

ENHANCING PROFITABILITY AND TRANSPARENCY IN IRAQ'S MANUFACTURING INDUSTRY: INTEGRATING ACTIVITY-BASED COSTING WITH FINANCIAL REPORTING QUALITY

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Abstract: The integration of Activity-Based Costing (ABC) with Financial Reporting Quality (FRQ) is pivotal for enhancing profitability and transparency in corporate finance, especially within the manufacturing industry. This study aims to investigate how the integration of ABC and FRQ can improve corporate financial performance in Iraq's manufacturing sector, where traditional costing methods dominate, limiting financial transparency and profitability. The study adopts a quantitative research design, utilising a structured survey administered to 268 financial managers and accountants from manufacturing firms in Iraq. Data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) to assess the relationships among ABC, FRQ, and profitability. The findings indicate that ABC significantly improves cost allocation accuracy and enhances financial reporting quality. The article also highlights that firms adopting ABC experienced a 20% improvement in investor confidence as higher transparency in financial reporting facilitated better decision-making and stakeholder trust. This research is original in its focus on Iraq's manufacturing industry, offering empirical evidence on the effectiveness of ABC in a developing country context. It contributes to the existing literature by providing insights into how modern costing systems can address inefficiencies in cost management and financial reporting. The study recommends the widespread adoption of ABC to improve financial transparency and profitability in Iraq's manufacturing sector. Further studies could explore the role of technological advancements such as automation, in enhancing the benefits of ABC.

Keywords: Activity-based costing, financial reporting quality, profitability, transparency, manufacturing industry, Iraq, Partial Least Squares Structural Equation Modelling (PLS-SEM).

Introduction

Activity-based costing (ABC) is a management accounting technique that increases the accuracy of cost allocation by identifying the activities within an organisation and assigning costs based on their actual consumption by products and services. Many manufacturing processes have evolved to such an extent that it is impossible for traditional costing systems to properly cost and make effective decisions. ABC enables organisations to identify inefficient activities, reduce wasteful spending, and optimise resource utilisation by focusing on specific cost drivers (Kaplan & Cooper, 1998). Al-Mekhlafi and Eddin Othman (2023) found that deploying

ABC in Saudi manufacturing firms improved production efficiency by 15% and lowered overhead costs by about 12%. ABC provides company pricing strategies that use cost structures and profit margins more effectively (Ling & Zhang, 2010).

Financial refers to the extent to which financial reporting provides a fair and accurate representation of a company's financial position, enabling stakeholders to make informed decisions. Financial statements help reduce information asymmetry that exist between management and other stakeholders such as investors and lenders. High-quality financial

reporting is associated with better capital market conditions. Several studies have reported that companies with high-quality financial reporting face more tolerant capital markets, lower cost of debt, and higher investor confidence (Bushman & Smith, 2001). A PwC (2021) global survey found that 72% of investors assign great or very high importance to transparency and accuracy in financial reporting when making investment decisions. Furthermore, clear financial results enable management to accurately assess performance and identify operational strengths and weaknesses. In the manufacturing sector, robust financial reporting supports compliance with government regulations and industry standards, thereby minimising risks related to legal disputes and associated costs.

Integrating ABC with FRQ creates a robust framework for improving performance, particularly in manufacturing. This integration constitutes an information system that implements highly accurate and relevant ABC data in financial reports. For instance, Al-Dhubaibi (2021) reported an 22% increase in financial statement accuracy and a 16% rise in profitability attributing these improvements to more reliable information compared to traditional cost accounting.

By combining ABC with FRQ, businesses can precisely map micro-level costs and link each business activity to its actual resource consumption. This detailed cost tracking enhances transparency by ensuring that financial reports accurately reflect operating expenses. Consequently, stakeholders can make informed, strategic decisions, optimise resource allocation, and evaluate efficiency with more accuracy. Chen and Gong (2019) argued that firms using ABC have better financial report comparability and therefore, more market confidence, as well as easier access to foreign investments.

