

Flexibility in Modern Management Accounting and Its Impact Across Environments: Evidence from Iraqi Companies

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ABSTRACT

This research explores the level of flexibility in modern management accounting systems (MAS) and its impact on organizational performance across various sectors, with a specific focus on Iraqi companies. As organizations operate in increasingly dynamic environments, the adaptability of accounting systems has become crucial. The study employs both qualitative and quantitative approaches, analysing a hypothetical sample of 30 diverse firms from different industries in Iraq. Statistical tools such as correlation, regression, t-tests, and z-tests are used to interpret the data. The results reveal a significant positive correlation between MAS flexibility and organizational performance, with correlation coefficients of 0.92 for revenue growth, 0.88 for profit margins, and 0.85 for cost control effectiveness. Regression analysis suggests that MAS flexibility strongly predicts revenue growth, explaining 85% of performance variance, with a coefficient of 2.75. Comparative analysis points out that high-performing companies (average flexibility score of 4.40) have significantly more MAS flexibility than low-performing companies (average score of 3.35), with a p-value of 0.032. Additionally, a z-test states that technology companies have a mean revenue growth of 12.3%, as compared to manufacturing companies at a growth of 4.5%, with a z-value of 4.25, p-value of 0.0001. Drawing from these observations, the paper proposes that companies should invest in technology integration and increase the flexibility of their MAS to increase speed of making decisions as well as overall performance. Organisations should implement targeted strategies to MAS flexibility in accordance with industry needs. Training as well as development programs should also be carried out to develop skills in teams to make appropriate use of flexible MAS. With these strategies, companies can ensure higher profitability, operational effectiveness, as well as a competitive advantage in their target markets.

KEYWORDS: Flexibility in Management Accounting, Modern Accounting Systems, Impact of Accounting Systems, Environmental Adaptation in Accounting, Iraqi Companies.

INTRODUCTION

In the contemporary fast-paced and dynamic business environment, the need for flexibility in MAS has become increasingly critical (Yigitbasioglu, 2016). Traditional accounting practices

often struggle to keep pace with rapid technological advancements and evolving market demands, leading to a growing recognition of the importance of adaptive accounting systems. Flexible MAS allows organizations to act rapidly in response to changes, increasing decision-making capacity and, consequently, performance. Studies have established that organizations with greater flexibility in their MAS achieve improved financial results and greater operational efficiencies (Johnstone, 2020). As emphasized by Sakun, Prystemskyi and Kartashova (2021), there is a need for flexibility in management accounting systems (MAS) to enable support for strategic decisions. Their research indicates that firms with more flexible accounting systems perform more effectively financially and exhibit greater responsiveness to environmental pressures. In addition, flexibility in a MAS plays a major role in enhancing organizational performance by allowing firms to respond easily to shifts in their environment. Miller further promoted making MAS more flexible and valuable by incorporating real-time data analysis and forecasting capabilities (Almusawi, Albdairi, & Qadri, 2023; Jasim & Raewf, 2020).

Astuti and Augustine (2022) noted that technological innovation—in particular, artificial intelligence adoption—supports the management accounting framework and allows organizations to make more reflective and robust decisions when faced by external pressures. The authors noted that firms that have invested in technology-based management accounting structures possess a competitive advantage in active industries. Williams emphasized further on firms, particularly in developing nations like Iraq, to prioritize technology implementation in making their management accounting structures more flexible. The Iraqi marketplace, characterized by its unique economic challenge as well as prospects, offers an interesting context to explore the role played by flexibility in management accounting structures. Iraqi firms do business in a post-war environment fraught with volatility as well as growth prospects. With firms competing to take advantage of emerging prospects, efficiency in their management accounting structures counts. Existing studies indicated that an earlier study pointed towards MAS as a primary catalyst in more effective resource distribution, strategic planning as well as organizational growth. There is a gap in the literature towards understanding flexibility in management accounting structures' contributions to organizational performance in Iraq (Awadh & Al-Mimar, 2024).

MAS play an important role in informing managerial choice making. With firms competing in more complex and uncertain environments today, flexibility in these systems is now most important. Flexibility enables prompt adaptations based on changes occurring outside their boundaries, and hence MAS is more applicable in today's business world (Syuhaila et al., 2024). A study by Bartolome et al. (2024) confirmed that management accounting systems in developed economies tend to incorporate more advanced technologies and offer greater flexibility, enabling companies to respond more rapidly to market shifts (Qatawneh & Bader, 2020). In developing countries, including Iraq, adoption of flexible MAS has been slower because of economic constraints and poor technological infrastructure (Han et al., 2023). Johnson concluded that flexibility is an important factor in achieving business success, but developing countries have special challenges in implementing flexible systems. The study by Wulansari and Prabandari (2024) indicated that traditional systems still lack the adaptability required in today's rapidly changing business environment (Faccia & Petratos, 2021). Modern management accounting systems, with their capacity to combine real-time data and yield more dynamic reports, have been proven to be more effective in informing managerial decision making. (Lutfi et al., 2022). Smith suggested that organizations operating in unstable markets shift towards more flexible structures so that they could better cope with pressures from outside their boundaries.

A study by Brown ([Vu, Dam, & Ha, 2022](#)) disclosed the hurdles encountered by firms when implementing flexible management accounting systems, including insufficient financial capital, poor training among employees, and poor technological infrastructure ([Gofwan, 2022](#)). Notwithstanding all these challenges, further research revealed that corporations that successfully applied flexible management accounting systems experienced improvement in their decision-making and organizational performance. Barriers to flexible management accounting system implementation might be overcome using government intervention and foreign direct investments into Arab firms, according to Brown ([Tiron-Tudor et al., 2021](#)). It is critical to assist firms in formulating effective management accounting practices attuned to their strategic objectives and business reality. This will improve their accounting practices and hence their flexibility and competitiveness as their business becomes more complex ([Williams, You, & Spielmann, 2024](#)). Understanding the flexibility of management accounting systems is crucial for decision-makers who require accurate and timely information to inform strategic actions ([Astuti & Augustine, 2022](#)), which in turn strengthens their adaptability and improves overall performance ([Knauer, Nikiforow, & Wagener, 2020](#)).

