ADVANCES IN MANAGEMENT ACCOUNTING

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ADVANCES IN MANAGEMENT
ACCOUNTING VOLUME 35

ADVANCES IN MANAGEMENT ACCOUNTING

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Advances in Management Accounting (AIMA) is a publication of quality, theoretical, and applied research in management accounting. The journal's purpose is to publish thought-provoking articles that advance knowledge in the management accounting discipline and are of interest to both academics and practitioners. The journal seeks thoughtful, well-developed articles on a variety of current topics in management accounting, broadly defined. All research methods including survey research, field tests, case studies, experiments, meta-analyses, and modeling are welcome. Some commentaries, research notes, and critiques will be included where appropriate.

Articles may range from purely empirical to purely theoretical, from practice-based applications to speculation on the development of new techniques and frameworks. Empirical articles must present sound research designs and well-explained execution. Theoretical articles must present reasonable assumptions and logical development of ideas. All articles should include well-defined problems, concise presentations, and succinct conclusions that follow logically from the data.

REVIEW PROCEDURES

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INTRODUCTION

This volume of *Advances in Management Accounting (AIMA)* presents a diversity of management accounting topics, methods and author affiliations, which form the basic tenets of *AIMA*. Included are papers on planning, budgeting, costing systems, strategic management accounting practices and performance management. Topics analyzed include the new management accounting ecosystem, strategic planning and budgeting, complex cost accounting systems, non-monetary preferences and cost reporting, strategic management accounting practices, customer-centered strategy and relative performance information in remote work arrangements. The articles in this volume employ a variety of methods from experiments and case studies to surveys and a diversity in authorship with affiliations from Australia, Canada, New Zealand and the United States of America.

This volume begins with an article by the AIMA Editor and Associate Editors, Akroyd, Dow, Drake and Wong who argue that we need more cross-disciplinary research to bridge the gap between management accounting research and practice. They present an overview of the history of management accounting and show how research could be expanded to include external factors and information sources, which can be framed around the concept of the management accounting ecosystem. We encourage researchers to submit studies to *Advances in Management Accounting* that include the impact that external factors have on internal decision-making processes, evaluation of the effectiveness of new management accounting information sources and techniques in the broader ecosystem, and the use of new technologies to enhance the efficiency of management accounting practices.

The following three papers focus on issues around planning and budgeting. First, Spraakman and O'Grady examine how firms align strategic planning and budgeting. They interview management accountants at large, listed companies about how they achieve alignment between their strategic plans and budgets, both ex ante and ex post. They found that rather than using multiple strategic, planning, budgeting and forecasting processes these were all part of a single connected process. They show that alignment of strategic planning and budgeting are undertaken both prior to the beginning of the financial year as well as during the financial year. It is the alignments between these two mechanisms that enable these companies to accomplish their goals.

Sharma and Frost examine how social capital influences budgeting in a church organization. They argue that focusing on social capital can provide new insights into the construction of budgets and the social aspects which influence this process. They adopted a qualitative case study approach and carried out interviews of managers involved in the budgeting process, examined using an interpretive

methodology. They found that budgeting was a social process that was influenced by the social capital of the participants.

Miller, Peffer and Stone examine participative budgeting. They carry out two experiments to investigate whether managers' judgments of fair behaviors are malleable and context-dependent, and if these judgments of fair behavior impact cost reporting misrepresentations. They found that managers deploy fairness beliefs around honesty or equality consistent with maximizing their context-relevant income. Hence, fairness beliefs constrain misrepresentations in predictable ways. In addition, the authors found that more accounting information is not always beneficial as the presence of this information can actually increase misrepresentations when managers are initially advantaged.

Matsumura, Thomas and Yatsenko examine complex cost systems. They argue that organizations that operate in highly competitive markets want to have more accurate cost systems as systems with greater complexity are potentially more accurate. However, the authors argue that even complex systems do not always provide accurate costings due to design or calculation issues. They found that greater cost system complexity resulted in greater confidence in the cost system. As the level of competition increased there was a decrease in managers' attribution of cost-system-driven adverse firm effects to the cost system. When cost system complexity and higher competition were combined, managers were less likely to attribute the cost-system-driven adverse firm effects to the costing system.

