilience, workplace flexibility, and dynamic capabilities in a way that helps achieve superior performance (Marginson et al., 2014). In other words, implementing a management use system enhances the utilization and application of organizational capabilities, resulting in improved organizational performance (Phan et al., 2023).

RQ3. What are the challenges faced by companies in implementing management control systems and how do they affect company performance?

Enterprise Risk Management (ERM) or corporate risk management differs from corporate risk management. Because it analyzes risk as part of the company's strategic planning and control process. Furthermore, unlike traditional risk management, ERM allocates roles and responsibilities to many parties (the board, executive management, risk officers, chief financial officers, and internal auditors), and in that sense, ERM is a new way for management control systems or risk-based controls. (Metwally & Diab, 2024). The company's strategy that supports resources can influence management control toward an overall representation of its performance model. By knowing this, we can link the evaluation and control tools of resources and overall performance to the issues of efficiency and legitimacy before the business can respond to a more or less loose coupling (Travaillé & Naro, 2017).

RQ 4. How does an adaptive management control system affect a company's competitiveness and innovation?

Management control systems enable managers to communicate with lower levels more strategically. Management control systems, by definition, are routines to maintain patterns in coordinating, conveying information for decision-making and being able to frame cognitive models and communication patterns (Pagliarussi & Leme, 2020). However, how strategic communication and guidance are provided when innovation is paramount in strategic terms is an unexplored domain. Research by Silva et al. (2023) highlights the role of management control systems in communicating and providing guidance to organizational member actions related to innovation, as seen from the description in terms of structure, values, mottos and objectives related to the rationality that will be identified in the company. Management control systems are also related to competitiveness (Gomez et al., 2023). Management control systems (MSS) play an essential role in increasing an organization's competitiveness by ensuring efficient operations, appropriate decision-making, and the achievement of strategic goals. MSS ensures that resources are allocated appropriately, identify opportunities and risks, and respond quickly to market changes. The article (Simons, 1990) explains that the management control system will encourage or hinder company innovation.

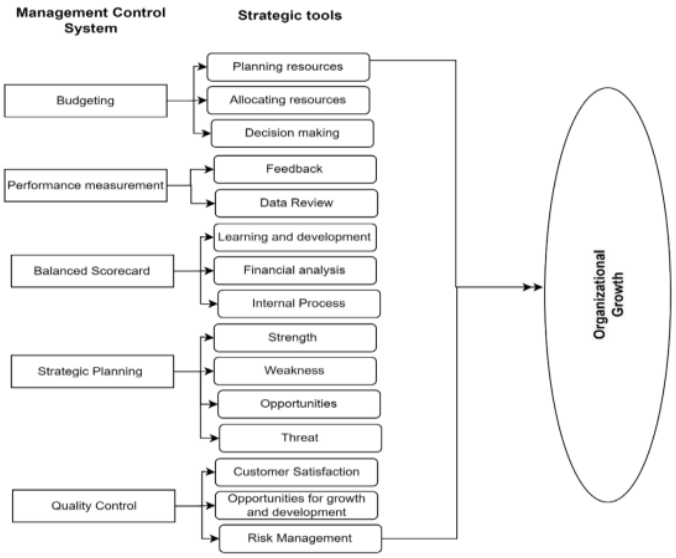
RQ5. How to create an effective management control system (MCS) for a company?

In its understanding, the management control system, according to Salmanzadeh et al., (2022), is an information-based system that collects, processes, and reports data on the organization's resources, activities, and performance and helps managers make choices that help the organization achieve its goals. Similarly, Otley, (2016) said that this system involves collecting, analyzing, and reporting critical information for decision-making and ensuring that organizational resources are used effectively and efficiently. This system is also an indispensable instrument to ensure that organizational activities are aligned with its strategic goals and objectives.

Thus, Management Control Systems (MCS) are essential to any successful business because they enable managers to make intelligent decisions about allocating limited company resources, exploiting new growth opportunities, and maintaining or improving their competitiveness. By implementing MCS, businesses or companies have a roadmap to oversee their operations and ensure they deliver the desired results.

The management aspects that need to be considered to create an effective control system for the company according to (Yusuf, 2023) are:

Figure 2. Empirical framework of management control systems



1. Budgeting: According to Phillips and Bana (2007), budgeting is a management skill that helps organizations plan and allocate resources to meet their strategic goals. By defining goals and evaluating actual results, budgeting can help management make informed choices about investment opportunities, cost savings, and growth plans. Indicators of budgeting as a strategic tool are budget variance analysis, return on investment, and cost savings achieved.
2. Performance Measurement: According to (Guerrini, 2012), the performance measurement system provides feedback to management on how effectively the company operates about its objectives. Management can identify parts of the company that are functioning well and parts that need improvement by reviewing performance data. This data can be used to make strategic choices regarding resource allocation and development prospects. Performance measurement indicators are strategic tools that include customer satisfaction ratings and performance comparisons against competitors.
3. Balance Scorecard: According to (Hoque and James, 2000) Balanced scorecard is a method of control system management that assesses organizational performance from various perspectives, including finance, customers, internal processes, and learning and development. Management can make more accurate decisions about strategic goals and development possibilities by considering these various perspectives. Balanced scorecard indicators as a strategic tool are financial metrics, internal processes, and customers.
4. Strategic Planning: According to Poister (2010), Strategic planning is an activity that helps businesses develop long-term goals and strategies to achieve them. Management can set strategic goals and development possibilities by examining the organization's strengths, weaknesses, opportunities, and threats. Strategic planning indicators as strategic tools are market research and performance metrics.
5. Quality Control: According to Laguir et al. (2019), Quality control is a quality management system that helps a company ensure that its goods and services meet customer expectations. By monitoring quality measurements, management can find opportunities to improve operations, minimize waste, and increase customer satisfaction, which results in increased revenue, client loyalty, and organizational development. Quality control indicators as a strategic tool are process improvement metrics, quality assurance inspections and audits, and defect rates with customer complaint resolution.

Figure 2 states that it is necessary to match the organization's goals and objectives with the control system to ensure better resource management, improve performance, and encourage development. Budgeting is an essential control system component because it helps in resource allocation and planning. At the same time, performance measurement is essential to monitor and assess the system's effectiveness. The balanced scorecard technique can measure financial and non-financial performance indicators, and strategic control ensures that the control system is aligned with the organization's goals. Furthermore (Jolović & Jolović, 2020) also states that the BSC serves three generational functions - a performance measurement system, a strategic management system, and a control system. Finally, quality control ensures that goods or services meet the organization's requirements and consumer demands.

Thus, implementing a management control system in the company must be carried out correctly to create good company performance. According to Curado et al. (2022), a company achieves excellence when it exceeds the target by a certain percentage or the level of performance achieved is higher than expected. This shows that the role of the management control system is essential in a company.

5. CONCLUSION

Management Control Systems (MCS) are vital in improving corporate performance by ensuring efficient use of resources, strategic decision-making, and aligning operational activities with organizational goals. The success of MCS is highly dependent on alignment with the organizational culture and structure, which are the foundation for designing and implementing the system. In addition, MCS also contributes to increasing employee motivation and productivity through structured control and constructive feedback. Despite various challenges, such as internal and external risks, an adaptive and risk-based system can help companies respond effectively to market changes. By utilizing tools such as the Balanced Scorecard, strategic budgeting, performance measurement, and quality control, MCS can be implemented effectively to drive the company's competitiveness, innovation, and sustainability. Therefore, an MCS is a control tool and a key driver for companies and organizations to achieve performance excellence.

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CHAPTER 7

The Role of Accounting Information Systems in the Management Control System : A Systematic Literature Review

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ABSTRACT

System Accounting Information System (AIS) is designed to manage financial data that supports reporting and decision-making. support reporting and decision-making, while the Management Control System (MCS) assists management in planning and controlling the organization's performance. of the organization. This article discusses the important role of AIS in MCS and its implications for company performance using a systematic literature approach. on company performance using the Systematic Literature Review (SLR) approach. Findings from the literature synthesis show that AIS integration is positively related to firm financial performance, mainly through increased user satisfaction with information accuracy. By utilizing AIS in supporting the management control system (MCS), companies can simplify the process and increase the transparency of actual information. More than that, researchers revealed a gap and lack of literature examining the role of AIS in increasing the effectiveness of MCS. Thus, this study will also highlight these gaps and suggest future research directions.
Keywords: Accounting Information Systems, Management Control System, systematic literature review.

1 INTRODUCTION

The implications of accounting information systems (AIS) and management control systems (MCS) have important role in companies in supporting decision making and improving companies performance (Fitriani & Fitriyani, 2019). AIS is a framework in an organization that includes technology, procedures, and human resources, aiming to produce accurate and timely financial reports (Al-Hattami, 2024). According to Ruiz-Palomo et al., (2019), companies use AIS to manage financial data and support effective decision making in various areas, such as budgeting, performance evaluation, and operational management. This effectiveness has been proven to play a role in improving the quality of decisions taken and in supporting better planning and control activities, which ultimately improves organizational performance.

In relation to AIS, Reheul & Jorissen (2014) defines management control systems (MCS) as a series of processes used by management to influence the behavior of individuals and groups in achieving the goals and objectives set by the organization. According to Jukka (2023), information from AIS helps MCS develop better control policies and procedures, improve accountability and operational efficiency (Nurhayati, 2022). By presenting historical data and performance trends, AIS also allows MCS to measure and report relevant performance, which is important in evaluating the effectiveness of the organization's strategies and operational activities.

Several studies have highlighted the role of MCS in improving the sustainability of a company's business. For example, Haseeb et al., (2019) and Broccardo & Rossi (2020) showed findings that a good understanding of MCS supports the formation of appropriate business strategies and has a positive impact on the sustainability of small and medium enterprises (SMEs). In line with these findings, the results of studies by Jukka (2023) and Davila et al., (2015) suggest that certain business strategies are more effective when aligned with the right type of MCS. Moreover, Malmi & Brown (2008) in Florêncio et al., (2023) showed that the MCS framework consists of planning, cybernetics (data-based control), reward systems, administration and corporate culture. This approach allows organizational control to be carried out comprehensively and contributes to the company's strategy and targets.

Interestingly, several studies have successfully explored the potential implications of AIS and MCS separately. However, the analysis and literature that examines the relationship between the two systems are still limited. Therefore, researchers are interested in documenting research related to AIS and MCS using the Systematic Literature Review (SLR) method. This method is intended to reveal gaps, research trends, and also opportunities for future research topics. These findings are expected to provide valuable insights for practitioners and academics in understanding how AIS can be utilized effectively to improve the management control system (MCS) process.

2 LITERATURE REVIEW

2.1 Definition and The Role of Accounting Information Systems (AIS)

Accounting Information Systems are series of systems designed to process data in the form of financial information to support the control of company activities (Nicolaou, 2000). Furthermore, Accounting Information Systems (AIS) are part of the Management Information System used for company management and control (Fitriani & Fitriyani, 2019, Mustika., 2021). According to Qatawneh (2022), AIS facilitates the availability of relevant information for managers to be used as a reference by management when making decisions. In an increasingly complex and competitive business environment, AIS is considered an important competitive advantage because it can affect financial performance and organizational effectiveness (Kustiwi, 2024).

2.2 Definition and The Role of Management Control Systems (MCS)

According to Fachrudin et al., (2024), a management control system (MCS) is a system used by managers to guide employees to achieve company goals. Referring to the study of García Osma et al., (2022) the management control system includes planning, reporting, monitoring, and evaluation. According to Al-Dhubaibi (2024) MCS refers to various processes packaged in the form of workflows and processes designed to ensure efficiency, resource allocation, and communication management, coordination, and motivation. On the other hand, MCS allows companies to align strategies with the company's potential. In addition, MCS supports management in setting corrective steps so that the company remains on target (Fitriani & Fitriyani, 2019).

3 METHODOLOGY

This study uses a qualitative method with a systematic literature review (SLR) approach. Referring to Nightingale (2009), the SLR approach can provide a comprehensive overview and study related to the findings of empirical studies. More clearly, Snyder (2019) explains that the use of the SLR method aims to identify, describe, and synthesize findings from empirical studies that are relevant to a particular topic. The research objects used are in the form of library data or tracing research objects of various library information (books, encyclopedias, academic journals, newspapers, magazines).

In determining the specific literature to be identified, researchers must follow structured systematic stages to ensure the reliability of research information such as determining keywords, inclusion and exclusion criteria. The Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines are used by the researchers to identify and choose papers that meet the predetermined inclusion and exclusion criteria. As a reference, researchers use the following keyword qualifications:

Figure 1. Research topic keywords

(*Advanced Search*)	**(*Papers*)**
((Management Control) AND ("Accounting Information System") OR (SMEs) OR ("small and medium-sized enterprise")) AND ("Business") AND ("Economy") AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) *Timespan: - Indexes: SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI.*	*n. 63*
Final result: 25 relevant articles	
Selected by theme alignment (title, abstract, and full-text reading)	

Source : Authors

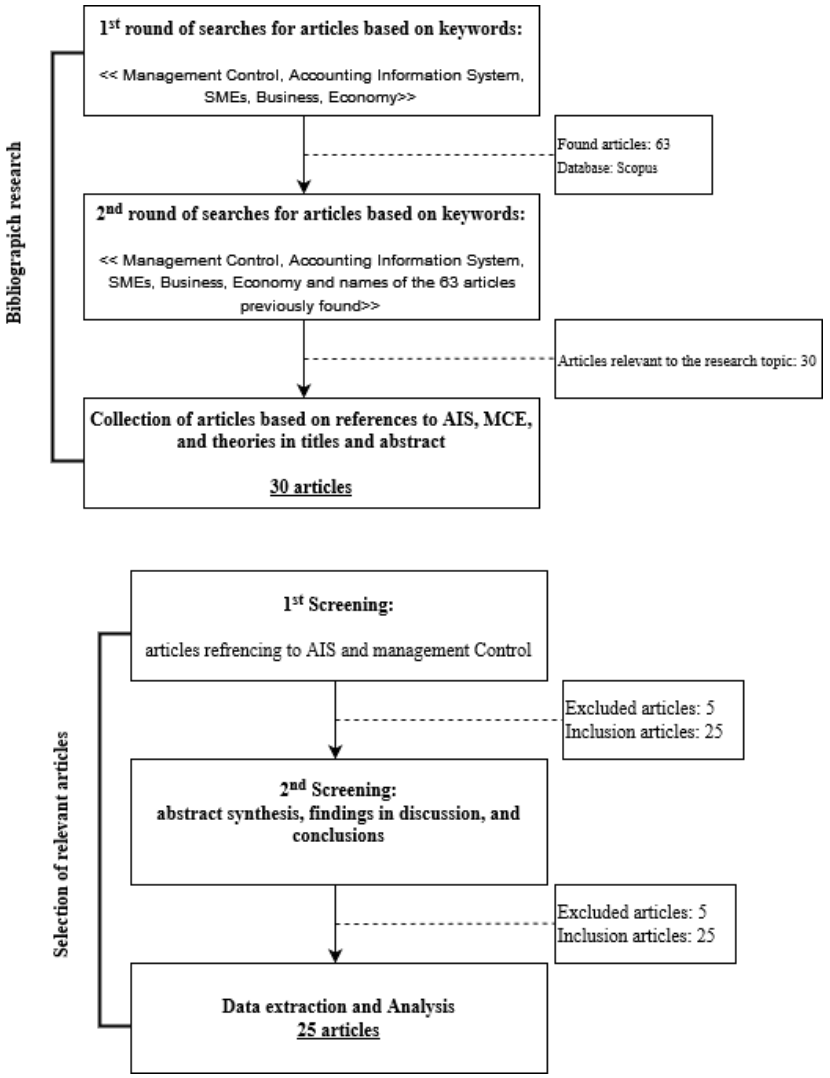
Keywords are used to find relevant studies in scientific databases, while inclusion and exclusion criteria help identify suitable studies for further analysis (see figure 2). This process ensures that the SLR results focus on literature that is truly relevant to the research topic being conducted.

