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How ERP systems create strategic accounting value: The mediating role of IT adoption in Jordanian commercial banks

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Abstract

Enterprise resource planning (ERP) systems are widely recognized for improving organizational integration and information visibility, yet limited evidence explains how these capabilities are translated into strategic managerial accounting forecasting effectiveness in emerging-market banking contexts. This study examines the direct effect of ERP systems on strategic managerial accounting forecasting effectiveness and the mediating role of IT adoption in Jordanian banking institutions. Drawing on complementary insights from the Technology-Organization-Environment (TOE) framework, the Technology acceptance model (TAM), and the Resource-based view (RBV), the study employs a quantitative cross-sectional design and analyzes 240 usable questionnaire responses using partial least squares structural equation modeling (PLS-SEM). The results indicate significant positive relationships between ERP systems and forecasting effectiveness ($\beta = 0.420$, $p < 0.001$), ERP systems and IT adoption ($\beta = 0.451$, $p < 0.001$), and IT adoption and forecasting effectiveness ($\beta = 0.281$, $p < 0.001$). The indirect ERP → IT adoption → forecasting effectiveness effect is also significant ($\beta = 0.127$, $p < 0.001$), indicating partial mediation. The findings imply that ERP investment should be complemented by sustained user adoption and digital capability development.

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Keywords: Enterprise resource planning, IT adoption, Strategic managerial accounting, Forecasting effectiveness, Jordanian banking sector, Technology acceptance, PLS-SEM.

1. Introduction

Enterprise resource planning (ERP) systems have become central to organizational digital transformation because they integrate fragmented processes, standardize information flows, and provide timely access to financial and operational data [1], [2], [3]. In banking, where managerial decisions depend on timely, integrated, and analytically useful information, ERP systems are increasingly viewed not merely as operational

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infrastructures but as strategic enablers of planning, control, and performance management [3], [4]. This relevance is particularly pronounced in strategic managerial accounting, whose value lies in supporting forward-looking analysis, planning, and managerial decision-making rather than only recording historical transactions [5].

However, the strategic value of ERP systems does not arise automatically from technical installation alone. The benefits of integrated systems are realized only when users and organizational units meaningfully adopt and embed their functionalities in forecasting, planning, and analytical routines [6], [7]. This implies that the relationship between ERP systems and strategic managerial accounting forecasting effectiveness is not purely technological. It also depends on whether the organization can translate system capabilities into actual patterns of digital use. In this study, IT adoption is therefore treated not as a peripheral contextual factor, but as a plausible mediating mechanism through which ERP-enabled capabilities are converted into strategic accounting value.

Prior studies have examined ERP implementation in relation to management accounting practices, reporting quality, and organizational performance, yet limited empirical work has explained how ERP systems create value for strategic managerial accounting forecasting through IT adoption, particularly in commercial banks operating in emerging-market environments [1], [6], [8]. Much of the existing literature either emphasizes broad operational outcomes or treats technological, behavioral, and strategic dimensions separately rather than integrating them into a coherent explanatory model. As a result, an important gap remains in understanding the pathway through which ERP systems translate into more effective strategic forecasting in managerial accounting.

Jordan's commercial banking sector provides a relevant empirical context because banks face growing pressure to deepen digital transformation, strengthen compliance systems, accelerate decision processes, and improve managerial reporting capabilities [9]. In such an environment, ERP investments are expected to support not only operational coordination but also higher-quality strategic analysis and forecasting. Yet evidence from Jordan suggests that ERP outcomes depend not only on technological readiness but also on user acceptance and effective system use, making IT adoption a critical practical and theoretical concern [10].

Accordingly, this study examines whether IT adoption mediates the relationship between ERP systems and strategic managerial accounting forecasting effectiveness in Jordanian commercial banks. To explain this relationship, the study integrates the TOE framework, TAM, and RBV into a single causal logic: ERP systems provide the technological infrastructure, IT adoption reflects the organizational and behavioral assimilation of that infrastructure, and forecasting effectiveness represents the strategic accounting outcome generated when those capabilities are effectively used. On this basis, the study seeks to explain not only whether ERP systems matter, but also how their value is transmitted to strategic managerial accounting forecasting.

The study offers a focused mechanism-based and contextual extension of prior ERP research rather than proposing a fundamentally new theoretical model. First, it narrows the ERP-value question to strategic managerial accounting forecasting effectiveness as a specific accounting outcome. Second, it examines IT adoption as an intervening mechanism through which ERP capabilities are translated into forecasting value. Third, it evaluates this mechanism in the Jordanian banking context, where digital transformation, regulatory requirements, and strategic information needs intersect. The contribution therefore lies primarily in specifying and empirically testing a theoretically grounded value-creation pathway in an emerging-market setting that remains comparatively underexamined.

2. Problem statement

Despite the growing diffusion of ERP systems in banking institutions, the literature does not yet sufficiently explain how these systems improve strategic managerial accounting forecasting effectiveness. Existing studies show that ERP systems can enhance data integration, reporting consistency, and process coordination, but they

also indicate that organizational value depends not only on technical implementation but on whether employees and departments adopt and use the associated technologies [6], [7], [11]. This raises a central research problem: the strategic accounting value of ERP systems may depend less on technical deployment alone and more on the broader process through which ERP capabilities are assimilated into organizational practice.

This issue is especially important in banking, where strategic managerial accounting depends on integrated financial information systems, timely forecasts, and analytical support for long-term decision-making in a highly regulated and uncertain environment [4], [5]. Although ERP systems can provide the informational foundation for these activities, their actual contribution to forecasting effectiveness is likely to vary according to the organization's digital readiness, user acceptance, and the extent to which technology is embedded in daily work practices [12], [13], [14]. Therefore, the organizational challenge extends beyond ERP implementation itself to understanding the conditions and mechanisms through which ERP systems become strategically useful for forecasting and decision support.

In the Jordanian banking sector, this problem has become more pressing because digital transformation, competitive pressures, and the need for more advanced internal reporting and decision-support systems have increased expectations regarding the strategic value of ERP investments [9]. Although previous studies indicate that ERP outcomes in Jordanian organizations are shaped by both technological and user-related adoption factors [10], limited empirical evidence explains how ERP systems improve strategic managerial accounting forecasting effectiveness through a mediating mechanism in this context. Two specific gaps therefore remain. First, most prior studies have examined ERP systems in relation to management accounting practices, organizational performance, or digital transformation in general, rather than focusing specifically on strategic managerial accounting forecasting effectiveness [1], [3], [8]. Second, while IT adoption is widely recognized as important for ERP success, its role as a mechanism linking ERP systems to strategic forecasting outcomes remains insufficiently theorized and tested, particularly in banking and emerging-market environments [6], [7].

To address these gaps, this study investigates the relationship between ERP systems and strategic managerial accounting forecasting effectiveness in Jordanian commercial banks and examines whether IT adoption serves as a mediating mechanism in that relationship. From this problem setting, the following research questions arise:

1. To what extent do ERP systems influence strategic managerial accounting forecasting effectiveness in Jordanian commercial banks?
2. To what extent do ERP systems influence IT adoption in Jordanian commercial banks?
3. To what extent does IT adoption influence strategic managerial accounting forecasting effectiveness?
4. Does IT adoption mediate the relationship between ERP systems and strategic managerial accounting forecasting effectiveness?

3. Conceptual model

This study proposes a conceptual model in which ERP systems influence strategic managerial accounting forecasting effectiveness both directly and indirectly through IT adoption. The model reflects a socio-technical view of value creation: ERP systems provide the technological infrastructure for integrated information processing, while IT adoption captures the extent to which those capabilities are assimilated into organizational routines and decision processes. In this sense, the model moves beyond a purely technical explanation and treats strategic forecasting effectiveness as an outcome that depends on both system capability and meaningful technology use [6], [7].

Conceptually, ERP systems represent the technological backbone that integrates financial and operational information across organizational functions. IT adoption reflects the behavioral and organizational assimilation of technology into everyday work practices, including reporting, analysis, coordination, and forecasting. Strategic managerial accounting forecasting effectiveness refers to the extent to which accounting systems produce timely, relevant, integrated, and forward-looking information that supports strategic planning,

performance evaluation, and managerial decision-making [3], [4], [5]. The model is grounded in the combined logic of the Technology-Organization-Environment (TOE) framework, the Technology acceptance model (TAM), and the Resource-based view (RBV). TOE explains how organizational and technological conditions support ERP assimilation, TAM explains how users come to accept and employ technology in practice, and RBV explains why technological resources generate strategic value only when they are combined with complementary organizational capabilities [12], [13], [14], [15], [16]. Accordingly, IT adoption is theorized not as a peripheral contextual factor, but as the mechanism through which ERP-enabled capabilities are translated into more effective strategic forecasting. The model is presented in Figure 1.