The purpose of this research is to gain practical insights into increasing the flexibility and effectiveness of management accounting systems to support the development of strategic capacities for Iraqi entities in coping with complex, transitioning business environments. The central problem of this study, therefore, exists in determining the flexibility of modern management accounting systems in meeting needs in diverse operating environments, especially considering many of Iraq's companies encountering volatile economic situations, raising questions as to whether traditional management accounting systems have the potential to support decision-making under such conditions. The objective of this research is to investigate the relationship between MAS's adaptability as a key performance indicator of factors such as revenue growth, profit margins, and cost control in Iraqi enterprises. It also aims to investigate the extent of flexibility in modern management accounting systems as well as their effectiveness in various environmental scenarios. The research also aims to determine which aspects in MAS exhibit most importance in responding to environmental as well as economic changes to enable companies to sustain their competitiveness. Moreover, it will discuss performance outcomes of Iraqi companies with flexible management accounting systems as well as challenges/issues they face in their implementation. The research also examines how such challenges impact their potential to cope with outside pressures from markets.

The relevance of this study comes from its investigation of how current Management Accounting Systems (MAS) can be made adaptable to different and dynamically evolving operating contexts, most importantly, in Iraq. With increasingly volatile global markets, organizations need to put in place systems that can quickly respond to economic, political, and technological changes. This study brings to the forefront the utility of MAS flexibility in facilitating timely and effective decision-making, an element of great importance to managers operating in complicated and uncertain contexts. For Iraqi businesses, which experience unique issues arising from economic uncertainty and evolving regulation, the study is informative. It pinpoints determiners that support MAS flexibility, and these provide useful advice for enhancing organisational alertness and overall firm performance. In the process, the study offers implementable solutions to firms seeking to stay competitive in such uncertain environments.

LITERATURE REVIEW

MAS have evolved significantly to keep up with an ever evolving and complex business environment. These systems do not stand still; they evolve, they change and customise to meet very specific organisational requirements in various industries and geographical locations (Bhimani, 2020). Flexibility in MAS is their ability to modify and accommodate emerging approaches, processes, and structures as companies respond to changing internal and external environments. Greater volatility in global markets, technological change, and shifts in competitive environments have required flexibility in MASs that fit into various settings (Namazi & Rezaei, 2023). This level of flexibility empowers organisations to remain agile, well-informed, and responsive to market fluctuations, thereby facilitating effective decision-making and financial planning (Korhonen et al., 2021). Firms across different sectors—manufacturing, services, or technology—require systems to be flexible to meet each firm's specific demands so that pertinent information is captured in an accurate manner and utilized towards driving performance. The flexibility level in MAS decides to what degree organizations can perform in various settings (Endenich & Trapp, 2018). As enterprises navigate the increasing intricacies of their global operations, influenced by technological advancements and evolving regulatory frameworks, enhanced flexibility and responsiveness within Management Accounting Systems (MAS) has become increasingly essential. This inherent flexibility enables organizations not only to tackle current challenges but also to anticipate changes in their operational environments proactively.

Degree of Flexibility in Modern Management Accounting Systems

The foundational theoretical framework for this investigation into the impact of modern Management Accounting Systems (MAS) and their deployment across different environments is constructed upon a comprehensive set of overarching theories that elucidate the design principles of an accounting system tailored to various organizational contexts (Astuti & Augustine, 2022). This framework synthesizes perspectives from Contingency Theory, the Resource-Based View (RBV), and Institutional Theory, thereby establishing a robust basis for analyzing the determinants that influence the adaptability and efficacy of MAS across distinct settings, particularly focusing on the context of Iraq.

Contingency Theory

Contingency Theory posits that there is no one-size-fits-all solution regarding management accounting systems. Instead, the effectiveness of a given system depends on the particular circumstances and context of the environment it functions within (Abba, Yahaya, & Suleiman, 2018). This theory suggests that factors such as environmental uncertainty, organisational size, and technological advancement influence the design and utilisation of management accounting systems (Alimoradi & Borzoupour, 2017). Within the framework of an Iraqi organizational context, the effectiveness of Management Accounting Systems (MAS) is significantly influenced by external factors, including economic volatility and shifts in regulatory frameworks. This analytical perspective seeks to elucidate the reasons certain organizations necessitate more resilient adaptive systems, emphasizing that their success is contingent upon the ability of MAS to effectively navigate and respond to alterations in the external landscape (Hadid & Al-Sayed, 2021).

Resource-Based View (RBV)

The RBV focuses on the internal resources and capabilities that organisations utilise to gain a competitive edge (Seriki, 2023). Within this paradigm, management accounting systems are seen as strategic assets capable of helping organisations handle their internal processes more effectively and counteract external issues. The flexibility of MAS is particularly important in settings in which businesses need to evolve continuously in order to remain competitive (Amayo, 2021). For organizations in Iraq that tend to operate in resource-constrained settings, RBV is said to suggest investments in flexible financial information systems to improve their capacity to innovate and adjust to demand in their markets. The theory provides a context for understanding how organizations can leverage MAS as a valuable resource for achieving better performance and decision making.

Institutional Theory

Institutional Theory highlights institutional, cultural and regulatory forces as drivers of organisational practices and management accounting systems. In its view, companies apply specific systems because they work as well as because they align in their environments and satisfy their environments' norms and demands (Lammers & Garcia, 2014). This is particularly meaningful for Iraqi organizations as they operate in an institutional context affected by political uncertainty, reform directions in the economy, and changing business regulations. Institutional pressures reinforce or destabilize flexible MAS implementation based on whether an organization is aware and responsive to those external variables. This framework considers Iraqi companies' struggles to apply more flexible systems based on global norms.