Figure 2 : The Literature Criteria

Inclusion Criteria	1. Journal articles are not limited to the range of publication years 2. Articles published in English 3. The type of literature is only in the form of scientific research articles that can be accessed in full or full access
Exclusion Criteria	1. Journal articles with findings that are less relevant to the current research topic 2. Articles published in other foreign languages 3. The type of literature is not relevant to the topic and is not from scientific research articles and is difficult to access

Source : Authors

Figure 3 : PRISMA Diagram to Acquire Selected Studies



Source : Authors

After setting certain criteria, screening and literature mapping process were carried out (see Figure 3). The first stage found 63 Scopus database journal articles that matched the research keywords. Then continued in the second stage, the articles were sorted again based on keywords, abstracts, and findings so that 25 articles were determined to be ready to be reviewed in depth so that the following discussion was obtained.

4 RESEARCH AND DISCUSSIONS

4.1 Result

4.1.1 The Role of AIS In Management Control Systems

Accounting Information Systems (AIS) are designed to collect, store, manage and process financial data that supports financial reporting and decision making in an organization (Al-Hattami, 2024; Fitriani & Fitriyani, 2019). While Management Control Systems (MCS) are a framework that helps management plan, coordinate and disseminate organizational performance, MCS uses different methods and procedures to collect and analyze information so that managers can control operations effectively (Hosoda, 2020).

The integration of AIS in an organization is important to overcome coordination and control challenges, which often arise due to contingent variables in the business environment. According to Xu (2014), the integration of AIS that is in accordance with organizational needs can increase the perception of system effectiveness among users. Research by Le et al., (2020); Soudani (2012); Trabulsi (2018) also found that integrated AIS has a significant impact on the company's financial performance, especially when system effectiveness is measured by user satisfaction with the accuracy of the information produced. The results of this study strengthen the view that a well-integrated AIS can support more accurate and effective decisions in carrying out control functions.

4.1.2 Prospects of AIS Implications In Mcs Effectiveness On Company Performanc

Accounting Information Systems (AIS) are designed to collect, store, manage and process financial data that supports financial reporting and decision making in an organization (Al-Hattami, 2024; Fitriani & Fitriyani, 2019). While Management Control Systems (MCS) are a framework that helps management plan, coordinate and disseminate organizational performance, MCS uses different methods and procedures to collect and analyze information so that managers can control operations effectively (Hosoda, 2020).

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4. 2 PAPER EXTRACTION

Figure 4 : Mapping of Journal Articles

Researcher	Findings
(Al-Dhubaibi, 2024; Ruiz-Palomo et al., 2019; Tucker & Parker, 2015)	MCS development practices can support the development of competitive, efficient and sustainable corporate strategies.
(Alewine et al., 2016; Kpurugbara et al., 2016; Kustiwi, 2024; Nicolaou, 2000; Sari, 2022, Qatawneh, 2022)	Accounting Information Systems (AIS) are designed to facilitate the availability of relevant accounting information for managers to assist decision making and control activities.
(Le et al., 2020; Soudani, 2012; Trabulsi, 2018; Nurhayati, 2022, Xu, 2024)	AIS can improve organizational performance.
(Broccardo & Rossi, 2020; Haseeb et al., 2019)	Optimal understanding of MCS supports the formation of appropriate business strategies and has a positive impact on business sustainability.
(Davila et al., 2015; Jukka, 2023)	Business owners should use strategies that are aligned with the type of MCS in their company.
(Fachrudin et al., 2024)	This literature review identifies MCS themes that have been widely explored in research, such as management control systems, performance management, performance appraisal, human resource management, and performance measurement.
(Al-Hattami, 2024; Fitriani & Fitriyani, 2019)	Integration of AIS into a company's management control system MCS supports decision making and performance improvement.
Florêncio *et al.*, (2023)	The MCS framework consists of planning, cybernetics (data-based control), reward systems, administration and corporate culture.
(García Osma et al., 2022)	The MCS mechanism involves interactive strategies that lead to earnings management practices.
(Hosoda, 2020)	MCS are used to analyze information so that managers can control operations effectively.
(Reheul & Jorissen, 2014)	MCS is a series of processes used by management to influence individual and group behavior in order to achieve company targets.

Source : Authors

From the results of the literature analysis, the findings reveal that research in the field of AIS and MCS has been widely elaborated. The themes that are often used are the role of AIS as a provider of

financial information that helps management in decision making (Alewine et al., 2016; Kpurugbara et al., 2016; Kustiwi, 2024; Nicolaou, 2000; Qatawneh, 2022). In addition, AIS is considered to be a component that supports company performance (Le et al., 2020; Soudani, 2012; Trabulsi, 2018; Xu, 2024). Likewise, MCS is considered to have an important influence in determining strategy and as a comprehensive control element for business continuity (Al-Dhubaibi, 2024; Broccardo & Rossi, 2020; Haseeb et al., 2019; Ruiz-Palomo et al., 2019; Tucker & Parker, 2015). Meanwhile, studies of literature on the theme of the role of AIS in the effectiveness of MCS are still rarely carried out. Findings with relevant discussions were only carried out by Al-Hattami, (2024) and Fitriani & Fitriyani (2019) so that this theme can be used as a research opportunity in the future.

4. 3 CONCLUSION

Accounting Information Systems (AIS) play an important role in improving company performance in the business world. AIS is a framework in an organization that includes technology, procedures, and human resources, which aims to produce accurate financial reports. According to the study, companies use AIS to manage financial performance and support decision-making in various areas, such as budgeting, performance evaluation, and operations management. The integration of AIS with Management Control Systems (MCS) provides many benefits to organizations, especially in terms of efficiency, accuracy, and internal control. This integration can improve efficiency and process automation by automating routine tasks such as data entry and financial reporting, thereby reducing manual workload and errors. In addition, the workflow becomes faster, which speeds up financial reporting and decision-making.

Thus, the integration of Accounting Information Systems (AIS) is very important in organizations to improve coordination and control, especially in the face of uncertainty in the business environment. An integrated AIS not only improves the perception of information effectiveness for management, but also contributes significantly to the company's financial performance by providing accurate information that supports decision making. The literature shows that the role of AIS in providing financial information that supports management has been widely studied and proven to be an important component in improving company performance. In addition, MCS also play an important role in determining comprehensive strategies and controls for business continuity. However, research on the role of AIS in improving the effectiveness of MCS is still limited, indicating that this theme is a promising research opportunity in the future.

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CHAPTER 8

The Relationship between Sustainability Performance and Earnings Management: A Comprehensive Analysis Through a Systematic Review of Literature

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ABSTRACT

This study aims to determine and identify the Relationship between Sustainability Performance and Earnings Management with Comprehensive Analysis Through a Systematic Literature Review Approach. This study uses agency theory and legitimacy theory. This study involved an analysis of 132 papers from various database sources. Of these, 102 papers were selected based on data screening criteria with a publication year range between 2017 and 2024. After conducting more in-depth research related to the completeness of the text, data accessibility, translatability, and relevance to the research title, 20 papers were obtained that could be used as data references for this study. The databases used in this study were Sciene Direct, Emerald, and Google Scholar.The result of this study shows that there is a significant relationship between sustainability performance and earnings management in the corporate context. Good sustainability performance not only reflects the company's social and environmental responsibility, but also has the potential to improve long-term financial performance and reputation. On the other hand, aggressive earnings management practices can damage the company's sustainability potential, especially if they focus too much on short-term results.
Keywords: Sustainability Performance, Earnings Management.

1. Introduction

With sustainability issues becoming increasingly important in the business world, companies are now under pressure to not only focus on short-term profits, but also to consider the social, environmental and governance (ESG) impacts of their activities (Rutskiy et al., 2024). Good sustainability performance not only demonstrates a company's responsibility to society and the environment, but can also affect the company's financial performance and reputation in the long term. On the other hand, earnings management, which is a company's effort to manage and present earnings in accordance with certain objectives, is often considered a practice that can affect investment decisions and market perceptions of the company.

In today's business context, where corporate social responsibility and sustainability are the main focus, the relationship between executive compensation incentives and corporate sustainability is gaining increasing attention. In recent years, sustainability has emerged as a major concern in global development, amid the frequent COVID-19 pandemic, climate change, and income inequality issues (Zhu et al., 2024)

Several studies have shown that linking executive compensation to corporate environmental, social, and governance (ESG) performance not only encourages actions that support sustainable development but also improves the long-term market value and financial performance of the company. There is a positive relationship between executive compensation, sustainability-focused compensation policies, and carbon emission performance. Incentives for executives play an important role in encouraging companies to achieve their environmental goals (Zhu et al., 2024)

As the adoption of the ESG concept increases, the market focus is gradually shifting from general corporate performance to ESG performance (Siregar et al., 2022). This has led to increased attention on the relationship between executive compensation and corporate ESG performance. The concept of ESG-related compensation has been introduced, and such compensation systems are more common in companies with higher ESG ratings. Larger companies also tend to link their compensation policies more closely to ESG criteria (S. Cohen et al, 2023).

Although many companies have started implementing sustainability strategies (Nguyen et al., 2021), the reasons behind implementing these practices remain an unresolved issue. Some researchers argue that companies engage in sustainability because they see it as a long-term investment to run a sustainable business. However, others see sustainability as a practice used by managers to cover up their opportunistic actions (Saleh et al., 2020).

To reduce information asymmetry between management as the preparer of financial statements and shareholders, several countries have mandated ESG reporting (Ndegwa, 2024) . In order for financial information to be useful to readers and help them make informed decisions, it must meet several criteria, such as completeness, relevance, comparability, reliability, and ease of understanding (Thoa & Nhi, 2022). Management preparing financial statements may be motivated to mislead readers by hiding or changing information, especially when the company's performance is poor (Thiago et al., 2023). Real earnings management can occur when a company changes its operations to improve performance (Lo et al., 2017). Accrual-based earnings management occurs when managers deliberately choose aggressive accounting policies, standards, and practices to mislead readers of financial statements and manipulate company performance (Ball et al., 2000; Goncalves et al., 2022; Thiago et al., 2023).

True earnings management involves manipulating real economic activity to achieve desired financial statement results, rather than simply changing accounting entries (Y. Zhang, 2024). Studying management’s commitment to integrity is critical to corporate governance, as it impacts investor confidence, market stability, and overall corporate transparency (Liu & Liang, 2024) . Commitment to integrity demonstrates to investors and stakeholders that management prioritizes ethical behavior, which in turn impacts investment decisions and corporate image (Y. Kim, 2012). Furthermore, in an environment of increasing scrutiny and regulatory demands, demonstrating integrity can reduce the risks associated with financial misreporting and fraud (L, Deng, 2023).

Some listed companies may use earnings management to hide their true operational performance in order to achieve certain goals (L, Deng et al, 2023). The purpose of companies conducting earnings management is to obtain loans, political motivation, IPO or SEO, avoid or reverse losses and managerial incentives (P, Gu & SY Yin (2020), QY Peng & SR Yin (2021) and JW Lu & K, Zhang ((2019). Although this action is in accordance with the company's accounting standards and applicable accounting systems, it is still considered unethical because it can harm the interests of investors (Nan Hu, 2021).

Research shows that after engaging in earnings management, management tends to implement ways to hide information, such as making explanations more complicated and changing the way information is conveyed to make it more profitable for them (K. Lo, 2017). However, this behavior aims to reduce the possibility of being detected by earnings management (Wang Huajie & Wang Kemin, 2018).

2. Literature Review

2.1 Agency Theory

Agency theory by Jense and Meckling (1976) argues that the separation of shareholders from corporate management creates opportunistic behavior in management that takes advantage of information asymmetry between them and shareholders to manipulate financial statements to present a better picture of corporate performance than actual performance (Ndegwa, 2024) . According to agency theory, managers are more interested in immediate personal gain than in long-term shareholder value (Nguyen, 2024). Agency theory is the basis for earnings management practices that individuals say often maximize their own interests. The concept of agency theory is the relationship between agent and principal contracts where agents are employed by principals to perform tasks to fulfill the principal's interests.

2.2 Legitimacy Theory

The legitimacy theory proposed by Suchman (1995) states that companies must carry out their operations in accordance with the values, norms, and ethics held by society in order to access resources without interference. Therefore, companies engage in corporate social responsibility (CSR) and philanthropic activities, by allocating funds, time, and other resources to support the interests of the communities around them. Companies that fail to meet societal expectations are at risk of facing conflicts that can threaten their survival. This legitimacy theory is often used to explain issues related to sustainability reporting (ESG) (Ndegwa, 2024)

The theory that states that a company's business activities must be in line with the values and norms prevailing in society is known as the legitimacy theory. Legitimacy from society is one of the important factors in the development of a company in the future, because the company can position itself well in the midst of a society that continues to develop.

2.3 Sustainability Performance

The ESG concept was first introduced by Goldman Sachs and other financial institutions in 2004, in response to pressure from the United Nations Environment Programme Financial Action Unit (UNEPFI). Over the past 19 years, the ESG concept has gained increasing attention. As the market has become more focused on ESG Ratings, companies are now presenting accurate, relevant and credible data to demonstrate their increasingly good ESG ratings (Kholis et al., 2020).

According to the Association of Chartered Certified Accountants (ACCA) (2004), a sustainability report is the delivery of information on economic, environmental, and social policies, as well as the impact and performance of an organization and its products in the context of sustainable development. This report is also known as the "triple bottom line report", which covers three aspects: profit, human welfare (people), and the environment (planet). A sustainability report is a document that not only includes information on financial performance, but also includes non-financial information related to social and environmental activities, which support the company's sustainable growth (Wijayanti, 2016).

Corporate social responsibility (CSR) management is growing rapidly among public interest organizations (PIEs) (Velte, 2020). Mandatory disclosures related to ESG and sustainability are expected to reduce information asymmetry to improve the readability of financial reports after the interests of management and shareholders are aligned (Krueger et al., 2023). In 2016, the Global Reporting Initiatives (GRI) released the Sustainability Reporting Standards (SRI) which require a shift in focus from a perspective that only looks at a company's financial performance to a more comprehensive perspective, covering both the company's financial and non-financial performance (GRI, 2016).