Su, Baird and Nuhu examine how organizational culture influences the use of strategic management accounting practices and competitive advantage. They collected data from 408 accountants in Australian businesses using an online survey questionnaire, which they examine using structural equation modeling. They found a positive association between the use of strategic management accounting practices and competitive advantage although this association was positively moderated by one cultural dimension, teamwork orientation. This indicates that the positive effect of strategic management accounting practices on competitive advantage is dependent upon the fit between the use of these practices and teamwork orientation.

Anderson, Khan, Mashruwala and Yu examine how managers acquire and develop specialized resources as they grow their firms which enable a resource-based competitive advantage. They argue that an important part of committing to a resource-based strategy is a willingness to keep spending on specialized resources during periods when sales and profits are down. They examine whether such resource-based commitments to a customer-centered strategy result in improved customer satisfaction. They find evidence consistent with their expectations that resource-based commitments are reflected in cost stickiness, which is an important dimension of creating and sustaining a resource-based competitive advantage.

In the final paper, Daly and Yatsenko seek to understand if relative performance information can improve performance in remote work arrangements. It has been argued that the use of relative performance information can improve employee performance; however, there may be differences in employees' remote work environments which could influence performance. In this study, the authors

manipulate relative performance information across the sections of introductory accounting courses taught during the COVID-19 pandemic. The authors found that relative performance information improves performance in a remote work setting, as students receiving relative performance information achieved higher exam scores and increased their exam scores to a greater extent than students who did not receive relative performance information. The authors also found that lower performers improved performance more than higher performers in response to RPI, and the effect of RPI was more pronounced in those closest to meaningful thresholds. These results inform practice on the expected benefits of implementing relative performance information in a remote work setting.

The eight articles in Volume 35 represent relevant, theoretically sound and practical studies that extend our knowledge within the management accounting discipline. These articles manifest the journal's commitment to providing a high level of contribution to management accounting research and practice.

Chris Akroyd
Editor

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THE NEW MANAGEMENT ACCOUNTING ECOSYSTEM: A RETROSPECTIVE VIEW AND PATH TO THE FUTURE

Chris Akroyd, Kevin E. Dow, Andrea Drake and Jeffrey Wong

ABSTRACT

In this paper, the editors argue that management accounting research should seek to expand to examine the broader ecosystem of information sources that influence organizational performance. The editors introduce the concept of the management accounting ecosystem as a means of linking discrete management accounting research topics to the broader environment in which organizations operate. By doing this, a stronger connection can be established between management accounting research and management accounting practice. The goal is to encourage more cross-disciplinary research that provides a better understanding of the ecosystem in which management accounting practitioners operate. The editors encourage researchers to submit studies to "Advances in Management Accounting" that evaluate the effectiveness of new management accounting information sources and the techniques used to analyze them in the broader ecosystem to enhance the effectiveness of management accounting practices. By exploring the wider information sources within the management accounting ecosystem, future management accounting research can become more innovative and better address the decision-making needs of organizational members.

Keywords: Management accounting ecosystem; practice-academic gap; IMA Competency Framework; cross-disciplinary; information; technology

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INTRODUCTION

Management accounting aims to quantify, assess, and communicate financial and non-financial data to assist organization members in making informed decisions that align with the objectives of their organization (Horngren, Datar, & Rajan, 2012). As most of our economy's activity occurs within organizations, our aim as management accounting researchers should be to understand how organizations can better "coordinate complex activities" (Simon, 2000, p. 751). It has been suggested that

> management accounting and control systems are so important and ubiquitous today that if accountants and information people wrapped up their systems and took them home, the whole process of producing society's material goods and services along with the governance of social order would grind to a standstill. (Macintosh, 1994, p. 1)

Even though this quote is now almost three decades old, it remains just as relevant today as when it was made.

Historically, management accounting practice has focused on utilizing various techniques and analytical tools to aid organizations in planning, controlling, and enhancing their operational processes and financial performance. As industries have evolved, so too have the techniques and tools employed. Improvements in cost allocation, budgeting, and profit analysis have enhanced the effectiveness of internal decision-making. However, due to technological limitations, most of these improvements have focused on the data available within the organization, despite the knowledge that organizations operate in a broader "marketplace." Management accounting practitioners can now provide a more comprehensive understanding of organizational performance by systematically considering the broader ecosystem in which organizations operate and utilizing appropriate data and analysis. With the rapid pace of changes in the use of information technology in organizations (Spraakman, O'Grady, Askarany, & Akroyd, 2015), research is needed to support how firms can further advance how they use technology in their management accounting practices (Granlund, 2011).

