INTEGRATED CLOUD ERP SYSTEMS AND COST TRANSPARENCY: AN EMPIRICAL INVESTIGATION INTO ADOPTION, BENEFITS, AND INTEGRATION ISSUES AMONG INDIAN ENTERPRISES

Abstract

This empirical study investigates how integrated cloud ERP systems enhance cost transparency in Indian enterprises, focusing on adoption levels, perceived benefits, and ease of integration. Drawing on primary data from a structured questionnaire administered to cost accountants, finance and ERP professionals, the research employs PLS-SEM to test relationships mediated by perceived information quality and timeliness. Results reveal strong support for all hypotheses: perceived benefits exert the strongest influence on information quality ($\beta = 0.588$, $p < 0.001$), followed by ease of integration ($\beta = 0.278$, $p < 0.001$) and adoption level ($\beta = 0.077$, $p = 0.026$). Information quality significantly mediates the path to cost transparency (explaining 28.5% variance in the outcome). The study highlights cloud ERP's strategic role in improving real-time cost visibility and decision-making. These findings offer practical insights for Indian organizations and cost management professionals adopting digital tools for sustainable cost efficiency in FY 2026–27.

Dr. Amit Kumar Nag
Professor (Finance)
BSSS Institute of Advanced Studies (BSSS IAS)
Bhopal
amitnag148@gmail.com

Introduction

The evolution of Enterprise Resource Planning systems has significantly transformed organizational operations, enabling integrated management of core business processes across various departments (Ghosh & Biswas, 2016). Initially adopted by large corporations, these systems consolidated information and streamlined workflows, although with substantial on-premise infrastructure investments and associated maintenance complexities (Lee et al., 2024). The arrival of cloud computing, however, introduced a paradigm shift, offering Cloud ERP solutions that mitigate these traditional challenges through enhanced scalability, flexibility, and reduced total cost of ownership (Lee et al., 2024). This evolution allows organizations to access robust ERP functionalities as a service, thereby eliminating the need for extensive in-house IT infrastructure and personnel (Gupta et al., 2018). This accessibility has democratized access to sophisticated ERP capabilities, particularly benefiting small and medium-sized enterprises that previously found traditional ERP systems prohibitively expensive (Zadeh et al., 2018). The inherent agility of cloud-based platforms facilitates rapid deployment and continuous updates, ensuring businesses remain competitive in dynamic market environments (Basu et al., 2023). Cloud ERP

systems deliver advantages including real-time process integration, improved visibility and control, higher productivity, reduced personnel costs, online data access, better decision-making, and overall cost-efficiency (Chirvase & Zamfir, 2023; Gupta et al., 2018; Thompson, 2025). Despite these advantages, empirical evidence on actual benefits, particularly cost transparency, remains limited in Indian enterprises. While general literature covers Cloud ERP adoption drivers (Jha et al., 2022; Johansson et al., 2015), the mediated impact of information quality and timeliness on cost transparency in India's unique socio-economic context is underexplored (Albarrak et al., 2024; Fasileem & Rajapakse, 2022). This study bridges this gap by empirically examining how Cloud ERP adoption levels, perceived benefits, and ease of integration enhance perceived cost of transparency via improved information quality and timeliness.

Objectives of the Study

This study aims to:

i. Examine the adoption level of integrated cloud ERP systems in Indian enterprises.
ii. Assess the perceived benefits of cloud ERP for cost management.
iii. Evaluate the ease of integrating cloud ERP with existing systems.
iv. Investigate how information quality mediates the link between cloud ERP factors and cost transparency.
v. Determine the overall effect of cloud ERP on cost transparency.

Conceptual Framework

The conceptual framework shows how Cloud ERP Adoption Level, Perceived Benefits of Cloud ERP, and Perceived Ease of Integration positively influence Perceived Information Quality and Timeliness (the mediator), which then leads to higher Perceived Cost of Transparency in the Organization (the outcome). In other words, better adoption, stronger benefits, and smoother integration improve the quality and speed of cost-related information, ultimately making costs clearer and easier to understand across the organization. This model is inspired by the DeLone and McLean Information Systems Success Model (2003), which stresses information quality as a key link between system use and organizational benefits, along with elements of the Technology Acceptance Model focusing on usefulness and ease of use.

