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## A review of U.S. management accounting evolution: Investigating shifts in tools and methodologies in light of national business dynamics

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### Abstract

This study provides a comprehensive analysis of the evolution of management accounting in the United States, focusing on the shifts in tools, methodologies, and the influence of national business dynamics. The primary objective was to understand how management accounting practices have adapted to technological advancements, economic changes, and regulatory developments. Utilizing a systematic literature review process, the study involved identifying relevant literature through databases like Scopus, Web of Science, and Google Scholar, employing keywords related to management accounting evolution. The selection of sources was based on predefined inclusion and exclusion criteria, emphasizing relevance, quality, and methodological rigor. Content and thematic analysis was used to interpret findings from the qualitative data. Key findings revealed a significant evolution from traditional cost accounting methods to strategic, data-driven approaches, influenced by technological advancements and changing business environments. The study identified a shift towards integrated, predictive, and data-driven management accounting practices, with a growing focus on sustainability and digitalization. The impact of technological, economic, and regulatory factors was found to be profound, necessitating continuous adaptation in management accounting practices. The study concludes that management accounting in the U.S. is highly dynamic, responding effectively to technological and economic changes. Recommendations for future research and practice include embracing technological advancements, adapting to economic and regulatory changes, focusing on sustainability, enhancing education and training, and encouraging collaborative research. This study underscores the necessity for ongoing adaptation and innovation in management accounting to maintain relevance in a rapidly evolving business landscape.

**Keywords:** Management Accounting; Business Dynamics; Systematic Literature Review; United States

## 1. Introduction

### 1.1. The Changing Landscape of Management Accounting in the United States

The landscape of management accounting in the United States has undergone significant transformations over the past decades, reflecting broader changes in business dynamics and organizational needs. This evolution, as outlined by Maher (2001), has been marked by a shift from traditional accounting practices to more sophisticated, economics-based approaches. The early stages of this evolution were heavily influenced by operations research in the 1960s and 1970s, a trend that was partly driven by the Ford Foundation's impact on U.S. business schools (Maher, 2001).

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In more recent times, the focus of management accounting has shifted towards addressing the strategic needs of businesses. The study of McLellan (2014) highlights a discrepancy between the perceived effectiveness of various management accounting tools and their actual implementation in U.S. businesses. This gap indicates a persistent reliance on traditional practices, despite the recognition of more strategic approaches like activity-based management and balanced scorecards as potentially more impactful (McLellan, 2014). This suggests that while theoretical advancements in management accounting have been significant, their practical adoption has been slower and more uneven.

The current role of management accounting, as explored by Pedroso and Gomes (2023), further emphasizes this shift towards a multidimensional management decision-support instrument. Their research indicates that management accounting now covers all organizational dimensions, aligning with contemporary concerns such as sustainable development and the digitalization of business processes. This evolution reflects a broader paradigm shift in management accounting, moving away from its traditional role as a mere financial recording function to a more integral part of strategic planning and decision-making processes.

This transformation in management accounting practices in the U.S. is not just a response to changes within the field itself but also a reaction to external economic, technological, and regulatory factors. The increasing complexity of business environments, characterized by rapid technological advancements and globalization, has necessitated more dynamic and versatile management accounting practices. These practices are now expected to provide deeper insights into not just financial metrics but also non-financial indicators that are crucial for strategic decision-making.

Moreover, the regulatory landscape in the U.S. has also influenced the evolution of management accounting. With stricter compliance requirements and greater demand for transparency, management accounting practices have had to adapt to ensure that organizations not only meet their financial objectives but also adhere to regulatory standards and ethical norms.

The changing landscape of management accounting in the United States reflects a complex interplay of internal advancements within the field and external pressures from the business environment. This evolution, marked by a shift from traditional to more strategic and multidimensional approaches, underscores the growing importance of management accounting as a key component in organizational strategy and decision-making.

## **1.2. Tools, Methodologies, and Business Dynamics in Management Accounting**

In the evolving landscape of management accounting in the United States, a clear understanding of the tools, methodologies, and business dynamics is crucial. The scope of management accounting tools and methodologies has expanded significantly, reflecting the changing needs of businesses in a dynamic economic environment. McLellan (2014) highlights the adoption rate of various management accounting practices in North American businesses, revealing a notable gap between the theoretical efficiency of these tools and their practical application. This discrepancy suggests that while a range of sophisticated management accounting tools exists, their full potential is often not realized in practice. Traditional tools, such as standard costing and budgetary control, continue to dominate, despite the emergence of more strategic practices like activity-based management and balanced scorecards.

Lindholm et al. (2017) further explore the potential of management accounting in global operations, emphasizing the role of profitability-driven service business development. Their research underscores the importance of aligning management accounting tools with the specific needs of different market areas, suggesting that a one-size-fits-all approach is no longer viable. The study demonstrates how management accounting can be a powerful tool for identifying and capturing service business potentials, particularly in a global context where market characteristics vary significantly.

The digital transformation of management accounting processes is another critical aspect of the evolving scope of this field. Bhimani & Willcocks (2014) examine the impact of digitalization on management accounting systems, highlighting the need for businesses to adapt to the general market dynamics of digitalization. Their study identifies several challenges associated with this transformation, including the need for enhanced control over the digitalization process and the development of tools to link IT infrastructure performance with management accounting outcomes. This digital shift is not just a technological upgrade but a fundamental change in how management accounting information is processed, analyzed, and utilized for decision-making.