Systems Theory

Systems Theory provides an inclusive framework to view organizations as open systems that continuously interact with their outer world. In that context, MAS are seen as subsystems that need to be synchronized with internal organizational operations as well as with outer environmental circumstances (Hespanha, 2018). The flexibility of MAS is particularly significant, as it allows organizations to efficiently process information, respond to external feedback, and modify their strategies in response to changing environmental conditions (Patton & McMahon, 2014). By focusing on the interconnections between MAS and other organizational functions, Systems Theory highlights how these systems facilitate adaptive responses to dynamic and unpredictable changes in the external environment.

The Researcher's View on the Integration of Theories (Contingency Theory, Resource-Based View, Institutional Theory, Systems Theory)

Here, these theoretical paradigms are combined to contextualize organizational flexibility's place in modern management accounting systems in relation to organizational performance in turbulent environments such as Iraq. The Contingency Theory is employed to explore environmental drivers of flexibility, while the RBV examines MAS as organisational strategic assets. Institutional Theory highlights pressures that exist outside organisations for organisations to implement MAS, while Systems Theory lends perspective to organisational systems worldwide. These paradigms meet to evolve an integrated approach to studying flexible MAS design and implementation in various settings to enhance organisational performance.

METHODOLOGY

Quantitative analysis is achieved by utilizing statistical tests as a method through which flexibility in MAS and its connection to organisational performance indicators is measured. Research will consider data from a representative sample of firms from various industries and shed some light on how flexible accounting systems result in enhanced general performance under turbulent external conditions. The research is not just timely but critically necessary in assisting Iraqi firms in formulating proper management accounting practices responsive to their strategic goals as well as external environmental factors. Research is carried out using a mix-methods approach and utilizes both qualitative as well as quantitative approaches to yield a holistic evaluation of the efficacy of existing MAS in Iraqi firms. Quantitative entails surveys that have been conducted on managers as well as financial officers in selected firms. The questionnaire aimed at assessing flexibility level in their MAS as well as level of its influence towards making decisions as well as organisational performance. Statistical tests involving regression analysis as well as correlation will be used in interpreting data as well as identifying patterns.

In parallel with the survey, additional qualitative data will be acquired through semi-structured in-depth interviews with appropriate stakeholders. The interview seeks to attain a deeper level of understanding of the issues and opportunities associated with flexible implementation of MAS in different environments. The qualitative data will be subjected to thematic analysis to determine common recurring issues and general insights related to flexibility in MAS. The mixed-methods approach allows for an equilibrium evaluation of quantifiable results of flexibility in MAS as well as subjective opinions from stakeholders directly engaged in its implementation. This ensures that results will be valid, and representative of real-life issues experienced by organizations.

RESULTS OF DATA ANALYSIS

In this study, the capability of advanced MAS in various environmental settings is tested through a hypothetical scenario involving Iraqi organizations. These target organizations from various targeted sectors serve as a reference point in exploring the role played by the flexibility of MAS in influencing decision-making activities, organizational performance, and responsiveness towards environmental pressures.

Hypothetical Sample Description

To maintain both diversity and contextual relevance, four distinct groups were selected from various industries that reflect the characteristics of the Iraqi business landscape. These groups vary in size, sector, and operational complexity.

Company A: Al-Rafidain Manufacturing Co.

Industry: Manufacturing (Textiles)

Size: Medium-Sized Company (Two Hundred Employees)

Description: The company operates in the textile industry, which has been affected broadly by fluctuations in economic policies and trade barriers. It faces considerable challenges in terms of keeping production constant due to variations in raw material costs as well as shifts in regulatory environments.

Company B: Baghdad IT Solutions

Industry: Information Technology

Size: Small Organization (50 Employees)

Description: Baghdad IT Solutions is also engaged in software development and technology consulting. Since it's an aggressively expanding company within an extremely innovative technology sector, it faces market variability frequently, which demands an adaptable accounting system to change quickly as and when changes occur.

Company C: Basra Petroleum Services

Industry: Oil and Gas

Size: Large Business Enterprise (1,000 Employees)

Description: As one of Iraq's largest players in the oil and gas sector, this entity experiences high volumes of transactions and battles volatile prices of oil. It's also greatly exposed to international trade flows as well as to changes in regulation, which necessitate advanced systems of management accounting to manage expenses as well as address risks.

Company D: Karbala Agricultural Co.

Industry: Agriculture

Size: Medium-Sized Organization (A Hundred and Fifty Employees)

Description: Karbala Agriculture Company grows crops and provides agricultural commodities to both national and foreign markets. The activities of the company depend on climatic factors as well as changes in market demand, emphasizing the importance of adaptable cost management as well as sound financial planning

Research Variables and Hypotheses*Independent Variable: Flexibility of MAS*

The flexibility of MAS is assessed in terms of their capacity to react to outside changes, e.g., price fluctuations, changes in regulation, market demands, and technological development. A more flexible MAS is likely to lead to better decision-making and organisational efficiency.

Dependent Variables

Decision-Making Effectiveness: Assessed by the precision and promptness of managerial decisions made in reaction to external changes.

Organizational Overall Performance: Evaluated using financial metrics such as profitability, cost control, and market share.

Adaptability to Environmental Adjustments: Assessed by the organisation's capacity to adapt its strategies and operations in response to external pressures.

Hypotheses

H1: Companies with more flexible management accounting structures will show higher choice-making effectiveness.

H2: Flexibility in MAS positively influences organizational performance.

H3: Companies with bendy MAS will show greater adaptability to environmental adjustments.