According to (Velte, 2020) *Corporate Social Responsibility* is related to the triple bottom line concept, which emphasizes that companies must consider three main aspects, namely economic, environmental, and social, in managing stakeholder interests. This leads to CSR reporting that supports financial statements, and is expected to improve CSR performance and the company's financial performance

in the long term.

2.4 Earnings Management

Financial reports must comply with international financial reporting standards (IFRS) so that the message conveyed in the report can be understood clearly and effectively (Loughran and McDonald, 2014). Earnings management is a strategy often implemented by companies to regulate and improve profit figures in order to create the impression of better performance, and this continues to be a relevant issue in the capital market (Hrp, 2017 & Han, 2022). Accounting information from listed companies is the basis for allocating resources effectively in the capital market (X. Yan, 2023).

Manipulation of earnings data will change the picture of the company's actual economic performance, thus disrupting the process of resource distribution in the market. This unethical earnings management practice not only harms investors who lack correct information but can also reduce the company's value in the long term. Supervision of corporate earnings management includes two important aspects: external supervision and internal supervision (Lian et al., 2024) . Earnings management occurs when managers use their policies in preparing financial statements and transactions to change the data presented, with the aim of misleading several related parties regarding the company's performance or to influence the outcome of contracts that depend on the figures in the financial statements (Guevara et al., 2021)

Earnings management includes accrual-based earnings management and real earnings management (Syarif et al., 2021). Accrual-based earnings management involves management's manipulation of earnings through accounting policies, such as the selection of depreciation methods for fixed assets and the estimation of amortization periods for intangible assets. In contrast, real earnings management is mainly achieved through the organization of real transactions, such as end-of-period price promotions to increase current earnings, overproduction to reduce unit selling costs, and reductions in current research and advertising expenses (Liu & Liang, 2024)

Management as the party that prepares the financial statements, has an incentive to mislead readers of the statements by hiding or obscuring information, especially when the company's performance is poor (Thiago et al., 2023). Real earnings management can occur if there are changes in the company's operations that are made to improve performance (Lo et al., 2017). Meanwhile, accrual-based earnings management occurs when managers deliberately choose more aggressive accounting policies and practices to manipulate financial statements and deceive readers about the company's performance (Ball et al., 2000; Goncalves et al., 2022; Thiago et al., 2023).

3. Research Methods

Systematic Literature Review (SLR) study approach is used in this study to identify, assess, and interpret all existing research related to a particular subject or research question. The purpose of this SLR or Systematic Literature Review study is to find strategies that will help overcome the problems faced and identify different perspectives related to the problem being studied and reveal theories that are relevant to the case in this study that examines more deeply about sustainability performance and earnings management. This SLR process consists of three main stages: planning, implementation, and reporting.

The data collection process in this study was carried out through several stages, starting with creating clear and specific research questions. After that, the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines were used by researchers to find and select publications or journals that met the inclusion and exclusion criteria that had been set.

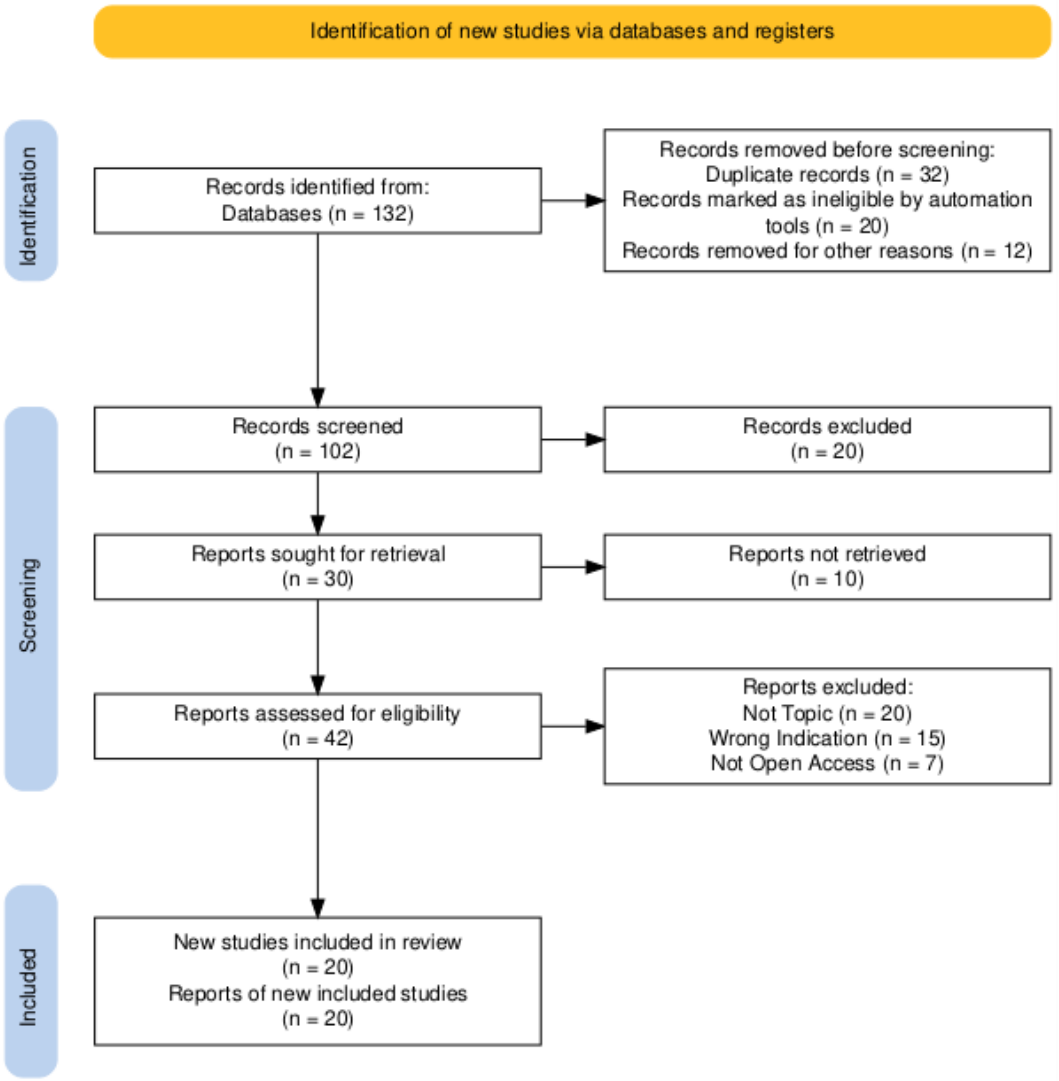

Figure 1SLR PRISM

3.1 Selecting a Database

The first step in a research is to determine the online database sources that will be used as literature references. This database functions to search for journals or other publications that are relevant to the research topic. In this SLR research, several selected database sources include:

- Science Direct (https://www.sciencedirect.com)
- Emerald Insight (https://www.emerald.com/insight)
- Google Scholar (https://scholar.google.com)
- MDPI (https://www.mdpi.com)

3.2 Research Inclusion and Exclusion Criteria

Inclusion and exclusion criteria in research serve as a guide to determine which studies or information will be considered (inclusion) and which will not be used (exclusion). These guidelines ensure that the data or literature selected is in accordance with the research objectives and meets relevant methodological requirements.

Inclusion Criteria	- Publication 2017-2024 - Having significant implications or contributions to the understanding of the relationship between agency and organizational behavior. - Includes empirical research, case studies, and an in-depth literature review. - Include research with strong and valid methodology - Language and accessibility can be translated - Open Access Only
Exclusion Criteria	- Excluding research or literature that does not have a direct relationship between sustainability performance and earnings management. - Studies with methodological shortcomings that may affect the validity of the findings. - Studies that have been superseded by newer research. - Restrictions on literature that cannot be accessed or translated. - Not available in full text

Table 1. Research Inclusion and Exclusion Criteria

3.3 Data Extraction

This study involved an analysis of 132 papers from various database sources. Of these, 102 papers were selected based on data screening criteria with a publication year range between 2017 and 2024. After conducting more in-depth research related to the completeness of the text, data accessibility, translatability, and relevance to the research title, 20 papers were obtained that could be used as data references for this study. The databases used in this study were Sciene Direct, Emerald, and Google Scholar.

Data source	Study Found	Candidate for Study	Selected Studies
Science Direct	80	45	10
Emerald	37	15	7
Google Scholar	15	3	3
Total	**132**	**63**	**20**

Table 2. Number of Studies in Selected Sources

The table above shows the number of studies found, candidate studies, and selected studies from the selected data sources. There were 132 studies analyzed, with 61 candidate studies considered, and finally 33 studies selected for this study. Science Direct had the largest contribution with 80 studies found, followed by Emerald with 37 studies found, and Google Scholar with 15 studies considered.

4. Results and Discussion

The Relationship Between Sustainability Performance and Earnings Management

Sustainability performance and earnings management are two concepts that are often discussed in the context of corporate finance and accounting. The relationship between the two is very relevant in the context of good corporate governance. Companies that are serious about implementing responsible sustainability practices will usually avoid unethical or aggressive earnings management practices. On the other hand, earnings management that focuses too much on short-term results can damage the company's potential for future sustainability, both in terms of reputation and long-term performance.

Although more and more companies are implementing sustainable development strategies, the reasons behind the adoption of sustainability practices by companies remain an unanswered question. (Nguyen et al., 2021). Some researchers argue that engagement in sustainability is driven by a long-term

perspective for sustainable business operations, while others consider sustainability as a practice that is abused by managers to cover up their opportunistic behavior (Nguyen, 2024)

Several studies focus on the long-term perspective to prove the negative relationship between *Corporate Social Responsibility* and earnings management. Socially responsible companies have strong incentives to maintain good relationships with diverse stakeholders, so they are unlikely to mislead stakeholders with financial reporting Cho and Chun (2016), Research conducted by Dimitropoulos (2020) states that CSR can reduce agency problems and focus more on long-term goals. Other studies also support the influence of CSR on earnings management such as those conducted by Chouaibi and Zouari (2021) for five European countries, Ehsan et al. (2021) for Pakistan, García-Sanchez et al. (2020) for a multinational view, Ghaleb et al. (2021) for Jordan, and Kumala and Siregar (2020) for Indonesia.

Research conducted by (Ehsan et al., 2021) states that presenting accounting information that misleads stakeholders can damage the company's relationship with external parties, and ultimately have a negative impact on the company's financial performance and social reputation. Therefore, companies that implement sustainable performance will limit earnings management (Nguyen, 2024)

The overall research results in related articles on the topic of the Relationship between Sustainability Performance and Earnings Management:

Table 3. The Overall Research

No	Researcher	Title	Publication	Results
1	Nguyen Linh-TX	The relationship between corporate sustainability performance and earnings management: evidence from emerging East Asian economies	ISSN : 1985-2517 Publisher: Emerald Publishing Limited (Journal of Financial Reporting and Accounting) SJR 202 4: 0 .488 (Q2), H – index 21	found a negative influence of corporate sustainability performance on the manipulation of real activities and discretionary accruals. This finding highlights the long-term perspective of sustainable evelopment strategies in relation to with earnings management. The authors conclude that sustainable companies in developing East Asia tend not to engage in earnings management.
2	James Ndirangu Ndegwa	Sustainability Reporting, Board Diversity, Earnings Management And Financial Statements Readability: Evidence From An Emerging Economy	ISSN :1472-0701, Publisher : Emerald Publishing Limited (CORPORATE GOVERNANCE) , SJR 2023 : 1,456 (Q1), H – index 108	The main findings are that increasing board diversity is shown to significantly increase financial statement readability. Discretionary earnings management is shown to significantly decrease financial statement readability. Sustainability reporting is shown to significantly increase financial statement eadability, and moderate the relationship between board diversity, earnings management, and readability. financial statements in Kenya.
3	Kanika Saxena, Sunita Balani and Pallavi Srivastava	The Relationship Among Corporate Social Responsibility, Sustainability And Organizational Performance In Pharmaceutical Sector: A Literature Review	ISSN :1750-6123, Publisher : Emerald Publishing Limited (International Journal of Pharmaceutical and Healthcare Marketing), SJR 2021 : 0.311 (Q3), H – index 30	The results of this study indicate that CSR and Sustainability have a positive influence on organizational performance in the long term.
4	Fadi Alkaraan, Mahmoud Elmarzouky, Khaled Hussainey and VG Venkatesh	Sustainable Strategic Investment Decision-Making Practices In UK Companies: The Influence Of Governance Mechanisms On Synergy Between Industry 4.0 And Circular Economy	ISSN : 0040-1625, Publisher: Elsevier BV (technological forecasting social change), SJR 2023: 3188 (Q1), H – index 179	This study found that there is a positive relationship between I4.0 technology and CE techniques in UK companies. The synergy between I4.0 technology and CE techniques significantly mediates SSIDMP in UK companies. The successful integration of I4.0 technology and CE techniques improve organizational performance.
5	Patrick Velt	Corporate Social Responsibility And Earnings Management: A Literature Review	ISSN : 1727-9232, Publisher: Virtus Interpress (Corporate Ownership & Control), SJR 2020: 0.144 (Q4), H – index 26	The results of this study indicate that the relationship between CSR and earnings management varies. Most studies support the Stewardship Theory, which suggests that good CSR performance can reduce earnings management practices. However, some studies support the Agency Theory, where CSR

				is used to cover up earnings manipulation. The results of the study are also influenced by contextual factors such as country regulations and corporate governance systems, with variations in results indicating the need for further research.
6	Paolo Fiorillo & Gianluca Santilli	The influence of shareholder ESG performance on corporate sustainability: Exploring the role of ownership structure	ISSN : 1544-6123, Publisher : Elsevier BV (Finance Research Letters) SJR 2024: 1,903 (Q1), H – index 101 https://doi.org/10.1016/j.frl.2024.105800	The results of this study indicate a positive relationship between corporate ESG performance and shareholder ESG performance. This relationship is stronger when the largest shareholder is excluded, ownership is more dispersed, and companies provide more rights to their shareholders. This suggests that these characteristics play a role. important in strengthening the relationship between a company's ESG performance and shareholders.
7	Han Xiao, Abdullah Al Mamun, Mohammad Nurul Hassan Reza, Xiaofang Lin and Qing Yang	Modeling the significance of corporate social responsibility on green capabilities and sustainability performance	ISSN : 2405-8440, Publisher: Elsevier BV (Heliyon Journal), SJR 2024: 1,617 (Q1), H – index 88 https://doi.org/10.1016/j.heliyon.2024.e38991	The results of the study indicate that corporate social responsibility (CSR) has a significant impact on sustainable corporate performance. Specifically, CSR towards external stakeholders has a positive and significant influence on corporate dynamic capabilities (GDC), while CSR towards internal stakeholders does not show any influence. which is significant to the company's innovative capability (GIC)
8	Shahid Latif, Safrul Izani Mohd Salleh and Mazuri Abd	Management Accounting Systems And Economic Sustainability: A Qualitative Inquiry Of SMS In Pakistan	ISSN : 1321-7348, Publisher : Emerald Publishing Limited (Asian Review of Accounting), SJR 2023 : 0.408 (Q3), H – index 30	Management Accounting System has a positive influence on the Economic Sustainability of SMEs
9	Mijoo Lee & In Tae Hwang	The Effect of the Compensation System on Earnings Management and Sustainability: Evidence from Korea Banks	ISSN : 2071-1050, Publisher : Multidisciplinary Digital Publishing Institute (Sustainability), SJR 2019 : 0.581 (Q2), H – index 169	The results of this study found that incentive-based compensation in South Korean banks has a significant impact on earnings management. The higher the variable compensation and equity compensation received by executives, the more likely they are to manipulate earnings through loan loss provisions. On the other hand, deferred compensation is associated with increased earnings smoothing, indicating long-term performance stability. These findings are important for regulators to ensure that compensation structures support financial stability and transparency.
10	Anita Moosa, Feng He	Impact Of Environmental Management Practices On Corporate Sustainability: Evidence From The Maldives Hospitality Industry	ISSN :2869-2889, Publisher : Emerald Publishing Limited (International Journal of Emerging Markets), SJR 2021 : 0.5081 (Q2), H – index 41	Environmental management practices have a direct and positive impact on corporate sustainability. Environmental regulation and reporting mediate the impact of environmental management practices on corporate sustainability in a positive way.
11	Azharul Islam, Ratan Ghosh, Md Kaysher Hamid and Sadman Kabir	Unveiling The Impact Of Sustainable Manufacturing On Triple Bottom Line Sustainability Performance: A Bangladesh Perspective	ISSN :2514-9342, Publisher : Emerald Publishing Limited (Global Knowledge, Memory and Communication), SJR 2023 : 0.4 (Q2), H – index 38	Sustainable production processes have positive impacts on environmental and economic performance, but sustainable supply chain management only has a significant impact on economic performance. Meanwhile, sustainable end-of-life management has a significant impact on environmental and economic

