

The Impact of Digital Transformation on Non-Financial Performance: A Management Accounting Perspective

Hanadi Alshamlan

hmalshamlan@imamu.edu.sa

Imam Muhammad Ibn Saud Islamic University (IMSIU)

Research Article

Keywords: digital transformation, management accounting, accounting information quality, cost reduction, decision-making effectiveness, Saudi Arabia

Posted Date: October 1st, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-10974589/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Additional Declarations: No competing interests reported.

Abstract

This study examines the impact of digital transformation (DT) on three non-financial management accounting outcomes: accounting information quality, cost reduction, and decision-making effectiveness in Saudi Arabian companies. Drawing on Organizational Information Processing Theory, the study investigates whether digital transformation enhances management accounting performance by strengthening organizations' ability to process and use information effectively. Data were collected from 150 accounting professionals through a structured survey and analyzed using multiple linear regression after confirming the reliability of the measurement scales, with Cronbach's alpha values ranging from 0.81 to 0.90. The findings indicate that digital transformation has a significant positive effect on accounting information quality, cost reduction, and decision-making effectiveness, with the strongest impact observed for decision-making effectiveness. These relationships remained significant after controlling for company size. The study contributes to the digital transformation and management accounting literature by providing integrated empirical evidence from Saudi Arabia and offers practical implications for organizations seeking to improve management accounting performance and support the objectives of Saudi Vision 2030.

1. Introduction

Over the past decade, Digital Transformation (DT) has fundamentally reshaped the way organizations create, process, and exploit information, becoming a strategic driver of organizational competitiveness rather than merely a technological initiative (Fernandez-Vidal et al., 2022). Within management accounting, DT extends well beyond the automation of traditional accounting routines or the implementation of Enterprise Resource Planning (ERP) systems. Instead, it encompasses the integration of advanced digital technologies—including artificial intelligence (AI), Robotic Process Automation (RPA), big data analytics, blockchain, and cloud computing—that transform how accounting information is generated, analysed, and communicated. As these technologies become embedded within organizational processes, the role of management accountants is evolving from recording and reporting historical information toward interpreting real-time data, supporting strategic decisions, and creating organizational value (Möller et al., 2020).

The growing strategic importance of DT has stimulated considerable academic interest. Previous studies consistently demonstrate that digital technologies improve operational efficiency, enhance customer service, reduce operating costs, and foster organizational innovation (Jackson & Allen, 2024), and DT has similarly been associated with improvements in the quality of financial reporting (Alshamlan & Zverovich, 2018; Kerrouche & Belouadah, 2025; Dahal et al., 2024). However, these benefits are not achieved automatically: organizations frequently encounter shortages of digital capabilities, employee resistance, regulatory uncertainty, and cybersecurity risks that may constrain the value derived from digital initiatives (Jackson & Allen, 2024; Hamdy et al., 2025). Consequently, the effectiveness of DT should be evaluated not only in terms of technology adoption but also through its ability to improve organizational capabilities and managerial outcomes.

Despite the rapid expansion of DT research, existing knowledge remains fragmented. Much of the literature concentrates on conceptualizing DT (Vial, 2019; Konopik et al., 2022) or documenting its implementation in developed economies such as Portugal (Gonçalves et al., 2022), the Nordic countries (Andreassen, 2020), and China (Chen et al., 2024), predominantly examining organizational or technological change rather than its implications for management accounting. This limitation is particularly evident within the Saudi Arabian context, where existing studies examine DT in relation to financial reporting quality, information system quality, or organizational support (Kerrouche & Belouadah, 2025; Hamdy et al., 2025; AlNasrallah & Saleem, 2022) but treat these outcomes independently, overlooking the mechanisms through which DT enhances non-financial dimensions of management accounting performance.

From a management accounting perspective, three interrelated outcomes are particularly important: Accounting Information Quality (AIQ), Cost Reduction (CR), and Decision-Making Effectiveness (DME). Together, these constructs capture complementary dimensions of management accounting performance. High-quality accounting information provides managers with timely, reliable, and relevant information for planning and control; CR reflects operational improvements achieved through more efficient processes and resource utilization; and effective decision-making represents the strategic value created when managers are able to transform digital information into better business decisions. Although each of these outcomes has received attention individually within different streams of research, little empirical evidence has examined how DT simultaneously influences these dimensions within a unified management accounting framework.

Saudi Arabia has, in recent years, emerged as one of the leading DT environments among emerging economies through the implementation of Vision 2030, which positions digitalization as a central mechanism for economic diversification, productivity, and public-sector efficiency (Saudi Vision, 2016; Digital Government Authority, 2023). Substantial government investment in digital infrastructure and regulatory reform (Ministry of Communications and Information Technology, 2023) has been accompanied by growing regulatory emphasis on corporate governance, transparency, and financial reporting quality, creating an institutional environment that encourages organizations of all sizes—including SMEs—to integrate digital technologies into their accounting activities (Capital Market Authority, 2021; Saudi Organization for Chartered and Professional Accountants, 2023). These national developments have important implications for management accounting: as organizations adopt enterprise-wide digital platforms, cloud-based ERP systems, AI, automation, and data analytics, management accounting is evolving from a function concerned primarily with recording and reporting financial information toward one that provides timely, high-quality information for planning and strategic decision-making (Möller et al., 2020; Vial, 2019). However, the pace of DT adoption remains uneven across organizations (Ratmono et al., 2023; Wanderley & Horton, 2024), and empirical evidence linking DT to management accounting outcomes in the Saudi context remains limited.