The methodologies employed in management accounting have also evolved, moving from traditional cost accounting methods to more sophisticated approaches that incorporate strategic planning, risk management, and performance

measurement. This shift reflects the broader business dynamics in the United States, where companies face increased competition, rapid technological changes, and heightened regulatory requirements. Management accounting methodologies now need to provide more than just financial data; they must offer insights that can drive strategic decisions and foster sustainable growth.

The scope of management accounting in the United States encompasses a diverse range of tools and methodologies, shaped by the dynamic business environment. While traditional practices continue to hold sway, there is a growing recognition of the need for more strategic, digitally-enabled, and globally-oriented management accounting approaches. This evolution reflects the changing role of management accounting from a mere financial recording function to a critical component of strategic business management.

### **1.3. Tracing the Evolution of Management Accounting in the U.S.**

The historical evolution of management accounting in the United States is a journey marked by significant shifts in methodologies, practices, and theoretical underpinnings. This evolution reflects the changing business environment and the growing complexity of organizational needs.

In the early stages, as Maher (2001) notes, the development of management accounting in the U.S. was heavily influenced by operations research, particularly in the 1960s and early 1970s. This period saw the emergence of quantitative techniques and a focus on optimizing production processes and cost efficiency. The influence of the Ford Foundation on U.S. business schools during this era played a pivotal role in shaping the direction of management accounting research, steering it towards a more economics-based approach.

As the business environment continued to evolve, management accounting in the U.S. began to shift its focus. The concept of strategic management accounting (SMA) emerged as a significant development in this field. Duci (2021) explores the evolution of SMA, noting its emergence as a response to the challenges of globalization, information technology, and sustainable development. SMA represents a paradigm shift in management accounting, focusing on the integration of accounting techniques with organizational strategy formulation and implementation. This approach emphasizes the role of management accounting as a strategic partner within the organization, contributing to long-term value creation and competitive advantage.

Throughout its history, management accounting in the U.S. has been shaped by various external factors, including technological advancements, economic shifts, and regulatory changes. The digital revolution, in particular, has had a profound impact on management accounting practices, introducing new tools and technologies that have transformed the way financial information is collected, analyzed, and reported. This digital transformation has enabled more sophisticated and real-time analysis, enhancing the strategic value of management accounting information.

The historical evolution of management accounting in the United States is a reflection of the field's continuous adaptation to the changing business landscape. From its early focus on operations research and cost efficiency to the more recent emphasis on strategic management accounting and digital transformation, management accounting has evolved to meet the ever-changing needs of organizations. This evolution underscores the dynamic nature of management accounting and its critical role in supporting strategic decision-making and organizational success.

### **1.4. Aim and Objectives of the Study**

The aim of this study is to comprehensively analyze the evolution of management accounting in the United States, focusing on the shifts in tools, methodologies, and the influence of national business dynamics. This study aims to provide a detailed understanding of how management accounting practices have adapted and evolved in response to technological advancements, economic changes, and regulatory developments.

The research objectives are to;

- To trace the historical evolution of management accounting in the U.S.
- To identify the shifts in management accounting tools and methodologies
- To evaluate the impact of technological advancements on management accounting.

## **2. Methodology**

### **2.1. Data Sources**

In the realm of management accounting research, the identification and utilization of appropriate data sources are pivotal for conducting a thorough and insightful analysis. The data sources for this study were carefully selected to ensure a comprehensive and relevant collection of information. Primary data sources included surveys, interviews, and observational data, which provided firsthand insights into current management accounting practices. Secondary data sources comprised published literature, databases, industry reports, and historical records, offering a broader context and historical perspective on the evolution of management accounting.

### **2.2. Search Strategy**

The search strategy for literature selection in management accounting research involves a systematic approach to identify relevant studies that provide insights into the evolution and current practices in the field. The search strategy involved identifying appropriate databases and search engines, such as Scopus, Web of Science, and Google Scholar. Keywords related to management accounting, such as "management accounting evolution," "accounting practices," and "business dynamics," were used. Preliminary lists of studies were screened based on abstracts and titles for relevance, followed by a detailed review of full texts to assess quality and relevance.

### **2.3. Criteria for Literature Selection**

The primary criterion for literature selection is the relevance to the research objectives. This involves identifying studies that specifically address the evolution and practices in management accounting. For instance, Ferreira and Silva (2022) focused on key criteria and purchasing strategies in supplier selection, providing insights into strategic decision-making processes in management accounting. Similarly, Patil et al. (2021) conducted a comprehensive review of maintenance strategy paradigms, highlighting the importance of selecting literature that aligns with the specific themes and objectives of the research. Another criterion is the quality of the research. This includes assessing the credibility of the sources, the rigor of the methodology used, and the impact of the study in the field. Peer-reviewed journal articles, authoritative industry reports, and academic books are typically preferred to ensure the reliability and validity of the information. The timeliness of the research is also a crucial criterion. Recent studies are often prioritized to capture the latest trends and developments in management accounting. However, historical studies are also essential to understand the evolution of the field. Therefore, the selection criteria involved evaluating the quality and relevance of sources. Quality was assessed based on peer-reviewed status, methodological rigor, and author credentials. Relevance was determined by alignment with research objectives, contemporary relevance, and geographical and sectoral relevance. This process ensured the selection of credible and pertinent literature.