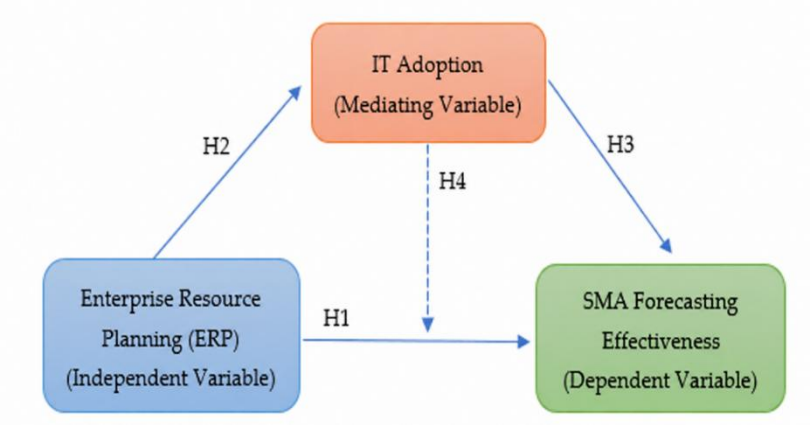


Figure 1. Conceptual model

As shown in Figure 1, the model assumes that ERP systems improve strategic managerial accounting forecasting effectiveness directly by enhancing information integration, process consistency, and analytical visibility, while indirectly strengthening IT adoption within the organization. Higher levels of IT adoption, in turn, increase the organization's ability to convert ERP-enabled information into forecasting, planning, and strategic decision-support value. This dual-path logic provides the basis for the study's hypotheses.

4. Hypotheses development

Based on the preceding theoretical arguments and the conceptual model, the following hypotheses are formulated:

H1: ERP systems have a statistically significant positive effect on strategic managerial accounting forecasting effectiveness.

ERP systems are expected to improve strategic managerial accounting forecasting effectiveness because they reduce information fragmentation, increase process integration, and provide broader access to timely financial and operational data. These capabilities support forecasting by providing integrated, future-oriented information for planning and performance evaluation, particularly in banking, where strategic decisions rely on coordinated inputs from multiple functional units [3], [4]. Prior research has shown that ERP systems can enhance management accounting and expand the strategic role of accounting information beyond routine transaction processing [1], [8], [17]. From an RBV perspective, this relationship is expected because ERP systems enhance the organization's information-processing capacity and thereby support more effective strategic decision-making [15]. Therefore, stronger ERP capabilities should be associated with higher strategic managerial accounting forecasting effectiveness.

4.1. ERP systems and IT adoption

ERP systems are also expected to increase IT adoption because they reshape how organizational work is performed and create stronger dependence on digital processes. When ERP systems are implemented, employees are typically required to engage with integrated interfaces, digital workflows, shared databases, and

technology-based reporting routines. This exposure can encourage broader and more routine technology use by embedding digital practices into everyday work. In this sense, ERP systems do not only provide infrastructure but also create organizational conditions that make technology use more necessary, more visible, and more valuable [7], [11].

This expectation is supported by the combined logic of TOE and TAM. From a TOE perspective, ERP systems alter the organization's technological and organizational context by increasing technological readiness, formalizing digital routines, and requiring managerial support, coordination, and training for successful use [16], [18]. From a TAM perspective, greater exposure to ERP-enabled tools can strengthen users' perceptions of usefulness and ease of use, which in turn supports broader acceptance of technology in work processes [12], [13]. Prior empirical research also suggests that ERP systems can strengthen digital culture and technology-oriented behavior in organizations [6], [14]. Thus, stronger ERP systems should be associated with higher levels of IT adoption.

H2: ERP systems have a statistically significant positive effect on IT adoption.

4.2. IT adoption and strategic managerial accounting forecasting effectiveness

IT adoption is expected to improve strategic managerial accounting forecasting effectiveness because the value of digital systems depends on whether users incorporate them into forecasting, analysis, and decision-support activities. Forecasting effectiveness is not achieved merely by storing information in digital form. It depends on the organization's ability to access, interpret, share, and use that information in a timely and analytically meaningful way. When IT adoption is stronger, employees are more likely to use dashboards, reporting applications, integrated databases, and forecasting tools in ways that improve the speed, relevance, and analytical depth of accounting information. This should enhance the quality of managerial judgment and support more responsive strategic planning [12], [13]. Prior research also indicates that digital technology use improves decision performance, agility, and organizational responsiveness [19], [20]. From an RBV perspective, IT adoption can therefore be understood as a complementary capability that enables the organization to convert technological resources into strategic outcomes [15]. Accordingly, higher IT adoption should lead to stronger strategic managerial accounting forecasting effectiveness.

H3: IT adoption has a statistically significant positive effect on strategic managerial accounting forecasting effectiveness.

4.3. Mediating role of IT adoption

The central mediating proposition of this study is that ERP systems improve strategic managerial accounting forecasting effectiveness not only through their direct technical effects, but also by encouraging higher levels of IT adoption. Although ERP systems integrate information, standardize processes, and improve access to organizational data, these capabilities do not automatically translate into strategic forecasting value unless users and departments meaningfully embed them in practice [6], [7]. Thus, part of the effect of ERP systems on forecasting effectiveness is expected to occur indirectly through the organization's broader ability to adopt and use technology.

This mediation logic follows directly from the integration of TOE, TAM, and RBV. TOE explains how the organizational and technological conditions surrounding ERP implementation shape the organization's readiness to assimilate digital capabilities. TAM explains how user acceptance influences the actual use of those capabilities in day-to-day work. RBV explains why ERP systems generate strategic value only when they are combined with complementary capabilities that enable effective use [12], [15], [18]. Therefore, IT adoption is expected to operate as the mechanism through which ERP capabilities are translated into more effective strategic managerial accounting forecasting outcomes.

H4: IT adoption mediates the relationship between ERP systems and strategic managerial accounting forecasting effectiveness.

5. Significance of study

This study is relevant theoretically and practically because it examines how ERP-enabled technological capability is associated with a specific strategic accounting outcome through organizational technology adoption. Rather than treating ERP success as a broad operational concept, the study focuses specifically on strategic managerial accounting forecasting effectiveness and examines IT adoption as a mechanism through which ERP capabilities may be translated into forecasting and decision-support value [2], [3], [6].

From a theoretical perspective, the study provides a focused extension of prior ERP and management accounting research. Previous studies have linked ERP systems to management accounting practices, reporting quality, technology use, and organizational performance [1], [6], [8]. The present study narrows this relationship by examining whether IT adoption partially transmits the association between ERP capability and strategic managerial accounting forecasting effectiveness. The theoretical contribution is therefore mechanism-based rather than a claim of a fundamentally new theory.

TOE, TAM, and RBV are employed as complementary explanatory perspectives. TOE clarifies the organizational and technological setting in which ERP assimilation occurs, TAM provides a behavioral rationale for technology acceptance and use, and RBV explains why technological resources can generate greater strategic value when they are combined with complementary organizational capabilities [12], [15], [18]. Their combined use is intended to clarify different stages of the proposed value-creation pathway rather than to propose a new unified theory.

From a practical perspective, the study is relevant to bank executives, accounting managers, information-system professionals, and strategic planning units. ERP investment alone may not be sufficient to generate strategic accounting value if employees and organizational units do not effectively incorporate digital tools into forecasting, analysis, and decision-support routines. The study therefore emphasizes the complementary importance of ERP capability, technology adoption, training, organizational support, and cross-functional digital integration.

6. Theoretical framework

6.1. Enterprise resource planning (ERP) systems

An enterprise resource planning system is an information system that unifies data throughout an organization, standardizes business processes, and enables functional departments to coordinate through the same electronic system [1], [17]. Over the past 20 years, organizational ERP systems have changed from being primarily operational tools to becoming strategic solutions with an emphasis on improving information visibility, process integration, and organizational responsiveness [2], [3]. The significance of ERP systems is most prevalent in industries that are information-intensive (such as banking) because timely, consistent, and cross-functional data is used to make decisions.

ERP systems are used in accounting and finance to improve the quality of internal information by unifying financial records, operational indicators, and reporting in a single system. Integrating this information improves accuracy, reduces duplication, and facilitates access to data for budgeting, forecasting, performance analysis, and internal control [1], [8]. These enhancements to data quality are of relevance to strategic, as opposed to tactical, management accounting because it requires accurate, timely, external information that is suitable for proactive managerial analyses [4]. The literature establishes that improvements in the management of organizations' accounting systems can be attributed to the transition of the accounting function from generic transaction recording and processing to strategic planning and managerial support via the use of accounting systems [3], [8]. However, the benefits of adopting an ERP system for an organization will not be realized solely through the technological installation of the system. The organizational value of an ERP system depends not only on its technical implementation but also on how effectively it is integrated into organizational processes and aligned with managerial information and decision-support requirements [6], [11].

6.2. Information technology (IT) adoption

The adoption of information technology represents the degree to which individuals and organizations accept, utilize, and integrate technology into their day-to-day work processes and decision-making [12], [13]. Technology adoption in an organizational context is much more than simply a matter of having technical access to IT. It includes the actual use of technology in the performance of work activities, which can be through reporting, communication, analysis, forecasting, and coordination, among others [7], [20]. Therefore, an organization may possess the latest technology systems but be of limited value because the level of actual technology adoption in the organization is either weak or superficial.