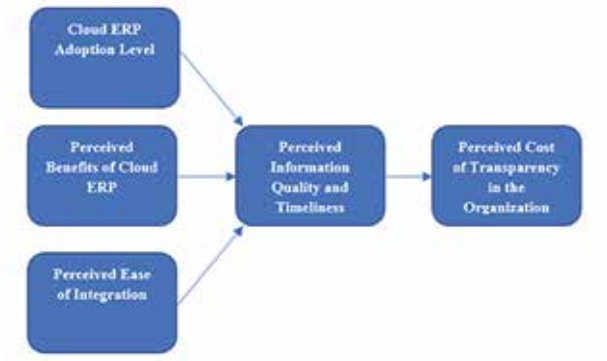

Figure 1: Conceptual Framework

Hypotheses of the Study

$H1_0$: Cloud ERP adoption level has no positive effect on information quality and timeliness.

$H1_1$: Cloud ERP adoption level positively affects information quality and timeliness.

$H2_0$: Perceived benefits of cloud ERP have no positive effect on information quality and timeliness.

$H2_1$: Perceived benefits of cloud ERP positively affect information quality and timeliness.

$H3_0$: Perceived ease of integration has no positive effect on information quality and timeliness.

$H3_1$: Perceived ease of integration positively affects information quality and timeliness.

$H4_0$: Information quality and timeliness does not mediate the relationship between cloud ERP factors and cost transparency.

$H4_1$: Information quality and timeliness mediates the relationship between cloud ERP factors and cost transparency.

Methodology

This study used a quantitative cross-sectional survey design. Primary data were collected through an online structured questionnaire from 431 valid respondents (cost accountants, finance managers, and ERP professionals in Indian enterprises), using convenience and snowball sampling via CMAs networks, LinkedIn, and professional groups. The

sample size was determined using the Taro Yamane formula to ensure adequate representation and statistical reliability. The questionnaire included demographic questions and 25 five-point Likert-scale items measuring five reflective constructs, adapted from ERP and information systems success literature. Data were analyzed using PLS-SEM in SmartPLS 4 software. The measurement model was evaluated for reliability (Cronbach's alpha and composite reliability) and convergent validity (AVE). Structural paths, significance (bootstrapping with 5000 subsamples), R^2, and mediation effects were assessed following Hair et al. (2022) guidelines. Participation was voluntary and anonymous.

Confirmatory Composite Analysis

Table 1: Reliability and Convergent Validity of Constructs (Confirmatory Composite Analysis)

Variables and their indicators	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Cloud ERP Adoption Level (CERPAL): i. Our organization has widely adopted integrated cloud ERP modules. ii. Cloud ERP covers most of our key business processes. iii. Our organization has implemented cloud ERP across multiple departments. iv. Cloud ERP adoption in our firm is at an advanced stage. v. Integrated cloud ERP is fully operational in our costing functions.	0.844	0.851	0.896	0.682
Perceived Benefits of Cloud ERP (PBCERP): i. Cloud ERP provides real-time cost data access. ii. Cloud ERP improves cost reporting accuracy. iii. Cloud ERP reduces overall cost management expenses. iv. Cloud ERP enhances scalability for cost analysis. v. Cloud ERP boosts decision-making speed on costs.	0.883	0.892	0.915	0.685
Perceived Ease of Integration (PEOI): i. Integration of cloud ERP with our existing systems was straightforward. ii. Our legacy systems integrated smoothly with the cloud ERP. iii. Data migration to cloud ERP was easy and efficient. iv. Customization and setup of cloud ERP faced minimal technical barriers. v. Overall, integration challenges with cloud ERP were low in our organization.	0.912	0.941	0.933	0.736

Perceived Information Quality and Timeliness (PIQT): i. Cloud ERP delivers accurate cost information. ii. Cost data in ERP is always timely. iii. ERP integrates cost data without errors. iv. Real-time cost updates are reliable. v. ERP provides complete and unified cost info.	0.921	0.927	0.941	0.760
Perceived Cost of Transparency in the Organization (PCTO): i. Cost data is fully visible across departments. ii. Management has clear insight into cost drivers. iii. Cost allocation is highly transparent now. iv. ERP has improved overall cost traceability. v. Stakeholders easily understand cost details.	0.924	0.935	0.943	0.767