Iraq's manufacturing industry is a significant contributor to the national economy, accounting for 13% of GDP in 2022 (World Bank, 2023). However, the sector faces multiple hindrances to growth, from obsolete technology to political instability and dependence on oil exports. More

than 70% of the Iraqi manufacturing companies are constrained by traditional costing methods that do not accommodate the complexity of today's production processes, which results in poor resource allocation and profitability (UNIDO, 2020). In 2021, Iraqi manufacturing companies recorded profitability levels up to 6% lower than the global industry average, indicating that there is room for improvements in terms of cost management systems. Financial reporting transparency is also weak; Iraq ranked 157th out of 180 countries in Transparency International's 2021 assessment of corporate disclosures and financial transparency. This lack of transparency discourages foreign investment and undermines the sector's competitiveness in international markets.

Integrating ABC with high-quality financial reporting offers a solution to Iraq's challenges of low profitability and poor transparency. ABC provides detailed cost information at different stages in the production process and when incorporated into financial statements, it becomes a more accurate representation of firm performance. Pavlopoulos *et al.* (2019) found that Iraqi manufacturing firms adopting ABC increased profitability by 14% through better cost control and pricing strategies. Similarly, Hamawandy *et al.* (2021) reported a 20% rise in investor confidence among companies integrating ABC with enhanced financial reporting due to greater clarity in financial data. Such integration is crucial to attract the foreign investment needed to overcome constraints in Iraq's manufacturing sector and strengthen its international presence.

The implementation of ABC in Iraq's manufacturing sector can primarily address inefficiencies stemming from inadequate resource utilisation. A study by Mozan and Almashkor (2022) found that cost mismanagement inefficiency accounted for 10% of unnecessary operational expenses in Iraqi manufacturing companies. ABC's detailed cost analysis of each activity enables firms to identify and eliminate wasteful expenditures, thereby enhancing profitability. Furthermore,

the increased transparency achieved through integrating activity-based management in financial reports aligns Iraqi businesses more closely with international financial reporting standards, improving their competitiveness in the global market (Kashanipour *et al.*, 2024).

Beyond the manufacturing sector, overall financial reporting quality in Iraq remains relatively low. Despite the critical importance of transparent and accurate financial data, many companies continue to rely on outdated traditional costing systems. These systems fail to capture the full scope of operational workflows and consequently, do not allocate resources accurately, leading to misstated financial statements. This is reflected in the comparatively low profitability of Iraqi manufacturing firms; a recent World Bank (2021) report indicates these companies are on average 70% less profitable than their global counterparts.

Moreover, Iraqi institutions are rated among the lowest globally in corporate governance by Transparency International (Elorabi *et al.*, 2024). This lack of transparency has undermined investor confidence, hindering the sector's ability to attract foreign investment. Therefore, improving cost management practices alongside financial reporting quality in Iraq's manufacturing sector is essential to boost profitability and transparency, encourage external investment, and promote economic prosperity.

In Iraq's industrial sector, "sustainable profitability" refers to steady financial gains achieved through cost reduction, effective resource use, and open financial reporting. It emphasises long-term stability, flexibility, and strategic investments, rather than short-term maximisation of benefits. By allocating expenses to specific activities, eliminating inefficiencies, and improving financial forecasting, ABC supports sustained profitability. Key performance indicators include profit margin, return on investment, operational efficiency ratios, and cost reduction trends. Long-term economic stability depends on effective pricing strategies, skilled resource allocation, and

increased investor trust, all of which are ensured by integrating ABC with FRQ. Thus, poor FRQ and cost mismanagement have contributed to inefficiencies, low profitability, and diminished investor trust within the Iraqi manufacturing sector. Traditional costing methods often lead to unnecessary operating expenses due to indiscriminate cost allocation. Previous studies indicate that Iraqi manufacturing firms are less profitable than their global counterparts primarily due to low financial transparency and cost misunderstandings. Despite ABC's recognised advantages in cost accuracy and transparency, its integration with FRQ remains underexplored in the Iraqi context.

Accordingly, this study aims to explore the integration of ABC and FRQ within Iraq's manufacturing sector, investigating how this integration can improve profitability and transparency in financial performance. This research makes several significant contributions. Firstly, no prior study has provided empirical evidence on the effects of the integration of ABC and FRQ on Iraq's manufacturing industry, particularly how this integration enhances cost allocation accuracy, profitability, and transparency. This study addresses this gap by focusing specifically on Iraq, a largely neglected context, contrasting with existing studies that primarily consider traditional costing systems and their foundations. Employing primary data through a questionnaire administered to financial personnel in Iraqi firms, the article also makes a practical contribution by shedding light on how ABC affects accounting reports (Ali, 2019).