Within the present study, IT adoption refers to the extent to which employees incorporate ERP-enabled and complementary digital technologies into routine reporting, analysis, forecasting, communication, and decision-support activities. This conceptualization emphasizes meaningful technology use and organizational assimilation rather than the mere availability of technological infrastructure. Factors such as perceived usefulness, ease of use, managerial support, training, and organizational readiness may facilitate such adoption [12], [13], [14]. However, these factors are not modeled as separate constructs in the present structural model. IT adoption is therefore conceptualized as the behavioral and organizational mechanism through which ERP-enabled technological capability is translated into practical strategic accounting use [6], [7].

6.3. Strategic managerial accounting (SMA) forecasting effectiveness

Strategic managerial accounting forecasting effectiveness refers to the overall capability of the accounting information environment to provide timely, relevant, integrated, and forward-looking information that supports forecasting, strategic planning, performance evaluation, and managerial decision-making [4], [5]. Unlike conventional management accounting, which may place greater emphasis on historical reporting and short-term internal control, strategic managerial accounting emphasizes forward-looking analysis and decision support within changing competitive environments.

For the present empirical model, SMA forecasting effectiveness is operationalized as a single first-order reflective construct measured by eight indicators. The item pool provides content coverage across four closely related facets: timeliness of strategic accounting information, relevance for forecasting and planning, analytical support for managerial decision-making, and integration of accounting information across organizational functions. These four facets define the substantive content domain of the construct. They are not modeled as separate latent dimensions, and no second-order or higher-order component model is estimated in the present study.

Accordingly, the empirical assessment treats SMA forecasting effectiveness as one reflective latent construct whose indicators jointly reflect an underlying overall forecasting-effectiveness concept. This specification ensures consistency between the theoretical definition of the construct and the measurement model estimated in SmartPLS.

6.4. Technology organization environment (TOE) framework

According to the TOE framework, there are three key areas that explain how organizations adopt and integrate innovative technologies, and these areas are defined in terms of the organization’s technological, organizational, and environmental contexts [18]. The technological context includes the capabilities and features of the technology being implemented, while the organizational context includes the internal characteristics of the organization, such as its structure, available resources, readiness for new technology, management support for implementation, and corporate culture. The environmental context includes competitive pressures, regulations, and other external institutional forces [16].

The significance of this model to the present study is that the adoption of ERP systems cannot be understood from only a technical perspective; they represent the technical component of the organization, but the value of an ERP will be contingent upon the banks' internal capacity, processes, and ability to have the necessary skill

levels and supportive environments to integrate the technology on a meaningful level. While IT adoption is occurring at the organizational level, the successful alignment of the technology and the organization occurs through effective forecasting within managerial accounting as a strategic focus.

6.5. Technology acceptance model (TAM)

The technology acceptance model, developed by Davis [12], explains user acceptance of technology through two central perceptions: perceived usefulness and perceived ease of use. According to TAM, individuals are more likely to adopt and use technology when they believe that it enhances their performance and is relatively easy to use [12], [13]. This model has been widely used to explain technology adoption behavior across organizational and information systems research. In the context of this study, TAM is relevant because ERP systems can improve strategic accounting only if employees adopt and use the technologies associated with them. Users in accounting, information systems, internal audit, and strategic planning functions are more likely to employ ERP-enabled tools in forecasting and decision support when they perceive such systems as useful for improving work quality and manageability in terms of complexity. Thus, TAM provides the micro-level behavioral explanation for the mediating role of IT adoption.

6.6. Resource-based view (RBV)

According to the resource-based view theory, organizations gain a sustainable competitive advantage by possessing resources and capabilities that are valuable, rare, hard to imitate, and non-substitutable [15]. Thus, while technology in and of itself typically does not offer an organization a sustainable competitive advantage unless it is used in conjunction with complementary organizational capabilities (skills and expertise, routines, coordination, and integration of knowledge), this is especially true of ERP systems. Although the ERP platform may be a valuable technological resource, its ability to provide the organization with a strategic advantage is contingent upon the organization's ability to utilize the ERP platform effectively for managerial and analytical purposes. In this respect, the adoption of IT becomes a complementary capability that enables the organization to convert its ERP system from a technical asset to a source of strategic value [6]. Similarly, the effectiveness of strategic management accounting forecasting can be viewed because of a successful combination of the technological infrastructure with the organizational use capability.

6.7. Theoretical integration and causal logic of the study

TOE, TAM, and RBV serve as complementary explanatory perspectives in this study. TOE explains the technological and organizational context of ERP assimilation, TAM explains users' acceptance and adoption of technology, and RBV explains how technological resources create organizational value when combined with complementary capabilities [12], [13].

Within this framework, ERP systems represent the technological capability providing integrated information and standardized digital processes. IT adoption reflects the integration of technology into work routines, while SMA forecasting effectiveness represents the strategic accounting outcome of combining technological capabilities with organizational use. The model examines both the direct effect of ERP systems on SMA forecasting effectiveness and the indirect effect mediated by IT adoption.

All three constructs are modeled as first-order reflective latent variables. No second-order or higher-order construct is estimated in the PLS-SEM model. Table 1 summarizes their roles and empirical specifications.

Table 1. Construct roles and measurement specifications

Construct	Structural role	Empirical specification	No. of indicators	Operational meaning
ERP systems	Independent variable	First-order reflective	8	Perceived ERP capability in integrating organizational information, processes, and digital work activities

Construct	Structural role	Empirical specification	No. of indicators	Operational meaning
IT adoption	Mediating variable	First-order reflective	8	Extent to which employees incorporate IT and ERP-enabled digital tools into routine work, analysis, reporting, and decision support
SMA forecasting effectiveness	Dependent variable	First-order reflective	8	Overall effectiveness of accounting information in supporting timely, relevant, integrated, analytical, and forward-looking strategic forecasting

7. Methodology

7.1. Research design

This study adopts a quantitative, explanatory, cross-sectional research design to examine the direct and indirect relationships among ERP systems, IT adoption, and strategic managerial accounting forecasting effectiveness in Jordanian commercial banks. A quantitative design is appropriate because the study seeks to test theory-derived hypotheses and estimate the magnitude and significance of relationships among latent constructs using structured survey data [21], [22]. The explanatory orientation is also suitable because the study aims not only to describe associations but to assess whether ERP systems influence forecasting effectiveness directly and indirectly through IT adoption. Although a cross-sectional design does not establish temporal causality with the strength of longitudinal or experimental approaches, it is widely used in accounting and information systems research for testing theoretically specified structural relationships, especially when the model includes mediation and latent variables [22], [23].

7.2. Population and sampling

The population of interest comprised employees in Jordanian commercial banks whose roles are directly connected to ERP-enabled information processing and strategic accounting activities. This includes personnel working in accounting, information systems, internal audit, and strategic planning functions, because these positions are the most likely to engage with integrated digital systems and assess how such systems support reporting, analysis, and forecasting. Commercial banks were selected as the empirical setting because they depend heavily on integrated information systems for transaction processing, internal reporting, managerial control, and decision support.

A purposive sampling strategy was employed because the study required responses from individuals with direct professional exposure to ERP systems, digital workflows, and strategic accounting processes. This approach is appropriate when the objective is to obtain informed judgments from respondents who possess specialized role-based knowledge that is not evenly distributed across all organizational employees [24]. By targeting employees with relevant professional experience, the study aimed to ensure that participants could provide meaningful assessments of how ERP systems and digital technologies support strategic accounting and forecasting activities. A broad probability sample drawn from all bank employees would likely include many respondents with limited or no involvement in ERP-enabled forecasting and accounting practices, thereby reducing construct relevance. At the same time, purposive sampling limits statistical generalizability beyond similar professional groups and organizational contexts; therefore, the findings should be interpreted as analytically generalizable to comparable banking environments rather than automatically representative of all employees or all sectors. A total of 289 questionnaires were distributed, of which 251 were returned. After data screening, 240 usable responses were retained for analysis, yielding an effective usable-response rate of approximately 83.0%. This sample size exceeds commonly accepted thresholds for PLS-SEM in models of this complexity and is adequate for estimating the proposed mediation model [22], [25].

7.3. Instrument development and measurement

Data were collected using a structured questionnaire comprising three multi-item measures corresponding to ERP systems, IT adoption, and strategic managerial accounting forecasting effectiveness. The complete measurement instrument, including item wording, source attribution, adaptation status, and standardized outer loadings for all 24 indicators, is provided in Appendix A.

The empirical model contains three first-order reflective latent constructs. ERP systems are measured using eight indicators (ERP1–ERP8), IT adoption using eight indicators (ITA1–ITA8), and SMA forecasting effectiveness using eight indicators (SMA1–SMA8), resulting in 24 substantive measurement items. All items were rated using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree [26].

SMA forecasting effectiveness is modeled as a single first-order reflective construct. Although its item pool is intended to cover the related substantive facets of timeliness, relevance for forecasting and planning, analytical support, and information integration, these facets are not estimated as separate first-order dimensions or as a higher-order component model.