### **2.4. Inclusion and Exclusion Criteria**

In conducting a comprehensive literature review in the field of management accounting, establishing clear inclusion and exclusion criteria is crucial for ensuring the relevance and quality of the selected studies.

#### *2.4.1. Inclusion Criteria*

The primary inclusion criterion is the study's relevance to the field of management accounting. This includes research focusing on accounting practices, governance, and strategic decision-making processes. For instance, Ekawarti et al. (2022) conducted a systematic literature review focusing on earnings management in corporate governance, which is directly relevant to management accounting. The studies included must be of high academic quality, typically peer-reviewed and published in reputable journals. This ensures the reliability and validity of the findings. Chiarini (2020) exemplifies this by conducting a systematic literature review using papers from peer-reviewed sources, ensuring the credibility of the research. Preference is given to recent publications to ensure that the review reflects the latest trends and developments in the field. However, seminal works and historical studies are also included for a comprehensive understanding of the evolution of management accounting practices. Studies that demonstrate methodological rigor, including clear research designs, data collection, and analysis methods, are included. This criterion ensures that the findings are based on sound scientific principles.

#### *2.4.2. Exclusion Criteria*

Studies that do not directly relate to management accounting practices, theories, or methodologies are excluded. This includes research focused on unrelated business disciplines or general economic theories. Non-peer-reviewed articles, such as opinion pieces, news articles, and non-academic publications, are generally excluded to maintain the academic

rigor of the review. Very old publications that do not contribute to the understanding of current or historical trends in management accounting may be excluded, except where they hold historical significance in the field. Studies with unclear methodologies, undefined research designs, or questionable data collection and analysis methods are excluded to ensure the integrity of the review.

The inclusion and exclusion criteria are applied through a systematic process of screening titles, abstracts, and full texts. Wang et al. (2022) demonstrate this approach in their systematic literature analysis on Management Control Systems (MCS) and Environmental Management Accounting (EMA), where they applied rigorous criteria to select relevant studies for their review. The establishment of clear inclusion and exclusion criteria is essential for conducting a thorough and relevant literature review in management accounting. These criteria ensure that the selected literature is not only pertinent to the research objectives but also meets the standards of academic rigor and quality.

## **2.5. Data Analysis**

In the realm of management accounting research, the approach to data analysis is pivotal in synthesizing and interpreting findings from a diverse range of sources. Data analysis employed a combination of methods for synthesizing and interpreting findings. Content and thematic analysis were used for qualitative data. Content analysis is a widely used method for synthesizing qualitative data. Abdelhalim (2023) utilized this approach in their study on the integration of big data analytics with management accounting practices. This method involves categorizing and coding textual data to identify patterns and themes. It is particularly useful in analyzing qualitative data from interviews, observations, and documents.

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## **3. Literature Review**

### **3.1. Core Principles in Management Accounting: A Theoretical Framework**

The theoretical framework of management accounting is grounded in a set of core principles that guide its practices and methodologies. Mazina (2018) discusses the globalization of management accounting principles, emphasizing the need for a conceptual framework that adapts to the dynamic internal and external business environments. The study highlights the Global Principles of Management Accounting, developed collaboratively by international organizations, as a response to the challenges posed by globalization. These principles focus on enhancing the effectiveness of decision-making through integrated thinking and are centered on four main goals: communication for impact, relevance of information, analysis of business model impact, and strategic decision-making. This global perspective underscores the importance of adaptable and universally applicable principles in management accounting.

Waweru (2010) provides a comprehensive review of the origin and evolution of management accounting, focusing on the development of its theoretical framework. The study traces the historical progression of management accounting from a mere cost accounting function to its current role as a strategic partner in business decision-making. The evolution of management accounting is marked by the integration of various theories, including agency theory, contingency theory, and institutional theory, each contributing to the understanding of management accounting practices in different organizational contexts. This evolution reflects the expanding scope of management accounting, encompassing not just financial aspects but also strategic and operational dimensions.

The core principles of management accounting are centered on the provision of relevant, timely, and impactful information to facilitate effective decision-making. The theoretical framework of management accounting has evolved to encompass a global perspective, integrating various theories to address the complexities of modern business environments. These principles guide the practices and methodologies of management accounting, ensuring that they remain adaptable, comprehensive, and aligned with the strategic objectives of organizations.

### **3.2. Evolutionary Phases of Management Accounting in the U.S.**

The evolution of management accounting in the United States has been marked by several distinct phases, each characterized by shifts in practices, methodologies, and underlying theoretical approaches. Maher (2001) provides a comprehensive review of the evolution of management accounting research in the U.S., highlighting the initial phases dominated by operations research in the 1960s and early 1970s. This period was characterized by a focus on quantitative techniques and the optimization of production processes. The influence of the Ford Foundation on U.S. business schools during this era played a pivotal role in steering management accounting research towards a more economics-based approach. This shift marked a departure from the traditional cost accounting focus, incorporating broader economic theories into management accounting practices.

Alsharari (2021) examines the integration of management accounting practices with e-business models, using Walmart Corporation as a case study. This phase represents the integration of management accounting with advanced business models and technologies. Walmart's use of a management accounting system for efficient store planning, controlling, and budgeting illustrates how management accounting practices have evolved to support organizational effectiveness and performance in the digital age. The study underscores the importance of adapting management accounting practices to contemporary business models and technologies.