				performance.
12	Habiba Al-Shaer and Khaled Husaini	Sustainability reporting beyond the business case and its impact on sustainability performance: UK evidence	ISSN :0301-4797, Publisher: Elsevier BV (Journal of Environmental Management), SJR 2023 : 1,678 (Q1), H – index 243	The findings suggest that companies reporting 'very strong' and 'strong' sustainability are more likely to positively influence sustainability performance. On the other hand, companies following the business case approach and standard disclosure will have a negative effect on sustainability performance. The results also suggest that voluntary adoption of SRA and the choice of guarantor tend to improve the completeness of information by providing a rigorous independent reporting process that is more likely to improve sustainability performance.
13	Fang Liu & Chen Liang	The moral masking behavior of management after real earnings management: An analysis of management's integrity commitment	ISSN :0301-4797, Publisher : Elsevier BV (Heliyon), SJR 2023 : 0.617(Q1), H – index	The results of the study indicate a significant positive relationship between actual earnings management and management integrity commitment in the Management Discussion and Analysis (MD&A) section of the annual report. This study indicates that management tends to make integrity commitments as a form of moral disguise rather than actually engaging in moral purification behavior.
14	Chen Zhu, Xue Liu, Dong Chen and Yuanyuan Yue	Executive compensation and corporate sustainability: Evidence from ESG ratings	ISSN :2405-8440, Publisher : Elsevier BV (Heliyon), SJR 2023 : 0.617 (Q1), H – index 88	The results of the study indicate that executive compensation incentives have a positive effect on improving corporate ESG performance. The study found that incentives improve green innovation efficiency, environmental information disclosure, and financial performance, all of which contribute to improving corporate ESG performance. In addition, further analysis shows that environmental information disclosure has the highest proportion of indirect effects in mediating between executive compensation and ESG performance, followed by financial performance.
16	Lanlan Lian , Di Zhao and Qingli Don	Fund holdings and real earnings management: An empirical analysis of the Chinese A-share market	ISSN : 2405-8440, Publisher : Elsevier BV (Heliyon), SJR 2024 : 0.617 (Q1), H – index 88	Shows that there is a significant negative correlation between fund ownership and real earnings management (REM) practices. This means that fund ownership serves as a strong external monitoring echanism, reducing the level of REM in the company.
17	Iram Naz, Syed Danial Hashmi and Nisar Ahmed	Top executives, earnings management and firm risk: Evidence from emerging economies	ISSN : 2666-1888, Publisher : Elsevier BV (Sustainable Futures), SJR 2024 : 0.92 (Q2), H – index 16	The results of the study show that manager characteristics, such as experience and personal values, have a significant impact on corporate earnings and risk management. The study found that managers with a certain financial style tend to influence the company's strategic decisions, which in turn affect the financial performance and risks faced by the company.
18	Ivo Hristov, Andrea Appolloni, Antonio Chirico and Wenjuan Cheng	The role of the environmental dimension in the performance management system: A systematic review and conceptual framework	ISSN : 1879-1786 , Publisher : Elsevier BV (Journal of Cleaner Production), SJR 2021 : 1,921 (Q1), H – index 309	The research results of this article indicate that there is increasing interest in integrating environmental dimensions into performance management systems (PMS).

19	Rui Coelho, Shital Jayantilal and Joao J. Ferreir	The impact of social responsibility on corporate finance performance: A systematic literature review	ISSN : 1535-3958, Publisher : Jhon Wiley and S ons LTD (Corporate Social Responsibility and Environmental Management), SJR 2022 : 2,201 (Q1), H – index 113	The research in the paper shows that there is a relationship between corporate social responsibility (CSR) and the financial performance of the company. The study identified that intangibles such as innovation, human capital, reputation, and organizational culture affect the relationship between CSR and financial performance.
20	Ruoqi Genga, S. Afshin Mansouria and Emel Aktasb,	The relationship between green supply chain management and performance: A meta-analysis of empirical evidence in emerging Asia economy	ISSN : 0925-5273 , Publisher : Elsevier BV (Int. J. Production Economics), SJR 2017 : 2,401 (Q1), H – index 231	The results of this study indicate that Green Supply Chain Management (GSCM) practices have a positive impact on company performance in the manufacturing sector in developing countries in Asia.

5. Conclusion Suggestions

5.1 Conclusion

The conclusion of this study shows that there is a significant relationship between sustainability performance and earnings management in the corporate context. Good sustainability performance not only reflects the company's social and environmental responsibility, but also has the potential to improve long-term financial performance and reputation. On the other hand, aggressive earnings management practices can damage the company's sustainability potential, especially if they focus too much on short-term results. Therefore, companies need to integrate sustainability principles into their earnings management strategies to achieve a healthy balance between short-term profits and long-term sustainability.

5.2 Suggestion

The suggestion that can be given is for companies to be more proactive in linking executive compensation incentives to sustainability performance. This can encourage actions that support sustainable development and reduce unethical earnings management practices. In addition, companies are advised to carry out transparent and accountable reporting on their sustainability performance, so as to increase stakeholder trust and create sustainable long-term value. Thus, companies will not only meet market demands but also contribute to better social and environmental development.

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CHAPTER 9
The Role of Management Accounting and Digital Technologies in Assessing and Mitigating Risks of Sustainable Digital Business Model Innovation : Systematic Literature Review

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ABSTRACT

The critical role of management accounting in assessing and mitigating risks associated with sustainable digital business model innovation. In the context of enterprise risk management (ERM), management accounting provides relevant information that supports decision-making and enables organizations to identify, analyze, and respond effectively to potential threats. This study explores the application of management accounting in various industries, as well as best practices in managing risks of sustainable digital business model innovation. By integrating financial and non-financial data, management accounting can provide a comprehensive view of risks and opportunities. The findings suggest that organizations committed to sustainable practices are able to manage risks more effectively and achieve long-term sustainability goals. The study also highlights the importance of sustainability reporting and stakeholder engagement in risk management.
Keywords: Management Accounting, Risk Management, Digital Business Model Innovation, Sustainability, Integrated Reporting, Non-Financial Risks, Risk Mitigation Strategies.

Introduction

Management accounting plays a critical role in assessing and mitigating risk in organizations, particularly in the context of enterprise risk management (ERM). Integrating management accounting practices with risk management strategies enables organizations to effectively identify, analyze, and respond to potential threats (Azmi et al., 2018). This synthesis of management accounting and risk management is essential to improving organizational performance and ensuring sustainability in a volatile business environment.

One of the primary functions of management accounting in risk management is to provide relevant information that supports the decision-making process. For example, Rasid et al.it is highlighted that the appointment of a Chief Risk Officer (CRO) in a financial institution signifies the adoption of ERM, whereby a management accounting framework is used to inform risk management strategies Rasid et al. (2011). This is echoed by Hashem and Hashem, who argue that management accounting contributes significantly to risk management by providing the financial and non-financial information needed to anticipate and mitigate risks (Hashem & Hashem, 2023). Furthermore, the integration of management accounting tools, such as the balanced scorecard, with ERM practices has been shown to improve an organization's responsiveness to risk. (Köse & Ağdeniz, 2019),

The evolving role of management accountants also reflects the growing importance of risk management in an organizational context (Adawiyah et al., 2020). As noted by Soin and Collier, the relationship between risk management and management accounting has become more prominent, especially in light of the recent global financial crisis that has underscored the need for a robust risk management framework (Soin & Collier, 2013). This development requires management accountants to focus not only on traditional financial reporting but also engage in proactive risk assessment and mitigation strategies (Soin & Collier, 2013).

In addition to providing information for decision-making, management accounting systems can also facilitate the identification and measurement of risks (Atmanegara, 2021). Karpushenko emphasized that effective accounting systems are essential to reflect risks in financial reporting, thereby enabling organizations to manage their risks more effectively (Karpushenko, 2021). This is particularly relevant in sectors such as agribusiness, where timely response to risks is critical to sustainable development (Eremenko et al., 2020).

Continuous digital business model innovation is increasingly recognized as a critical element for organizations seeking to thrive in the contemporary digital economy. This innovation not only encompasses the integration of digital technologies but also emphasizes sustainability and adaptability to changing market conditions. The role of management accounting in this context is critical, as it provides the framework and insights needed to guide organizations through the complexities of digital transformation while ensuring sustainable practices.

Management accounting has evolved to support sustainable digital business model innovation by facilitating the alignment of financial and non-financial metrics with sustainability objectives. Varaniūtė et al. argue that management accounting can significantly improve the product development process by integrating sustainability, digitalization, and circularity into its framework, ultimately leading to improved organizational performance (Varaniūtė et al., 2022). This perspective is supported by Momo et al., who emphasize that accounting professionals must go beyond traditional roles to leverage new digital technologies, thereby creating value and ensuring business sustainability (Momo et al., 2020). The ability of management accounting to adapt to this new paradigm is critical to driving innovation that aligns with digital advancements and sustainability objectives.

In addition, the adoption of digital technologies is an important driver of innovation in organizations. Zeng et al. highlighted that the adoption of artificial intelligence (AI) enhances digital resilience, which in turn facilitates digital innovation (Zeng et al., 2022). This resilience enables organizations to navigate challenges and seize opportunities, thereby fostering a culture of continuous improvement and innovation. Similarly, Khin and Ho emphasized that digital capabilities are critical to driving digital innovation, which is essential to maintaining competitiveness in a rapidly evolving business landscape (Khin & Ho, 2019). Thus, management accounting must integrate these digital capabilities into its practices to effectively support continuous innovation.

The application of digital technology in assessing and mitigating risks associated with sustainable

digital business model innovation is increasingly critical across various industries. This integration not only enhances operational efficiency but also addresses the complexities and uncertainties inherent in digital transformation processes.

One significant aspect of digital technology's role in risk management is its ability to provide comprehensive data analysis and modeling capabilities. Khrustalev highlights that the implementation of automated information technologies in financial risk management systems is essential for processing large volumes of structured and unstructured data, which in turn improves the accuracy of risk assessments (Khrustalev, 2023). This capability is particularly relevant in industries undergoing rapid digital transformation, where timely and precise data can inform strategic decisions and mitigate potential risks.

Moreover, Kessler et al. emphasize the dual nature of digital technologies, noting that while they offer transformative potential, they also introduce new risks that must be systematically understood and managed (Kessler et al., 2022). This perspective is crucial for organizations that are innovating their business models, as it encourages a balanced approach to leveraging digital technologies while being cognizant of the associated risks. The authors argue for a comprehensive risk management framework that incorporates the complexities of digital technologies, particularly in industrial operations.

In the context of manufacturing, He-Dan et al. assert that digital transformation facilitates ambidextrous innovation, which is essential for balancing technological advancements with business model innovation (He-dan et al., 2022). This interplay is vital for sustaining enterprise value and navigating the risks associated with adopting new technologies. The authors provide empirical evidence that supports the notion that digital transformation is not merely a technological shift but a strategic imperative that requires careful risk assessment and management.

The construction industry also exemplifies the application of digital technologies in risk management. Maskuriy et al. discuss how Industry 4.0 technologies, such as IoT and blockchain, can significantly enhance operational efficiency and risk mitigation strategies (Maskuriy et al., 2019). By integrating these technologies, construction firms can streamline processes, reduce uncertainties, and improve overall project outcomes. This integration is particularly beneficial in managing risks related to project delays and cost overruns, which are prevalent in construction projects.

Furthermore, the financial sector's adoption of digital technologies is reshaping risk management practices. Bisht et al. highlight the imperative role of integrating digitalization into financial management to achieve sustainable finance goals (Bisht et al., 2022). This integration not only enhances financial efficiency but also provides a framework for assessing and mitigating financial risks in a rapidly evolving digital landscape. The authors argue that digital finance tools can facilitate better risk assessment and management, thereby supporting sustainable business practices.

Additionally, the energy sector is witnessing a transformation through digital technologies, as Zhang et al. illustrates how intelligent digital upgrades can reshape energy production and management models (Zhang et al., 2021). The authors advocate for the integration of modern information technology with traditional energy practices to enhance risk management capabilities and promote sustainability. This approach not only addresses operational risks but also aligns with broader sustainability goals.

In summary, the application of digital technology in assessing and mitigating risks associated with sustainable digital business model innovation is multifaceted. It encompasses enhanced data analysis capabilities, a balanced understanding of risks, and the integration of advanced technologies across various industries. As organizations continue to navigate the complexities of digital transformation, leveraging these technologies will be essential for effective risk management and sustainable growth.

The management of risks associated with sustainable digital business model innovation is increasingly facilitated by the adoption of digital technologies across various industries. Best practices in this domain leverage advanced digital tools to enhance decision-making, streamline operations, and foster sustainable practices. Below, several examples of best practices are discussed, supported by relevant literature.

One prominent best practice is the use of digital platforms to enhance sustainability in business models. Hilali et al. highlight that transitioning from traditional product and process modifications to innovative business models, such as platform-based models, can significantly reduce negative externalities while improving financial performance Hilali et al. (2020). This approach allows companies to create digital marketplaces that not only optimize resource use but also promote sustainable consumption patterns. By leveraging digital platforms, businesses can better assess market demands and adapt their offerings

accordingly, thereby mitigating risks associated with market volatility.