Prior to full administration, the questionnaire was reviewed by academic specialists in accounting and information systems and by practitioners familiar with ERP-based banking operations to assess wording clarity, contextual relevance, and content adequacy. Minor wording refinements were introduced following this review. A pilot test involving 20 individuals in comparable professional roles, who were excluded from the final analytical sample, was subsequently conducted to assess questionnaire clarity and usability. The pilot assessment indicated that the instrument was understandable and suitable for full administration.

7.4. Data collection procedure

Data were collected through direct distribution of questionnaires to employees in organizational units aligned with the study constructs. Participants were informed of the academic purpose of the study, that participation was voluntary, and that responses would be used only in aggregate form for research purposes. Informed consent was obtained before questionnaire completion. To encourage candid reporting and reduce evaluation apprehension, the questionnaire was administered anonymously.

Several procedural measures were taken to improve response quality and reduce the likelihood of common method bias. First, respondents were informed that there were no right or wrong answers and that the study evaluated professional perceptions rather than individual performance. Second, the questionnaire used clear and context-appropriate wording to minimize ambiguity and reduce item misinterpretation. Third, the survey was organized by construct, while demographic items were placed separately to reduce cognitive burden and potential consistency motifs in responses [27].

7.5. Assessment of non-response bias

Because survey-based research may be affected by non-response bias, the study assessed whether early and late respondents differed significantly on the core constructs. Following the widely used extrapolation logic proposed by Armstrong and Overton [28], late respondents were treated as a practical proxy for non-respondents. Accordingly, valid responses were divided into early and late groups based on response timing, and independent-samples t-tests were performed for ERP systems, IT adoption, and strategic managerial accounting forecasting effectiveness.

The results showed no statistically significant differences between early and late respondents across the three main constructs at the 0.05 level. This suggests that non-response bias is unlikely to have materially influenced the study's findings.

7.6. Common method bias

Because the study relies on single-source, self-reported survey data, common method bias was considered explicitly. The study addressed this issue through both procedural and statistical remedies. Procedurally,

anonymity was assured, respondents were informed that there were no correct or preferred responses, item wording was kept clear and specific, and evaluation apprehension was minimized during data collection [27].

Statistically, two diagnostic checks were performed. First, Harman's single-factor test indicated that the first unrotated factor explained 36.4% of the total variance, which is below the threshold commonly used to signal severe common method contamination. Second, a full collinearity assessment showed that all latent-construct VIF values were below 3.3. Taken together, these results suggest that common method bias is unlikely to pose a serious threat to the interpretation of structural relationships, although as with any single-source design it cannot be ruled out with absolute certainty [29].

7.7. Data analysis strategy

The analysis was conducted in two stages. First, SPSS 26 was used to generate descriptive statistics for respondent characteristics and overall construct-level patterns. Second, SmartPLS 4 was used to estimate the measurement and structural models because the study focuses on latent constructs, prediction-oriented relationships, and mediation testing within a variance-based structural equation modeling framework. PLS-SEM is appropriate for this objective because it is widely used in explanatory and predictive research involving reflective constructs and theoretically specified structural paths [22], [23], [25]. The measurement model was evaluated through indicator loadings, Cronbach's alpha, composite reliability, average variance extracted (AVE), and discriminant validity using both the Fornell-Larcker criterion and HTMT. The structural model was then assessed through collinearity diagnostics, bootstrapped path coefficients and confidence intervals, explained variance (R^2), effect sizes (f^2), predictive relevance (Q^2), and mediation analysis using bootstrapped indirect effects and variance accounted for (VAF).

For transparency and reproducibility, the SmartPLS structural model showing the standardized path coefficients and R^2 values is provided in Appendix B. The SmartPLS measurement model showing indicator allocation and outer loadings is presented in Appendix C. In addition, the complete indicator cross-loading matrix is reported in Appendix D as a supplementary discriminant-validity diagnostic. Bootstrapped direct and indirect effects are reported numerically in Tables 9 and 11.

8. Results

8.1. Respondent and sample profile

A total of 240 usable questionnaires were retained for analysis. Table 2 provides a concise profile of the respondents. The demographic distribution shows that 67.5% of respondents were male and 32.5% were female. The largest age group was 31–40 years (45.0%), followed by 20–30 years (30.8%). Most respondents held a bachelor's degree (60.0%), while 33.3% held a master's degree and 6.7% held a doctoral degree. Functional representation was relatively balanced across financial/accounting and related administrative functions (31.3%), IT/MIS (35.0%), and strategic planning/business development (33.7%). These characteristics are reported descriptively and are not treated as explanatory variables in the structural model.

Table 2. Respondent characteristics (N = 240)

Characteristic	Category	Frequency	Percentage
Gender	Male	162	67.5%
	Female	78	32.5%
Age	20–30 years	74	30.8%
	31–40 years	108	45.0%
	41–50 years	41	17.1%
	Over 50 years	17	7.1%
Education	Bachelor's degree	144	60.0%

Characteristic	Category	Frequency	Percentage
	Master's degree	80	33.3%
	Doctorate (Ph.D.)	16	6.7%
Department	Financial accounting / administrative accounting	75	31.3%
	IT / MIS	84	35.0%
	Strategic planning / business development	81	33.7%

8.2. Descriptive analysis of study constructs

To get overall impressions on how respondents felt about the three main variables studied (enterprise resource planning, information technology adoption, and strategic managerial accounting forecasting effectiveness), descriptive statistics were completed. The mean, standard deviation, minimum and maximum were calculated to assess general trends in responses as well as similarities or dissimilarities among participants.

Table 3. Descriptive statistics for the variables

Variable	# Items	Mean	S.D	Minimum	Maximum
ERP systems	8	4.21	0.52	3.10	5.00
IT adoption	8	4.07	0.59	2.90	5.00
SMA forecasting effectiveness	8	4.18	0.55	3.00	5.00

Table 3 summarizes the descriptive statistics of the three focal constructs. Mean scores are above 4.00 on the five-point scale for ERP systems (M = 4.21, SD = 0.52), IT adoption (M = 4.07, SD = 0.59), and SMA forecasting effectiveness (M = 4.18, SD = 0.55). These values indicate generally favorable respondent assessments of the three constructs. The descriptive results are presented to characterize the response pattern only. Hypothesis testing is based on the subsequent PLS-SEM structural analysis.

8.3. Measurement model assessment

The measurement model was assessed in terms of indicator reliability, internal consistency reliability, convergent validity, and discriminant validity [22], [30]. ERP systems, IT adoption, and SMA forecasting effectiveness were all specified a priori and estimated as first-order reflective constructs. No second-order or higher-order component model was estimated. Accordingly, the measurement assessment is conducted at the first-order construct level.

8.3.1. Indicator reliability

Table 4. Outer loadings of measurement items

Construct	Item	Loading
ERP systems	ERP1	0.781
	ERP2	0.804
	ERP3	0.823
	ERP4	0.748
	ERP5	0.836
	ERP6	0.869
	ERP7	0.791
	ERP8	0.756
IT adoption	ITA1	0.742
	ITA2	0.779

Construct	Item	Loading
	ITA3	0.812
	ITA4	0.758
	ITA5	0.801
	ITA6	0.844
	ITA7	0.767
	ITA8	0.728
SMA forecasting effectiveness	SMA1	0.794
	SMA2	0.821
	SMA3	0.847
	SMA4	0.788
	SMA5	0.853
	SMA6	0.884
	SMA7	0.806
	SMA8	0.754

As shown in Table 4, all retained indicators achieved outer loadings between 0.728 and 0.884, indicating satisfactory indicator reliability. Because all item loadings exceeded the commonly recommended threshold of 0.70, the retained indicators can be considered sufficiently representative of their respective reflective constructs [22]. The pattern of loadings also supports item retention, as no indicator appears to fall below an acceptable contribution level. The SmartPLS measurement model, showing the allocation of the 24 indicators to their respective reflective constructs and their standardized outer loadings, is provided in Appendix C (Figure C1).

8.3.2. Internal consistency reliability and convergent validity

Table 5. Internal consistency reliability and convergent validity

Construct	Cronbach's alpha	Composite reliability	AVE
ERP systems	0.892	0.917	0.582
IT adoption	0.879	0.907	0.551
SMA forecasting effectiveness	0.906	0.926	0.611

Table 5 indicates that all constructs satisfy accepted thresholds for internal consistency, reliability, and convergent validity. Cronbach's alpha values range from 0.879 to 0.906, while composite reliability values range from 0.907 to 0.926, both well above the minimum benchmark of 0.70. In addition, AVE values range from 0.551 to 0.611, exceeding the recommended threshold of 0.50. These results indicate that the reflective measures are internally consistent and that each construct explains more than half of the variance in its indicators [22]. Overall, these results support the reliability and validity of the measurement model and justify proceeding with the assessment of discriminant validity and the structural model.