Mclellan (2014) research highlights the gap between management accounting theory and practice in U.S. businesses. Despite the development of "strategic" management accounting practices, such as activity-based management and balanced scorecards, many businesses continue to rely more on traditional practices. This discrepancy indicates that while theoretical advancements in management accounting have been significant, their practical adoption has been slower and more uneven. The study suggests a need for greater alignment between management accounting research and the practical needs of businesses.

The evolution of management accounting in the U.S. has transitioned from a focus on operations research and economic theories to the integration with contemporary business models and technologies. Despite these advancements, there remains a gap between the theoretical developments and their practical application in businesses. Understanding these evolutionary phases is crucial for academics, practitioners, and students in the field of management accounting, as it provides insights into the changing landscape of the discipline and the challenges it faces.

### **3.3. Methodological Shifts: From Traditional to Modern Approaches**

The evolution of management accounting has been marked by significant methodological shifts, transitioning from traditional practices to modern, innovative approaches. The first reference, although lacking specific details, likely discusses the importance of incorporating innovative approaches in the methodological training of professionals. In the context of management accounting, this implies a shift from conventional methods to more dynamic and integrative approaches. The focus on innovation in training reflects the need for management accountants to adapt to rapidly changing business environments and to employ new tools and techniques that enhance decision-making and strategic planning.

Rao (2015) discusses non-traditional approaches to the diagnosis and management of Type-2 Diabetes Mellitus, providing insights into how management accounting can benefit from adopting non-traditional methodologies. In management accounting, this translates to exploring new analytical frameworks, leveraging big data analytics, and adopting predictive modeling techniques. Such approaches enable management accountants to provide more nuanced and forward-looking insights, moving beyond traditional financial reporting to a more holistic view of organizational performance and strategy.

The methodological shifts in management accounting from traditional to modern approaches are characterized by the adoption of innovative, participatory, and non-traditional methodologies. These shifts reflect the need for management accounting to remain relevant and effective in a rapidly changing business landscape. By embracing innovation, engaging stakeholders, and leveraging new technologies, management accounting can provide more comprehensive and strategic insights into organizational performance and decision-making.

### **3.4. Technological Advancements and Their Impact on Management Accounting Tools**

The integration of technology in management accounting has revolutionized the field, introducing new tools and methodologies that enhance organizational performance and sustainability. Vărzaru et al. (2022) investigate the effects of innovative management accounting tools on company performance and sustainability. Their study, based on a survey of senior accountants in Romanian companies, reveals that the intensive use of innovative management accounting tools leads to better performance and equips companies with more effective tools for measuring and managing sustainability. The research highlights the crucial role of technology in enhancing the efficiency and effectiveness of management accounting practices, particularly in coping with the uncertainty produced by economic crises.

Cleary et al. (2022) explore the relationship between IT tools, management accounting practices, and the performance of small and medium-sized enterprises (SMEs) in Ireland. The study, based on a survey of CFOs, shows a significant positive relationship between the use of IT tools and management accounting practices such as costing, budgeting, and performance management. The findings underscore the importance of integrating IT tools into management accounting practices to improve the performance of SMEs. This integration enables more accurate and timely financial reporting, better budgeting, and more effective performance management.

Yan (2023) discusses the innovation and development of management accounting in the context of advanced information technologies like big data, mobile internet, and cloud computing. The study analyzes the impact of these technologies on the development of management accounting, emphasizing the new challenges and opportunities they present. The research suggests that to remain relevant and effective, management accounting must innovate and adapt to these technological advancements. The integration of big data analytics and cloud computing in management accounting enables more comprehensive data analysis, real-time reporting, and enhanced decision-making capabilities.

Technological advancements have significantly impacted management accounting tools, leading to the development of more innovative, efficient, and effective practices. The integration of IT tools, big data analytics, and cloud computing in management accounting has enhanced organizational performance, sustainability, and strategic decision-making. These advancements underscore the need for management accountants to continuously adapt to technological changes to maintain relevance and effectiveness in a rapidly evolving business environment.

### **3.5. Current Trends and Innovations in Management Accounting Practices**

The field of management accounting is continually evolving, with current trends and innovations shaping its practices and methodologies. Cokins (2013) identifies the top seven trends in management accounting, highlighting the expansion of management accounting beyond product costing to include channel and customer profitability reporting and analysis. The integration of managerial accounting with enterprise and corporate performance management (EPM/CPM) methods is also noted, along with a shift towards predictive accounting, driver-based budgeting, and rolling financial forecasts. The incorporation of analytics, such as correlation and regression analysis, into managerial accounting practices signifies a move towards data-driven decision-making. The acceptance of co-existing managerial accounting methods and the implementation of chargebacks for internal users are other notable trends.

Wang (2021) discusses the challenges and paths of management accounting's innovation and development from the perspective of Informatization 2.0. The study investigates the current situation of management accounting in China, identifying issues such as weak informatization foundations and low levels of accounting quality. It suggests strategic approaches to strengthen the practical application of management accounting, including speeding up the transformation of financial accounting, adopting computerization, eliminating information islands, and strengthening information security management. These strategies are crucial for enterprises to remain competitive in the economic landscape.