In the context of small and medium-sized enterprises (SMEs), the application of digital technologies has been proven beneficial for sustainability. Bachtiar discusses how technologies such as online marketing platforms and communication tools enhance MSMEs' operational efficiency and customer engagement (Bachtiar, 2023). By using these digital tools, MSMEs can effectively manage risks related to market access and customer service, ensuring that they remain competitive in an increasingly digital marketplace.

The fashion industry provides another illustrative example of best practices in digital transformation for sustainability. Colombi and D'Itria describe how European fashion companies are integrating digital technologies to support circular business models (Colombi & D'Itria , 2023). These practices not only redefine business processes but also enhance transparency and traceability in supply chains, which are critical for managing risks related to sustainability. By adopting digital solutions, companies can monitor their environmental impact more effectively and adjust their operations to align with sustainability goals.

Moreover, the role of digital orientation in fostering sustainable innovation is underscored by Nasiri et al. Their research indicates that a strong digital orientation significantly impacts the adoption of sustainable practices among small businesses (Nasiri et al., 2021). This finding suggests that businesses that prioritize digital capabilities are better positioned to innovate sustainably, thereby reducing risks associated with environmental compliance and market expectations.

In the realm of Industry 4.0, Ardito et al. emphasize the importance of integrating digital technologies into supply chain management to enhance competitiveness and sustainability (Ardito et al., 2018). By adopting advanced technologies such as IoT and big data analytics, companies can optimize their supply chains, reduce waste, and improve resource management. This proactive approach to risk management not only addresses operational inefficiencies but also aligns with broader sustainability objectives.

Another critical practice involves the alignment of digital technologies with business strategies to enhance sustainable innovation performance. Lin's study highlights that effective alignment between digital transformation initiatives and business objectives is crucial for achieving sustainable outcomes (Ginting et al., 2022 & Lin, 2023). Companies that successfully integrate digital technologies into their strategic frameworks can better navigate uncertainties and capitalize on emerging opportunities, thereby mitigating risks associated with innovation.

Furthermore, the use of big data analytics is emerging as a game changer for business model innovation. Bican and Brem note that digital technologies enable businesses to harness vast amounts of data, which can inform strategic decisions and enhance operational resilience (Bican & Brem, 2020). By analyzing data trends, companies can identify potential risks early and implement measures to address them, thus fostering a culture of continuous improvement and sustainability.

Lastly, the incorporation of fraud risk management into digital business operations is essential for maintaining trust and integrity in digital transactions. Lumbwe emphasizes the need for robust information technology frameworks to detect and mitigate fraud risks, which have proliferated in the digital era (Lumbwe, 2023). By prioritizing cybersecurity and risk management practices, businesses can safeguard their operations and enhance their sustainability credentials.

Based on the explanation given on there is a number of questions we want to explore through The technical aspects of a systematic literature review are (1) How implementation digital technology in evaluate And mitigate risk sustainable digital business model innovation on various industry ? (2) What just example practice best (*best practices*) in use digital technology for manage risk sustainable digital business model innovation ?; and (3) Benefits And loss from activity digital technology and business model innovation on performance sustainability ?

The results of this study aim to explore the application of management accounting in assessing and mitigating risks arising from digital business model innovation in various industries, so that it is expected to enrich the understanding of the contribution of management accounting in supporting sustainability through innovative business strategies. In addition, by identifying best practices *in* the use of management accounting to manage risks in sustainable digital business model innovation. Thus, the results of this study are expected to be able to provide practical guidance for professionals in various sectors who want to optimize the function of management accounting in supporting sustainable business initiatives. In addition, the identification of these best practices also has the potential to be a reference for other sectors that want to adopt effective risk management strategies, accelerating the adoption of business models that are not only

innovative but also sustainable.

Methodology

Data search using POP application with period certain And keyword usage as explained in Table 1, results from search the will be analyzed via the Covidence website And will done synthesis with PRISMA (*Preferred Reporting Items for Systematic Reviews and Meta-Analyses*). The PRISMA results will be extracted And reviewed more in to clarity formulation problem , clarity method , and validity results study .

Table 1Search Strategy

Source library	1. Scopus (scopus.com) Through Publish or Perish App
Keywords search	1. management accounting AND risk assessment OR enterprise risk management AND digital transformation 2. integrated report* AND ERM 3. performance management OR cost accounting AND innovation risk 4. Management Account* OR digital technology business model innovation 5. sustainability* AND risk management
Year Rise	2018-2024
Type library	Journal Article Study

In addition, the assessment and selection process for articles is also based on the feasibility test criteria presented in Table 2.

Table 2Selection Criteria

Criteria Inclusion	1. Population: a. Studies that focus on the organizational level, Company, Corporation, business unit, or management function b. English 2. Intervention / Exposure a. Sustainability accounting b. Integrated reporting c. cost benefit analysis d. performance measurement systems with sustainability indicators 3. Results/Outcomes a. Decreased risk levels (digital, operational, financial, reputational, environmental, social). b. Improved ability to identify, assess and mitigate risks. c. Improvement of environmental performance d. Increased company value 4. Study Characteristics a. Empirical study (quantitative, qualitative, or mixed). b. Issued 2018-2024 c. Research Article d. Scopus database
Criteria Exclusion	1. Systematic Literature Review 2. Bibliometric Analysis 3. Book Chapter.

Results

The articles obtained using the Publish or Perish application version 8 using keywords and *string symbols* (*) were 521 articles as shown in table 3.

Table 3: Search Keywords

No.	Search Keywords	Number of Articles
1.	management accounting AND risk assessment OR enterprise risk management AND digital transformation	19
2.	integrated report* AND ERM	27
3.	performance management OR cost accounting AND innovation risk	51
4.	Management Account* OR digital technology business model innovation	200

5.	sustainability* AND risk management	200
6.	management accounting AND risk assessment OR enterprise risk management AND digital transformation AND Business Model Innovation	24
Amount		521

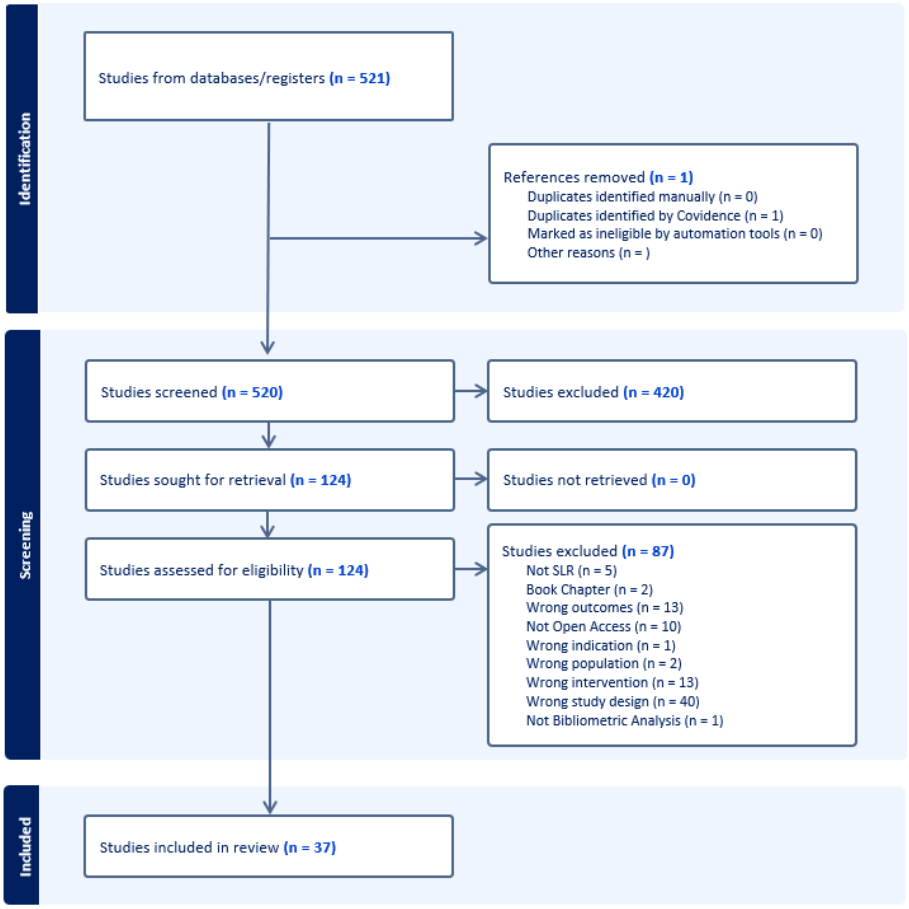


Figure 2: SLR PRISM

There is 1 duplicated article from 521 articles collected based on the search using the keywords listed in table 3 above. Three stages were carried out to filter the most relevant articles to the topic, resulting in 37 most relevant articles for analysis.

Bibliographic information and main focus of the publication

Based on the available data, it can be concluded that the research methods used in this study include a variety of approaches, with a focus on quantitative and qualitative methodologies, as well as some examples of mixed methods and exploratory studies. Quantitative studies use techniques such as panel data analysis, text analysis, regression, SEM, and difference-in-differences, while qualitative studies mainly involve case studies and interviews. Quantitative research appears to be more prevalent than qualitative research, with a large number of studies using survey-based methods and econometric modeling techniques. The use of secondary data is widespread, with many studies using databases such as CSMAR, Wind, Bloomberg, and OECD.

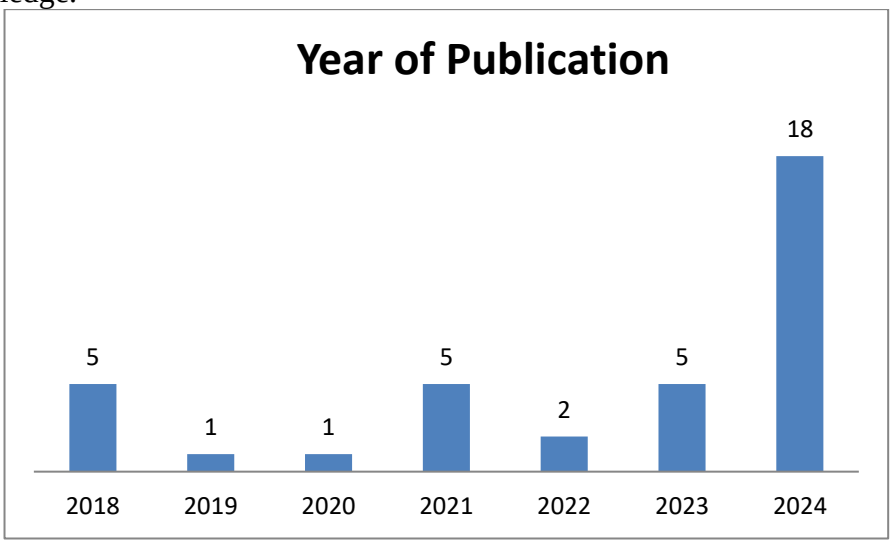
The geographic scope of the research varies widely, with studies focusing on specific countries such as Portugal, Australia, China, Romania, Germany, Malaysia, India and Tunisia, as well as broader regions such as Europe and Central Asia, and global analyses covering 18 or 43 countries. The industry focus is also diverse, with manufacturing being the most frequently studied, followed by the digital economy, banking, technology, pharmaceuticals, retail, hospitality, agriculture, finance and MSMEs.

The heavy reliance on secondary data in many studies can pose limitations in terms of data availability, accuracy, and potential bias in the original data collection process. In addition, the focus on a particular country or region can limit the generalizability of findings to other contexts. The choice of research methods and data collection techniques can also affect the types of questions that can be answered and the nature of conclusions that can be drawn.

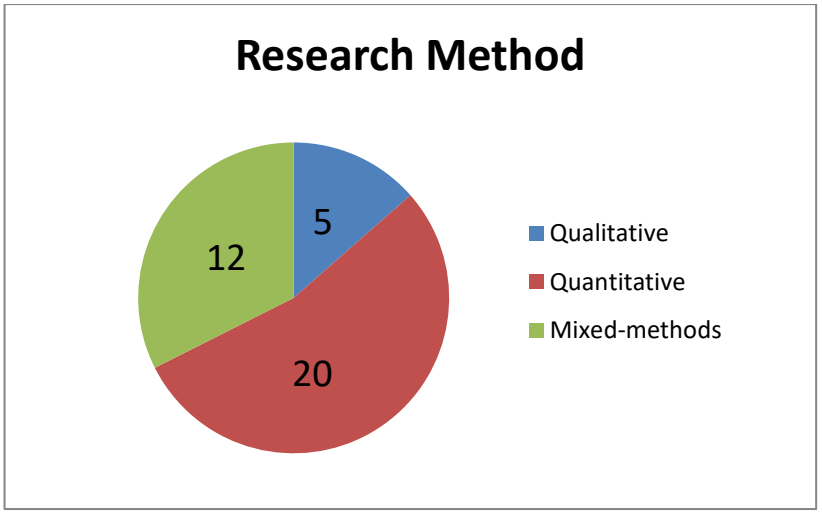
The data show a strong reliance on the Resource-Based View (RBV) with 9 articles, indicating that

researchers primarily assess and mitigate risks by analyzing how firms leverage their unique resources and capabilities, such as technological expertise, data analytics capabilities, and collaborative networks, to develop and implement sustainable digital business models. Dynamic Capabilities Theory, with 3 articles, likely explores how firms adapt and reconfigure their resources to respond to dynamic market conditions and sustainability challenges in the digital era. Agency Theory (2 articles) may examine the incentive alignment between management and stakeholders in pursuing sustainable digital innovation, ensuring that sustainability objectives are integrated into the decision-making process. Limited use of the Attention-based view (ABV) (2 articles) may indicate a renewed focus on understanding how firms attract attention and build legitimacy for their sustainable digital initiatives in crowded markets. Technological Innovation Systems (2 articles) and Socio-Technical Systems Theory (2 articles) likely explore the broader ecosystem in which digital innovation occurs, considering factors such as regulatory frameworks, social acceptance, and infrastructure support. The "Other" category (17 articles) encompasses a wide range of theoretical lenses, reflecting the ongoing nature of digital business model innovation and the need for diverse perspectives to effectively assess and mitigate risks across industries.

Future research may benefit from a more balanced mix of quantitative and qualitative approaches, as well as greater attention to mixed methods studies that can provide a more comprehensive understanding of complex phenomena. Efforts should also be made to diversify data sources and consider potential limitations and biases associated with different data collection methods. Expanding the geographic scope of research and exploring under-researched industries and sectors would contribute to more comprehensive and generalizable knowledge.