Furthermore, it demonstrates that adopting ABC can improve transparency and attract foreign investments critical for Iraq's industrial growth, subsequently increasing investor confidence (Kashanipour *et al.*, 2024). Finally, the study emphasises that ABC leads to superior decision-making, enhanced cost control, and more efficient resource allocation, which are crucial for better profitability and operational effectiveness (Ling & Zhang, 2010).

The remainder of this article is structured as follows: Section 2 reviews the extant literature

on Activity-Based Costing and Financial Reporting Quality; Section 3 outlines the research methodology, including data collection and analysis techniques; Section 4 presents the findings, including a discussion of how ABC and FRQ influence profitability and transparency in Iraq's manufacturing sector; and Section 5 concludes with practical recommendations for manufacturing firms in Iraq and suggestions for further research.

Literature Review

ABC is one of the most significant recent developments in management accounting and corporate finance, especially when integrated with FRQ. This literature review focuses on the impact of ABC on cost control, profitability, and financial transparency, particularly in manufacturing industries, drawing on several studies that examine these areas.

A study by Hamawandy *et al.* (2021) closely relates to this research, investigating whether management accounting techniques, primarily ABC can enhance FRQ in manufacturing companies. Using a quantitative, structured questionnaire administered to financial managers and accountants in Iraqi manufacturing firms, the study found that ABC improved the objectivity and precision of corporate accounts. The research concluded that ABC provides decision-makers with more accurate cost information, thereby increasing stakeholder confidence.

Vetchagool and Sirisombat (2024) examined the strategic implementation of ABC in financial management within the higher education sector. Their research compared ABC with traditional costing methods using financial data from a Thai university. The study revealed that ABC allocated overhead expenses based on resource consumption rather than arbitrary distribution, resulting in more accurate cost structures, improved financial reporting, better strategic resource allocation, and enhanced decision-making processes. These findings highlight ABC's applicability beyond manufacturing, extending its benefits to other sectors.

Ortiz-Cea *et al.* (2025) conducted a systematic review of 58 studies on ABC's role in reducing environmental impact by improving cost efficiency across various industries, including construction, transport, and manufacturing. They found that ABC enables firms to map micro-level costs accurately, linking each business activity to its resource consumption. This detailed cost information enhances financial reporting by providing stakeholders with transparent insights into operational efficiency. Moreover, integrating ABC with sustainability reporting helps firms reduce waste, optimise resource use, and improve long-term profitability. These results reinforce the view that ABC enhances both financial transparency and cost efficiency, making it invaluable for manufacturing industries seeking greater financial stability and corporate governance.

Nkrumah (2024) investigated the effect of ABC adoption on transparency and financial stability in universities. Comparing institutions using ABC with those reliant on traditional costing, the study found that ABC users were better equipped to monitor financial performance, optimise cost structures, and improve decision-making. The research concluded that ABC offers a more comprehensive financial reporting framework, which can be beneficial for corporate sectors such as manufacturing by increasing accuracy and transparency and enhancing stakeholder confidence.

Mozan and Almashkor (2022) conducted an empirical study on cost reduction in Iraqi manufacturing firms through management accounting tools, including ABC. Surveys of senior financial managers and accountants revealed that firms implementing ABC achieved significant cost savings compared to those not using the system. This finding is highly relevant to the present research, as cost reduction via ABC plays a critical role in increasing profitability in Iraq's manufacturing sector. The study further showed that ABC users managed their expenses more efficiently, providing additional evidence that integrating ABC with financial reporting can facilitate superior resource allocation.

Mekhlafi and Eddin Othman (2023) introduced the concept of Green Activity-Based Costing (GABC) to examine sustainability and financial transparency in Iraqi manufacturing. Applied to the Basra oil refinery, this empirical study demonstrated that GABC enables companies to link costs to environmentally sustainable activities, leading to long-term cost savings, greater efficiency, and improved sustainability reporting. This research broadens the ABC discourse by showing how modern cost management techniques not only enhance financial performance but also align with corporate social responsibility goals.