Accordingly, this study investigates the influence of DT on AIQ, CR, and DME from the perspective of management accounting in Saudi Arabia. By integrating these three non-financial performance

outcomes into a single empirical model, the study responds to calls for a more comprehensive understanding of how digital technologies generate value beyond traditional measures of organizational performance, shifting the focus of DT research from technology adoption itself toward the managerial capabilities that enable organizations to derive strategic benefits from digital investments. This study contributes theoretically by integrating AIQ, CR, and DME into a single outcome framework grounded in Möller et al. (2020), Vial (2019), and Ratmono et al. (2023); empirically, by providing new primary survey evidence from Saudi Arabia, an emerging Gulf economy underrepresented in this literature relative to Portugal, the Nordic region, and China; methodologically, by applying a validated multi-item instrument together with a transparent, replicable analytical workflow; and practically, by informing technology-investment decisions for managers and policymakers supporting Saudi Arabia's Vision 2030 digital agenda, particularly regarding SMEs. Specifically, this study aims to examine the effect of digital transformation on three non-financial management accounting outcomes—accounting information quality, cost reduction, and decision-making effectiveness—among accounting professionals in Saudi Arabian organizations.

2. Theoretical Framework

2.1. Digital Transformation

Digital Transformation (DT) is reshaping the business environment worldwide, compelling organizations to integrate digital technologies into their strategies and operations to remain competitive in increasingly dynamic markets (Fernandez-Vidal et al., 2022). Rather than the adoption of isolated technologies, DT is widely recognized as a strategic and continuous process that drives organizational and operational change, extending beyond technological implementation to encompass the development of capabilities that enhance performance and support long-term value creation (Fernandez-Vidal et al., 2022).

DT is driven by digital disruptions that have altered customer behaviour, competitive dynamics, and data availability, requiring organizations to rethink their business models and structures (Vial, 2019). It should therefore be viewed as an ongoing organizational journey rather than a one-off project: while DT offers substantial benefits—improved operational efficiency, stronger customer engagement, and more effective decision-making—it also presents challenges including organizational resistance, technological complexity, and ethical concerns (Vial, 2019). Reflecting this broader perspective, Plekhanov et al. (2023) conceptualize DT as operating across core activities, peripheral activities, and the external environment, demonstrating that it extends beyond internal implementation to interactions across organizational and external networks. Building on this, Konopik et al. (2022) argue that organizational capabilities are fundamental to successful DT, enabling firms to identify and exploit digital opportunities, while Fernandez-Vidal et al. (2022) show that DT has redefined the role of IT and Digital Leaders from technical support toward strategic leadership.

Although these studies have advanced understanding of the organizational capabilities required for DT, considerably less attention has been devoted to whether DT produces measurable improvements in

organizational outcomes—particularly non-financial outcomes within the Saudi Arabian context. This study addresses this gap by empirically examining the relationship between DT and key non-financial management accounting outcomes. Evidence from other settings supports the view that DT's organizational benefits are non-financial as well as financial: Atobishi et al. (2024) found that digital capabilities in the public sector translate into gains across efficiency, quality, and satisfaction outcomes largely through organizational agility, while Edelman et al. (2023) showed that realizing these benefits depends on organizations first developing the digital competences needed to support transformation. Similarly, Valdez-Juárez et al. (2023) demonstrated that digitalization enhances innovation management and corporate performance among SMEs in an emerging economy, and Espina-Romero et al. (2025) found that digital competencies and organizational culture jointly drive successful DT among SMEs, reinforcing that organizational readiness—not technology adoption alone—determines whether DT translates into measurable performance gains.

The implications of DT are particularly evident in management accounting, where organizational performance depends heavily on the quality, timeliness, and strategic use of information. The integration of advanced digital technologies is fundamentally changing how management accounting information is generated, analysed, and communicated, enabling management accountants to play a more strategic role in organizational planning and decision-making. The following section therefore examines the evolving role of management accounting in the digital era.

2.2. Digitalization in Management Accounting

Digital transformation (DT) has fundamentally reshaped the role of management accounting, shifting it from a function primarily concerned with bookkeeping and financial reporting toward one that supports strategic analysis and managerial decision-making. This has been enabled by AI, advanced data analytics, automation, and digital accounting systems, which improve the quality, accessibility, and timeliness of accounting information (Dahal et al., 2024; Datamatics CPA, 2023; Möller et al., 2020). Consequently, management accounting is increasingly viewed as a strategic capability that creates value by transforming digital information into actionable managerial insights.

Recent studies consistently suggest that digital technologies enhance management accounting, although they differ in how these benefits are conceptualized. Dahal et al. (2024) found that Contemporary Management Accounting Practices, applied strategically, improve cost efficiency and organizational performance, while Ratmono et al. (2023) demonstrated that adopting a Digital Management Accounting System improves information quality, reduces costs, and enhances managerial decision-making among SMEs. Realizing these benefits, however, depends not only on technological investment but also on the availability of digital skills among accounting professionals (Gonçalves et al., 2022; Jesus, 2024)—a complementarity that existing studies acknowledge but rarely link to measurable outcomes such as AIQ, CR, and DME.

Evidence from Saudi Arabia suggests that these outcomes are neither uniform nor automatic. Kerrouche and Belouadah (2025) reported that DT positively influences relevance and understandability of financial

reports but not faithful representation or comparability, while Hamdy et al. (2025) found that DT initially harmed the quality of governmental accounting information systems, attributing this to the complexity of newly adopted systems. AlNasrallah and Saleem (2022) further argued that organizational support—managerial commitment, resource allocation, and a supportive environment—is essential for successful implementation. Together, these studies suggest that the benefits of DT depend on organizational readiness and system maturity rather than adoption alone, yet each examines financial reporting quality, information systems, or organizational support in isolation.

The growing integration of digital technologies has also transformed the professional role of management accountants toward strategic advisory functions (Wanderley & Horton, 2024; Van Slooten et al., 2024; Andreassen, 2020; Chen et al., 2024), even as automation creates role ambiguity for accountants whose work has historically centered on monitoring and control (Pargmann et al., 2023). From a performance perspective, electronic accounting systems outperform manual systems by accelerating procedures and reducing errors (Shehzadi & Hussain, 2025), and digital technologies strengthen information sharing and reporting reliability, although implementation costs, training, and data security remain barriers (Jackson & Allen, 2024).