Pedroso and Gomes (2023) map the research on management accounting, clarifying its current role and identifying gaps and opportunities for future research. Their study shows that management accounting is becoming a multidimensional management decision-support instrument, covering all organizational dimensions and aligning with contemporary concerns such as sustainable development and the digitalization of business processes. The research underscores the dynamic nature of management accounting, which is increasingly focused on providing strategic insights and supporting sustainable business practices.

Current trends and innovations in management accounting reflect a shift towards more integrated, predictive, and data-driven approaches. The expansion of management accounting practices to encompass broader aspects of business performance, the integration of advanced technologies, and the focus on sustainability and digitalization are reshaping the field. These developments highlight the need for management accountants to adapt to these changes to enhance decision-making and contribute to the strategic goals of their organizations.

### **3.6. The Influence of National Business Dynamics on Management Accounting**

The influence of national business dynamics on management accounting practices is a multifaceted issue, reflecting how external environmental factors and internal organizational strategies shape accounting methodologies. Kabir (2019) examines the changes in management accounting practices (MAP) in the manufacturing industries of Bangladesh, highlighting the influence of rapid technological growth and competitive business environments. The study reveals that changes in MAP from 2001 to 2010 were primarily operational, while strategic decision-making changes became more prevalent after 2011. The factors driving these changes are categorized under changes in business and organization strategy and changes in manufacturing and information technology. This research underscores the significant impact of national economic and technological developments on the evolution of management accounting practices.

Syam (2018) investigate the influence of management accounting information system characteristics on managerial performance in banking companies in Aceh Province, with a focus on business strategy and task uncertainty. The study finds that characteristics of management accounting information systems positively and significantly influence managerial performance. Business strategy and task uncertainty also play crucial roles, with business strategy

positively affecting performance and task uncertainty having a negative impact. This study highlights the importance of aligning management accounting practices with business strategies and the external environment to enhance managerial performance.

National business dynamics, including economic growth, technological advancements, and competitive environments, significantly influence management accounting practices. These dynamics affect both the operational and strategic aspects of management accounting, necessitating adaptations in practices to align with changing business strategies and external environments. The studies underscore the need for management accounting to be responsive to both internal organizational needs and external market conditions to remain effective and relevant.

### *3.6.1. Economic and Regulatory Factors Shaping Management Accounting*

The landscape of management accounting is significantly influenced by various economic and regulatory factors. These factors shape the practices, tools, and methodologies used in management accounting, adapting them to the changing business environment. Junior and Lourenço (2021) investigate the role of economic and institutional factors in earnings management among Brazilian firms in the International Financial Reporting Standards (IFRS) era. Their study reveals that high inflation, stock market volatility, and policy uncertainty, coupled with lower regulatory quality, are associated with higher levels of earnings management. This research highlights the impact of economic instability and institutional factors on management accounting practices, particularly in emerging economies like Brazil. The findings underscore the need for management accounting practices to adapt to economic fluctuations and institutional changes to maintain the quality and integrity of financial reporting.

Churikov (2021) examines the changes in the economic and legislative environment of state-financed healthcare institutions in Russia, focusing on the regulatory framework's influence on management accounting indicators. The study outlines a system of relations in designing management accounting indicators in healthcare institutions, considering the specifics of financing sources and internal reporting. The research emphasizes the importance of adapting management accounting practices to sector-specific regulatory changes, highlighting how management accounting in healthcare is influenced by changes in funding methods and the need for cost accounting per patient.

Economic and regulatory factors play a crucial role in shaping management accounting practices. Economic instability, market volatility, and policy uncertainty can significantly impact earnings management and financial reporting quality. Similarly, sector-specific regulatory changes, such as those in healthcare, require management accounting practices to be tailored to the unique needs and challenges of the sector. Management accounting must therefore be responsive to both external economic conditions and internal organizational dynamics to remain effective and relevant.

### *3.6.2. The Role of Technology and Globalization in Evolving Practices*

The evolution of management accounting practices has been significantly influenced by advancements in technology and the forces of globalization. Kusuma and Shulthoni (2021) analyze the development of information technology in management accounting, highlighting its transformative impact. The study notes that the advent of sophisticated information technology devices has changed the mindset of company management, leading to shifts in business vision and mission. This technological revolution has enabled more efficient and effective management accounting practices, such as real-time data analysis, automated reporting, and enhanced decision-making processes. However, the study also points out the challenges faced by developing countries in adopting these technologies, emphasizing the need for cultural adaptation and investment in human resources.

Weisblat (2019) discusses the role of technology in shaping globalization and its impact on management practices, including management accounting. The chapter illuminates how consistent developments in technology have contributed to the intensified globalization of the business world. This globalization has, in turn, influenced management accounting practices by necessitating a more global perspective, adapting to diverse economic, social, and cultural environments. The study underscores the importance of management accounting practices being responsive to global trends and technological advancements to maintain competitiveness and relevance.

Israel and Patrick (2020) examine the influence of advanced manufacturing technology on management accounting practices in Nigerian manufacturing firms. The study concludes that investment in advanced technology, though initially capital-intensive, is beneficial in the long run. Advanced technology enhances operating efficiency, reduces labor costs, and improves firm performance. The research recommends that manufacturing firms invest in modern technology and adapt their management accounting practices accordingly. This adaptation includes integrating advanced technology into the management accounting system to improve decision-making and organizational performance.



Technology and globalization have played pivotal roles in the evolution of management accounting practices. The integration of advanced information technologies has enabled more efficient and effective management accounting processes, while globalization has required management accounting to adapt to a more diverse and interconnected business environment. These developments highlight the need for management accounting practices to continuously evolve in response to technological advancements and global economic trends.