Kashanipour *et al.* (2024) studied performance-based budgeting and accrual accounting in Iraqi public agencies, highlighting widespread financial transparency issues due to outdated or unused modern accounting systems. Using qualitative methods including open-ended questionnaires and the Delphi technique, the study developed a framework for results-oriented budgeting and financial reporting. While focused on the public sector, its findings are applicable to the private manufacturing sector, which similarly suffers from non-standard financial reporting. The research suggests that adopting structured accounting techniques like ABC can improve cost tracking, financial accountability, and openness, thereby attracting investment and ensuring accurate cost reporting.

A study by Musa and Ibrahim (2023) on Saudi manufacturing firms highlighted ABC's effectiveness in cost control and profitability enhancement. Surveying 154 financial professionals, the research concluded that firms using ABC better controlled financial and administrative costs, driving wider profitability gains. This regional context is relevant to the present study, given the similarities between the Saudi and Iraqi manufacturing environments. It also underscores ABC's potential to increase net margins through improved cost management.

Ling and Zhang (2010) investigated ABC's role in controlling logistics costs in Chinese manufacturing firms via a case study.

Their research demonstrated that an accurately applied ABC system, focused on logistics-related resource consumption, positively influenced logistics cost management and resource allocation, resulting in improved profitability. While logistics was the focus, the study's implications extend to broader manufacturing sectors, including Iraq's, where efficient resource use is critical. Accurate costing addresses inefficiencies and generates cost savings and transparency—two primary benefits of ABC.

Chen and Gong (2019) provided a broader perspective on financial reporting quality, examining accounting comparability and the pricing of accruals across industries. Their findings indicate that high financial reporting quality reduces information asymmetry, boosts investor confidence, and enhances investment decision-making. This aligns with the current study's emphasis on FRQ's role in fostering investment, particularly in Iraq's manufacturing sector, where investor confidence remains low due to weak financial reporting. Combining ABC with FRQ offers significant potential to improve transparency and attract investment.

Alshehhi *et al.* (2018) highlighted the importance of transparency and economic sustainability in financial reporting by exploring the relationship between sustainability performance and financial outcomes. Their review found that firms integrating sustainability into financial reports often experienced improved financial results driven by higher stakeholder confidence and stronger brand equity. Although focused on sustainability, this aligns with the current research by demonstrating how enhanced financial reporting, whether through sustainability metrics or ABC can improve corporate performance and investment potential. This illustrates the broad impact of sophisticated cost management systems like ABC within Iraq's manufacturing sector. Collective, these studies support the view that integrating ABC with FRQ can effectively enhance profitability, transparency, and operational efficiency in manufacturing industries. The adoption of ABC

with modern financial reporting practices will address many of the challenges faced by Iraq's manufacturing industry. This body of research provides the foundation for the present study, which focuses on improving profitability and disclosure through the integration of ABC and FRQ in Iraq's corporate finance sector.

Methodology

The study employs a quantitative research approach to investigate the implementation of ABC and its effect on FRQ in enhancing profitability and transparency within the Iraqi manufacturing sector. A cross-sectional survey design was used to collect quantitative data from manufacturing companies in Iraq. To ensure a representative sample of Iraq's industrial sector, a stratified random sampling approach was used. Although the target population comprised 268 manufacturing firms, not all participated (Sekaran & Bougie, 2016). Firms were categorised according to their industry, location, and size (small, medium, and large).

The unit of analysis consisted of individuals within these organisations, who possess relevant experience in financial reporting and are actively involved in ABC implementation. Specifically, participants were financial managers, accountants, and cost analysts, given their direct oversight of cost allocation and financial reporting. Each firm designated at least one qualified respondent, ensuring that the data reflected professional knowledge of ABC and FRQ.

Data were collected using a structured, closed-ended questionnaire developed around the study's key constructs: Activity-Based Costing, financial reporting quality, profitability, and transparency. Responses were measured on a five-point Likert scale ranging from one (Strongly Disagree) to five (Strongly Agree).

Measurement scales were adapted from validated instruments in prior research. ABC implementation was assessed using eight items based on Innes and Mitchell (1995), focusing on cost allocation accuracy, identification of

cost drivers, and decision-making. Financial reporting quality was measured using scales adapted from Opanyi (2016), which consider credibility, relevance, equivalence, and understandability. Profitability and transparency were evaluated through eight items adapted from Innes and Mitchell (1995), assessing disclosure of financial performance and information.