Decision-making represents one of DT's most important management accounting outcomes: improvements in accounting information enhance governance efficiency and decision-making (Ismail et al., 2024), and DT enables more accurate, timely, and transparent information that strengthens managerial analysis (Le Thi Tu Oanh et al., 2025). These studies, however, give little attention to how CR interacts with information quality and decision-making within an integrated framework.

Overall, the literature demonstrates that DT transforms management accounting by enhancing information processing and decision-making, but existing studies remain fragmented—typically examining AIQ, CR, or DME independently, and focusing predominantly on developed economies. Addressing this gap, by simultaneously examining all three outcomes within an emerging economy such as Saudi Arabia, is the primary objective of the present study.

2.3. Theoretical Framework and Hypotheses Development

Organizational Information Processing Theory (OIPT) provides the theoretical foundation for this study. The theory argues that organizations improve their effectiveness by increasing their information-processing capacity to cope with uncertainty and support managerial decision-making (Galbraith, 1973, 1974; Daft & Lengel, 1986). From this perspective, DT enhances organizations' ability to collect, process, integrate, and communicate information through advanced digital technologies, thereby improving the quality of accounting information, increasing operational efficiency, and supporting more effective managerial decision-making.

Consistent with this theoretical perspective, DT positively influences various non-financial performance dimensions. Dai and Fang (2024) examined the effect of DT on A-share listed manufacturing firms across five dimensions—corporate market competitiveness, organizational resilience, working capital

management performance, innovation performance, and Environmental, Social, and Governance (ESG) performance—and found that DT improves these non-financial outcomes by strengthening the quality of internal controls.

Although Dai and Fang (2024) demonstrated that DT enhances non-financial organizational performance, their study did not examine AIQ, CR, and DME, which represent key management accounting outcomes. Likewise, previous studies have shown that DT improves management accounting through more efficient accounting processes (Le Thi Tu Oanh et al., 2025), enhanced information quality (Kerrouche & Belouadah, 2025), and better managerial decision-making (Ismail et al., 2024). However, these outcomes have largely been examined independently, and empirical evidence investigating their simultaneous relationship with DT remains limited, particularly within the Saudi Arabian context. Guided by OIPT, which suggests that greater information-processing capability leads to improved organizational outcomes, this study develops three hypotheses examining the influence of DT on AIQ, CR, and DME.

2.3.1. Influence of Digital Transformation on Accounting Information Quality

Investment in IT infrastructure and diverse data sources enhances the quality of information systems, which in turn improves management accounting data and practice (Knauer et al., 2020). From an information-processing perspective, DT enables organizations to generate accounting information that is more timely, accurate, and accessible, reducing information asymmetry and supporting more effective managerial decisions. Consistent with this view, Ratmono et al. (2023) found that digital technologies improve the accuracy and timeliness of accounting information in a developing economy; automation similarly accelerates routine activities and improves reporting quality (Shehzadi & Hussain, 2025); and Kerrouche and Belouadah (2025) demonstrated that DT enhances financial reporting quality through improvements in AIQ. Accordingly, organizations with more advanced DT are expected to achieve higher levels of AIQ.

H1

Digitalization in the management accounting system has a positive effect on Accounting Information Quality (AIQ).

2.3.2. Influence of Digital Transformation on Cost Reduction

Digital Transformation (DT) enables organizations to improve cost efficiency by enhancing management accounting systems and streamlining processes. By generating accurate, timely, and detailed cost information, digitalized systems support more effective budgeting, cost control, and resource allocation (Kusumawardhani et al., 2024). The literature identifies several complementary mechanisms:

digitalization reduces the storage costs of accounting records (Le Thi Tu Oanh et al., 2025), improves operational efficiency while minimizing processing errors (Gonçalves et al., 2022), and decreases labour costs by automating repetitive tasks (Chen et al., 2024). Accordingly, organizations with more advanced DT are expected to achieve greater CR.

H2

Digitalization in the management accounting system positively affects Cost Reduction (CR).

2.3.3. Influence of Digital Transformation on Decision-Making Effectiveness

Management accounting information systems play a critical role in supporting managerial decision-making by providing timely, accurate, and relevant information for planning, control, and strategic resource allocation. As organizations undergo DT, the integration of accounting information systems with emerging digital technologies enhances their ability to collect, process, and communicate information, thereby strengthening strategic flexibility and overall organizational performance (Yoshikuni et al., 2023).

The literature consistently suggests that DT improves decision-making by increasing the quality and accessibility of accounting information. The integration of advanced digital technologies enables organizations to generate more timely, accurate, and high-quality accounting information, providing managers with a stronger basis for evaluating alternatives and responding to changing business conditions (Le Thi Tu Oanh et al., 2025). Furthermore, Ratmono et al. (2023) demonstrated that improvements in information quality and cost efficiency resulting from DT contribute directly to faster and more effective managerial decision-making. Collectively, these findings indicate that DT enhances organizational information-processing capability, enabling managers to make more informed, efficient, and effective decisions. Accordingly, organizations with more advanced DT are expected to achieve higher levels of DME.

H3

Digitalization in the management accounting system has a positive effect on Decision-Making Effectiveness (DME).

3. Materials and Methods

3.1. Research Approach

This study adopts a quantitative research approach using a structured survey to examine the impact of DT on management accounting practices in Saudi Arabian companies. A quantitative approach is appropriate because it enables the empirical examination of the relationships between DT and the

study's non-financial performance outcomes—AIQ, CR, and DME. By collecting standardized data from management accounting professionals, the study provides statistical evidence on how DT influences management accounting practices within the Saudi Arabian context.

3.2. Research Model and Measuring Variables

The research model is presented in Fig. 1. From a management accounting perspective, DT is specified as the independent variable, while AIQ, CR, and DME are specified as the dependent variables. Company size is included as a control variable to account for potential differences in organizational characteristics that may influence the proposed relationships. All constructs are operationalized using multi-item Likert-scale measures adapted from the existing literature, as summarized in Table 1.