8.3.3. Discriminant validity

Table 6. HTMT ratios

Constructs	ERP systems	IT adoption	SMA forecasting effectiveness
ERP systems	-	0.711	0.684
IT adoption	-	-	0.732
SMA forecasting effectiveness	-	-	-

The HTMT ratios reported in Table 6 range from 0.684 to 0.732, all below the conservative threshold of 0.85. This indicates satisfactory discriminant validity and suggests that the three constructs are empirically distinct rather than excessively overlapping [22], [30]. The values therefore support the interpretation that ERP systems, IT adoption, and SMA forecasting effectiveness represent related but separate conceptual domains.

Table 7. Fornell–Larcker criterion

Construct	ERP systems	IT adoption	SMA forecasting effectiveness
ERP systems	0.763	0.648	0.601
IT adoption	0.648	0.742	0.689
SMA forecasting effectiveness	0.601	0.689	0.781

As illustrated in Table 7, all constructs meet the Fornell-Larcker criterion because the square root of the average variance extracted (AVE) for each construct exceeds the correlations of that construct with any other construct in the model. To illustrate, the square root of the AVE (0.763) for ERP Systems is greater than both the correlations with IT adoption (0.648) and SMA forecasting effectiveness (0.601). Likewise, the square root of the AVE (0.742) for IT adoption is greater than the correlations with both ERP systems (0.648) and SMA forecasting effectiveness (0.689). In addition, the square root of the AVE (0.781) for SMA forecasting effectiveness is greater than the correlations with both ERP systems (0.601) and IT adoption (0.689). The results support the existence of adequate discriminant validity because each construct has a greater portion of its variance (shared) with the indicators of that construct compared to the variance (shared) between the indicators of two different constructs [22], [31]. The complete indicator cross-loading matrix is reported in Appendix D (Table D1) as a supplementary assessment of discriminant validity, complementing the HTMT and Fornell–Larcker criteria. Cross-loadings are provided as a supplementary diagnostic, while HTMT is retained as the primary contemporary criterion for assessing discriminant validity [22], [30].

8.4. Structural model assessment

To evaluate the structural model, collinearity, path coefficients, coefficient of determination, effect size, and predictive relevance were assessed. A bootstrap sample of 5,000 was used to determine the statistical significance of structural relationships.

8.4.1. Collinearity assessment

The inner VIF values reported in Table 8 range from 1.000 to 1.315, which is well below commonly accepted thresholds for problematic multicollinearity. This indicates that the predictor constructs do not exhibit harmful levels of overlap and that the structural path estimates can be interpreted without concern that multicollinearity is distorting the coefficients [22], [23].

Table 8. Inner VIF values

Endogenous construct	Predictor	VIF
IT adoption	ERP systems	1.000
SMA forecasting effectiveness	ERP systems	1.315
SMA forecasting effectiveness	IT adoption	1.315

8.4.2. Path coefficients and hypothesis testing

As reported in Table 9, all direct structural paths are positive and statistically significant, and the corresponding confidence intervals do not include zero. The strongest direct relationship is the path from ERP systems to IT adoption ($\beta = 0.451$), followed by the path from ERP systems to SMA forecasting effectiveness ($\beta = 0.420$), while the path from IT adoption to SMA forecasting effectiveness is positive but comparatively smaller ($\beta = 0.281$). These coefficients indicate that ERP systems play a substantive role both in promoting technology adoption and in directly improving strategic forecasting effectiveness. The effect-size estimates provide

additional interpretive value: ERP systems exert moderate effects on IT adoption ($f^2 = 0.255$) and SMA forecasting effectiveness ($f^2 = 0.221$), whereas IT adoption contributes a smaller but still meaningful incremental effect on SMA forecasting effectiveness ($f^2 = 0.091$). Taken together, the findings suggest that the model is not only statistically supported but also substantively meaningful in explaining how ERP capabilities and technology use jointly shape forecasting effectiveness [22]. The estimated SmartPLS structural model, illustrating the standardized path coefficients and the explained variance (R^2) of the endogenous constructs, is presented in Appendix B (Figure B1).

Table 9. Structural path coefficients

Hypothesis	Path	β	t-value	p-value	95% CI lower	95% CI upper	f^2	Decision
H1	ERP systems → SMA forecasting effectiveness	0.420	8.614	<0.001	0.325	0.514	0.221	Supported
H2	ERP systems → IT adoption	0.451	11.478	<0.001	0.374	0.526	0.255	Supported
H3	IT adoption → SMA forecasting effectiveness	0.281	4.392	<0.001	0.157	0.405	0.091	Supported

8.4.3. Coefficient of determination and predictive relevance

Table 10 shows that the model explains 20.3% of the variance in IT adoption and 41.8% of the variance in SMA forecasting effectiveness. The adjusted R^2 values are very close to the corresponding R^2 values, suggesting that the explanatory estimates are stable rather than inflated by model complexity. In addition, the Q^2 values for IT adoption (0.134) and SMA forecasting effectiveness (0.247) are both greater than zero, indicating that the model has predictive relevance for the endogenous constructs. Overall, the results point to acceptable explanatory power and meaningful predictive capability for the proposed model [22], [30].

Table 10. Coefficient of determination and predictive relevance

Endogenous construct	R^2	Adjusted R^2	Q^2
IT adoption	0.203	0.199	0.134
SMA forecasting effectiveness	0.418	0.413	0.247

8.5. Mediation analysis

Table 11 shows that the indirect effect of ERP systems on SMA forecasting effectiveness through IT adoption is positive and statistically significant ($\beta = 0.127$, $t = 4.168$, $p < 0.001$), and the 95% bootstrapped interval (0.071 to 0.188) excludes zero. This confirms that IT adoption carries a meaningful portion of the ERP effect on forecasting effectiveness. At the same time, the direct path from ERP systems to SMA forecasting effectiveness remains significant, which supports the interpretation of partial rather than full mediation. The VAF value of 23.2% indicates that the mediating mechanism is meaningful but not dominant, suggesting that ERP systems improve forecasting effectiveness through both a direct capability-enhancing route and an indirect route operating through broader technology adoption [22], [32]. The bootstrapped indirect-effect statistics are reported in full in Table 11.

Table 11. Mediation analysis

Path	Indirect effect (β)	t-value	p-value	95% CI lower	95% CI upper	VAF	Type of mediation
ERP systems → IT adoption → SMA forecasting effectiveness	0.127	4.168	<0.001	0.071	0.188	23.2%	Partial mediation

8.6. Summary of hypothesis testing

As indicated in Table 12, the empirical results support the proposed model. ERP systems enhance strategic managerial accounting forecasting effectiveness both directly and indirectly through IT adoption.

Table 12. Summary of hypothesis testing

Hypothesis	Statement	Result
H1	ERP systems have a statistically significant positive effect on SMA forecasting effectiveness.	Supported
H2	ERP systems have a statistically significant positive effect on IT adoption.	Supported
H3	IT adoption has a statistically significant positive effect on SMA forecasting effectiveness.	Supported
H4	IT adoption mediates the relationship between ERP systems and SMA forecasting effectiveness.	Supported (partial mediation)

9. Discussion

9.1. ERP systems and strategic managerial accounting forecasting effectiveness

The results indicate that ERP systems exert a positive and meaningful direct effect on strategic managerial accounting forecasting effectiveness. This finding suggests that ERP capabilities matter not only because they automate processes, but because they improve the quality of the information environment on which strategic accounting depends. In particular, the observed effect is consistent with the view that forecasting effectiveness improves when accounting information becomes more integrated, timely, standardized, and analytically accessible across functions.

This pattern is especially plausible in banking, where strategic decisions depend on coordinated access to financial, operational, and compliance-related information originating from multiple units. ERP systems reduce fragmentation among these information streams and make it easier to generate coherent, cross-functional inputs for planning and forecast-oriented analysis. In this sense, the value of ERP systems for strategic managerial accounting lies not merely in transaction efficiency, but in strengthening the informational infrastructure that supports forward-looking managerial judgment.

This finding is consistent with prior research showing that ERP systems can strengthen management accounting practices and extend the role of accounting information beyond routine reporting toward planning and strategic support [1], [8], [17]. The present study extends this line of evidence to the more specific outcome of strategic managerial accounting forecasting effectiveness rather than claiming a fundamentally new ERP–accounting relationship. From an RBV perspective, the result suggests that ERP systems function as strategic information-processing resources that enhance organizational capacity for analysis and decision support [15]. At the same time, the magnitude of the direct effect and the presence of a mediated path indicate that technology alone does not fully explain strategic accounting value, which points to the importance of complementary use-related capabilities.

9.2. ERP systems and IT adoption

The study also finds that ERP systems have a strong positive effect on IT adoption. This result suggests that ERP implementation does more than introduce an integrated technical platform; it also reshapes organizational routines in ways that encourage broader technology use. Once work processes become increasingly dependent on shared databases, digital reporting interfaces, and integrated workflows, employees are more likely to normalize technology use in their daily activities. Furthermore, the integration of different business functions

within a single system can encourage employees to develop greater confidence in digital tools and recognize their practical value in improving coordination, information sharing, and task performance.