This chapter introduces the concept of the management accounting ecosystem as a means of linking discrete, traditional management accounting research topics to the broader environment in which practitioners operate. A management accounting ecosystem can be thought of as the interdependency among entities in a complex network bound together to provide shared value to organizations and society. The management accounting ecosystem is a complex (and self-organized) network that includes an information source layer and an information technology layer (including computer science, statistics, math, machine learning, artificial intelligence, etc.) through which data and information move into the management accounting system where it is transformed into knowledge that is useful for decision-making. In essence, this ecosystem is how data and information sourcing, access, and flows are interconnected and enable efficient and effective communication between information sources and the management accounting system to help organization members make better decisions. While we do not purport to describe an overarching information management model in organizations, we strive to understand better the structural and functional information

environment in which management accountants can help organizations create shared value. Thus, we view the management accounting ecosystem as a unifying conceptual model that illustrates the multi-disciplinary nature of management accounting practice that has always been, but also needs management accounting researchers to examine.

Organizations have always functioned within an ecosystem of competitors, partners, employees, and external market forces. However, a systematic consideration of the broader ecosystem using appropriate data and analysis has been limited. Accordingly, the conceptualization of a management accounting ecosystem recognizes the need for management accountants to use data from within the organizations they serve as well as from external sources.

Understanding what management accountants do in practice can help us bridge the gap between traditional management accounting research and the broader ecosystem where organizations now operate. This will enable us to connect traditional management accounting research topics with external factors influencing organizational performance. We aim to reduce the practice-academic gap and ensure that future research is relevant and accessible to a broader audience, including those from marketing, supply chain logistics, sociology, strategy, organization behavior, and psychology disciplines. By doing so, we hope to foster cross-disciplinary research that provides a more comprehensive understanding of the broader ecosystem in which management accounting operates.

As information technology rapidly transforms the business landscape, it has been argued that management accounting practitioners and researchers should leverage the opportunities at the intersection of technology and management accounting (Granlund, 2011). Therefore, we encourage researchers to submit studies to *Advances in Management Accounting* that examine the impact of external factors on internal decision-making processes, evaluate the effectiveness of new management accounting techniques in the broader management accounting ecosystem, and utilize new technologies to enhance the efficiency of management accounting practices. This approach will ensure that future management accounting research is relevant and accessible to a broader audience, thereby reducing the practice-academic gap. By exploring the intersection of information sources and management accounting practice we can gain a more comprehensive understanding of how these fields can complement each other, leading to the development of more innovative and effective management accounting practices and more relevant research.

The rest of this chapter is structured as follows. First, we present the IMA Competency Framework recently developed by the Institute of Management Accountants (IMA) along with the Data, Information, Knowledge, Wisdom (DIKW) Pyramid which we use to frame our discussion. We then provide a historical perspective on management accounting practice and an overview of what a management accounting system includes. Next, we introduce our new management accounting ecosystem, which serves as a first step toward identifying areas of interest to link management accounting practice with research. We then explore potential improvements to management accounting doctoral programs to overcome the practice-research gap and outline some areas for future research.

THE IMA COMPETENCY FRAMEWORK AND THE DIKW PYRAMID

The IMA developed a Management Accounting Competency Framework (2022) based on extensive research on the practices of management accounting professionals (see Fig. 1). The framework consists of six broad domains linked to specific