Consistent with the proposed research model, three separate multiple linear regression models were estimated, one for each dependent variable. DT was specified as the independent variable, while company size (SIZE) was included as a control variable:

$$AIQ_i = \beta_0 + \beta_1 DT_i + \beta_2 SIZE_i + \epsilon_i \quad (1)$$

$$CR_i = \beta_0 + \beta_1 DT_i + \beta_2 SIZE_i + \epsilon_i \quad (2)$$

$$DME_i = \beta_0 + \beta_1 DT_i + \beta_2 SIZE_i + \epsilon_i \quad (3)$$

where AIQ, CR, and DME denote the dependent variables; DT is the independent variable; SIZE is the control variable; β_0 is the intercept; β_1 estimates the effect of DT on each dependent variable and is used to test H1, H2, and H3; β_2 represents the coefficient of the control variable; and ϵ is the random error term. Because the data are cross-sectional, each observation represents a single respondent, and no time subscript is included in the regression equations.

Table 1
Measurement of variables.

Variable	Symbol	Definition	Measurement	Scale	Source
Digital Transformation	DT	Digital transformation adoption status	7 Likert items	5-point Likert	Adapted from Ratmono et al. (2023)
Accounting Information Quality	AIQ	Effect of digital tools on characteristics of financial information	7 Likert items	5-point Likert	Adapted from Ratmono et al. (2023)
Cost Reduction	CR	Effect of digital tools on cost reduction	5 Likert items	5-point Likert	Adapted from Ratmono et al. (2023)
Decision-Making Effectiveness	DME	Effect of digital tools on improving the managerial decision-making process	3 Likert items	5-point Likert	Adapted from Ratmono et al. (2023)
Company Size	SIZE	Organizational size category	SME (revenue SAR 3–200 million); Large (revenue > SAR 200 million) *	Categorical	Monsha'at criteria
<i>Note: * This research uses micro, small and medium-sized enterprises (SMEs) and large companies as the study context.</i>					

3.3. Research Sample

The study sample comprised accounting professionals employed in Saudi Arabian SMEs and large companies, classified according to the criteria established by the Small and Medium Enterprises General Authority (Monsha'at, 2023). Because the study examines the impact of DT on management accounting practices, respondents were required to possess relevant knowledge of management accounting and, where applicable, the digital technologies and accounting systems used within their organizations.

Consistent with Ratmono et al. (2023), a purposive sampling approach was adopted to identify respondents with the expertise necessary to provide informed evaluations of the study constructs. This approach was considered appropriate because the research focuses on participants with specialized professional knowledge. Previous survey-based studies conducted in the Saudi context have reported sample sizes ranging from 116 to 365 respondents; the final sample for this study comprised 150 valid responses, which falls within this range.

The survey questionnaire was distributed electronically to approximately 625 accounting professionals identified through professional networks. Following data screening, 150 fully completed and valid questionnaires were retained for analysis, representing a response rate of approximately 24%. This response rate is consistent with those typically reported for online surveys employing purposive sampling among accounting professionals in Saudi Arabia.

3.4. Data Collection

Data were collected using an online questionnaire administered through Google Forms. The survey was distributed via email and professional networking platforms (e.g., LinkedIn) to accounting professionals working in Saudi Arabian companies. Online administration was considered appropriate because it enabled efficient access to geographically dispersed respondents while ensuring a standardized data collection process. The questionnaire comprised closed-ended Likert-scale items to measure the study constructs. The measurement items were adapted from validated instruments reported in the existing literature and refined to reflect the Saudi business environment. Prior to the main data collection, the questionnaire was pilot-tested with three experts, comprising academics and accounting professionals, to assess the clarity, relevance, and appropriateness of the measurement items. The questionnaire was subsequently revised based on their feedback to improve its clarity and content validity.

3.5. Data Analysis Technique

Quantitative data were analyzed using SPSS. Composite scores for each construct (DT, AIQ, CR, and DME) were calculated as the mean of their respective Likert-scale items. Prior to hypothesis testing, the internal consistency of each multi-item construct was assessed using Cronbach's alpha. Given the cross-sectional nature of the data, the proposed relationships were examined using multiple linear regression (OLS). Before estimating the regression models, Pearson correlation coefficients and VIF values were used to assess the presence of multicollinearity among the independent variables. In addition, company size was included as a control variable to account for potential differences in organizational characteristics and to examine the robustness of the hypothesized relationships.

This study was conducted in accordance with recognized principles of research ethics for studies involving human participants. Participation in the survey was entirely voluntary, and respondents were informed of the purpose of the study before completing the questionnaire. No personally identifying information (e.g., name, national ID, or direct employer identifiers) was collected; responses were recorded and stored anonymously, and only aggregated, de-identified data are reported in this paper. Further details are provided in the Institutional Review Board Statement and Informed Consent Statement below.

4. Results

This section presents the descriptive and correlational results of the study, covering the sample profile, reliability of the measurement scales, descriptive statistics, and correlation/multicollinearity diagnostics. Regression results and hypothesis testing are reported in Section 4.5.

4.1. Sample Profile

The final sample consisted of 150 respondents. Table 2 summarizes the respondent and organizational characteristics.

Table 2
Sample profile.

Variable	Category	n	%
Position	Management Accountant	31	20.7%
	Cost Accountant	29	19.3%
	Financial Planning and Analysis Analyst	25	16.7%
	Budgeting / Forecasting Specialist	22	14.7%
	Performance Measurement / KPI Specialist	22	14.7%
	Financial Manager	21	14.0%
Organization Type	Services	59	39.3%
	Manufacturing	49	32.7%
	Government	26	17.3%
	Trade	16	10.7%
Company Size	SME	86	57.3%
	Large	53	35.3%
	Micro	11	7.3%
DT Experience	Partially integrated	61	40.7%
	Fully integrated	51	34.0%
	Never integrated	38	25.3%

Years of professional experience ranged from 1 to 16 years ($M = 7.97$, $SD = 3.91$).