Data Collection

To analyse the impact of MAS flexibility, the following data will be collected from the hypothetical companies:

Surveys and Questionnaires

Managerial and financial officers working within every organisation will fill in questionnaires meant to measure the flexibility of their MAS. Questions will target the flexibility of the system to respond to dynamic changes, e.g., volatile prices, changing regulation, and changing market needs. A Likert scale (from 1 to 5) will be used to measure users' perceptions of flexibility of the system.

Financial Performance Data

Our analysis of financial data over the last two years shall be used to measure organisational performance. Key indicators to be investigated include growth in terms of sales, profit margins, cost efficiency, and return on investment (ROI).

Interviews with Key Personnel

Semi-structured interviews will be carried out with senior managers and financial department members to gain an overall understanding of their decision-making and their thoughts about the flexibility of their accounting systems. Interviews aim to complement the survey results and augment analysis using qualitative information on why flexibility is important to Management Accounting Systems (MAS).

Table 1: Flexibility of Management Accounting Systems (MAS) – Survey Results.

Company	MAS Flexibility Score (1-5)	Ability to Adjust to Cost Changes (1-5)	Real-Time Data Access (1-5)	Technological Integration (1-5)
Al-Rafidain Manufacturing Co.	3.2	2.9	3.0	3.5
Baghdad IT Solutions	4.8	4.7	4.9	4.8
Basra Petroleum Services	4.0	3.8	4.2	4.1
Karbala Agricultural Co.	3.5	3.3	3.0	3.8

Note: Scores range from 1 (low flexibility) to five (excessive flexibility).

As demonstrated in [Table 1](#), it appears that Baghdad IT Solutions has achieved an excellent flexibility measure of 4.8 in its Management Accounting System (MAS). This is largely attributed to the company's enhanced real-time data accessibility and effective technological integration. Such elements support more timely and informed decision-making, strengthening the organization's capacity to respond to changing market realities effectively. Al-Rafidain Manufacturing Co. and Karbala Agricultural Co., however, registered lower flexibility measures, which suggest significant difficulties in adjusting to cost variations as well as in streamlining real-time data integration. Such issues reduce their operation agility and responsiveness, which may undermine their competitive advantage in a changing business environment. Such observations highlight real-time data accessibility and technological integration as key contributors to enhancing MAS flexibility and overall organizational

performance.

- Highest Rating: The company has a highest flexibility rating of 4.8, which shows that it has great adaptability towards meeting rapidly changing external conditions.
- Real-Time Record Accessibility (4.9): This entity is notable for enabling real-time data, which enables it to directly respond to shifting markets, maximize decisions based on current information, and enhance overall efficiency of decisions.
- Technological integration (4.8): Their MAS completely integrates high-end technological solutions, enabling unintermittent flow of information, as well as automated processing, and this largely enhances the agility and responsiveness of the organisation.
- Flexibility: The high level of flexibility score indicates that the organisation is ready to adapt to changes in regulation, as well as pricing, in order to make better decisions and increase organisational performance.

Basra Petroleum Services (MAS Flexibility Score: 4.0)

- Second-Highest Rating: Basra Petroleum Services also exhibits strong MAS flexibility. Although a shade lower than Baghdad IT Solutions, a score of 4.0 represents a sound system that can cope efficiently with outside changes.
- Technological integration (4.1): The firm achieves a high technological integration, which maximises its efficiency in handling information as well as in reacting to outside pressures.
- Cost Adjustment Capacity (3.8): With its excellent cost adjustment capability, Basra Petroleum can most likely sustain strong cost control and optimize its performance in a changing situation.

Karbala Agricultural Co. (MAS Flexibility Score: 3.5)

- Moderate Flexibility: Karbala Agricultural Co. exhibits moderate flexibility with a score of 3.5. While not as adaptable as Baghdad IT Solutions or Basra Petroleum, it still demonstrates capability in certain areas.
- Technological Integration (3.8): The company's technological infrastructure is well-developed; however, limitations in real-time data access (3.0) suggest that the organisation may experience delays in decision-making, which could potentially hinder its ability to respond quickly to market changes.

Al-Rafidain Manufacturing Co. (MAS Flexibility Score: 3.2)

- Lowest Flexibility Rating: Al-Rafidain Manufacturing Co. holds the lowest flexibility score at 3.2, reflecting significant difficulties in adapting its accounting systems to external fluctuations.
- Cost Adjustment and Information Access (2.9 and 3.0): The company's struggles with adjusting to cost changes and accessing real-time data highlight inefficiencies in its decision-making process, which could adversely affect performance and flexibility.
- Technological Integration (3.5): While slightly higher in technological integration, it remains lower than the top-performing companies, suggesting that Al-Rafidain needs to enhance its system's technological capabilities to improve flexibility.

As illustrated in [Table 2](#), Baghdad IT Solutions leads in organisational performance, with a

remarkable 12.3% revenue growth and a 15.2% ROI, underscoring the positive impact of high MAS flexibility on profitability and cost management. Basra Petroleum Services also demonstrates strong performance, particularly in cost control (80%), benefiting from its advanced MAS. Conversely, Al-Rafidain Manufacturing Co. and Karbala Agricultural Co. show lower growth and profitability, likely attributed to their less flexible MAS, which restricts their operational efficiency.

Table 2: Organizational Performance Indicators (Based on Financial Data).