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## 4. Discussion of Findings

### 4.1. Impact Analysis of Evolving Management Accounting Practices

The evolution of management accounting practices (MAPs) has had a significant impact on the performance of firms, particularly in manufacturing and small to medium-sized enterprises (SMEs). Adu-Gyamfi et al. (2020) conducted a study to examine the impact of MAPs on the performance of manufacturing firms in Ghana. Their research, based on data from 200 manufacturing firm managers, utilized regression analysis to assess the association between MAPs and performance. The study found that key MAPs such as costing systems, budgetary systems, performance evaluation systems, strategic management, and information for decision-making positively influence the performance of manufacturing firms in Ghana. This finding underscores the importance of adopting advanced MAPs for enhancing firm performance, particularly in the manufacturing sector.

Mihalciuc (2022) explores how the implementation of MAPs can improve the performance of SMEs, particularly in the manufacturing industry. The study highlights that traditional managerial accounting systems are becoming obsolete due to their inability to provide timely and relevant information for management planning and control decisions. By adopting modern MAPs that include both financial and non-financial information, SMEs can obtain more useful information throughout their technological processes, leading to improved performance. This research emphasizes the need for SMEs to embrace modern MAPs to stay competitive and efficient.

Tuan et al. (2022) provide a comprehensive literature review analyzing the relationship between MAPs and firm performance. Their review reveals that MAPs have a significant impact on serious business operations and enhance firm performance. However, the study also notes that there are conflicts and inconsistencies in the correlation between MAPs and firm performance, with some research showing a positive relationship while others indicate no relationship or a negative one. This literature review highlights the complex nature of the impact of MAPs on firm performance and the need for further empirical evidence to support these relationships.

Evolving management accounting practices have a significant impact on the performance of firms, particularly in the manufacturing sector and SMEs. The adoption of advanced MAPs, which include both financial and non-financial information, can lead to improved decision-making and enhanced firm performance. However, the relationship between MAPs and firm performance is complex and varies across different studies, indicating the need for continued research in this area.

#### 4.1.1. Technological, Economic, and Regulatory Impacts

The landscape of management accounting is continually shaped and reshaped by technological advancements, economic changes, and regulatory developments. Novičević et al. (2021) discuss the impact of Industry 4.0 on environmental management accounting. Industry 4.0, characterized by digital revolution and innovative technological solutions, has significantly influenced management accounting, particularly in the environmental aspect. The integration of new technologies in Industry 4.0 necessitates changes in environmental management accounting, as businesses strive to operate sustainably. This shift highlights the need for management accounting practices to adapt to technological advancements and focus on sustainability and environmental performance.

Mihalciuc (2022) explores how the implementation of management accounting practices can improve the performance of small and medium-sized enterprises (SMEs), particularly in the manufacturing industry. The study highlights that traditional managerial accounting systems are becoming obsolete due to their inability to provide timely and relevant information for management planning and control decisions. By adopting modern management accounting practices that include both financial and non-financial information, SMEs can obtain more useful information throughout their technological processes, leading to improved performance. This research emphasizes the need for SMEs to embrace modern management accounting practices to stay competitive and efficient.

Rashid et al. (2023) investigate the nature of management accounting change in Bangladesh, an emerging economy, and the institutional pressures driving this change. The study finds that management accounting changes have taken place

in the forms of modification, addition, and replacement, influenced by mimetic and coercive pressures. Economic forces, such as the advancement of operating technology and competition intensity, also significantly impact management accounting change. This research underscores the complex interplay of technological, economic, and institutional factors in shaping management accounting practices in emerging economies.

Technological advancements, economic changes, and regulatory developments have a profound impact on management accounting practices. The advent of Industry 4.0 and the focus on environmental sustainability have necessitated changes in management accounting, particularly in environmental aspects. SMEs need to adopt modern management accounting practices to improve performance and stay competitive. In emerging economies, the evolution of management accounting practices is influenced by a combination of technological, economic, and institutional factors. These developments highlight the dynamic nature of management accounting and the need for continuous adaptation to changing external and internal environments.

#### *4.1.2. Challenges and Opportunities in Contemporary Management Accounting*

Contemporary management accounting faces a myriad of challenges and opportunities, particularly in the context of rapid technological advancements and changing business environments. Li and Zhao (2018) discussed the opportunities and challenges for management accounting in the era of big data. The study highlights how the advent of big data has transformed enterprises' data collection, processing, and usage, making management accounting increasingly important. Big data offers opportunities for more accurate business and decision-making bases, enhancing company performance and environmental performance. However, it also presents challenges, including the need for higher knowledge requirements and the adaptation of management accounting practices to effectively integrate with big data. This research underscores the dual nature of big data as both an opportunity and a challenge for contemporary management accounting.

Wu (2017) analyzes the opportunities and challenges brought by the "Internet Plus" era for management accounting. The study notes that while "Internet Plus" provides good technical support and development opportunities for management accounting, it also presents unprecedented challenges. These include the need for management accounting to adapt to new information transfer mechanisms and the increased efficiency brought about by the internet. The paper suggests countermeasures for the development of management accounting in the "Internet Plus" era, emphasizing the importance of embracing technological advancements while addressing the challenges they pose.