4.2. Reliability Analysis

Internal consistency was assessed using Cronbach's alpha to evaluate the reliability of the four multi-item constructs. As presented in Table 3, all constructs demonstrated satisfactory internal consistency, with Cronbach's alpha values ranging from 0.814 to 0.902, exceeding the commonly accepted threshold of 0.70. Specifically, DT and AIQ exhibited excellent reliability, while CR and DME demonstrated good reliability. These results indicate that the measurement scales possess a high degree of internal consistency and are suitable for subsequent statistical analyses and hypothesis testing.

Table 3
Reliability analysis.

Construct	Items	Cronbach's Alpha	Interpretation
DT	7	0.902	Excellent
AIQ	7	0.900	Excellent
CR	5	0.814	Good
DME	3	0.823	Good

4.3. Descriptive Statistics

Table 4 presents the descriptive statistics for the composite construct scores, each measured on a five-point Likert scale. The mean scores range from 3.40 to 3.63, indicating that respondents generally reported moderate to relatively high levels of DT, AIQ, CR, and DME. AIQ recorded the highest mean (3.63), followed closely by DME (3.60), whereas CR exhibited the lowest mean (3.40). The standard deviations, ranging from 0.72 to 0.83, indicate a reasonable degree of variability in respondents' perceptions while remaining sufficiently concentrated around the mean. Furthermore, the observed minimum and maximum values demonstrate that responses span nearly the full range of the measurement scale, suggesting adequate variation in the data and supporting the suitability of the constructs for subsequent correlation and regression analyses.

Table 4
Descriptive statistics.

Construct	Mean	Std. Dev.	Minimum	Maximum
DT	3.45	0.83	1.14	5.00
AIQ	3.63	0.73	1.86	5.00
CR	3.40	0.72	1.60	5.00
DME	3.60	0.82	1.00	5.00

4.4. Correlation Analysis and Multicollinearity

Table 5 reports the Pearson correlation coefficients among the study constructs. All bivariate correlations are positive and statistically significant, providing preliminary evidence consistent with the hypothesized relationships. DT is positively associated with AIQ ($r = .401$, $p < .01$), CR ($r = .469$, $p < .01$), and DME ($r = .521$, $p < .01$). Among these relationships, the strongest association is observed between DT and DME, followed by DT and CR, whereas the relationship between DT and AIQ is comparatively weaker but remains statistically significant. Although these findings indicate that higher levels of DT are associated with higher levels of AIQ, CR, and DME, the hypotheses are formally tested using the regression analyses presented in the following section.

Table 5
Correlation matrix.

DT	DT	AIQ	CR	DME
	1.000	0.401**	0.469**	0.521**
AIQ	0.401**	1.000	0.237**	0.252**
CR	0.469**	0.237**	1.000	0.191*
DME	0.521**	0.252**	0.191*	1.000
<i>Note: * $p < .05$, ** $p < .01$.</i>				

4.5. Regression Results

Multiple linear regression (OLS) was employed to test H1–H3 by examining the effect of DT on each of the three non-financial management accounting outcomes. Table 6 presents the regression results. Across all three models, the estimated coefficients for DT are positive and statistically significant ($p < .001$). The explanatory power of the models ranges from $R^2 = .161$ to $R^2 = .272$, indicating that DT explains between 16.1% and 27.2% of the variation in the dependent variables.

Table 6
Regression results and hypothesis testing.

Hypothesis	Path	B	t	p	R ²	Decision
H1	DT → AIQ	0.349	5.33	< .001	.161	Supported
H2	DT → CR	0.406	6.45	< .001	.220	Supported
H3	DT → DME	0.511	7.43	< .001	.272	Supported
<i>Note: All models are estimated by Ordinary Least Squares on the full sample (N = 150).</i>						

5. Discussion

The following subsections interpret each hypothesis in turn, evaluate the magnitude of the estimated effects against prior literature, examine the role of the control variable, and conclude with an overall synthesis of the findings.

5.1. Digital Transformation and Accounting Information Quality (H1)

Digital Transformation (DT) is a significant and positive predictor of AIQ ($B = 0.349$, $t = 5.33$, $p < .001$, $R^2 = .161$), supporting H1. A one-point increase in DT is associated with an approximately one-third-point increase in AIQ; however, DT explains the smallest proportion of variance among the three dependent variables (16.1%), suggesting improvements in AIQ are only partly attributable to DT.

This finding is consistent with Knauer et al. (2020), who argue that IT infrastructure and digital capabilities enhance the quality of management accounting information systems; with Ratmono et al. (2023), who reported that digital technologies improve the timeliness and accuracy of accounting information; and with Kerrouche and Belouadah (2025), who found that DT positively influences financial reporting quality in the Saudi context. The comparatively lower explanatory power observed here, however, suggests that digital technologies alone are insufficient to maximize AIQ—the quality of accounting information likely also depends on complementary organizational capabilities such as internal controls, employee competencies, and governance mechanisms. DT provides the technological infrastructure for higher-quality information, but realizing this potential depends on how effectively organizations integrate it into practice.

The findings also contrast with Hamdy et al. (2025), who reported a negative effect of DT on governmental accounting information systems during early implementation. One possible explanation is that the organizations in the present sample have progressed beyond the initial implementation phase, allowing DT's benefits to outweigh short-term adjustment challenges—reinforcing the view that DT's organizational benefits depend not only on adoption but on the maturity of digital systems.

5.2. Digital Transformation and Cost Reduction (H2)

Digital Transformation (DT) is a significant and positive predictor of CR ($B = 0.406$, $t = 6.45$, $p < .001$, $R^2 = .220$), supporting H2. A one-point increase in DT is associated with an approximately 0.4-point increase in CR, and the model explains 22.0% of the variance—indicating that DT is an important contributor to cost efficiency within management accounting.