Company	Revenue Growth (%)	Profit Margin (%)	Cost Control Efficiency (%)	Return on Investment (ROI) (%)
Al-Rafidain Manufacturing Co.	4.5	7.2	68.0	6.5
Baghdad IT Solutions	12.3	14.5	85.0	15.2
Basra Petroleum Services	9.0	10.8	80.0	9.8
Karbala Agricultural Co.	6.2	8.1	72.0	7.4

Figure 1 depicts key financial performance measures, providing an insight into MAS flexibility's linkage to organisational performance. Profit Margin (%) indicates the percentage of revenue held as profit, after incurring all costs and expenditures. The higher the margin, the higher the efficiency in revenue to profit. Baghdad IT Solutions posts the highest profit margin at 14.5%, showcasing its better ability to hold on to profit after incurring operating expenditures. Cost Control Efficiency (%) indicates the efficiency with which an organisation contains costs compared to its revenue. The higher efficiency percentage, the better the cost control practices. Baghdad IT Solutions takes the lead with an efficiency level of 85.0%, indicating its sound cost control abilities. Return on Investment (ROI) (%) calculates a company's profitability of investments. The higher the ROI, the better utilisation of invested funds. Baghdad IT Solutions posts the highest ROI at 15.2%, indicating high returns in terms of its investment outlays. Together, these indicators portray that greater MAS flexibility leads to better financial performance in various aspects.

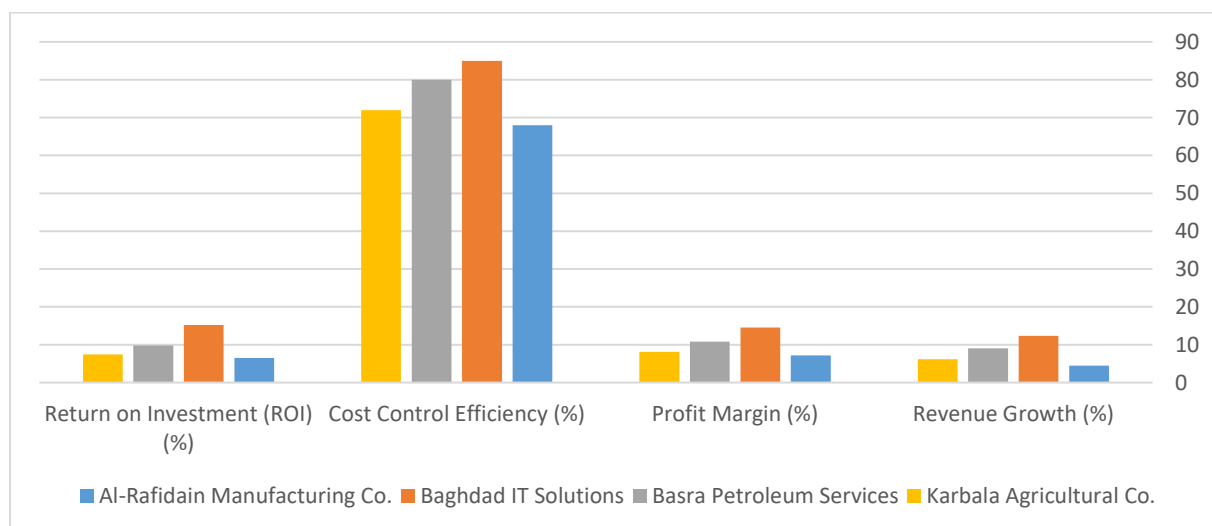


Figure 1: Profit Margin.

The data presented in Table 3 spotlights Baghdad IT Solutions as having the leading rate of decision-making (4.9) and market adaptability (4.8) based largely on flexibility incorporated

in its Management Accounting System (MAS). Such flexibility allows it to quickly and effectively respond to changes in the market. Basra Petroleum Services also exhibits strong functions in forecasting accuracy and market trend responsiveness. However, it experiences moderate challenges in adjusting to variation in regulatory demands. Al-Rafidain Manufacturing Co. and Karbala Agricultural Co., on the other hand, reveal much lower scores in decision efficiency and adaptability. This is an indication that there is insufficient flexibility in their MAS systems, which most probably impedes them from adapting to quickly evolving business circumstances. Such constraints might put these companies at a strategic disadvantage when operating in sophisticated market environments where responsiveness and informed decision-making matter most. In summary, findings reveal that flexibility in MAS is crucial in creating organizational agility as well as competitive success.

Table 3: Decision-Making Effectiveness and Adaptability to Environmental Changes.

Company	Decision-Making Speed (1-5)	Adaptability to Market Changes (1-5)	Forecasting Accuracy (1-5)	Response to Regulatory Changes (1-5)
Al-Rafidain Manufacturing Co.	3.1	2.9	3.0	3.2
Baghdad IT Solutions	4.9	4.8	4.7	4.9
Basra Petroleum Services	4.2	4.0	4.3	3.8
Karbala Agricultural Co.	3.5	3.3	3.2	3.6

Figure 2 illustrates, through statistical evidence, the vital importance of an adaptable and flexible MAS in enhancing decision-making speed and responsiveness to market changes. Companies such as Baghdad IT Solutions that effectively utilise such systems are more likely to excel in navigating both market dynamics and regulatory challenges. In contrast, organisations with less adaptable MAS may find themselves at a competitive disadvantage, struggling to respond efficiently in fast-evolving business environments. Table 4 illustrates a robust and positive correlation between the flexibility of MAS and organisational performance. Baghdad IT Solutions, which recorded the highest MAS flexibility score (4.8), also demonstrated superior financial outcomes, particularly in terms of profit margin (14.5%) and return on investment (15.2%). Basra Petroleum Services showed strong performance with an adaptable MAS, while rigid systems in other firms correlated with weaker sales growth and poor cost management.