Picture 3: Publication Based on Year



Picture 4: Methodology Study

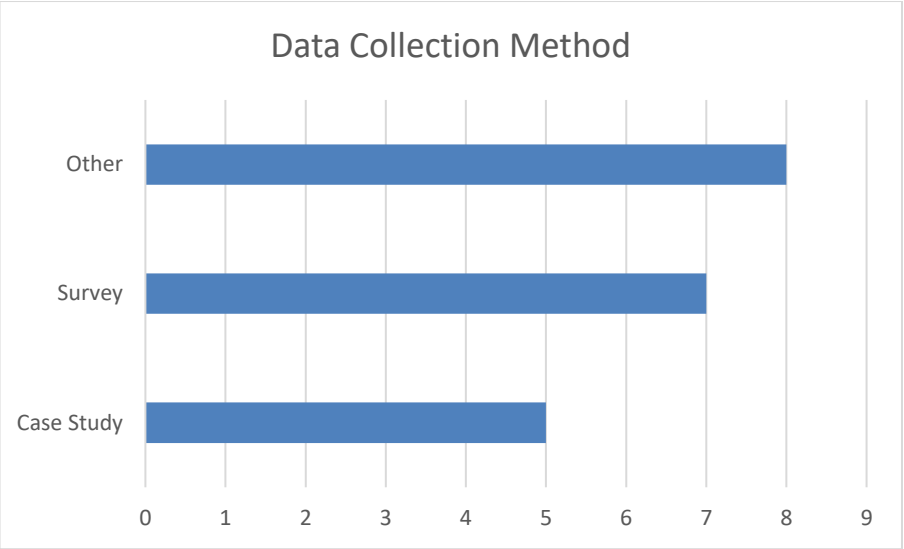


Figure 5: Technique Data collection

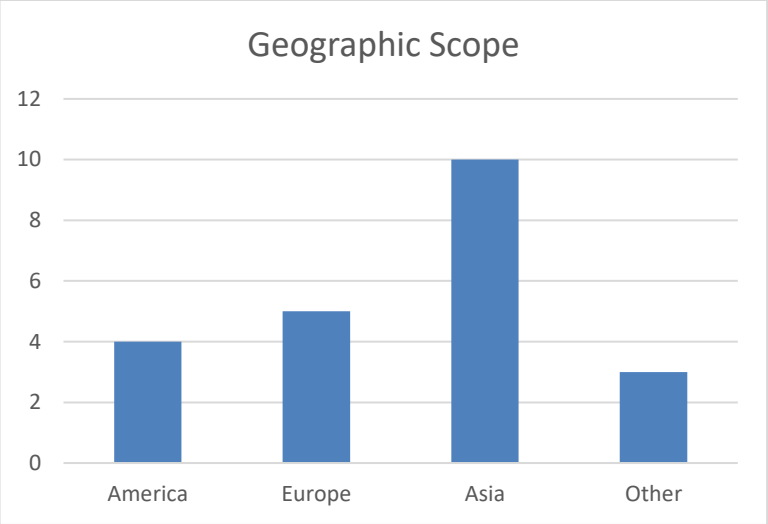


Figure 6: Research Locus

R(1) How is digital technology applied to assess and mitigate the risks of sustainable digital business model innovation in various industries?

Digital technologies play a critical role in assessing and mitigating the risks associated with sustainable digital business model innovation across industries. This involves leveraging digital tools to enhance transparency, efficiency and stakeholder engagement, which are essential for sustainable business practices. The following section explores how digital technologies can be applied in this context, drawing insights from the research papers provided.

Digital technologies have emerged as a key enabler in facilitating risk assessment and mitigation in sustainable business model innovation. Their ability to collect, analyze, and disseminate information enhances operational transparency and supports more effective resource management (Patwary et al., nd). This enhanced transparency enables organizations to proactively identify and address potential risks associated with sustainability initiatives, ensuring responsible resource use and reducing adverse environmental impacts (Patwary et al., nd). In addition, digital technologies empower businesses with access to critical data such as customer preferences and industry trends, which drives data-driven decision-making and better risk assessment (Patwary et al., nd).

Digital platforms further drive innovation by providing a space for idea sharing and solution development, contributing to the identification and mitigation of risks early in the innovation process (¸ek et al., nd). The Resource-Based View (RBV) framework highlights the role of digital technologies in enhancing organizational capabilities, which can then be leveraged to mitigate risks in sustainable business models (Patwary et al., nd). By leveraging digital tools, firms can gain competitive advantage, improve organizational well-being, and mitigate risks associated with digital business model innovation (Patwary et al., nd). The shift towards platform-based business models, enabled by digital innovation, allows firms to

align traditional business practices with the digital environment, creating more flexible and adaptive structures that mitigate risks (¸ek et al., nd).

Furthermore, digital platforms facilitate dynamic interactions between producers and consumers, enabling risk management strategies that are responsive to changes in market demand (¸ek et al., nd). In the context of sustainability and supply chain management, digital technologies play a critical role in enhancing sustainability efforts and reducing the risk of disruption (Gouda & Saranga, nd). The use of digital tools in supply chain management enables better tracking and mitigation of environmental and social risks, ultimately leading to more resilient business models (Gouda & Saranga, nd).

Overall, high levels of digitalization correlate with increased sustainable competitiveness by enabling countries and industries to innovate and manage risks effectively (Dabbous et al., nd). Integrating digital technologies with environmental innovation and financial development supports sustainable transitions, further reducing the risks associated with digital business model innovation (Dabbous et al., nd). Future research should investigate specific digital tools and strategies that maximize effectiveness across industry contexts to better understand their role in sustainable innovation.

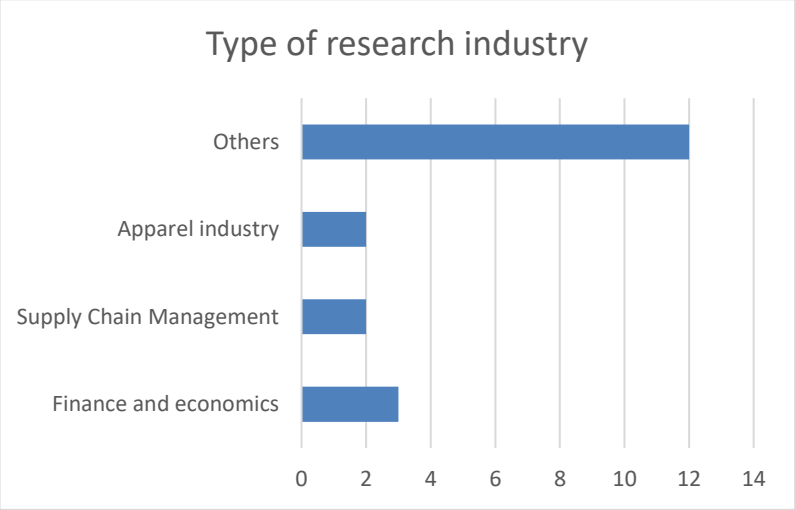


Figure 7: Industrial Objects

The data shows a significant focus on the financial industry (7 articles) and manufacturing (6 articles) in research related to sustainable digital business model innovation. This emphasis is understandable as these sectors are often at the forefront of adopting new technologies and face significant pressure to improve sustainability performance. The financial industry, for example, is exploring blockchain for secure and transparent transactions, AI for fraud detection and risk management, and big data analytics for sustainable investment decisions. The manufacturing sector, on the other hand, is leveraging IoT for process optimization, predictive maintenance, and resource efficiency, while AI and robotics are being used to automate tasks and reduce waste.

In the retail sector (2 articles), digital technologies are being applied to enhance customer experience while promoting sustainable practices. AI-powered recommendation engines can encourage purchases of eco-friendly products, while data analytics can optimize supply chains and reduce waste through accurate demand forecasting. The “Different Industries” category (9 articles) likely reflects the cross-sectoral nature of digital technologies and their application across sectors. This highlights the need for collaborative approaches and knowledge sharing to accelerate the adoption of sustainable digital business models.

Finally, the “Other” category (13 articles) shows a growing interest in exploring the role of digital technologies in sectors outside the traditional focus areas. This could include areas such as healthcare, education, and agriculture, where digital innovations can contribute to improving social and environmental outcomes. For example, telemedicine can reduce the need to travel, online education can minimize paper consumption, and precision agriculture can optimize resource use and reduce environmental impacts. In conclusion, the data underscores the importance of tailoring digital solutions to specific industry needs and challenges to effectively assess and mitigate the risks associated with sustainable digital business model innovation.

R(2) What are some examples of best practices in using digital technologies to manage the risks of sustainable digital business model innovation?

Digital technology plays a critical role in managing risks related to sustainable digital business model

innovation. As the integration of digital solutions into business increases, companies face challenges in terms of sustainability, competitiveness, and operational efficiency. Strategic use of digital technology can mitigate these risks.

First, digital technologies can enhance operational transparency and resource management, which are essential for maintaining business performance and environmental sustainability (Patwary et al., nd). Digital platforms enable efficient data collection, analysis, and sharing, supporting sustainability efforts. In addition, a focus on green innovation supported by digital technologies can enhance sustainability through proactive and transparent management of green information (Patwary et al., nd). Digital tools also facilitate the sharing and implementation of creative ideas, driving innovation within organizations.

Second, digital transformation enables business model adaptation to new technologies, optimization of operations, and enhancement of competitiveness (Cristache et al., nd). Digital business models offer scalability and rapid adaptation to market changes, which are essential for sustainable development. The configuration approach to digital innovation emphasizes that different attributes of digital technologies work together to drive business model innovation (Cheng & Wang, nd). This holistic approach can reshape the understanding of the drivers of business model innovation and help manage associated risks.

Third, digital technology can help manage operational risks by ensuring the smooth flow of information and materials along the supply chain, thereby reducing economic losses (Xu et al., n.d.). Environmental risks can be reduced by increasing transparency and proactivity in green information management through digital tools (Patwary et al., n.d.). The Resource-Based View (RBV) and Conservation of Resources (COR) theories emphasize the importance of strategic resource management using digital technologies for long-term sustainability and competitive advantage.

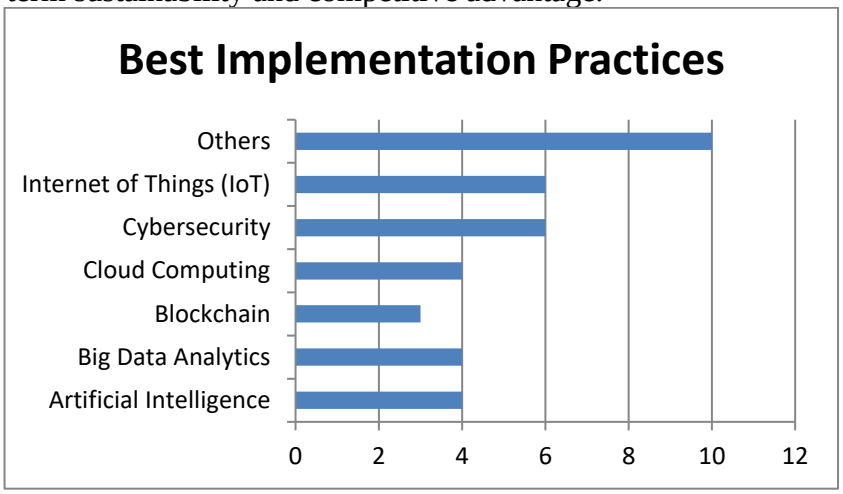


Figure 8: Best Implementation Categories

The above data shows the diversity of technology practices used, with Cybersecurity and Internet of Things (IoT) leading the way with 6 articles each. This highlights the growing awareness of the importance of digital security and its relevance in managing the risks associated with sustainable digital business model innovation. Close behind are Artificial Intelligence, Big Data Analytics and Cloud Computing, each with 4 articles, demonstrating a significant focus on leveraging data-driven insights and scalable infrastructure for innovation and risk mitigation.

These technology practices play a critical role in managing the risks of sustainable digital business model innovation. For example, AI and Big Data Analytics can be used to analyze large amounts of data to identify emerging trends, predict potential disruptions, and optimize resource allocation for sustainable practices. Cybersecurity measures are critical to protecting sensitive data and maintaining operational stability in the face of cyber threats, which can disrupt sustainable initiatives. IoT enables real-time data monitoring and collection, facilitating better decision-making and resource management for green operations.

In addition, Blockchain technology, with 3 articles, shows growing interest in its potential to increase transparency and traceability in supply chains, promoting ethical sourcing and responsible production. Cloud Computing provides the flexible and scalable infrastructure needed to support rapid innovation and adapt to evolving market demands while minimizing environmental impact. The “Other” category, which includes 10 articles, likely represents a diverse range of emerging technologies and approaches that contribute to

managing risk and driving sustainability in digital business model innovation.

Integrating digital technologies into business models offers significant potential for managing the risks associated with sustainable innovation. By adopting digital tools and strategies, businesses can increase transparency, improve resource management, and drive innovation. Future research could explore the specific configurations of digital technologies that most effectively mitigate risks across industries, further advancing sustainable business practices.

R(3) Advantages and disadvantages of digital technology activities and business model innovation on sustainability performance?

Digital technologies and business model innovation are critical in shaping sustainability performance. As businesses increasingly integrate digital solutions, they face both opportunities and challenges in improving their sustainability outcomes. This response explores the benefits and drawbacks of digital technology activities and business model innovation on sustainability performance, drawing insights from the academic context provided.

Digital technology itself offers various advantages in driving business sustainability. First, digital technologies such as blockchain can improve operational efficiency by optimizing resource use and reducing transaction time and costs (Dabbous et al., nd). This can free up resources for innovation and enable faster market response. The application of digital technology in supply chain management (SCM) has also been shown to have a positive impact on innovation performance, leading to more sustainable business practices.

Second, digital technology expands the scope of business operations. Blockchain encourages collaboration with external partners, leverages broader resources, and fosters a rich innovation ecosystem, which can ultimately drive sustainability (Dabbous et al., nd). Digital adoption also facilitates the integration of innovative practices, improving operational efficiency and sustainability performance.

Third, digital technology facilitates monitoring and increases efficiency. Digital technology can help monitor climate conditions and changes, reduce the impact of natural disasters, and lead to more efficient and sustainable energy consumption through smart grids (Dabbous et al., nd).

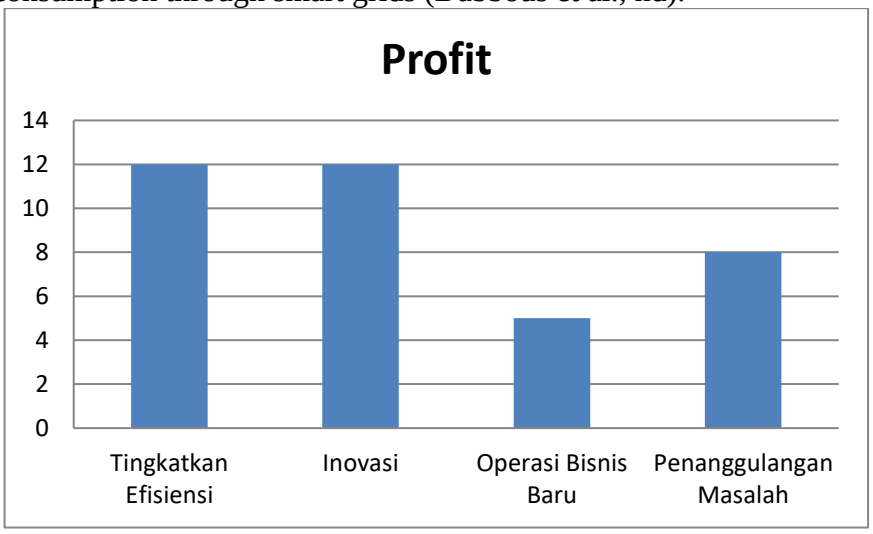


Figure 8. Profit Classification

Digital technology activities and business model innovation are critical in improving sustainability performance across multiple dimensions. These advances not only increase efficiency and drive innovation but also enable new business operations and effective problem-solving strategies. This response explores the advantages of digital technology and business model innovation in sustainability performance, categorized into four key areas: Improving Efficiency, Innovation, New Business Operations, and Problem-Solving.