This finding is consistent with Kusumawardhani et al. (2024), who argue that digitalized management accounting systems support budgeting, cost control, and performance evaluation through accurate and detailed cost information; with Gonçalves et al. (2022), who found that digital technologies reduce processing errors and streamline accounting activities; and with Shehzadi and Hussain (2025) and Chen et al. (2024), who show that automation lowers labour costs and reduces manual intervention. Collectively, these findings suggest that DT contributes to CR through complementary mechanisms—automating repetitive processes, improving cost-information accuracy, and enhancing operational efficiency—rather than through a single, short-term reduction in accounting costs.

5.3. Digital Transformation and Decision-Making Effectiveness (H3)

Digital Transformation (DT) is a significant and positive predictor of DME ($B = 0.511$, $t = 7.43$, $p < .001$, $R^2 = .272$), supporting H3. A one-point increase in DT is associated with an approximately 0.5-point increase in DME, and the model explains 27.2% of the variance—the largest explanatory power among the three outcomes.

This finding is consistent with Ismail et al. (2024), who found that improvements in accounting information from DT enhance governance efficiency and decision-making; with Le Thi Tu Oanh et al.

(2025), who argue that DT enables more timely, accurate, and transparent information; and with Yoshikuni et al. (2023), who emphasize that digital technologies strengthen strategic planning and decision support. Collectively, these findings suggest DT enhances DME by strengthening the analytical capabilities of management accounting systems—through timely access to high-quality information and more efficient processing, managers can evaluate alternatives and respond to changing conditions more effectively.

5.4. The Role of Company Size

A supplementary regression model including company size as a control variable confirmed that DT remained a significant and positive predictor of all three outcomes (AIQ: $B = 0.353$, $p < .001$; CR: $B = 0.407$, $p < .001$; DME: $B = 0.507$, $p < .001$), indicating that H1–H3 are robust and not explained by organizational size.

Company size was not a significant predictor of AIQ or CR, suggesting these benefits are achievable across organizations regardless of size. However, company size was significantly associated with DME, with large firms reporting lower levels than micro firms ($B = -0.478$, $p = .040$) after controlling for DT. One possible explanation is that larger organizations operate with more complex structures, multiple decision-making layers, and legacy systems that may slow the translation of digital information into managerial decisions—consistent with AlNasrallah and Saleem (2022) on the importance of organizational readiness, and with Wanderley and Horton (2024) and Van Slooten et al. (2024) on the coordination challenges DT can create in larger firms. This pattern also echoes SME-focused evidence outside the Saudi context: Valdez-Juárez et al. (2023) and Espina-Romero et al. (2025) both found that smaller firms can convert digital adoption into performance gains particularly effectively when digital competencies and supportive organizational culture are present, suggesting that structural simplicity, rather than resource constraints alone, may help smaller organizations translate DT into faster decision-making benefits. Nevertheless, DT's positive effect on DME remains significant after controlling for size, and future research could examine size as a moderating variable.

5.5. Cross-Hypothesis Synthesis

Taken together, the regression results show that DT's influence differs across outcomes: explanatory power increases from AIQ ($R^2 = .161$) to CR ($R^2 = .220$) and is highest for DME ($R^2 = .272$), suggesting that DT's organizational benefits are not uniform. A plausible interpretation is that DT creates its greatest value by strengthening the analytical and decision-support capabilities of management accounting—technologies such as AI, data analytics, and integrated information systems help managers evaluate alternatives and decide more effectively—whereas improvements in AIQ and CR appear to depend more heavily on complementary organizational factors such as governance, internal controls, and employee capabilities.

This interpretation should not be read as evidence of a causal or temporal sequence: because the data are cross-sectional and no mediation or longitudinal model was estimated, the study cannot determine whether improvements in AIQ or CR precede improvements in DME. Rather, the findings demonstrate

that DT is positively associated with all three outcomes, most strongly with DME, suggesting that organizations and policymakers should expect varying levels of benefit across different dimensions of management accounting performance when prioritizing DT initiatives.

6. Conclusions

This study examined the impact of DT on three non-financial management accounting outcomes in Saudi Arabia: AIQ, CR, and DME. Using survey data from 150 accounting professionals, the findings support all three hypotheses, with the strongest relationship observed for DME—suggesting that DT's strategic value extends beyond operational improvements to enhancing managerial decision support. Measurement reliability was high (Cronbach's alpha .81–.90), and the results are consistent with prior research linking DT to improvements in information quality (Kerrouche & Belouadah, 2025), cost efficiency (Kusumawardhani et al., 2024), and decision-making (Ismail et al., 2024; Ratmono et al., 2023), while extending this literature by demonstrating these relationships simultaneously within a unified framework.

The findings offer practical implications for organizations investing in ERP systems, cloud computing, AI, and data analytics: these technologies can be leveraged to improve AIQ, strengthen cost management, and enhance decision-making. Because the relationships remain significant after controlling for company size, the benefits of DT appear attainable for SMEs as well as large firms, supporting Saudi Vision 2030's emphasis on DT as a driver of organizational effectiveness rather than mere technological modernization.

Several limitations should be acknowledged. The use of purposive sampling ensured relevant professional expertise but may limit generalizability; the reliance on self-reported survey data is subject to common survey limitations; and the cross-sectional design does not permit causal inference, although the observed relationships are consistent with theoretical expectations.

Despite these limitations, this study contributes to the growing literature on DT and management accounting by providing empirical evidence from an underrepresented emerging economy and by examining AIQ, CR, and DME simultaneously rather than in isolation. Future research could employ longitudinal designs to establish causal dynamics, extend the analysis to other economies, and investigate the mediating or moderating roles of organizational readiness, digital capabilities, employee competencies, and governance mechanisms. Mixed-methods and qualitative research would also provide deeper insight into how management accountants experience DT in practice.

Declarations

Author Contribution

H.A. conceived and designed the study, developed the methodology, collected and analyzed the data, interpreted the findings, and wrote, reviewed, and edited the manuscript. H.A. approved the final version

of the manuscript and is accountable for all aspects of the work.