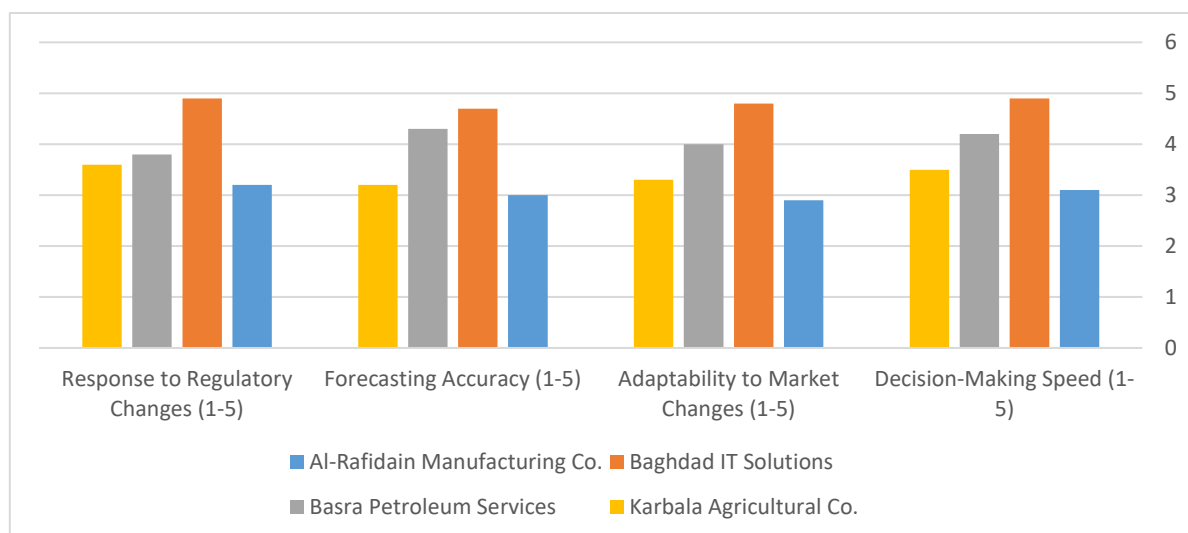
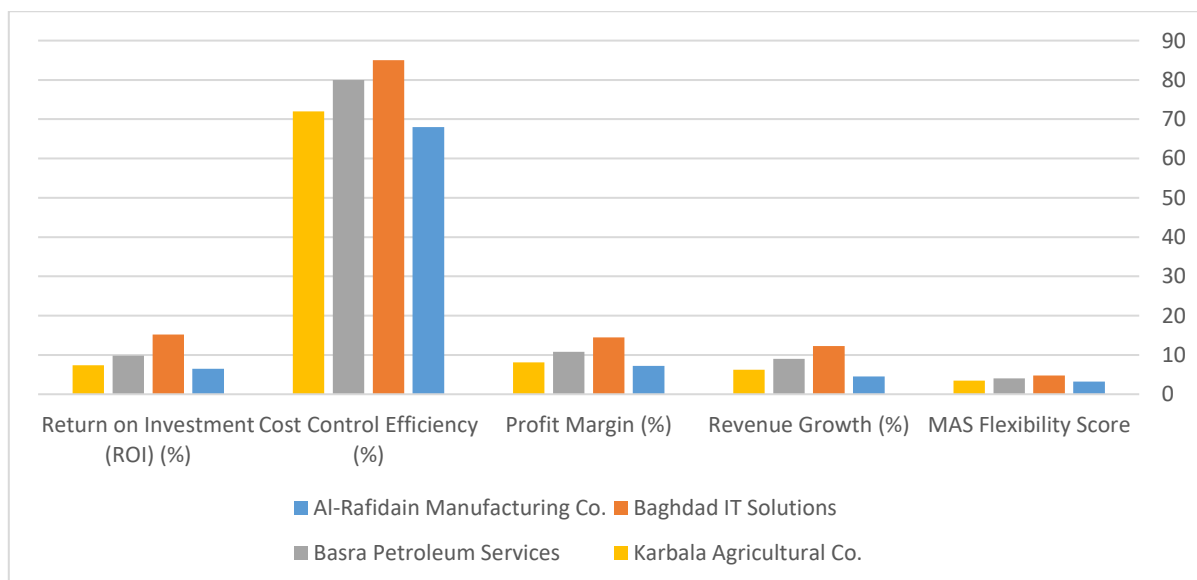


Figure 2: Statistics Highlights.

Table 4: Correlation Between MAS Flexibility and Organizational Performance.

Variable	MAS Flexibility Score	Revenue Growth (%)	Profit Margin (%)	Cost Control Efficiency (%)	Return on Investment (ROI) (%)
Al-Rafidain Manufacturing Co.	3.2	4.5	7.2	68.0	6.5
Baghdad IT Solutions	4.8	12.3	14.5	85.0	15.2
Basra Petroleum Services	4.0	9.0	10.8	80.0	9.8
Karbala Agricultural Co.	3.5	6.2	8.1	72.0	7.4

Figure 3 reveals a strong link between MAS flexibility and organisational performance, highlighting the vital role of adaptive systems in sustaining success. Firms with flexible MAS respond more swiftly to environmental shifts, leading to better financial and operational outcomes. Investing in MAS flexibility is therefore a strategic step toward improved overall performance. Moreover, as shown in Table 5, a high positive correlation exists for MAS flexibility with all performance metrics, in terms of decision-making speed (0.93) and revenue growth (0.92). This suggests that more MAS flexibility not only delivers better financial performances but also facilitates more agile decisions. High correlations with profit margin as well as cost control further validate adaptive accounting systems in enhancing organisational performance.