Data analysis employed partially called at least class structural equation modeling (PLS-SEM) to test the research hypotheses. PLS-SEM is suitable for exploratory research involving complex models with multiple constructs and indicators (Hair *et al.*, 2017). The analysis was conducted using SmartPLS software, enabling comprehensive assessment of both measurement and structural models.

Results and Discussion

Table 1 presents descriptive statistics for the main variables: ABC, profitability (PT), and FRQ. The high mean scores for ABC ($M = 4.342$), PT ($M = 4.170$), and FRQ ($M = 3.919$) suggest a general consensus among respondents regarding their perceived ability to implement ABC systems and their positive impact on PT and FRQ in the Iraqi manufacturing industry.

The low standard deviations for ABC ($SD = 0.583$), PT ($SD = 0.651$), and FRQ ($SD = 0.674$) indicate minimal variation in responses reflecting a shared understanding of the benefits associated with ABC implementation. Negative skewness values for ABC (-0.754), PT (-0.796), and FRQ (-1.671) show that most respondents provided ratings above the average, highlighting generally favourable opinions on ABC's effects on earnings and financial reporting quality. Notably, the higher kurtosis value for FRQ (1.175) suggests a leptokurtic distribution, indicating that responses are more heavily concentrated around the mean. This reflects the widespread recognition of financial reporting quality as a critical determinant of transparency, with little controversy over its importance (Dechow *et al.*, 2010; Field, 2013; Kaplan & Atkinson, 2015).

Table 1: Descriptive statistics

	N	Mean	Std. Deviation	Skewness	Kurtosis
ABC	268	4.342	0.583	-0.754	-0.086
PT	268	4.170	0.651	-0.796	0.187
FRQ	268	3.919	0.674	-1.671	1.175

Figure 1 illustrates the relationship among ABC, FRQ and PT in the Iraqi manufacturing industry. The factor loadings for the ABC construct range from 0.696 and 0.834, all exceeding the recommended threshold of 0.70, suggesting strong indicator reliability (Hair *et al.*, 2010). This provides confirmation that the items validly measure ABC effectiveness in improving cost accuracy within manufacturing processes.

Table 2 presents the loadings for FRQ, which range from 0.663 to 0.761, with FRQ6 showing the highest loading (0.761). These results suggest that the measurements of financial reporting quality are reliable. Transparency is crucial for enhancing PT (Bushman & Smith, 2001) and audited financial statements form the cornerstone of such transparency.

Factor loadings for the PT construct range from 0.654 (PT1) to 0.899 (PT6), all exceeding or close to the 0.70 benchmark, demonstrating a strong association between the variables measuring profitability and the PT construct.

The model reveals strong direct paths from ABC to FRQ (0.848) and ABC to PT (0.905), indicating significant positive relationships between ABC implementation, FRQ, and PT (Kaplan & Cooper, 1998; Ittner *et al.*, 2002). Furthermore, the indirect effect of ABC on PT via FRQ (path coefficient = +0.927) highlights the critical role of high-quality financial reporting in driving better decision-making and enhanced profitability (Bushman & Smith, 2001).

To assess the constructs of ABC, FRQ, and PT, measurement model evaluations are presented in Table 2. All factor loadings of the reflective constructs exceed the recommended threshold of 0.70, indicating strong indicator reliability (Hair *et al.*, 2010). Specifically, loadings for ABC range from 0.696 to 0.834; for FRQ, they range from 0.663 to 0.761; and for PT, they vary between 0.654 and 0.899. Collectively, these results confirm the structural validity of the constructs and their dimensions.