This interpretation is consistent with earlier work showing that ERP systems can strengthen digital culture, technology-oriented coordination, and broader patterns of system use [6], [7], [11]. It also aligns with prior evidence from Jordan indicating that ERP outcomes depend jointly on technological and user-related adoption conditions [10]. The result can therefore be understood through the combined logic of TOE and TAM: TOE explains how ERP systems alter the organization's technological and organizational context, while TAM explains how increased exposure and perceived usefulness can foster greater acceptance and routine use of technology [12], [13], [16], [18].

9.3. IT adoption and strategic managerial accounting forecasting effectiveness

The findings further show that IT adoption has a positive and statistically significant effect on strategic managerial accounting forecasting effectiveness. Although this effect is smaller than the direct ERP effect, it remains theoretically important because it demonstrates that strategic forecasting quality depends not only on the existence of integrated systems but also on whether employees and departments actively use digital tools in accounting and planning routines.

This relationship is theoretically plausible because forecasting effectiveness is achieved through use rather than system availability alone. Information stored in digital form becomes strategically valuable only when users access, interpret, share, and integrate it into planning and analytical decision processes. Higher IT adoption therefore reflects an organizational capacity to convert digital resources into actionable managerial insight. In practical terms, stronger adoption likely improves the speed, relevance, and analytical depth of forecast-related accounting information.

The result is consistent with prior studies showing that digital technology use can improve agility, decision performance, and the practical benefits derived from integrated systems [6], [7], [19], [20]. It also supports the behavioral logic of TAM, which implies that technology contributes to performance when it is accepted and incorporated into work practices, and the RBV argument that use-related capabilities are necessary for technological resources to generate strategic value [12], [13].

9.4. The mediating role of IT adoption

The mediation results provide the principal mechanism-based insight into the study. IT adoption partially mediates the relationship between ERP systems and strategic managerial accounting forecasting effectiveness, which indicates that ERP systems create value through two complementary routes rather than a single deterministic mechanism. One route is direct and capability-based: ERP systems improve information integration, process consistency, and analytical access. The second route is indirect and use-based: ERP systems also improve forecasting effectiveness by encouraging broader adoption and use of digital technologies within the organization.

This partial mediation pattern is theoretically meaningful because it shows that ERP systems are neither sufficient on their own nor merely passive infrastructures. Instead, they provide the structural potential for strategic value, while IT adoption determines how much of that potential is realized in everyday forecasting practice. The mediated effect therefore reflects a conversion process in which system capabilities become more valuable when they are embedded in actual user behavior and organizational routines.

The finding also provides empirical support for the integration of TOE, TAM, and RBV. TOE helps explain how the organizational and technological context surrounding ERP implementation shapes readiness for digital assimilation. TAM explains the behavioral mechanism through which users accept and employ digital tools in practice. RBV explains why ERP systems generate strategic value only when they are combined with complementary capabilities that enable effective use. The mediation result therefore reinforces the socio-technical interpretation of strategic managerial accounting value advanced in this study.

This interpretation is consistent with prior research indicating that organizations that build digital readiness, user competence, and technology assimilation capabilities are more likely to realize stronger performance benefits from ERP-enabled transformation [6], [7], [14]. The fact that mediation is partial rather than full further suggests that ERP systems have intrinsic strategic accounting value, but that this value is amplified when organizations also succeed in embedding technology in practice.

9.5. Overall interpretation of the findings

Taken together, the findings suggest that strategic managerial accounting forecasting effectiveness in Jordanian commercial banks is best understood as a socio-technical outcome. ERP systems provide the integrated information architecture required for higher-quality strategic analysis, but the extent to which this architecture improves forecasting depends in part on whether the organization achieves meaningful technology adoption. The overall pattern therefore indicates that strategic accounting effectiveness emerges from the interaction of technological capability and organizational use, rather than from either dimension in isolation.

10. Implications

10.1. Theoretical implications

The theoretical contribution of this study is deliberately bounded. Rather than proposing a new theory of technological value creation, the study provides a mechanism-based and context-specific extension of established ERP and technology-adoption research. First, it applies existing ERP value-creation arguments to the specific outcome of strategic managerial accounting forecasting effectiveness. Second, it provides empirical evidence that IT adoption partially transmits the relationship between ERP capability and this accounting outcome, thereby clarifying one pathway through which technological resources may be translated into practical strategic value. Third, the complementary use of TOE, TAM, and RBV provides organizational, behavioral, and resource-based explanations for different components of the observed relationships. Accordingly, the study's contribution lies primarily in refining, applying, and contextualizing existing theoretical arguments in the Jordanian banking setting rather than claiming a major theoretical departure.

10.2. Practical implications

The findings also carry practical implications for commercial bank executives, chief information officers, accounting leaders, and strategic planning units. First, ERP systems should be managed as strategic information infrastructures rather than as purely operational software platforms, because their value extends to planning, forecasting, and managerial decision support. Second, the partial mediation result shows that ERP investment alone is insufficient; banks must also strengthen user adoption through training, managerial support, change management, and digital capability development. Third, managers should view forecast improvement as a dual challenge involving both technical integration and organizational assimilation. In practical terms, banks are likely to obtain stronger strategic accounting benefits when ERP implementation is accompanied by deliberate efforts to build cross-functional usage, digital routines, and sustain employee engagement with the system.

11. Limitations and future research

Every empirical study, including this one, has limitations. One such limitation of this study is that the research adopts a cross-sectional design, making it impossible to fully establish temporal causality. Future research can utilize a longitudinal design to investigate the time-based development of ERP implementation, IT adoption, and the success of strategic managerial accounting forecasting.

The second limitation of this research involves its reliance on self-reports from individuals who work in identical firms. While procedural (anonymity assurances) and statistical (full collinearity assessments) measures were taken to minimize the effects of common response bias, the potential for residual method effects remains; hence, future investigations can help support the confidence with which causal conclusions are made; they might do

this by using a combination of survey data and other variables such as archival records, system usage data, or multiple sources.

The study's purposive sampling focused on employees in functional capacities that most closely pertain to ERP and strategic accounting; therefore, it is appropriately positioned methodologically with respect to the study's research objectives, but caution should be used when generalizing the study's findings beyond professional groups and organizational contexts that are similar to those of the study sample. Future research efforts could include broad multi-level designs, larger cross-industry comparative studies, or cross-national samples.

Fourthly, while the research shows that IT adoption is a significant mediator, it deliberately keeps the model minimalist. The relationship between ERP systems and forecasting effectiveness may also be impacted by additional variables such as digital culture, top management support, user competency, data quality, system maturity, organizational learning, and environmental uncertainty. As a result, future research may include moderating variables or additional mediators to expand upon the model.

The study focuses only on commercial banks in Jordan. This context provides greater specificity and makes it easier to interpret the results; however, it also limits the generalizability of the findings to other regulatory, technological, and institutional environments. To provide more insights into the stability of the relationships observed, replication studies could also be conducted in some of the following areas: Islamic banking, non-bank financial institutions, manufacturing companies, or public sector agencies.

Finally, the present study operationalized SMA forecasting effectiveness as a single first-order reflective construct whose item pool covers the related substantive facets of timeliness, relevance, analytical usefulness, and information integration. Future research could investigate whether these facets demonstrate sufficient theoretical and empirical distinctiveness to justify their treatment as separate first-order dimensions within a higher-order component model. Such future studies could also relate individual dimensions to more objective criteria, including forecast accuracy, planning responsiveness, budgeting quality, and branch-level strategic performance. Higher-order specifications, where theoretically warranted, should be assessed and reported using appropriate PLS-SEM procedures [33].

12. Conclusion

This study examined the relationships among ERP systems, IT adoption, and strategic managerial accounting forecasting effectiveness in Jordanian commercial banks. Drawing on an integrated TOE–TAM–RBV framework, it also assessed whether IT adoption mediates the relationship between ERP systems and forecasting effectiveness.

The findings show that ERP systems contribute directly to stronger forecasting effectiveness and also indirectly through IT adoption. ERP systems improve the informational and structural conditions required for strategic accounting by enhancing integration, consistency, and analytical visibility; while IT adoption strengthens the organization’s ability to translate those capabilities into everyday forecasting and planning practice. IT adoption also exerts an independent positive effect on forecasting effectiveness, which confirms that strategic accounting value depends not only on system availability but also on actual technology use.

The partial mediation finding indicates that ERP systems generate strategic accounting value through both direct capability-enhancing effects and indirect use-based effects operating through IT adoption. This result supports the argument that ERP value creation is socio-technical in nature: technological infrastructure provides the potential for strategic benefit, while organizational adoption helps determine how fully that potential is realized.

Overall, in line with [34], [35], the study concludes that strategic managerial accounting forecasting effectiveness in Jordanian commercial banks is shaped by the interaction between ERP capability and IT adoption. By focusing on a specific strategic accounting outcome and by explaining the mediating role of technology adoption, the study contributes to a more precise understanding of how ERP systems create strategic value in emerging-market banking environments.

Declaration of competing interest

The authors declare that they have no known financial or non-financial competing interests in any material discussed in this paper.