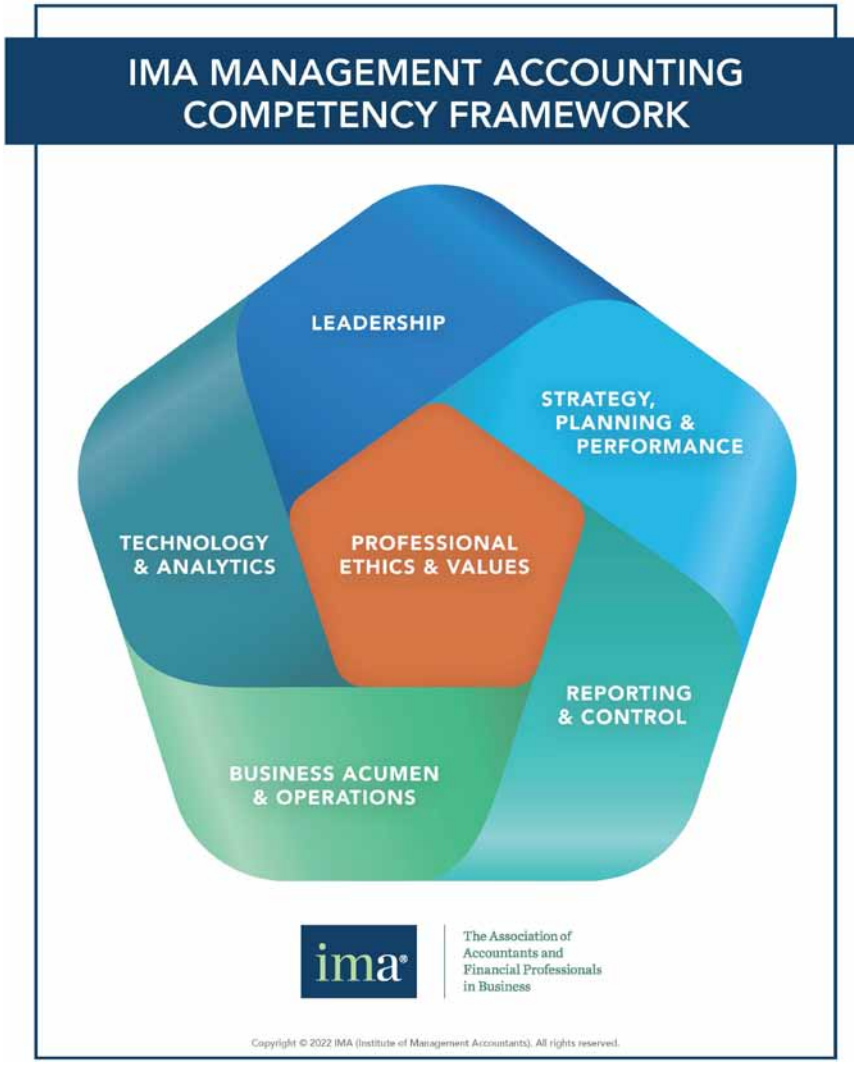

Fig. 1. IMA Management Accounting Competency Framework. *Source*: This graphic and its contents is used here with permission granted by IMA® (Institute of Management Accountants). Copyright© 2023 by IMA® (Institute of Management Accountants). All rights reserved. Further copying, modifying, reproducing or using without permission of the Institute of Management Accountants is prohibited.

skills and tasks that practitioners need to master to succeed in their careers, whether as new graduates or in the future. The IMA Competency Framework is useful for identifying areas of importance for practitioners and can guide further academic research to better understand how available methods and procedures can lead to better decision-making within the broader ecosystem in which they and their firms operate.

The strategy, planning and performance domain focuses on the visionary ability of management accountants to create and communicate strategic plans and performance metrics. This involves the ability to go beyond financial statements and focus on a wide range of stakeholders. The use of data analysis tools for strategy, planning and decision analysis is becoming increasingly critical to improve performance.

The reporting and control domain focuses on the stewardship function of management accounting which involves reporting on economic, environmental, social and governance performance. To do this, management accountants must know how to design internal controls and be able to use data analytics to communicate with stakeholders and work collaboratively with other departments.

The business acumen and operations domain is focused on management accountants as business partners. To become better partners, management accountants need to have knowledge of operations and be able to understand the drivers of revenue, cost and profitability. This requires the use of new business models and technology to analyze operations.

The technology and analytics domain is focused on the management accountant as a catalyst for change. This encompasses the necessary skills to effectively utilize technology, analyze data, which are necessary for making informed business decisions. Management accountants need to develop the ability to interpret data, identify patterns, and employ visual aids to communicate information effectively to stakeholders.