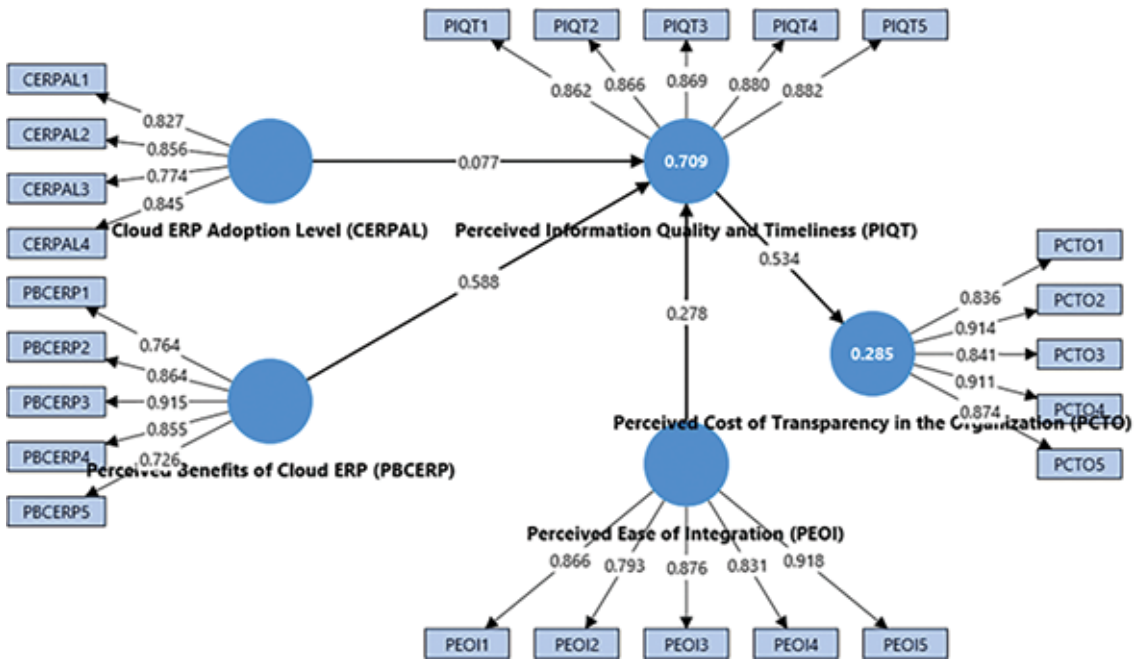

Figure 2: PLS Path Model

The Confirmatory Composite Analysis (CCA) results presented in the table indicate strong reliability and convergent validity for all five reflective constructs in the measurement model. Cronbach's alpha values range from 0.844 to 0.924, well above the recommended threshold of 0.70. Composite reliability (rho_a) ranges from 0.851 to 0.941, and composite reliability (rho_c) from 0.896 to 0.943, both exceeding 0.70 (and staying below 0.95, avoiding potential redundancy concerns). Convergent validity is also established, as the Average Variance Extracted (AVE) values range from 0.682 to 0.767, all comfortably above the accepted threshold of 0.50. This means that, on average, each construct explains more than half

of the variance in its indicators, indicating that the items converge well on their intended constructs. This confirms that the questionnaire items effectively measure their respective latent variables (Cloud ERP Adoption Level, Perceived Benefits of Cloud ERP, Perceived Ease of Integration, Perceived Information Quality and Timeliness, and Perceived Cost of Transparency in the Organization), supporting the use of these scales for further structural model analysis.