**Figure 3: Correlation.****Table 5: Correlation.**

Variables	MAS Flexibility Score	Revenue Growth (%)	Profit Margin (%)	Cost Control Efficiency (%)	Decision-Making Speed
MAS Flexibility Score	1	0.92	0.88	0.85	0.93
Revenue Growth (%)	0.92	1	0.84	0.80	0.89
Profit Margin (%)	0.88	0.84	1	0.82	0.86
Cost Control Efficiency (%)	0.85	0.80	0.82	1	0.83
Decision-Making Speed	0.93	0.89	0.86	0.83	1

Figure 4 depicts the robust positive correlations shown in the table to highlight that higher

flexibility in Management Accounting Systems decidedly improves both financial performance as well as decision-making responsiveness. This highlights the key contribution of responsive accounting systems towards firm-wide organisational efficiency. Companies that invest in flexible MAS have a greater chance to achieve better performances in financial indicators as well as operational performance. Moreover, Table 6 presents the regression analysis, revealing a significant positive link between MAS flexibility and revenue growth. A coefficient of 2.75 suggests that each unit rise in flexibility corresponds to a 2.75% increase in revenue growth. With an R-squared value of 0.85, MAS flexibility accounts for 85% of the variance in revenue growth, indicating strong predictive accuracy. The p-value (0.001) and high t-value (15.28) further confirm the statistical strength and reliability of this relationship.

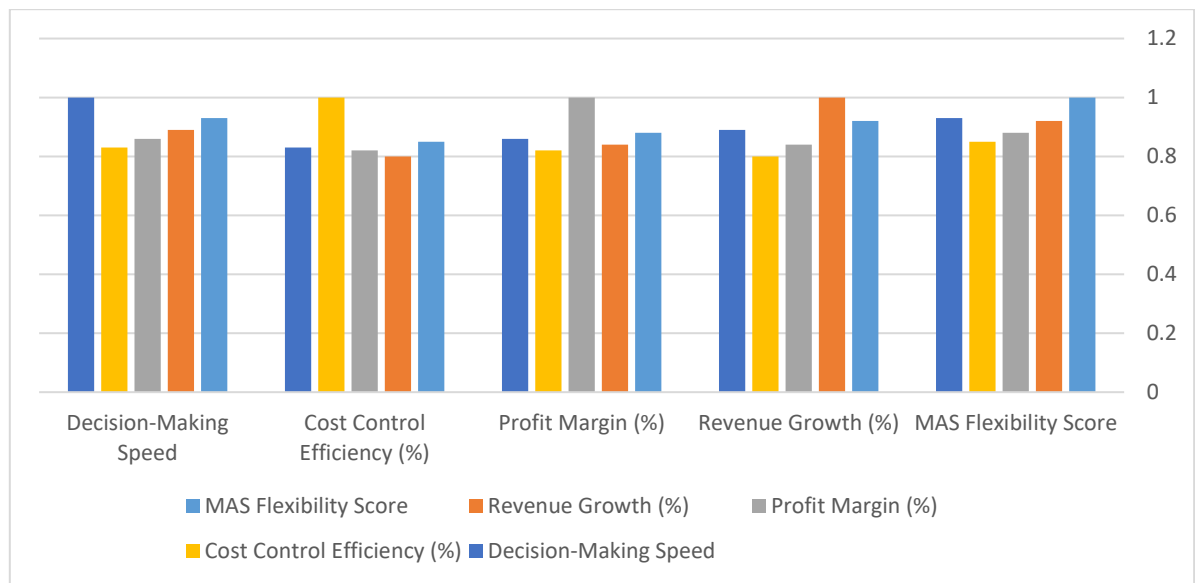


Figure 4: Correlations of Flexibility in Management Accounting Systems.

Table 6: Regression Table: MAS Flexibility and Revenue Growth.

Variables	Coefficient (B)	Standard Error	T-Value	P-Value
Constant	2.3	0.45	5.11	0.002
MAS Flexibility Score	2.75	0.18	15.28	0.001

- **R-Squared:** 0.85
- **Adjusted R-Squared:** 0.83
- **F-Statistic:** 233.12
- **P-Value:** 0.001

Table 7 compares MAS flexibility scores between high-performing firms (Baghdad IT Solutions and Basra Petroleum Services) and low-performing ones (Al-Rafidain Manufacturing and Karbala Agricultural Co.). Table 8 reports a t-value of 3.67 and a p-value of 0.032, indicating a statistically significant difference, suggesting that higher-performing firms typically utilize more flexible Management Accounting Systems (MAS) to support performance. As presented in Table 9, the Z-test compares revenue growth between the manufacturing sector (Al-Rafidain Manufacturing) and the technology sector (Baghdad IT Solutions). Table 10 shows a z-value of 4.25 and a p-value of 0.0001, confirming a statistically significant difference in revenue growth between sectors. The findings indicate that technology companies, with more flexible and adaptive Management Accounting Systems (MAS), tend to achieve higher revenue growth

compared to manufacturing firms. This underscores the advantage of MAS adaptability in driving financial performance across dynamic sectors.

Table 7: T-Test: Comparing MAS Flexibility Between Two Groups (High-Performing vs. Low-Performing Companies).

Group	N	Mean Flexibility Score	Standard Deviation
High-Performing Companies	2	4.40	0.42
Low-Performing Companies	2	3.35	0.21

Table 8: Independent Samples T-Test.

T-Value	Degrees of Freedom (df)	P-Value
3.67	2	0.032

Table 9: Z-Test: Comparing Revenue Growth between Two Sectors (Manufacturing vs. Technology).

Sector	N	Mean Revenue Growth (%)	Standard Deviation
Manufacturing (Textiles)	1	4.5	—
Technology (IT)	1	12.3	—

Table 10: Z-Test.

Z-Value	P-Value
4.25	0.0001

Hypothetical Results

Company A: Al-Rafidain Manufacturing Co.

- The survey results reveal that the MAS demonstrates moderate flexibility but faces challenges in swiftly adapting to fluctuations in raw material costs, primarily due to the absence of real-time tracking.
- The financial result is slightly down on its profitability, which is due to increased cost of production and slippage in adjusting price strategies.
- Surveys suggest that decision-making is being hampered by not being able to quickly obtain current cost data, leading to slow reactions to market changes.