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Author contributions

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Abbreviations

The following abbreviations were used in this manuscript:

Abbreviation	Meaning
ERP	Enterprise resource planning
IT	Information technology
TOE	Technology–organization–environment
TAM	Technology acceptance model
RBV	Resource-based view
SMA	Strategic managerial accounting
PLS-SEM	Partial least squares structural equation modeling
VIF	Variance inflation factor
HTMT	Heterotrait–monotrait ratio
AVE	Average variance extracted
CR	Composite reliability
SRMR	Standardized root mean square residual
Q^2	Predictive relevance
f^2	Effect size
VAF	Variance accounted for

References

[1] L.-E.-L. Barna, B.-Ș. Ionescu, and L. Ionescu-Feleagă, "The relationship between the implementation of ERP systems and the financial and non-financial reporting of organizations," Sustainability, vol. 13, no. 21, Art. no. 11566, Oct. 2021, https://doi.org/10.3390/su132111566.

[2] F. Kitsios, I. Giatsidis, and M. Kamariotou, "Digital transformation and strategy in the banking sector: Evaluating the acceptance rate of e-services," Journal of Open Innovation: Technology, Market, and Complexity, vol. 7, no. 3, Art. no. 204, Sep. 2021, https://doi.org/10.3390/joitmc7030204.

[3] S. Alsughayer, "Role of ERP systems in management accounting in SMEs in Saudi Arabia," Journal of Accounting & Organizational Change, vol. 21, no. 2, pp. 382–403, Mar. 2025, https://doi.org/10.1108/JAOC-11-2022-0176.

[4] A. Bhimani, "Digital data and management accounting: Why we need to rethink research methods," Journal of Management Control, vol. 31, nos. 1–2, pp. 9–23, Apr. 2020, https://doi.org/10.1007/s00187-020-00295-z.

[5] N. H. Nik Abdullah, S. Krishnan, A. A. Mohd Zakaria, and G. Morris, "Strategic management accounting practices in business: A systematic review of the literature and future research directions," Cogent Business & Management, vol. 9, no. 1, 2022, https://doi.org/10.1080/23311975.2022.2093488.

[6] P. Ruivo, B. Johansson, S. Sarker, and T. Oliveira, "The relationship between ERP capabilities, use, and value," Computers in Industry, vol. 117, Art. no. 103209, May 2020, https://doi.org/10.1016/j.compind.2020.103209.

[7] Md. A. Uddin, M. S. Alam, A. Al Mamun, T.-U.-Z. Khan, and A. Akter, "A study of the adoption and implementation of enterprise resource planning (ERP): Identification of moderators and mediator," Journal of Open Innovation: Technology, Market, and Complexity, vol. 6, no. 1, Art. no. 2, Mar. 2020, https://doi.org/10.3390/joitmc6010002.

[8] Z. Alhatabat, "The impact of ERP system's adoption on management accounting practices in the Jordanian manufacturing companies," International Journal of Business Information Systems, vol. 33, no. 2, p. 267, 2020, https://doi.org/10.1504/IJBIS.2020.105163.

[9] E. Ali Alqararah, M. Shehadeh, and H. Yaseen, "The role of digital transformation capabilities in improving banking performance in Jordanian commercial banks," Journal of Risk and Financial Management, vol. 18, no. 4, Art. no. 196, Apr. 2025, https://doi.org/10.3390/jrfm18040196.

[10] M. O. Al Shbail, Z. Jaradat, M. B. Baker, and M. Almuiet, "Individual and technological factors affecting the adoption of enterprise resource planning systems in the Jordanian banking sector," International Journal of Business Information Systems, vol. 45, no. 1, pp. 118–141, 2024, https://doi.org/10.1504/IJBIS.2024.135972.

[11] D. A. Almajali, F. Omar, A. Alsokkar, A. S. Alsherideh, R. Masa'Deh, and Z. Dahalin, "Enterprise resource planning success in Jordan from the perspective of IT-business strategic alignment," Cogent Social Sciences, vol. 8, no. 1, 2022, https://doi.org/10.1080/23311886.2022.2062095.

[12] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," MIS Quarterly, vol. 13, no. 3, pp. 319–340, Sep. 1989, https://doi.org/10.2307/249008.

[13] V. Venkatesh and F. D. Davis, "A theoretical extension of the technology acceptance model: Four longitudinal field studies," Management Science, vol. 46, no. 2, pp. 186–204, Feb. 2000, https://doi.org/10.1287/mnsc.46.2.186.11926.

[14] A. Lutfi, H. Alqudah, K. I. Al-Daoud, N. Zaqeeba, M. Alrawad, and M. A. Almaiah, "Technology factors and ERP system efficiency in the Jordanian industrial firms: Does company size matter?," Humanities and Social Sciences Communications, vol. 11, no. 1, Art. no. 674, May 2024, https://doi.org/10.1057/s41599-024-03198-9.

[15] J. Barney, "Firm resources and sustained competitive advantage," Journal of Management, vol. 17, no. 1, pp. 99–120, Mar. 1991, https://doi.org/10.1177/014920639101700108.

[16] H. Gangwar, H. Date, and R. Ramaswamy, "Understanding determinants of cloud computing adoption using an integrated TAM-TOE model," Journal of Enterprise Information Management, vol. 28, no. 1, pp. 107–130, Feb. 2015, https://doi.org/10.1108/JEIM-08-2013-0065.

[17] U. Weerasekara and T. Gooneratne, "Enterprise resource planning (ERP) system implementation in a manufacturing firm: Rationales, benefits, challenges and management accounting ramifications,"

Journal of Accounting and Management Information Systems, vol. 22, no. 1, 2023, https://doi.org/10.24818/jamis.2023.01005.

[18] J. Baker, "The Technology–Organization–Environment Framework," in Information Systems Theory, Integrated Series in Information Systems, vol. 28, Y. Dwivedi, M. Wade, and S. Schneberger, Eds. 2012, pp. 231–245, https://doi.org/10.1007/978-1-4419-6108-2_12.

[19] H. A. Alnemer, "Determinants of digital banking adoption in the Kingdom of Saudi Arabia: A technology acceptance model approach," Digital Business, vol. 2, no. 2, Art. no. 100037, 2022, https://doi.org/10.1016/j.digbus.2022.100037.

[20] N. Qatawneh, "Empirical insights into business intelligence adoption and decision-making performance during the digital transformation era: Extending the TOE model in the Jordanian banking sector," Journal of Open Innovation: Technology, Market, and Complexity, vol. 10, no. 4, Art. no. 100401, Dec. 2024, https://doi.org/10.1016/j.joitmc.2024.100401.

[21] R. Bougie and U. Sekaran, Research Methods for Business: A Skill-Building Approach. John Wiley & Sons, 2020.

[22] J. F. Hair, J. J. Risher, M. Sarstedt, and C. M. Ringle, "When to use and how to report the results of PLS-SEM," European Business Review, vol. 31, no. 1, pp. 2–24, Jan. 2019, https://doi.org/10.1108/EBR-11-2018-0203.

[23] J. Henseler, G. Hubona, and P. A. Ray, "Using PLS path modeling in new technology research: Updated guidelines," Industrial Management & Data Systems, vol. 116, no. 1, pp. 2–20, Feb. 2016, https://doi.org/10.1108/IMDS-09-2015-0382.

[24] S. Campbell et al., "Purposive sampling: Complex or simple? Research case examples," Journal of Research in Nursing, vol. 25, no. 8, pp. 652–661, Dec. 2020, https://doi.org/10.1177/1744987120927206.

[25] J.-H. Cheah, F. Magno, and F. Cassia, "Reviewing the SmartPLS 4 software: The latest features and enhancements," Journal of Marketing Analytics, vol. 12, no. 1, pp. 97–107, Mar. 2024, https://doi.org/10.1057/s41270-023-00266-y.

[26] A. T. Jebb, V. Ng, and L. Tay, "A review of key Likert scale development advances: 1995–2019," Frontiers in Psychology, vol. 12, May 2021, https://doi.org/10.3389/fpsyg.2021.637547.

[27] P. M. Podsakoff, S. B. MacKenzie, J.-Y. Lee, and N. P. Podsakoff, "Common method biases in behavioral research: A critical review of the literature and recommended remedies," Journal of Applied Psychology, vol. 88, no. 5, pp. 879–903, 2003, https://doi.org/10.1037/0021-9010.88.5.879.

[28] J. S. Armstrong and T. S. Overton, "Estimating nonresponse bias in mail surveys," Journal of Marketing Research, vol. 14, no. 3, pp. 396–402, Aug. 1977, https://doi.org/10.1177/002224377701400320.

[29] N. Kock, "Common method bias in PLS-SEM," International Journal of e-Collaboration, vol. 11, no. 4, pp. 1–10, Oct. 2015, https://doi.org/10.4018/ijec.2015100101.

[30] J. Henseler, C. M. Ringle, and M. Sarstedt, "A new criterion for assessing discriminant validity in variance-based structural equation modeling," Journal of the Academy of Marketing Science, vol. 43, no. 1, pp. 115–135, Jan. 2015, https://doi.org/10.1007/s11747-014-0403-8.

[31] C. Fornell and D. F. Larcker, "Evaluating structural equation models with unobservable variables and measurement error," Journal of Marketing Research, vol. 18, no. 1, pp. 39–50, Feb. 1981, https://doi.org/10.1177/002224378101800104.