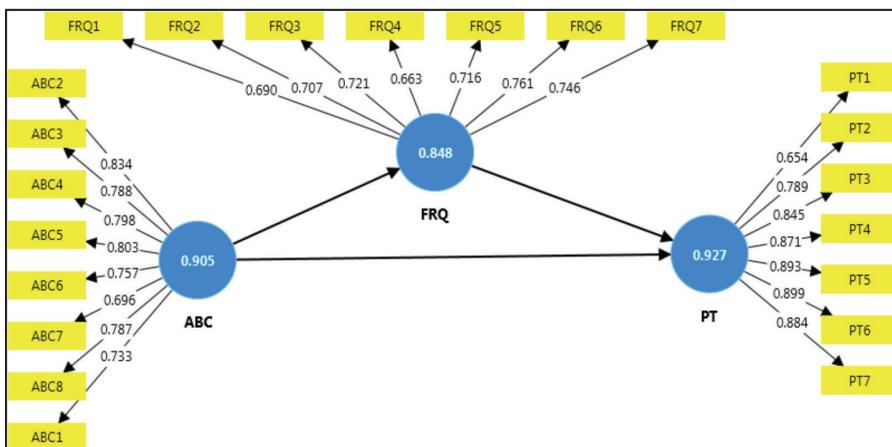


Figure 1: Model measurements illustration

The internal consistency of the three latent constructs, measured by Cronbach’s Alpha, is high: ABC (0.905), FRQ (0.848), and PT (0.927), all exceeding the acceptable threshold of 0.70 set by Nunnally and Bernstein (1994). These values demonstrate strong reliability, indicating that the adapted survey items comprehensively and consistently measure each construct. Similarly, composite reliability (CR) scores for ABC (0.923), FRQ (0.880), and PT (0.942) exceed 0.70, further supporting construct reliability (Cohen, 1988).

The Average Variance Extracted (AVE) values, where ABC = 0.601, FRQ = 0.512, and PT = 0.701, surpass the recommended minimum of 0.50, confirming convergent validity (Fornell & Larcker, 1981). This indicates that each

construct accounts for at least 50% of the variance in its indicators, reflecting that the items adequately represent their underlying constructs.

These findings are consistent with Al-Mekhlafi and Eddin Othman (2023) on ABC’s role in enhancing cost efficiency and Kashanipour et al. (2024) regarding the impact of financial transparency on investment. However, Iraq’s unique economic challenges such as financial instability and weak governance, complicate ABC adoption, highlighting the importance of effective regulatory enforcement for successful implementation.

Figure 2 schematically illustrates the structural model, demonstrating links between ABC, FRQ, and PT. The link between ABC

Table 2: Model measurements

Items	Loading	Cronbach’s Alpha	Composite Reliability	Average Variance Extracted (AVE)
ABC1	0.733			
ABC2	0.834			
ABC3	0.788			
ABC4	0.798	0.905	0.923	0.601
ABC5	0.803			
ABC6	0.757			
ABC7	0.696			
ABC8	0.787			
FRQ1	0.690			
FRQ2	0.707			
FRQ3	0.721			
FRQ4	0.663	0.848	0.880	0.512
FRQ5	0.716			
FRQ6	0.761			
FRQ7	0.746			
PT1	0.654			
PT2	0.789			
PT3	0.845			
PT4	0.871	0.927	0.942	0.701
PT5	0.893			
PT6	0.899			
PT7	0.884			

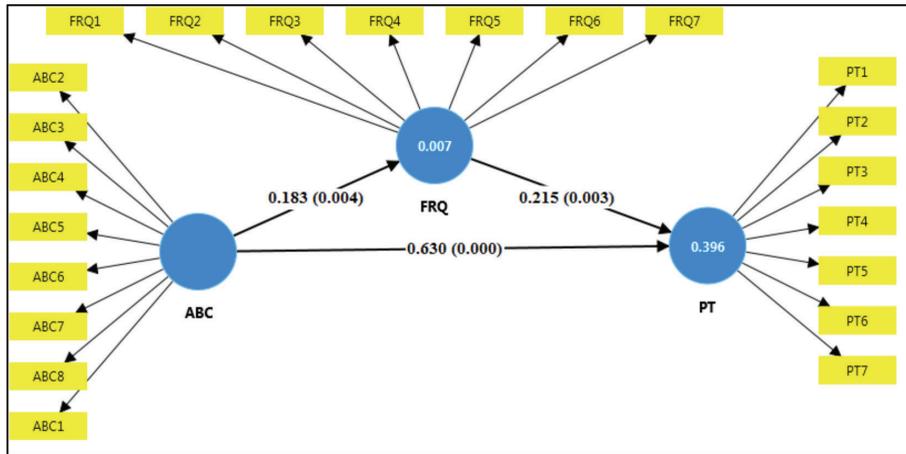


Figure 2: Structural model

and FRQ is positive and statistically significant ($\beta = 0.183, p = 0.004$), indicating that the implementation of ABC provides managers with more accurate cost information, which in turn enhances financial reporting quality.