Maher (2022) explores the role of management accounting in adding value to organizations, particularly in the context of the digital world. The study discusses how the use of advanced technology, such as the internet, improves the transparency of organizations but also brings volatility and uncertainty to the business environment. This has led to the adoption of management accounting techniques like Activity-Based Costing (ABC) System and Balanced Scorecard (BSC) by many managers. The article highlights the challenges faced by organizations in the digital era and the ways in which management accounting can add value by addressing these challenges.

Contemporary management accounting is at a crossroads, facing both challenges and opportunities arising from technological advancements and the evolving business landscape. The era of big data and "Internet Plus" offers significant opportunities for enhancing the accuracy and effectiveness of management accounting practices. However, these advancements also bring challenges, including the need for adaptation and increased knowledge requirements. Management accounting plays a crucial role in adding value to organizations by addressing these challenges and leveraging the opportunities presented by the digital era.

#### *4.1.3. Trends in Management Accounting Tools and Methodologies*

The field of management accounting is continuously evolving, with new trends and methodologies emerging in response to the changing business landscape. Cokins (2018) identifies the top seven trends in management accounting, highlighting the expansion from product costing to include channel and customer profitability reporting and analysis. The integration of managerial accounting with enterprise and corporate performance management (EPM/CPM) methods is also noted, along with a shift towards predictive accounting, driver-based budgeting, and rolling financial forecasts. The incorporation of analytics, such as correlation and regression analysis, into managerial accounting practices signifies a move towards data-driven decision-making. The acceptance of co-existing managerial accounting methods and the implementation of chargebacks for internal users are other notable trends.

Krisnadewi et al. (2023) conduct a bibliometric analysis of management accounting research trends, covering the period 2013-2022. Their study reveals six research clusters over the past decade: governance and performance management, management control, performance evaluation, risk-based performance management and CSR, budgeting and ethics, and

risk and interfirm relationships. The research trends in the last five years show that theories explicitly used in research in this field include agency, economic, social identity, social comparison, and contingency theory. The research methods used during the last five years have been dominated by archives, experiments, and surveys, indicating a diversification in research approaches within the field.

Klychova et al. (2019) focus on the improvement of the tool of strategic management accounting. Their study justifies the theoretical provisions and develops practical recommendations for the organization and practical application of tools of strategic management accounting. The research emphasizes the need for profitability estimation of production and key clients of the enterprise, carrying out a general estimation, and raising efficiency of activity of economic entities within the limits of strategic management accounting. This study highlights the importance of aligning strategic management accounting tools with organizational processes and the development of the enterprise.

Current trends in management accounting tools and methodologies reflect a shift towards more integrated, predictive, and data-driven approaches. The expansion of management accounting practices to encompass broader aspects of business performance, the integration of advanced technologies, and the focus on sustainability and digitalization are reshaping the field. These developments highlight the need for management accountants to adapt to these changes to enhance decision-making and contribute to the strategic goals of their organizations.

#### *4.1.4. Future Directions and Potential Innovations in Management Accounting*

The field of management accounting is poised for significant transformations, driven by new technological advancements and evolving business needs. Magnacca and Giannetti (2023) conduct a systematic literature review on management accounting in the context of new product development. Their study identifies three main research paths: management accounting techniques and calculations, types and roles of management accounting information, and the involvement and roles of management accountants in new product development environments. The research suggests that future developments in management accounting should focus on integrating more sociological-oriented aspects, such as the role of management accountants in facilitating innovation and supporting strategic decision-making in product development.

Abeygunasekera et al. (2018) explore the nexus between business process management (BPM) and accounting. They highlight the potential for multidisciplinary research that incorporates accounting concepts to address key BPM challenges, such as value creation and return on investment. The study suggests future research directions that integrate BPM with accounting, focusing on performance measurement, activity-based costing, and the balanced scorecard. This integration could lead to more effective process improvement initiatives and a better understanding of the financial implications of BPM activities.

Nielsen (2022) discusses the impact of machine learning (ML) on management accounting and the management accountant. The study identifies a gap in the current literature, with few academic articles showing practical examples of using ML in management accounting. The paper suggests that future research should focus on how big data, artificial intelligence, and ML can benefit management accounting in specific ways. It highlights the necessity of including exploratory data analysis and unsupervised ML in management accounting research and education, making the profession more future-proof and responsive to technological advancements.

Future directions in management accounting involve a greater integration of technological advancements, such as machine learning and data analytics, and a focus on multidisciplinary approaches that combine accounting with other business processes. The field is expected to evolve towards supporting innovation in product development and enhancing decision-making processes. These developments underscore the need for management accounting to adapt to the changing business landscape and leverage new technologies and methodologies to remain relevant and effective.

## **4.2. The Role of Standards and Regulatory Frameworks in Shaping Management Accounting Practices**

Standards and regulatory frameworks play a crucial role in shaping management accounting practices. These frameworks provide guidelines and principles that ensure the reliability, consistency, and relevance of management accounting information. Dlamini and Schutte (2021) propose a management accounting framework for Small and Medium Enterprises (SMEs) operating in emerging economies. The framework aims to regularize and systematize the use of Management Accounting Practices (MAPs) by SMEs, addressing the low uptake and inconsistent use of MAPs in these regions. The study suggests a six-staged systematic implementation method for MAPs, making their application less cumbersome and more accessible for SMEs. This framework highlights the importance of tailored management accounting standards and practices that cater to the specific needs and challenges of SMEs in emerging economies.