The IMA Competency Framework provides a comprehensive overview of the knowledge, skills, and abilities required to succeed as a management accountant. It emphasizes the importance of strategic thinking, effective communication, and collaboration with other departments. It also recognizes the importance of data analysis, risk management, and internal controls in ensuring that financial information is accurate and reliable.

As an example of how this relates to management accounting research can be seen in the strategy, planning, and performance domain. This domain includes the area of budgeting and forecasting, which has been the subject of many management accounting research endeavors. An expert practitioner in this area would, among other tasks "Lead collaborative forecasting efforts incorporating information from multiple internal and external expert sources and sophisticated modeling techniques" and "Design and lead the budget and financial planning process across multiple business units in a complex organization using advanced software tools" (IMA Management Accounting Competency Framework, p. 14).

Researchers in this area could use external sources of information, such as big data and analytics, to better understand these areas, which may not have been feasible to utilize in prior eras of management accounting research. Additionally,

researchers should consider the planning process that can span multiple business units and the use of advanced software and modeling techniques to inform how organization members make decisions. These factors should be key considerations in designing budgeting and forecasting research studies, as they involve the broader aspects of the management accounting ecosystem.

To make decisions, management accountants use a variety of data sources, some of which are created internally and some of which can only be obtained from partners external to their organization. Raw data that partners have created must first be given the appropriate context to become useful information that can be shared with our organization. Management accountants then apply various analytical tools and techniques to reveal underlying patterns in that external information so that this knowledge can then be combined with internal data to form actionable intelligence. Thus, organization members can use their knowledge and experience to make better judgments and decisions to create shared value (Shields, 2015, 2018).

To apply the IMA framework and make it accessible to academics and practitioners, we need to understand how data flows. The IMA Competency Framework lays the foundation for management accountants to innovate and create new knowledge by addressing a broad set of essential core competencies. We posit that the IMA Competency Framework provides the foundation for understanding management accounting practice. But in order to examine how new information sources can be integrated into the management accounting ecosystem, we need to understand how to convert data into knowledge and wisdom, which is captured in the DIKW Pyramid (see Fig. 2). To do this, we apply a theory of knowledge management to help understand how data moves from individual information sources into the management accounting system (Alavi & Leidner, 2001).

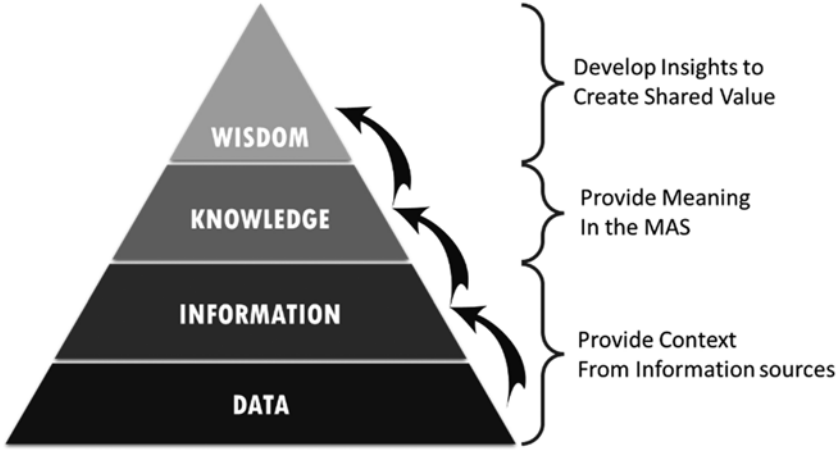

Fig. 2. The DIKW Pyramid and the Management Accounting System (MAS).
Source: Hey (2004). Knowledge Commons – Revised by the Authors.

The DIKW pyramid is a hierarchical knowledge management model that explains how data can be transformed into knowledge and wisdom. According to this framework, data are the raw material collected from internal and external sources. These data are then transformed into information, which are organized and meaningfully structured. Information is then analyzed and interpreted to produce knowledge, which enables a deeper understanding of the information. Finally, wisdom is making good decisions based on knowledge and experience. The DIKW framework helps management accountants understand the steps required to convert data into actionable insights. By using this framework, management accountants can identify the types of data they need to collect, the tools they need to analyze it, and the processes they need to implement to ensure that knowledge and wisdom is generated and applied to enable shared value creation.