[32] A. F. Hayes, Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach, 3rd ed. New York, NY, USA: The Guilford Press, 2022.

[33] M. Y. Alhasnawi et al., "Goal-setting meets public budgeting: How budget characteristics drive institutional development, a symmetric–asymmetric hybrid approach (PLS-SEM, fsQCA) with MCDM analysis," Social Sciences & Humanities Open, vol. 13, Art. no. 102886, Jun. 2026, https://doi.org/10.1016/j.ssaho.2026.102886.

[34] M. H. D. Dalloul, Z. B. Ibrahim, and S. Tajul Urus, "Analyzing the effectiveness of accounting information systems: Empirical evidence from municipalities," Jordan Journal of Business Administration, vol. 22, no. 2, pp. 86–113, 2026, https://doi.org/10.35516/jjba.v22i2.1666.

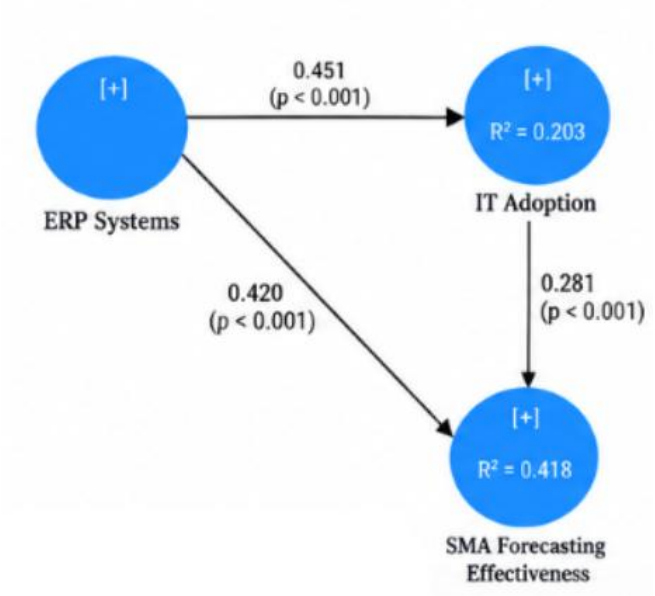
[35] M. K. Al Ani, "Value relevance of accounting information and non-accounting information: Evidence from Oman," Jordan Journal of Business Administration, vol. 22, no. 2, pp. 20–36, 2026, https://doi.org/10.35516/jjba.v22i2.721.

Appendix A. Measurement items, sources, and adaptation status

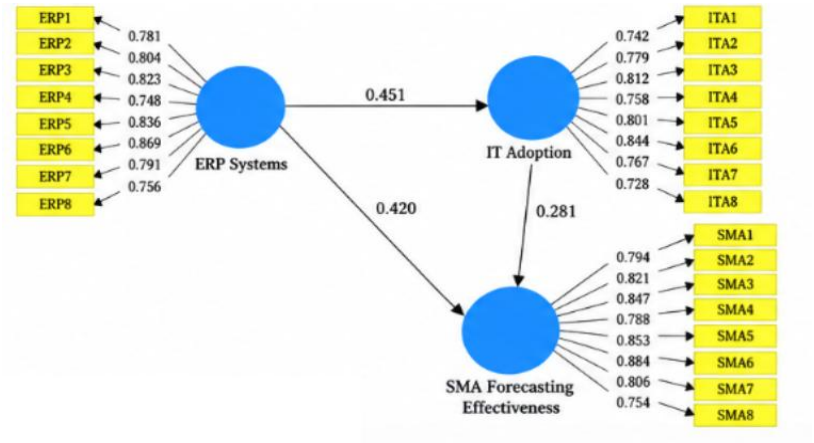
Construct	Item code	Item wording	Sources	Adaptation status	Outer loading
ERP systems	ERP1	Our bank's ERP system integrates data across functional departments.	Ruivo et al. (2020); Barna et al. (2021)	Adapted	0.781
ERP systems	ERP2	The ERP system provides timely access to financial and operational information.	Barna et al. (2021); Alhatabat (2020)	Adapted	0.804
ERP systems	ERP3	The ERP system improves consistency of reporting across departments.	Barna et al. (2021); Weerasekara & Gooneratne (2023)	Adapted	0.823
ERP systems	ERP4	The ERP system reduces duplication and information fragmentation.	Ruivo et al. (2020); Almajali et al. (2022)	Adapted	0.748
ERP systems	ERP5	The ERP system supports coordination among units involved in planning and reporting.	Ruivo et al. (2020); Almajali et al. (2022)	Adapted	0.836
ERP systems	ERP6	The ERP system enhances the analytical visibility of organizational data.	Alhatabat (2020); Weerasekara & Gooneratne (2023)	Adapted	0.869
ERP Systems	ERP7	The ERP system improves process standardization in accounting-related tasks.	Barna et al. (2021); Alsughayer (2025)	Adapted	0.791
ERP systems	ERP8	The ERP system supports strategic decision processes through integrated information.	Ruivo et al. (2020); Alsughayer (2025)	Adapted	0.756
IT adoption	ITA1	Employees regularly use ERP-enabled digital tools in their daily work.	Davis (1989); Venkatesh & Davis (2000)	Adapted	0.742
IT adoption	ITA2	Employees perceive digital systems as useful for job performance.	Davis (1989)	Adapted	0.779
IT adoption	ITA3	Employees find ERP-enabled technologies easy to use in work tasks.	Davis (1989); Venkatesh & Davis (2000)	Adapted	0.812
IT adoption	ITA4	Staff willingly incorporate digital tools into reporting and analysis routines.	Venkatesh & Davis (2000); Kitsios et al. (2021)	Adapted	0.758
IT adoption	ITA5	Different units actively use IT tools for coordination and information sharing.	Kitsios et al. (2021); Alnemer (2022)	Adapted	0.801
IT adoption	ITA6	The bank encourages widespread use of digital systems in functional activities.	Alnemer (2022); Qatawneh (2024)	Adapted	0.844
IT adoption	ITA7	Employees are confident in using IT tools for planning and forecasting.	Venkatesh & Davis (2000); Alnemer (2022)	Adapted	0.767

Construct	Item code	Item wording	Sources	Adaptation status	Outer loading
IT adoption	ITA8	Digital tools are embedded in routine work processes across relevant units.	Kitsios et al. (2021); Qatawneh (2024)	Adapted	0.728
SMA forecasting effectiveness	SMA1	Accounting information is available in time for strategic decisions.	Bhimani (2020); Nik Abdullah et al. (2022)	Adapted	0.794
SMA forecasting effectiveness	SMA2	Accounting information is relevant for forecasting and planning.	Nik Abdullah et al. (2022); Alsughayer (2025)	Adapted	0.821
SMA forecasting effectiveness	SMA3	Accounting reports support analytical evaluation of strategic alternatives.	Bhimani (2020); Weerasekara & Gooneratne (2023)	Adapted	0.847
SMA forecasting effectiveness	SMA4	Accounting information supports managerial decision-making across units.	Alsughayer (2025); Weerasekara & Gooneratne (2023)	Adapted	0.788
SMA forecasting effectiveness	SMA5	Accounting information is integrated across functions for planning purposes.	Nik Abdullah et al. (2022); Weerasekara & Gooneratne (2023)	Adapted	0.853
SMA forecasting effectiveness	SMA6	The accounting system helps anticipate future trends and conditions.	Bhimani (2020); Nik Abdullah et al. (2022)	Adapted	0.884
SMA forecasting effectiveness	SMA7	Accounting outputs improve forecasting quality and planning responsiveness.	Alsughayer (2025); Weerasekara & Gooneratne (2023)	Adapted	0.806
SMA forecasting effectiveness	SMA8	The accounting system contributes to strategically useful forward-looking information.	Bhimani (2020); Nik Abdullah et al. (2022)	Adapted	0.754

Appendix B. SmartPLS structural model



Appendix C. SmartPLS measurement model



Appendix D. Indicator cross-loadings

Item	ERP systems	IT adoption	SMA forecasting effectiveness
ERP1	0.781	0.452	0.389
ERP2	0.804	0.471	0.412
ERP3	0.823	0.498	0.433
ERP4	0.748	0.396	0.351
ERP5	0.836	0.515	0.457
ERP6	0.869	0.529	0.466
ERP7	0.791	0.488	0.418
ERP8	0.756	0.421	0.372
ITA1	0.501	0.742	0.538
ITA2	0.467	0.779	0.551
ITA3	0.512	0.812	0.589
ITA4	0.443	0.758	0.501
ITA5	0.486	0.801	0.567
ITA6	0.520	0.844	0.624
ITA7	0.451	0.767	0.559
ITA8	0.408	0.728	0.489
SMA1	0.386	0.523	0.794
SMA2	0.421	0.572	0.821
SMA3	0.458	0.611	0.847
SMA4	0.397	0.538	0.788
SMA5	0.446	0.620	0.853
SMA6	0.472	0.664	0.884
SMA7	0.429	0.598	0.806
SMA8	0.368	0.521	0.754