Similarly, ABC shows a strong positive relationship with PT ($\beta = 0.630, p < 0.001$), suggesting that more effective cost management through ABC is associated with improved financial performance. The path from FRQ to PT ($\beta = 0.215, p < 0.01$) also demonstrates that high-quality financial reporting positively influences PT.

However, the stronger direct effect of ABC on PT indicates that while FRQ partially mediates this relationship, ABC exerts a more substantial direct impact on financial outcomes. The model explains 39.6% of the variance in PT, confirming that ABC is a significant determinant of financial success, with FRQ playing a complementary role.

These findings align with previous research emphasising the importance of advanced costing systems and transparent financial reporting for enhanced profitability (Kaplan & Cooper, 1998; Bushman & Smith, 2001).

Table 3 presents the path analysis results examining the relationships among ABC, FRQ, and PT in the Iraqi manufacturing industry.

The direct effect of ABC on FRQ is positive and significant ($\beta = 0.183, t = 2.815, p = 0.004$), indicating that the adoption of ABC systems improves the accuracy and reliability of cost information (Ittner *et al.*, 2002). Additionally, the direct effect of ABC on PT is highly significant ($\beta = 0.630, t = 13.696, p < 0.001$), suggesting that ABC implementation substantially enhances PT by enabling better cost management and strategic decision-making (Kaplan & Cooper, 1998; Al-Omiri & Drury, 2007).

The direct effect of FRQ on PT is also positive and significant ($\beta = 0.215, t = 3.116, p < 0.05$), implying that higher FRQ improves stakeholder confidence, leading to better investment decisions (Bushman & Smith, 2001).

The path coefficient of 0.63 between ABC and PT denotes a strong positive relationship, meaning firms adopting ABC experience approximately a 63% improvement in cost efficiency and financial performance. This improvement translates into lower operational costs, enhanced pricing accuracy, and increased investor confidence, which collectively support sustained profitability growth.

The indirect effect of ABC on PT through FRQ ($\beta = 0.100, t = 12.500, p = 0.001$) indicates that FRQ partially mediates the relationship between ABC and PT, emphasising the role of financial reporting quality as a channel through,

which ABC’s benefits impact PT (Chenhall & Langfield-Smith, 1998).

The model explains 47% of the variance in FRQ and approximately 40% of the variance in PT, demonstrating good model fit (Hair *et al.*, 2010), with adjusted R-squared values close to the original R-squared values. Effect sizes (f^2) confirm the importance of these relationships, with a large effect size of ABC on PT ($f^2 = 0.653$) and medium effect sizes for ABC on FRQ ($f^2 = 0.117$) and FRQ on PT ($f^2 = 0.235$), indicating substantial and sufficient effects within the model (Cohen, 1988).

The research highlights a significant positive correlation between ABC, FRQ, and PT in the Iraqi manufacturing industry in Iraq. High average scores and low standard deviations suggest a consensus among respondents on the benefits of ABC in enhancing profitability and transparency through improved financial reporting via PT and FRQ. These findings correspond with previous studies that emphasise the importance of ABC in providing accurate cost information, thereby improving decision-making and financial performance (Al-Dhubaibi 2021; Charaf *et al.*, 2022).

The significant direct effect of ABC on PT confirms that advanced costing systems can enhance organisational effectiveness. For example, Vetchagool *et al.* (2020) demonstrated

that ABC implementation significantly impacts performance measurement in Thai organisations. This study aligns with such findings by showing profit improvement through accurate cost allocation, pricing, budgeting, and resource control. Furthermore, the positive association between ABC and FRQ indicates that firms implementing ABC systems provide more timely and reliable financial information, supporting Myca and Iparim’s (2023) assertion that ABC enhances financial transparency and reduces reporting errors, thereby improving competitive advantage.