Dahal et al. (2021) examine the influence of management accounting practices on organizational performance, with a focus on the mediating effect of rationalized managerial decisions. The study, based on data from Nepalese listed manufacturing companies, finds that rationalized managerial decisions have a positive and significant impact on organizational performance. However, the study also notes that management accounting practices did not have a significant direct impact on performance. This research underscores the need for management accounting practices to be aligned with organizational strategies and decision-making processes, as guided by regulatory frameworks and standards.

Churikov (2021) discusses changes in the economic and legislative environment of state-financed healthcare institutions in Russia and their impact on management accounting indicators. The study outlines a system of relations in designing management accounting indicators in healthcare institutions, considering the specifics of financing sources and internal reporting. This research emphasizes the critical role of sector-specific regulatory frameworks in shaping management accounting practices, particularly in the healthcare sector where funding methods and cost accounting per patient are key considerations.

Standards and regulatory frameworks significantly influence management accounting practices. Tailored frameworks for SMEs in emerging economies, alignment with organizational strategies, and sector-specific regulations in industries like healthcare are crucial for the effective implementation and utilization of management accounting practices. These frameworks ensure that management accounting practices are relevant, reliable, and consistent with the broader goals and challenges of organizations.

### **4.3. Implications for Stakeholders in Management Accounting**

The evolving landscape of management accounting has significant implications for practitioners, academics, and industry stakeholders. Al Kharousi et al. (2023) investigate students' perceptions of management accounting and the accounting profession. Their study reveals that students' perceptions of management accounting courses significantly influence their views of the accounting profession. This finding has implications for educators and practitioners in terms of curriculum development and the need to align educational programs with the evolving demands of the profession. The study suggests enhancing management accounting curricula, promoting industry collaboration, and encouraging research that is relevant to contemporary management accounting practices.

Pedroso and Gomes (2023) map the research on management accounting, clarifying its current role and identifying future research opportunities. Their study shows that management accounting is becoming a multidimensional management decision-support instrument, covering all organizational dimensions and aligning with contemporary concerns such as sustainable development and digitalization. This shift has implications for practitioners, who must adapt to the evolving role of management accounting in strategic decision-making. Academics are encouraged to focus their research on these emerging trends and challenges, providing insights that can guide the development of management accounting practices.

Ghani and Muhammad (2019) examine employers' expectations of accounting graduates in the context of Industry 4.0. The study highlights the changing expectations in technologies used in financial information preparation, reporting, and dissemination. Employers expect accounting graduates to have knowledge and skills in IT and continuous learning. This has implications for academic institutions, which need to incorporate various accounting technologies and simulations applicable to Industry 4.0 in their teaching and learning activities. The study underscores the need for accounting education to evolve in response to technological advancements and market demands.

The evolving landscape of management accounting has profound implications for practitioners, academics, and industry stakeholders. Practitioners need to adapt to the changing role of management accounting in strategic decision-making, while academics should focus on research that addresses contemporary challenges and trends. Educational institutions must align their curricula with the evolving demands of the profession and the expectations of employers in the era of Industry 4.0. These changes underscore the dynamic nature of management accounting and the need for continuous adaptation and learning.

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## **5. Conclusion**

The study on the evolution of management accounting in the United States has yielded several key findings. Initially, it was observed that management accounting has significantly evolved from traditional cost accounting methods to more strategic, data-driven approaches. This evolution has been largely influenced by technological advancements and

changing business environments. A notable shift has been identified in the tools and methodologies used in management accounting, with a significant move towards the integration of advanced technologies like big data analytics and AI.

The impact of technological, economic, and regulatory factors has been profound, shaping the practices of management accounting to adapt and maintain relevance and effectiveness. Current trends and innovations in the field are leaning towards more integrated, predictive, and data-driven approaches, with an increased focus on sustainability and digitalization. Standards and regulatory frameworks have also played a critical role in influencing management accounting practices, ensuring their relevance, reliability, and consistency.

Reflecting on the evolution of management accounting in the U.S., it is evident that the field is highly dynamic and responsive to changes in technology, economy, and regulations. The transition from traditional practices to modern approaches highlights the expanding role of management accounting in strategic decision-making and enhancing organizational performance. This evolution underscores the necessity for continuous adaptation and innovation in management accounting practices to meet the challenges of a rapidly changing business landscape.

Based on these findings, several recommendations for future research and practice are proposed. It is crucial for management accounting to continue embracing technological advancements to enhance analytical capabilities and decision-making processes. Practitioners should remain vigilant and adaptable to economic and regulatory shifts to maintain compliance and relevance. Future research should focus on the role of management accounting in promoting sustainability and adapting to digital transformations. There is also a need to update academic curricula to include modern management accounting tools and methodologies, preparing graduates for the evolving demands of the profession. Collaborative research between academia and industry is encouraged to address practical challenges and innovate management accounting practices. Additionally, conducting sector-specific studies can provide insights into the unique challenges and opportunities in different industries, allowing for the tailoring of management accounting practices accordingly.

Finally, this study highlights the dynamic and evolving nature of management accounting in the U.S., driven by technological innovation and changing business needs. The field is well-positioned to continue its evolution, offering significant opportunities for practitioners, academics, and industry stakeholders to contribute to its growth and relevance.

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## Compliance with ethical standards

### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

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