Data Availability

Yes. I used or generated research data in this study

References

1. AlNasrallah, W., & Saleem, F. (2022). Determinants of the digitalization of accounting in an emerging market: The roles of organizational support and job relevance. *Sustainability*, 14(11), 6483. <https://doi.org/10.3390/su14116483>
2. Alshamlan, H. M., & Zverovich, S. (2018). The costing systems in Saudi Arabian hospitals: Do they need to be modified? *International Journal of Accounting and Financial Reporting*, 8(1), 359–379. <https://doi.org/10.5296/ijafr.v8i1.12774>
3. Andreassen, R.-I. (2020). Digital technology and changing roles: A management accountant's dream or nightmare? *Journal of Management Control*, 31(3), 209–238. <https://doi.org/10.1007/s00187-020-00303-2>
4. Atobishi, T., Abu Bakir, S. M., & Nosratabadi, S. (2024). How do digital capabilities affect organizational performance in the public sector? The mediating role of the organizational agility. *Administrative Sciences*, 14(2), 37. <https://doi.org/10.3390/admsci14020037>
5. Capital Market Authority. (2021). Corporate governance regulations. <https://cma.org.sa>
6. Chen, Y., Lu, C., & Li, Z. (2024). How does digital transformation affect corporate accounting employees? *China Journal of Accounting Research*, 17(4), 100391. <https://doi.org/10.1016/j.cjar.2024.100391>
7. Daft, R. L., & Lengel, R. H. (1986). Organizational information requirements, media richness and structural design. *Management Science*, 32(5), 554–571. <https://doi.org/10.1287/mnsc.32.5.554>
8. Dahal, R. K., Sharma, P., & Koirala, S. (2024). Management accounting's role in decision-making and efficacy. *Cogent Business & Management*, 11(1), 2433165. <https://doi.org/10.1080/23311975.2024.2433165>
9. Dai, C., & Fang, J. (2024). Digital transformation and non-financial performance in manufacturing. *Sustainability*, 16(12), 5099. <https://doi.org/10.3390/su16125099>
10. Datamatics CPA. (2023). Embracing digital transformation in accounting and finance. Datamatics.
11. Digital Government Authority. (2023). Digital government strategy. <https://dga.gov.sa>
12. Edelmann, N., Mergel, I., & Lampoltshammer, T. (2023). Competences that foster digital transformation of public administrations: An Austrian case study. *Administrative Sciences*, 13(2), 44. <https://doi.org/10.3390/admsci13020044>
13. Espina-Romero, L., Chafloque-Céspedes, R., Izaguirre Olmedo, J., Albarran Taype, R., & Ochoa-Díaz, A. (2025). Driving digital transformation in Lima's SMEs: Unveiling the role of digital competencies

- and organizational culture in business success. *Administrative Sciences*, 15(1), 19.
<https://doi.org/10.3390/admsci15010019>
14. Fernandez-Vidal, J., Perotti, F. A., Gonzalez, R., & Gasco, J. (2022). Managing digital transformation: The view from the top. *Journal of Business Research*, 152, 29–41.
<https://doi.org/10.1016/j.jbusres.2022.07.020>
 15. Galbraith, J. R. (1973). *Designing complex organizations*. Addison-Wesley.
 16. Galbraith, J. R. (1974). Organization design: An information processing view. *Interfaces*, 4(3), 28–36.
 17. Gonçalves, M. J. A., da Silva, A. C. F., & Ferreira, C. G. (2022). The future of accounting: How will digital transformation impact the sector? *Informatics*, 9(1), 19.
<https://doi.org/10.3390/informatics9010019>
 18. Hamdy, A., Diab, A., & Eissa, A. M. (2025). Digital transformation and the quality of accounting information systems in the public sector: Evidence from developing countries. *International Journal of Financial Studies*, 13(1), 30. <https://doi.org/10.3390/ijfs13010030>
 19. Ismail, L. L., Abed, A. S., & Ali, A. G. (2024). The impact of digital transformation on management accounting practices: A survey study of a sample of Iraqi academics in accounting specializations. *International Journal of Research in Finance and Management*, 7(1), 317–326.
 20. Jackson, D., & Allen, C. (2024). Enablers, barriers, and strategies for adopting new technology in accounting. *International Journal of Accounting Information Systems*, 52, 100666.
<https://doi.org/10.1016/j.accinf.2023.100666>
 21. Jesus, J. (2024). Exploring the role of digital transformation in modern accounting and business practices: A systematic review. *International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence (IMJRISE)*, 1(6), 896–902.
 22. Kerrouche, N., & Belouadah, F. (2025). Digital transformation and the quality of financial reports: Evidence from Saudi listed companies. *International Journal of Data and Network Science*, 9(1), 243–252. <https://doi.org/10.5267/j.ijdns.2024.7.012>
 23. Knauer, T., Nikiforow, N., & Wagener, S. (2020). Determinants of information system quality and data quality in management accounting. *Journal of Management Control*, 31(1–2), 97–121.
<https://doi.org/10.1007/s00187-020-00296-y>
 24. Konopik, J., Jahn, C., Schuster, T., Hoßbach, N., & Pflaum, A. (2022). Mastering the digital transformation through organizational capabilities: A conceptual framework. *Digital Business*, 2(2), 100019. <https://doi.org/10.1016/j.digbus.2021.100019>
 25. Kusumawardhani, F. K., Ratmono, D., Wibowo, S. T., Darsono, D., Widyatmoko, S., & Rokhman, N. (2024). The impact of digitalization in accounting systems on information quality, cost reduction and decision making: Evidence from SMEs. *International Journal of Data and Network Science*, 8(2), 1111–1116. <https://doi.org/10.5267/j.ijdns.2023.11.023>
 26. Le Thi Tu Oanh, Bui Thi, N., Ngo Tien, D., Nguyen, T. T., & Nguyen, T. T. (2025). The impact of digital transformation in management accounting on governance efficiency: The intermediary role of