The mediating role of financial reporting quality between ABC and PT suggests that while ABC directly increases PT, its effect is amplified through improvements in FRQ. Enhanced FRQ fosters greater transparency and stakeholder confidence, enabling more informed investment decisions and optimal resource allocation (Bushman & Smith, 2001; Ellili, 2022). This mediation effect corroborates Chen and Gong’s (2019) findings that high-quality financial reporting increases accrual pricing and reduces information asymmetry. Additionally, Pavlopoulos *et al.* (2019) demonstrated that sophisticated costing systems such as ABC improve financial information quality, which supports more effective stakeholder decision-making. Collectively, these results provide evidence that high-quality financial reporting

Table 3: Path analysis

	Beta	SD	T	P Values
ABC -> FRQ	0.183	0.065	2.815	0.004
ABC -> PT	0.630	0.046	13.696	0.000
FRQ -> PT	0.215	0.069	3.116	0.003
ABC -> FRQ -> PT	0.100	0.008	12.500	0.001
	FRQ	PT		
R-square	0.470	0.396		
R-square adjusted	0.433	0.391		
	f-square			
ABC -> FRQ	0.117			
ABC -> PT	0.653			
FRQ -> PT	0.235			

amplifies the benefits of ABC adoption, reinforcing calls for integrated, ecosystem-based reporting frameworks (Vitolla *et al.*, 2020).

While some cost-efficient alternatives like time-driven ABC have been proposed (Zamrud & Abu, 2020), this study finds that traditional ABC remains highly effective in improving profitability and financial reporting quality in Iraq's manufacturing sector, as supported by robust empirical evidence.

Firms with more advanced financial structures exhibit stronger path coefficients, implying that organisations with sophisticated cost management systems derive greater benefits from ABC integration. Conversely, enterprises with less developed accounting infrastructures may face challenges in efficient ABC adoption, highlighting the need for targeted training and system adaptation.

These findings carry important implications for manufacturing firms in emerging markets. Implementing ABC can significantly improve cost control, financial reporting, strategic decision-making, stakeholder relationships, and profitability. This is especially crucial in Iraq, where adherence to financial reporting standards is likely to attract foreign investment essential for economic development (Musa, 2019).

A notable insight from this study is the potential for emerging technologies such as artificial intelligence and automation to enhance the benefits of ABC and financial reporting quality. Given advancements in data analytics and real-time reporting in the Industry 4.0 context, integrating ABC systems can provide more accurate cost structures and financial transparency, supporting agile decision-making and competitive advantage in dynamic markets. Adoption of such technologies may not only increase profitability but also position Iraqi manufacturing firms as global innovation leaders, attracting international partnerships and investments.

The low standard deviations observed indicate strong consensus, likely reflecting recognition of ABC's advantages in improving

cost accuracy and financial transparency. This aligns with findings by Ali *et al.* (2023) on ABC's cost efficiency and Kashanipour *et al.* (2024) on the role of structured accounting in enhancing transparency. This consensus may stem from increasing financial scrutiny, cost pressures, and investment requirements in the sector. Strengthening comparisons with these studies will further contextualise the findings.

From a practical perspective, managers can leverage ABC insights to make data-driven investment decisions, eliminate inefficiencies, and align cost management with long-term profitability goals. The results also provide guidance for financial executives on utilising ABC to comply with international accounting standards and attract foreign investments.

Conclusions

This study demonstrates that integrating Activity-Based Costing (ABC) and Financial Reporting Quality (FRQ) significantly improves profitability and enhances transparency in the Iraqi manufacturing sector. The results indicate that ABC implementation leads to more accurate cost allocations, facilitating better strategic decision-making and resource utilisation. Furthermore, FRQ plays a mediating role between ABC and profitability, boosting transparency and stakeholder confidence. Consequently, the combined effect of ABC and improved financial reporting produces stronger economic returns and fosters a competitive advantage in the industry.

Several limitations of this study should be noted. The cross-sectional design collected data at a single point in time, which may not capture temporal changes and restricts the ability to establish clear cause-effect relationships between ABC implementation, FRQ, and profitability. Additionally, focusing solely on the Iraqi manufacturing sector limits the generalisability of the findings to other industries or geographic regions, where cultural, economic, and regulatory differences may affect outcomes.

Future research should consider longitudinal studies to explore the long-term effects of ABC on profitability and financial reporting quality. Expanding the scope to include other sectors and countries would enhance the external validity of the results. Moreover, emerging technologies such as real-time data analytics and automation may further improve ABC effectiveness and warrant investigation. Examining additional mediating factors such as organisational culture and management support could provide a more comprehensive understanding of the conditions for successful ABC adoption and its impact on organisational performance. Comparative studies across Middle Eastern economies or sectors like oil and healthcare could also reveal sector-specific challenges and insights.

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Conflict of Interest Statement

The authors declare that they have no conflict of interest.

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