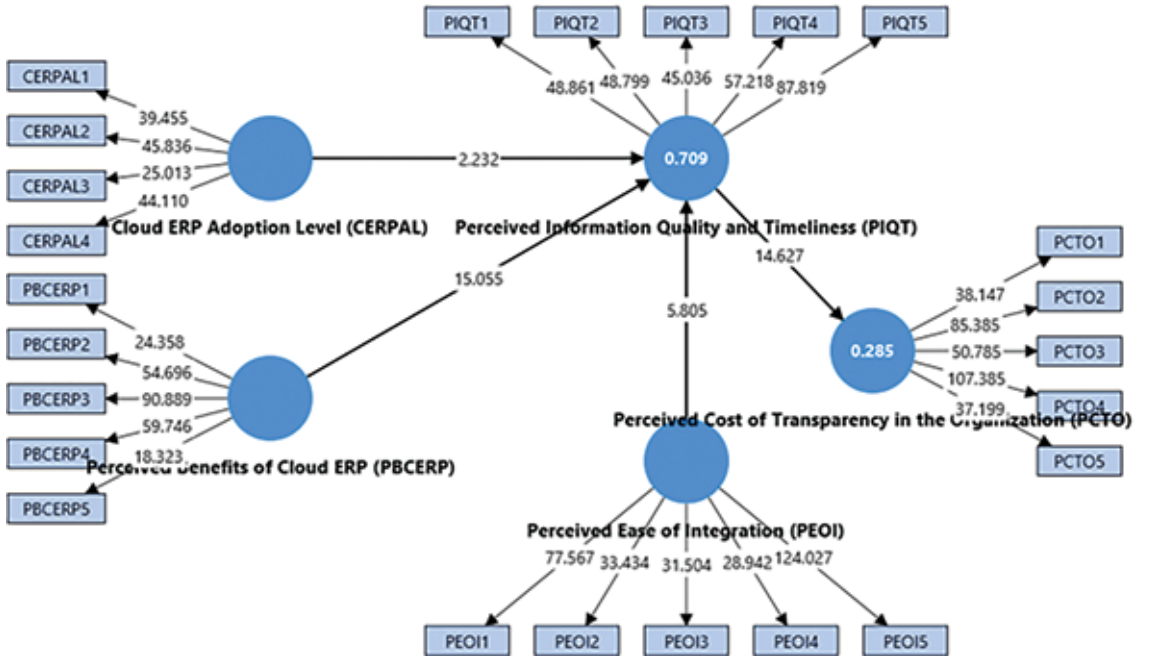

Figure 3: Hypothesis Testing Results: Path Coefficients, t-Statistics, and P-Values

Table 2: Hypothesis Testing Results

Hypotheses	Original sample (O)	T statistics (|O/STDEV|)	P values	Supported
$H1_0$: Cloud ERP adoption level has no positive effect on information quality and timeliness.	0.077	2.232	0.026	Alternate Hypothesis Supported
$H2_0$: Perceived benefits of cloud ERP have no positive effect on information quality and timeliness.	0.588	15.055	0.000	Alternate Hypothesis Supported
$H3_0$: Perceived ease of integration has no positive effect on information quality and timeliness.	0.278	5.805	0.000	Alternate Hypothesis Supported
$H4_0$: Information quality and timeliness does not mediate the relationship between cloud ERP factors and cost transparency.	0.534	14.627	0.000	Alternate Hypothesis Supported

The structural model is robust, with the independent variables (Cloud ERP Adoption Level, Perceived Benefits of Cloud ERP, and Perceived Ease of Integration) explaining 70.9% of the variance in Perceived Information Quality and Timeliness ($R^2 = 0.709$), indicating strong predictive power for the mediator, while explaining a moderate 28.5% of the variance in Perceived Cost of Transparency ($R^2 = 0.285$) primarily through mediation. Path analysis strongly supports all alternate hypotheses: Cloud ERP Adoption Level positively affects information quality ($\beta = 0.077$, $p = 0.026$), Perceived Benefits shows the strongest

effect (β = 0.588, p < 0.001), Perceived Ease of Integration contributes significantly (β = 0.278, p < 0.001), and information quality substantially influences cost transparency (β = 0.534, p < 0.001), confirming H1–H4 with all paths significant at p < 0.05.

Discussion

The results confirm that perceived benefits of cloud ERP exert the strongest influence on information quality and timeliness (β = 0.588), aligning closely with Gupta et al. (2018), who highlighted how cloud ERP improves organizational performance through better visibility and efficiency. Ease of integration (β = 0.278) and adoption level (β = 0.077) also play meaningful roles, reinforcing the importance of smooth implementation for real-time cost data. For cost and management accountants in India, these findings emphasize the need to prioritize user-perceived benefits during ERP rollout to achieve higher cost transparency and support better strategic decision-making in the digital-driven FY 2026–27 environment. This ultimately supports India's push for digital economy and Viksit Bharat by 2047.

Limitations and Future Research

This study has limitations as it relies on perceptual/self-reported data from a cross-sectional survey, which may include response bias and cannot establish causality over time. The convenience sampling through professional networks may limit generalizability. Future research could adopt longitudinal designs, objective cost metrics, or larger samples from diverse sectors to validate these findings and explore additional factors such as organizational culture or regulatory compliance in cloud ERP adoption.

Conclusion

The findings demonstrate that integrated cloud ERP systems significantly enhance cost transparency in Indian enterprises, primarily through improved information quality and timeliness. Perceived benefits emerge as the dominant driver, followed by ease of integration and adoption level. These results highlight the strategic value of cloud ERP adoption for better cost visibility and informed decision-making, offering practical guidance for cost accountants, finance professionals, and Indian organizations aiming to strengthen cost management in a digital era. MA

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