Digital technologies play a critical role in improving efficiency and driving innovation in the context of sustainability. By streamlining business processes, digital technologies optimize production, improve resource utilization, and reduce waste, ultimately improving overall operational efficiency (Liang et al., nd; Looy, nd). Automation of routine tasks through digital technologies not only saves time but also reduces operational costs, contributing to more sustainable business practices (Liang et al., nd; Cheng & Wang, nd). Furthermore, digital innovation drives the development of new products and services that align with sustainability goals, including green products and processes that minimize environmental impacts (Cheng & Wang, nd; Dabbous et al., nd).

The adoption of digital technologies enables the exploration of new business models that effectively

address sustainability challenges (Liang et al., nd; Kumail et al., nd). These new business models often leverage digital platforms to enhance customer interactions and engagement, leading to more sustainable operations (Liang et al., nd; Cheng & Wang, nd). The shift towards digital business models also opens up new revenue streams and market opportunities, contributing to long-term sustainability by diversifying revenue sources and reducing reliance on less sustainable traditional practices (Looy, nd; Kumail et al., nd). In addition, digital technologies provide powerful tools for solving complex sustainability problems, such as data analytics and monitoring systems to track and reduce environmental footprints (Liang et al., nd; Dabbous et al., nd). The integration of digital solutions enables companies to respond to sustainability issues in real-time, enabling more agile and informed decision-making (Looy, nd; Kumail et al., nd).

Despite its many benefits, digital technologies also have drawbacks in the context of sustainability. The digital technology industry is considered one of the most environmentally damaging sectors due to its high demand for electricity and the generation of e-waste (Dabbous et al., nd). The complexity and resource intensity of digital transformation can pose challenges, especially for small and medium-sized enterprises (SMEs) with limited resources. In addition, digital transformation can reinforce existing power structures and exclude certain practices, potentially leading to inequalities in sustainability performance.

However, business model innovation driven by digital technologies can be disruptive. Digital technology activities and business model innovation are critical in driving sustainability transitions. However, they also present several challenges that can impact sustainability performance. These challenges can be categorized into financial and operational costs, power and competitive imbalances, and regulatory and sustainability challenges.

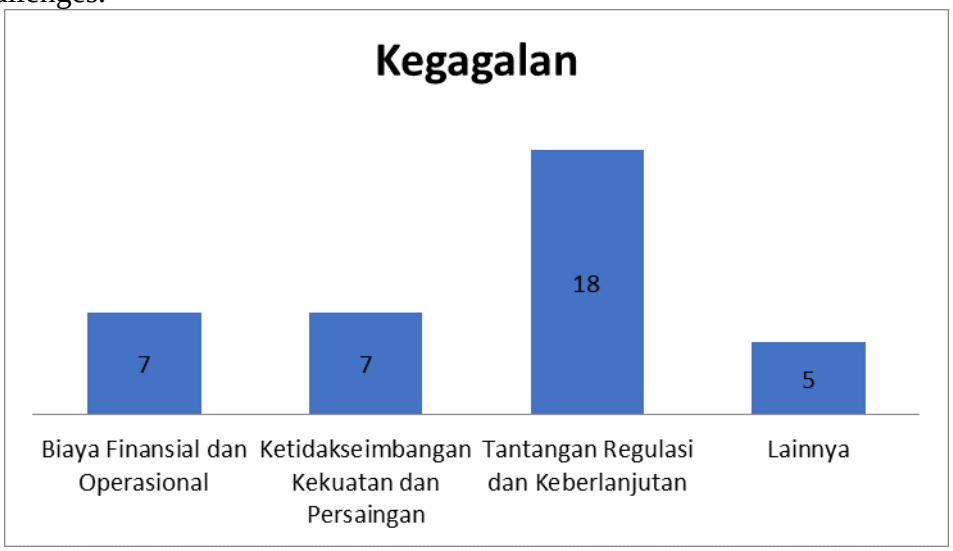


Figure 9. Loss Classification

Digital transformation, while offering many benefits, also presents significant financial and operational challenges. Initial investments in infrastructure, technology, and training can be substantial, especially for SMEs, and the ongoing costs of maintaining and upgrading digital systems can strain financial resources (Patwary et al., nd). This can result in diversion of funds from other critical sustainability initiatives such as environmental innovation and sustainable practices. Furthermore, the need to allocate resources to digital capabilities can lead to reduced investment in other areas critical to sustainability (Patwary et al., nd).

Digital technologies can also exacerbate power imbalances in supply chains, where larger firms can leverage their digital advantages to dominate smaller partners, potentially hampering innovation and sustainability efforts (¸ek et al., nd). SMEs often struggle to compete with larger firms that have more resources to invest in digital technologies, leading to competitive disadvantages (¸ek et al., nd). Additionally, the speed of digital innovation can create competitive pressures that prioritize short-term profits over long-term sustainability goals, potentially leading to unsustainable business practices. Navigating the complex regulatory landscape around digital technologies and aligning digital strategies with sustainability regulations can also be challenging (Dabbous et al., nd). Finally, the environmental impacts of digital technologies, such as increased energy consumption and e-waste, need to be carefully considered as they can negatively impact sustainability performance.

The integration of digital technology activities and business model innovation significantly improves sustainability performance by increasing efficiency, driving innovation, enabling new business operations,

and enhancing problem-solving capabilities. However, they also present challenges that need to be carefully managed, so future research should focus on developing strategies to mitigate these drawbacks, ensuring that digital transformation is aligned with broader sustainability goals. This includes exploring ways to balance financial investments, address power imbalances, and effectively navigate the regulatory landscape.

Conclusion

The research concludes that management accounting plays a crucial role in assessing and mitigating risks associated with sustainable digital business model innovations. It achieves this by integrating financial and non-financial data, which aids in decision-making and enhances the ability to identify, analyze , and address potential threats. The study highlights that organizations committed to sustainable practices manage risks more effectively and achieve long-term sustainability goals, emphasizing the importance of sustainability reporting and stakeholder engagement.

Additionally, the research identifies best practices for using digital technologies in managing risks related to sustainable digital business models. These include leveraging digital platforms for operational transparency, utilizing advanced tools such as AI and IoT for real-time data analysis, and aligning these technologies with sustainability strategies to foster innovation and resilience. Despite these benefits, challenges such as high investment costs, potential environmental impacts, and power imbalances within supply chains require careful management.

In summary, the integration of management accounting and digital technologies provides organizations with a robust framework for navigating risks in sustainable digital innovation. The findings offer practical guidance for professionals aiming to enhance sustainability while addressing the complexities of digital transformation. Future research should focus on exploring specific tools and strategies to optimize these practices across diverse industries, ensuring alignment with broader sustainability objectives.

Limitation

The limitations of this research stem primarily from its reliance on secondary data and the scope of articles analyzed. Much of the data is sourced from previously published studies, which can introduce biases related to the accuracy and relevance of the original data. Additionally, the use of secondary sources may limit the scope of real-time insights, especially in industries experiencing rapid changes due to digital transformation. These constraints may hinder the generalizability of the findings across different contexts or emerging sectors not well-represented in the literature.

Another limitation lies in the geographical and industrial focus of the reviewed studies. While the research includes data from various countries and industries, certain regions and sectors are underrepresented. For example, industries like healthcare and education, where digital transformation and sustainability are gaining traction, are less discussed. Similarly, regions with different socio-economic and technological landscapes, such as developing countries, may not align with the findings derived from studies in developed economies. This limits the ability to apply conclusions universally.

Lastly, the methodological diversity of the reviewed studies could pose a limitation. While the inclusion of both quantitative and qualitative approaches provides depth, the lack of balance between these methods may skew the findings. Quantitative studies dominate, potentially overlooking the nuanced, context-specific insights that qualitative research can provide. Furthermore, the exclusion of bibliometric and systematic reviews might restrict a comprehensive understanding of broader trends and patterns in the field of digital business model innovation and risk management. Addressing these gaps in future research could enhance the applicability and robustness of the findings.

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CHAPTER 10
Competitive Advantage and Resource-Based View: A Systematic Literature Review

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ABSTRACT

This research aims to explore the contribution of the Resource-Based View (RBV) theory to organizational competitive advantage through a Systematic Literature Review (SLR) approach. RBV emphasizes the importance of unique and hard-to-imitate internal resources as the primary key to creating sustainable competitive advantage. Through analysis of 40 relevant articles found in leading academic databases such as Scopus, Web of Science, and Google Scholar, this research identifies various research trends and gaps related to RBV implementation across different industries. Key findings indicate that valuable, rare, inimitable, and non-substitutable resources play a crucial role in organizational strategic success. Furthermore, dynamic capabilities and technological innovation integration are increasingly becoming critical factors in maintaining long-term competitiveness. Practical implications of RBV in sustainable business strategies include the importance of investing in intangible resources, adapting to technological changes, and developing managerial capabilities. While RBV has been widely applied in large company contexts, research gaps regarding RBV implementation in small and medium enterprises (SMEs) and external factors influencing business strategies still require further exploration. This research provides insights into how RBV can be further integrated with external factors and technological changes to create more comprehensive competitive advantage.
Keywords: Resource-Based View, Competitive Advantage, Systematic Literature Review, Dynamic Capabilities, Sustainable Business Strategy.

1. INTRODUCTION

Competitive advantage is one of the main goals that every organization aims to achieve in order to ensure sustainability and success in an increasingly competitive business world. This advantage is achieved when a company is able to create superior value that is difficult for competitors to replicate, thereby allowing the company to maintain its position in the market. One of the most influential approaches in explaining the achievement of competitive advantage is the Resource-Based View (RBV). RBV emphasizes the importance of managing unique and high-value internal resources that are not easily imitable and irreplaceable, as the foundation for creating sustainable competitive advantage (Hasugian et al., 2019).

Since it was introduced by Wernerfelt (1984) and further developed by Barney (1991), RBV has become a theoretical foundation widely used in strategic management studies. The core concept of RBV, namely the VRIN framework (Valuable, Rare, Inimitable, Non-substitutable), serves as the basis for identifying and managing strategic resources. However, the dynamic business environment, including technological changes, globalization, and market disruptions, presents new challenges in applying RBV. To address these challenges, the concept of dynamic capabilities was introduced by Teece et al. (1997), which highlights the importance of a company's ability to adapt and transform its internal resources to meet market demands.

Although RBV theory has been widely applied across various industry contexts, several gaps remain, such as the limited research focusing on the SME sector, the lack of integration with external factors, and the limited studies on the implementation of RBV in the digital era. Therefore, a systematic literature review is needed to provide a deeper understanding of RBV's contribution to creating competitive advantage, as well as to identify trends and research gaps that can serve as a reference for future studies. This research also raises research questions.Research questions are formulated to guide the literature analysis process:

1. How does the Resource-Based View (RBV) theory contribute to an organization's competitive advantage?
2. What are the trends and research gaps related to RBV and competitive advantage?
3. What are the practical implications of RBV in sustainable business strategy?

1.2 Previous Research

Several previous studies have highlighted the relationship between RBV and competitive advantage:

1. Barney (1991): Introduced the VRIN concept and emphasized the importance of internal resources as key to competitive advantage.
2. Teece et al. (1997): Developed the dynamic capabilities concept, emphasizing the adaptation of resources to environmental changes.
3. Wernerfelt (1984): Highlighted the role of strategic assets in determining competitive advantage and provided an initial framework for RBV.
4. Priem & Butler (2001): Criticized and expanded RBV, emphasizing the integration of external factors such as markets and competition.
5. Newbert (2007): Conducted a meta-analysis of RBV research, showing that a combination of unique resources and effective strategic management significantly impacts firm performance.

Despite various studies, several gaps remain, such as limited research on SMEs, the integration with digital technology, and analysis of the dynamic business environment. A systematic literature review is essential to identify and fill these gaps.

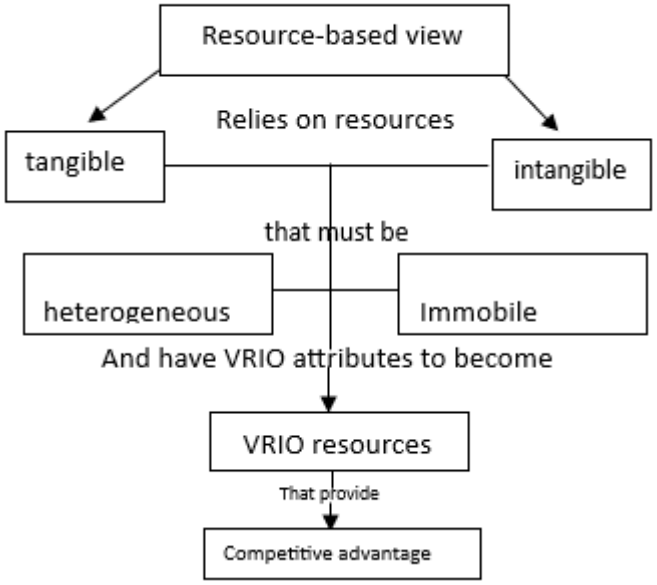
2. LITERATURE REVIEW AND THEORY

2.1 Introduction to Competitive Advantage

Competitive advantage refers to a firm's ability to create superior value that is difficult for competitors to imitate, allowing the firm to survive and thrive in the market (Maksum, 2021). This concept is central to business strategy and continues to evolve with changes in the industrial environment. Michael Porter (1985) identified two main strategies for achieving competitive advantage: cost leadership and differentiation. Other approaches emphasize the management of internal resources to create sustainable advantage, as explained in the Resource-Based View (RBV) theory.

2.2 Resource-Based View (RBV)

RBV is a theoretical framework in strategic management that emphasizes the importance of a firm's internal resources in creating competitive advantage. This theory was introduced by Wernerfelt (1984) and developed by Barney (1991), who introduced the VRIN framework (Valuable, Rare, Inimitable, Non-substitutable):



Source: RBV concept to improve company competitiveness

1. Valuable: Resources that provide value to the firm.
2. Rare: Resources that are difficult for competitors to find.
3. Inimitable: Resources that are hard for other companies to replicate.
4. Non-substitutable: Resources that cannot easily be replaced by other resources.

According to RBV, firms that possess and manage resources in line with the VRIN criteria can create sustainable competitive advantage.

2.3 Development of RBV Theory: Dynamic Capabilities

In a dynamic business environment, the traditional RBV concept is considered insufficient for addressing rapid market changes. Therefore, dynamic capabilities were introduced by Teece et al. (1997) as a complement to RBV. Dynamic capabilities refer to a firm's ability to:

1. Integrate, build, and reconfigure resources to address environmental changes.
2. Adapt quickly to new opportunities or threats in the market.

Dynamic capabilities provide strategic flexibility, allowing firms to remain relevant in rapidly

changing conditions, such as technological disruptions or globalization.