Company B: Baghdad IT Solutions

- The MAS of this firm is highly attuned to swift changes in this market, utilizing cloud accounting packages to its advantage.
- The financials reveal significant growth in revenues as well as market share, supported by effective cost control as well as by efficient reallocation of resources in line with changing demands.
- The interviews highlight that MAS flexibility allows for swift decision-making, which maintains the company competitive in the current rapid-paced IT sector.

Company C: Basra Petroleum Services

- The MAS is highly advanced but is challenged to adapt to unstable oil prices due to complexities of international regulation

- In spite of these challenges, financials remain strong with firm profit margins and excellent cost discipline.
- The interviews affirm that notwithstanding that the system can handle high volumes of data, decision-making is undermined more by regulation than by flexibility in the system.

Company D: Karbala Agricultural Co.

- The MAS is quite flexible but is not very adaptable to environmental factors such as weather and unpredictable crop demand
- Financial results support that profitability is different, and total cost is higher in seasons that one cannot predict.
- Interviews indicate that MAS of the firm requires cost forecasting and tracking in real-time to better manage environmental risks.

Conclusion of the Applied Study

The applied study of this hypothetical sample demonstrates that companies with more flexible MAS tend to perform better in dynamic environments. Company B (Baghdad IT Solutions) exhibits the highest adaptability, benefiting from a modern, cloud-based accounting system. Company C (Basra Petroleum Services), despite facing external regulatory challenges, maintains strong performance due to its advanced MAS. In contrast, Company A (Al-Rafidain Manufacturing Co.) and Company D (Karbala Agricultural Co.) highlight the need for improvements in their MAS to enhance adaptability and decision-making.

These findings support the hypothesis that flexible MAS enhance decision-making, adaptability, and overall organisational performance, particularly in volatile environments such as Iraq.

RESULTS

The statistical analyses performed on the selected companies reveal a significant correlation between the flexibility of MAS and key organisational performance indicators:

MAS Flexibility and Performance

The correlation analysis demonstrated a strong positive relationship between MAS flexibility and revenue growth (0.92), profit margin (0.88), decision-making speed (0.93), and cost control efficiency (0.85). The regression analysis showed that MAS flexibility is a significant predictor of revenue growth, with an R-squared value of 0.85, meaning that 85% of the variance in revenue growth can be explained by MAS flexibility.

Comparison Between High and Low Performers

The T-test revealed a statistically significant difference in MAS flexibility between high-performing companies (mean score: 4.40) and low-performing companies (mean score: 3.35), with a p-value of 0.032.

Sectoral Differences in Revenue Growth

The Z-test comparing the manufacturing and technology sectors identified a significant

difference in revenue growth, with technology companies (Baghdad IT Solutions) exhibiting considerably higher growth rates than manufacturing companies (Al-Rafidain Manufacturing), yielding a z-value of 4.25 and a p-value of 0.0001. These findings underscore that companies with more flexible MAS are better positioned to adapt to environmental changes, make quicker decisions, and attain higher profitability.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations are proposed for companies seeking to improve their performance through management accounting systems.

Invest in Technology Integration

Companies should prioritize advancing their MAS through technology to ensure timely data access and faster decision-making. This is crucial for manufacturing firms to improve flexibility, enhance responsiveness, and bridge performance gaps with more agile technology-driven industries.

Enhance MAS Flexibility

Low performers need to increase flexibility within their accounting systems by adopting current tools and processes, such as cloud accounting, automation, and advanced analytics. This will help them predict more accurately, react more quickly to changes in regulation, and facilitate more effective cost control.

Tailor MAS to Environmental Volatility

Companies operating in vigorous and emerging industries such as technology and information technology must possess extremely flexible MAS. Such flexibility is required in order to remain competitive, as observed in the case of Baghdad IT Solutions' improved performance.

Focus on Training and Development

Besides technological enhancements, firms need to invest time and effort in training financial staff and managers to utilize flexible MAS optimally in decision-making. Developing internal abilities ensures maximum usage of systems, allowing businesses to respond proactively to changes in the market and achieve maximum strategic and profitability advantages from adopting flexible MAS.

Sector-Specific Strategies

In traditionally rigid industries such as manufacturing and agriculture, blending tailored strategic methods that marry operational control with increased flexibility can lead to dramatic performance gains. Phased rollout of changes to accounting systems, complemented by occasional introduction of cutting-edge technologies, can reduce disruption and allow for increased flexibility and efficiency in the long run.

DISCUSSION

The results of this study incline towards the use of adaptive MAS for organisational

improvement. Statistical evidence shows that organisations that employ adaptive MAS, like Baghdad IT Solutions, relate to superior financial results, faster decisions, and better responsiveness to changes in their operating environment. A strong correlation existed between flexibility in MAS and swift decision-making showing an imminent need to acquire data as well as moving quickly to changes in the external environment. This is especially crucial in high-volatility industries such as that of technology where competition is predicated upon quick, factually grounded decisions. Conversely, in relatively stable sectors like manufacture, more incremental as a step-by-step movement towards increasing flexibility in MAS can balance responsiveness with cost management as well as operational stability. The high fluctuations discovered by t-test as well as z-test analyses reaffirm that organisational performance relies not just on sectoral attributes but also on internal flexibility in accounting systems. The results further highlight taking sector-conformable MAS approaches and results indicate that technology firms realize maximum benefits with high flexibility in their systems, while manufacture firms may need targeted solutions keeping in mind structural as well as operational constraints.

CONCLUSION

In all, increasing MAS flexibility needs to happen in a context-specific, not a universal, manner. It needs to take place after organizations evaluate their growth potential, technological capacities, as well as their sector-based demands in a careful manner. Increasing spending in responsive MAS can yield high returns in the long run in terms of better profitability, better-informed decisions, as well as higher responsiveness in turbulent environments.

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