- accounting information quality. *Journal of Governance and Regulation*, 14(1, Special Issue), 295–306. <https://doi.org/10.22495/jgrv14i1siart6>
27. Ministry of Communications and Information Technology. (2023). The Kingdom's ICT strategy and digital transformation initiatives. <https://www.mcit.gov.sa>
 28. Möller, K., Schäffer, U., & Verbeeten, F. (2020). Digitalization in management accounting and control: An editorial. *Journal of Management Control*, 31(1), 1–8. <https://doi.org/10.1007/s00187-020-00300-5>
 29. Pargmann, C., Dumitru, V. F., & Velte, P. (2023). Digitalisation in accounting: A systematic literature review of activities and implications for competences. *Journal of Applied Accounting Research*, 24(3), 599–622.
 30. Plekhanov, D., Franke, H., & Netland, T. H. (2023). Digital transformation: A review and research agenda. *European Management Journal*, 41(6), 821–844.
 31. Ratmono, D., Frendy, & Zuhrohtun, Z. (2023). Digitalization in management accounting systems for urban SMEs in a developing country: A mediation model analysis. *Cogent Economics & Finance*, 11(2), 2269773. <https://doi.org/10.1080/23322039.2023.2269773>
 32. Saudi Organization for Chartered and Professional Accountants. (2023). Annual report 2023. <https://socpa.org.sa>
 33. Saudi Vision 2030. (2016). Vision 2030. <https://vision2030.gov.sa>
 34. Shehzadi, T., & Hussain, S. (2025). Comparative study of manual vs. digital accounting in SMEs: Efficiency, accuracy, and adoption [Preprint]. ResearchGate.
 35. Small and Medium Enterprises General Authority (Monsha'at). (2023). About Monsha'at. <https://www.monshaat.gov.sa/en/about>
 36. Valdez-Juárez, L. E., Ramos-Escobar, E. A., & Borboa-Álvarez, E. P. (2023). Reconfiguration of technological and innovation capabilities in Mexican SMEs: Effective strategies for corporate performance in emerging economies. *Administrative Sciences*, 13(1), 15. <https://doi.org/10.3390/admsci13010015>
 37. Van Slooten, A. C. A., Dirks, P. M. G., & Firk, S. (2024). Digitalization and management accountants' role conflict and ambiguity: A double-edged sword for the profession. *The British Accounting Review*. Advance online publication. <https://doi.org/10.1016/j.bar.2024.101460>
 38. Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *Journal of Strategic Information Systems*, 28(2), 118–144. <https://doi.org/10.1016/j.jsis.2019.01.003>
 39. Wanderley, C. d. A., & Horton, K. E. (2024). Digitalization tensions in the management accounting profession: Boundary work responses and their consequences. *The British Accounting Review*, 56(4), 101455.
 40. Yoshikuni, A. C., Dwivedi, R., Dutra-de-Lima, R. G., Parisi, C., & Oyadomari, J. C. T. (2023). Role of emerging technologies in accounting information systems for achieving strategic flexibility through decision-making performance: An exploratory study based on North American and South American

Figures

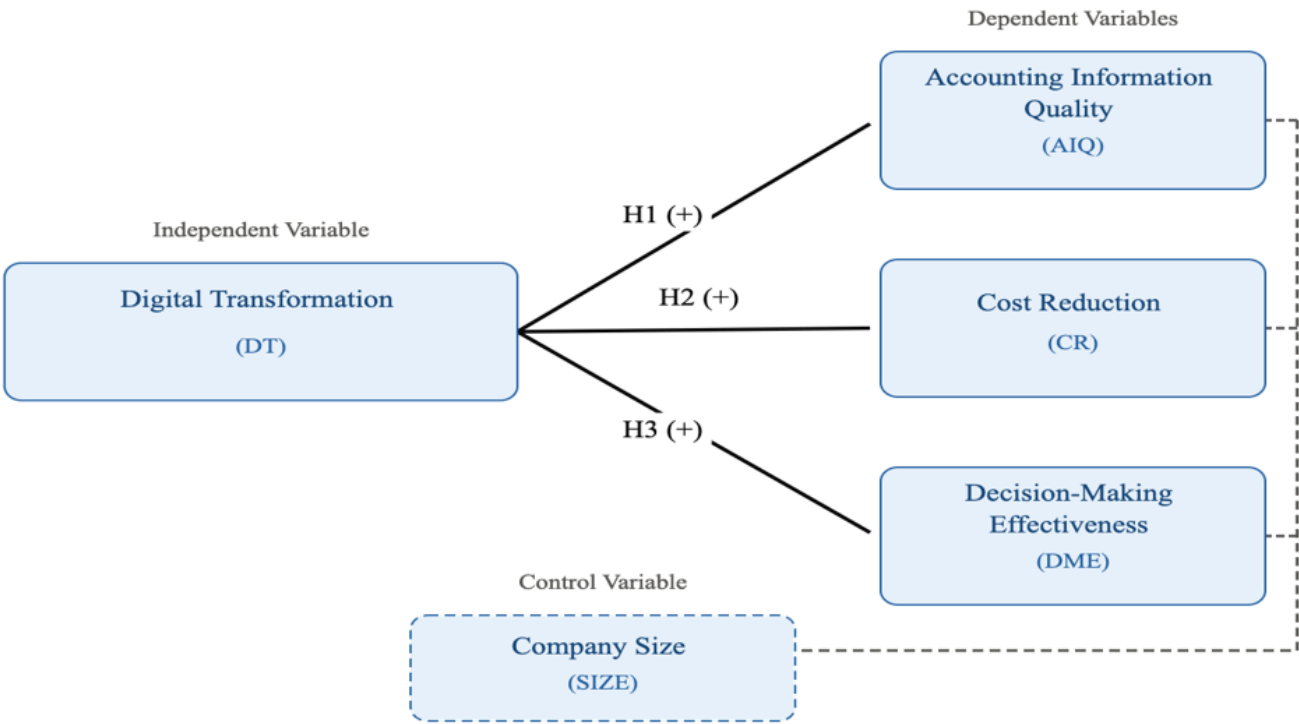


Figure 1
Conceptual research model.