To bridge the practice-research gap, it is crucial to gain a comprehensive understanding of the practices of management accountants – what they do, who they do it to, why, where, when & how. The IMA Competency Framework is a useful tool for achieving this goal. Using this framework, along with the DIKW pyramid, we can inform the development of a new management accounting ecosystem and identify relevant research questions that would interest practicing management accountants. Since the activities of management accountants are diverse, it is necessary to encourage cross-disciplinary research. The ecosystem in which management accounting operates relies on a broad range of information, and technology is crucial for analyzing that information. In this sense, management accountants are operating in a new "era" of information and technology, and we must leverage these resources to advance our understanding of their practices. The following section briefly discusses a historical perspective on management accounting.

THE HISTORY OF MANAGEMENT ACCOUNTING

Common descriptions of management accounting emphasize planning for the future, controlling present operations, and evaluating past actions taken. Management accounting is driven by the need for organizations to create and interpret information that informs strategies for achieving a competitive advantage, and actions that implement those strategies. It is important to understand the history and development of management accounting in order to gain insights into its current state and future direction. The following historical perspective on management accounting, in Fig. 3, is not intended to be a comprehensive overview of the discipline's history, but rather aims to highlight some of the significant milestones over time and illustrate its adaptive nature.

Management accounting practices have evolved to meet the changing needs of decision-makers. Management innovations have been a key driver of this evolution, and advances in operations and information technology have enabled such innovations. While it is difficult to define distinct eras in the history of management accounting, certain developments can be associated with particular times, companies, and individuals. The following illustration (see Figure 3 below) and subsequent discussion highlight some of these key developments.

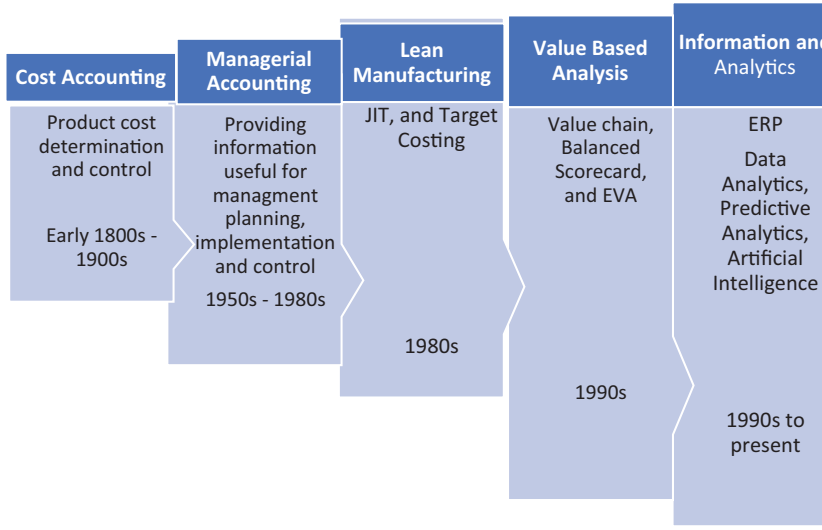

Fig. 3. A Brief History of Management Accounting. *Source*: Authors.

Cost Accounting

Cost accounting became popularized during the Industrial Revolution, when the complexity of a company's operations necessitated the development of cost accounting systems to plan, control, and evaluate work processes (Kamal, 2015; Kaplan, 1984; Swain, 2021). Hierarchical management structures required information to evaluate performance, and effective management accounting systems of this era allowed managers to evaluate operations that may be remote from them. The late 1800s and early 1900s saw the emergence of the scientific management movement, which emphasized the use of standard costs and the measurement and allocation of overhead costs to products.

DuPont (early 1900s, circa 1914) identified the need for a more sophisticated management accounting system because of its vertical integration of different companies. The diversity of businesses in their supply chain required a unifying management accounting system. The company is credited with the DuPont Return on Investment (ROI) decomposition technique derived from a simple concept that ROI = Investment turnover × profit margin. The ROI analysis integrated cost management with asset management and allowed extensive key performance measures to be utilized.

Managerial Accounting

Managerial accounting is focused on providing information for management planning and control, primarily through methods such as responsibility accounting (Waweru, 2008, 2010). Managerial accountants support management through management control systems, which facilitate decision analysis and responsibility