2.4 The Relationship Between RBV and Competitive Advantage

Previous research shows a strong relationship between RBV and competitive advantage. Some key findings include:

1. Barney (1991): Found that managing unique, hard-to-imitate resources is the core of RBV-based strategy.
2. Grant (1991): Emphasized the importance of organizational capabilities in utilizing resources to create value.
3. Teece et al. (1997): Showed that dynamic capabilities enable firms to maintain competitive advantage amid market changes.

However, RBV also faces criticism, such as from Priem & Butler (2001), who argue that the theory overlooks external factors like market dynamics or regulatory influences.

2.5 Practical Implications of RBV

In practice, RBV helps firms:

1. Identify and protect strategic resources, such as brands, technologies, and customer relationships.
2. Enhance innovation and efficiency through resource optimization.
3. Adapt to environmental changes by developing dynamic capabilities.

2.6 Research Gaps

Despite widespread application of RBV, several research gaps require further investigation:

1. Application to SMEs: Much research has focused on large companies, and little is known about how SMEs can effectively apply RBV.
2. Integration of External Factors: RBV tends to focus on internal resources, while the influence of external factors is often overlooked.
3. Digital Era: The role of digital resources, such as data and artificial intelligence, within RBV is still not well understood.

3. RESEARCH METHOD

3.1 Research Approach

This study uses a Systematic Literature Review (SLR) approach to explore the relationship between the Resource-Based View (RBV) and competitive advantage. The SLR approach is chosen because it allows the researcher to provide a comprehensive overview of relevant literature, identify research trends, and uncover existing gaps.

3.2 Research Process

The SLR research process is carried out in the following stages:

1. Data Collection

Data is collected from reputable academic databases, such as:

1. Scopus

2. Web of Science
3. Google Scholar

The search process is carried out using relevant keywords, such as:

1. "Resource-Based View"
2. "Competitive Advantage"
3. "RBV Framework"
4. "Strategic Management"

Boolean operators (AND, OR) are used to expand or narrow the search as needed.

2. Inclusion and Exclusion Criteria

To ensure the relevance and quality of the data analyzed, the following criteria are applied

No	Inklusi	Exclusion
1	Articles discussing RBV in the context of competitive advantage	Non-academic articles, such as editorials or opinion pieces
2	Articles published in reputable journals (indexed in Scopus or Web of Science)	Studies that do not explicitly discuss RBV or competitive advantage
3	Articles in English or Indonesian	

3. Data Screening

1. Articles obtained from the initial search are screened based on their titles and abstracts.
2. Articles passing the initial selection are analyzed in full text to ensure their relevance to the research topic.

4. Data Analysis and Synthesis

1. Data Extraction: Key information from each article (methodology, findings, contributions) is recorded in a structured table.
2. Data Synthesis: The results of the studies are analyzed to identify key trends, the contributions of RBV theory to competitive advantage, and research gaps that need to be explored further.

3.3 Validity and Replication

The research steps are explained transparently to ensure validity and enable replication by other researchers. The final results will be presented in the form of narratives, tables, and graphs to provide a comprehensive overview.

3.4 Tools and Analysis Techniques

1. Data is coded and analyzed using thematic analysis to identify key patterns or themes in the literature.

2. Visualizations, such as diagrams or literature maps, are used to clarify research trends and the interconnections between concepts.

3.5 Methodological Implications

This method not only helps in understanding the contribution of RBV theory to competitive advantage but also reveals practical implications for the development of future business strategies. SLR also provides insights for future research to fill theoretical and practical gaps in various contexts.

4. DISCUSSION

4.1 How does the Resource-Based View (RBV) contribute to an organization's competitive advantage?

Based on literature analysis, the Resource-Based View (RBV) significantly contributes to an organization's competitive advantage through several key aspects. The following are analyses from various perspectives:

4.1.1 Identification of Valuable Resources

RBV emphasizes the importance of a company's internal resources as the key element in creating competitive advantage. According to Barney (1991), resources must meet VRIN criteria (Valuable, Rare, Inimitable, Non-substitutable) to sustain competitive advantage.

1. Valuable: Resources help increase operational efficiency or better meet customer needs.
2. Rare: Resources that are not widely available to competitors, such as unique technology or a famous brand, enable a company to remain competitive.
3. Inimitable: Resources that are difficult to imitate, such as organizational culture or strong customer relationships, provide protection from competition.
4. Non-substitutable: Resources that are not easily replaced by alternatives ensure a more enduring competitive advantage.

4.1.2 Development of Dynamic Capabilities

RBV has evolved by incorporating the concept of dynamic capabilities (Teece et al., 1997), referring to a company's ability to:

1. Adapt to external environmental changes.
2. Integrate internal resources flexibly to face new challenges and opportunities. This concept is particularly relevant in fast-evolving industries, such as technology, where the ability to innovate and respond to market changes is key to success.

4.1.3 Focus on Intangible Resources

RBV highlights the importance of intangible resources, such as:

1. Managerial skills: Visionary leaders can manage resources with more effective strategies.
2. Organizational culture: Strong internal values and norms drive better employee performance.

3. Brand reputation: Providing a competitive edge that is difficult for competitors to replicate. These resources are often harder to imitate than physical assets, making them crucial for building long-term competitive advantage.

4.1.4 RBV-Based Strategy Implementatio

RBV encourages companies to build strategies based on in-depth analysis of their resources. Examples of implementation include:

1. Investment in research and development (R&D) to create unique products or services.
2. Enhancing employee capabilities through training to better utilize resources.
3. Maintaining strong relationships with customers to increase loyalty and retention.

4.1.5 Contribution to Innovation and Technology

In technology-based industries, RBV is often associated with innovation. Research shows that organizations leveraging resources such as patents, customer data, or AI-based algorithms are able to create competitive advantages that are difficult to replicate.

4.2 What are the trends and research gaps related to RBV and competitive advantage?

Based on the literature review, several key trends in research related to RBV and competitive advantage have emerged, along with gaps that need further exploration:

4.2.1 Research Trends Related to RBV and Competitive Advantage

4.2.1.1 Increased Focus on Intangible Resource

Recent research highlights that intangible resources, such as knowledge, brand, organizational culture, and customer relationships, are becoming increasingly relevant in creating competitive advantage.

1. In a knowledge-based and digital economy, the value of these resources is harder to measure but has a significant impact on business sustainability.
2. For example, technology companies often rely on patents or unique algorithms to win competitive battles.

4.2.1.2 Integration of Dynamic Capabilities

Dynamic capabilities have become a dominant subtopic in RBV literature, especially in the context of rapid changes in the business environment.

1. Studies indicate that companies capable of adapting to technological and market changes have a greater chance of sustaining competitive advantage.
2. Teece et al. (1997) emphasize the importance of innovation, change management, and organizational learning as key elements of dynamic capabilities.

4.2.1.3 Adoption of RBV Across Sectors

RBV is increasingly applied in diverse sectors, including:

1. Technology: Focused on product and service innovation based on data.
2. Manufacturing: Using automation technology and lean manufacturing to increase efficiency.
3. Services: Optimizing customer experience through resources like AI-based technology and customer relationships.

4.2.1.4 Relevance in the Digital Economy

Recent studies have begun to explore how RBV is applied in the digital era, particularly in the utilization of data, digital platforms, and artificial intelligence (AI).

1. In a digital context, RBV often focuses on customer data as a strategic resource for creating personalized services.

4.2.2 Research Gaps Related to RBV and Competitive Advantage

4.2.2.1 Lack of Studies on Small and Medium Enterprises (SMEs) Most RBV research focuses on large companies, while SMEs are often neglected.

1. SMEs may have limited resources but can create competitive advantage through simple innovation or strong local relationships.
2. Further research is needed to understand how SMEs can adapt RBV principles to their resource constraints.

4.2.2.2 Integration of External Factors with RBV

RBV tends to focus too much on internal resources, neglecting external factors such as:

1. Government regulations, social pressures, and market conditions.
2. New research integrating RBV with other theories, such as Institutional Theory or Contingency Theory, could offer a more holistic understanding.

4.2.2.3 Limited Research on Disruptive Technology Impact

While disruptive technologies are becoming more relevant, there is limited research on how RBV can be applied in the context of technological disruption.

1. Issues like managing resources based on blockchain, IoT, and AI require more in-depth exploration.

4.2.2.4 Lack of Longitudinal Studies

Many RBV studies are cross-sectional, providing insights only at one point in time.

1. Longitudinal studies examining how the use of resources and dynamic capabilities evolve over time could provide deeper insights into the sustainability of competitive advantage.

4.2.2.5 Limited Research in Developing Countries

Most RBV studies come from developed countries. Research in developing countries, including Indonesia, is still limited, so there is significant potential to explore RBV adaptations in local contexts.

4.3 What are the practical implications of RBV in sustainable business strategy?

Resource-Based View (RBV) provides a strong conceptual foundation for developing sustainable business strategies. By focusing on the management of internal resources, RBV enables organizations to create and maintain competitive advantages that remain relevant over the long term. The following are the practical implications of RBV in sustainable business strategies:

1. Optimization of Intangible Resources

   RBV stresses the importance of intangible resources such as brand, customer relationships, organizational culture, and knowledge as key drivers of competitive advantage.

   A. Practical Implementation:

      - Human Resource Development: Invest in employee training to enhance unique skills that are hard to imitate.
      - Brand Reputation Strengthening: Utilize marketing strategies that leverage brand power to create customer loyalty.
      - Customer Relationships: Build strong relationships with customers through personalized experiences, especially in services and retail sectors.

   B. Sustainable Benefits:

      - Create long-term trust in the market.
      - Strengthen the emotional connection between the organization and stakeholders.

2. Innovation as Dynamic Capability

   RBV emphasizes the importance of dynamic capabilities, i.e., a company's ability to adjust and modify resources according to environmental changes.

   A. Practical Implementation:
      - Sustained R&D: Invest in research and development to create relevant innovations.
      - Technology Utilization: Adopt new technologies such as AI and big data to improve efficiency and understand the market better.
      - Strategic Flexibility: Create an organizational structure that responds quickly to market changes, e.g., by using agile methods.

   B. Sustainable Benefits:
      - Ability to survive and grow in a disruptive business environment.
      - Improved competitiveness through relevant products and services.

3. Sustainability through Operational Efficiency

   RBV also leads to strategies that maximize resource use efficiency.

   A. Practical Implementation:
      - Resource Management: Use technology to reduce waste and operational costs.

- Green Supply Chain: Collaborate with partners who share sustainability goals, such as using eco-friendly raw materials.
- Energy Management: Optimize energy consumption to reduce the company's carbon footprint.

B. Sustainable Benefits:
- Reduce operational costs and increase profit margins.
- Enhance the company's image as an environmentally conscious entity.

4. The Role of Human Resources in Sustainable Strategy

Human resources are at the core of RBV implementation as they drive innovation and efficiency.

A. Practical Implementation:
- Work Culture Development: Build a work culture that supports collaboration, innovation, and sustainability.
- Talent Retention Programs: Design programs to retain top talent who are unique assets of the organization.
- Employee Well-being: Pay attention to work-life balance to enable employees to contribute optimally.

B. Sustainable Benefits:
- More productive employees who are committed to the company's success.
- Enhanced internal innovation through fresh ideas from a cohesive team.

5. Differentiation Strategy Using Unique Resources

RBV encourages companies to create distinct value propositions based on resources that are hard for competitors to imitate.

A. Practical Implementation:
- Exclusive Products: Develop products or services with unique features.
- Market Diversification: Leverage resources to target different market segments.
- Regional Advantage: Use local resources as

5. CONCLUSION

The research titled *Competitive Advantage and Resource-Based View: A Systematic Literature Review* reveals several important findings related to the role of the Resource-Based View (RBV) theory in creating competitive advantage, current research trends and gaps, as well as the practical implications of this theory in sustainable business strategy.

1. RBV's Contribution to Organizational Competitive Advantage RBV provides a strong theoretical framework explaining how organizations can build competitive advantage by managing unique, valuable, rare, inimitable, and non-substitutable (VRIN) internal resources. These resources include both tangible and intangible assets, such as innovative technology, brand value, and managerial capabilities. By focusing on leveraging these resources, RBV helps organizations create sustainable differentiation in the market.
2. Trends and Gaps in RBV and Competitive Advantage Research The literature review shows that RBV research is evolving toward integrating dynamic capabilities to address rapidly changing business environments. Innovation, technology, and strategic flexibility have become central themes in recent research. However, gaps exist in applying RBV in the context of Small and Medium Enterprises (SMEs), the digital sector, and understanding the influence of external factors such as regulations and market dynamics. Further research in these areas is needed to expand the scope of RBV theory.
3. Practical Implications of RBV in Sustainable Business Strategy In business practice, RBV supports organizations in leveraging intangible resources, such as organizational culture, customer relationships, and technological innovation, to create added value. Moreover, this approach promotes

operational efficiency, sustainable resource management, and adaptation to external environmental changes. RBV-based strategies have proven to help companies not only achieve competitive advantage but also enhance long-term business sustainability.

The Resource-Based View (RBV) theory serves not only as a foundation for understanding competitive advantage but also offers practical guidance for organizations to strategically manage resources. Research trends leading toward dynamic capabilities enrich the application of RBV, while gaps in certain contexts highlight opportunities for further development. The practical implications of RBV in sustainable business strategy emphasize the theory's relevance in an era of technological change and increasingly complex business environments.

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Lawrence Walambuka holds BA international Relations and BA Honours in International politics and currently doing Masters in international politics at University of South Africa. Lawrence is an award winner, second runner up in the College of humanities for the 11th Annual University of South Africa Student and Innovation Showcasing in November/*December 2023*. The author is an analytically-minded international relations specialist who has a strong focus on strategic analysis of foreign markets to help realize organizational goals, ability to accurately assess foreign laws, regulations, sociopolitical and socioeconomic factors and their potential impact on organizational goals. Experience in designing public relations strategies in foreign markets for true global involvement. He has a thorough understanding of South Africa's constitution and other statutory instruments. And experienced in lecturing, has Passion for Research, business management, accounting and financial management and worked in diverse sectors including construction, retail, agriculture, government parastatals, workforce solutions and education. Lawrence has been in South African education sector since 2011 as a lecturer and Head of Department of Commerce and academic manager/campus manager since 2020 to date. His focus has been on the meaning, construction and practice of leadership in Higher Education in South Africa. He has been an active practitioner in the Higher Education Sector for over 12 years. He has risen from the ranks of being a Lecturer to that of Senior Lecturer, Head of Commerce Depart and Campus Manager in a multi-campus context of Private College set up. Lawrence has a record of accomplishments in managing complex departments, which include student affairs, academic operations, marketing, finance and health and safety in a large Multi- Campus Private Colleges. During his tenure in higher education, he had a privilege of being exposed to the higher education regulatory environment as a campus manager. A major focus of the Campus Manager during his tenure was on transformation and ensuring improvements in the quality of the student experience in all campuses. In the DHET management of Private colleges, as campus manager: he was responsible for Monitoring Quality Assurance of all examination procedures and implementing DHET, CHE, QCTO and SETA policies.