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A Study on Effectiveness of the ERP System in Improving Financial Management Efficiency at Surya Pelle Chemical & Mould Private Limited Company.

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ABSTRACT

Enterprise Resource Planning (ERP) systems have emerged as pivotal instruments in reshaping financial management practices within manufacturing organisations. This study examines the extent to which ERP adoption contributes to financial management efficiency, with specific reference to a chemical and mould manufacturing firm operating in South India. Employing a quantitative, descriptive survey design, data were collected from 110 employees drawn from finance, marketing, production, and human resource departments through a structured Likert-scale questionnaire. The internal consistency of the instrument was validated using Cronbach's Alpha ($\alpha = 0.736$). Statistical analyses encompassing Pearson correlation, multiple regression, one-way ANOVA, and chi-square tests were applied to examine inter-construct relationships and demographic influences. The findings reveal statistically significant positive correlations among all ERP-related constructs — namely, system impact, internal control, decision-making support, and cost efficiency — with correlation coefficients ranging from $r = 0.41$ to $r = 0.61$ ($p < 0.001$). The regression model accounts for 46.1% of the variance in ERP role effectiveness ($R^2 = 0.461$, $F = 22.174$, $p < 0.001$), affirming the predictive potency of ERP dimensions on financial outcomes. Demographic analysis indicates that age and departmental affiliation exert significant influence on ERP perceptions, whereas gender and educational qualification do not yield statistically meaningful differences. The study concludes that ERP systems function not merely as operational utilities but as strategic enablers of financial governance, cost control, and evidence-based managerial decision-making. Recommendations are advanced for strengthening training frameworks, cross-departmental integration, and the adoption of next-generation cloud and AI-enabled ERP platforms.

Keywords: ERP Systems, Financial Management Efficiency, Internal Control, Decision-Making, Cost Efficiency

1.INTRODUCTION

The contemporary business environment is characterised by relentless competitive pressure, regulatory complexity, and an increasing demand for real-time financial intelligence. In this milieu, Enterprise Resource Planning systems have gained unprecedented prominence as integrated platforms capable of consolidating disparate organisational functions — including finance, procurement, production, and human resources — into a unified, data-driven architecture. The fundamental premise underlying ERP adoption is that the elimination of information silos and the automation of transactional workflows will yield measurable improvements in both operational efficiency and financial governance.

Financial management, as a discipline, constitutes the backbone of organisational decision-making. It encompasses the planning, monitoring, and control of financial resources to sustain organisational viability and achieve strategic objectives. Traditional, fragmented financial management systems have long been beleaguered by challenges such as data redundancy, manual processing errors, delayed reporting cycles, and inadequate coordination across functional departments. These systemic deficiencies compromise the timeliness and reliability of financial information, with direct adverse consequences for managerial decision quality.

ERP systems address these challenges by providing automated, integrated financial processes that deliver accurate, real-time information to decision-makers. In the specific context of manufacturing organisations, where cost control, production budgeting, cash flow monitoring, and multi-departmental coordination are simultaneously critical, the potential of ERP to transform financial management practices is particularly pronounced. Nonetheless, the effective realisation of ERP benefits is contingent upon several organisational and behavioural factors, including the quality of implementation, adequacy of user training, and the degree to which system features are embedded in daily financial workflows.

This study is motivated by the recognition that empirical evidence on ERP-driven financial management efficiency — particularly within Indian manufacturing enterprises — remains limited and fragmented. The research, conducted in a chemical and mould manufacturing organisation in South India, seeks to contribute to this growing but underexplored domain by providing rigorous quantitative evidence on ERP effectiveness across five key dimensions: the role of ERP, its impact on financial management, internal control enhancement, decision-making support, and cost efficiency.

2. NEED FOR THE STUDY

- There is limited research on the role of ERP systems in improving financial management efficiency in Indian manufacturing industries.
- Existing studies mainly focus on overall organizational performance rather than specific financial management activities such as budgeting, cost control, and financial reporting.
- Manufacturing organizations face challenges such as increasing operational costs, financial risks, and changing regulatory requirements.
- ERP systems help improve financial transparency, operational efficiency, and internal control within organizations.
- The study helps evaluate whether ERP systems effectively support financial management functions in Surya Pelle Chemical & Mould Private Limited.
- The findings of the study may support management in making better ERP implementation and investment decisions.

3. SCOPE OF THE STUDY

- The study focuses on the effectiveness of ERP systems in improving financial management efficiency.
- It covers financial activities such as accounting, budgeting, financial planning, internal control, and cost management.
- The study is conducted at Surya Pelle Chemical & Mould Private Limited in South India.
- Respondents include employees from different departments who use the ERP system.
- The research is based on quantitative analysis using data collected from 110 employees.
- The findings provide useful insights for similar manufacturing organizations using ERP systems.

4. OBJECTIVES OF THE STUDY

Primary Objective: To evaluate the effectiveness of ERP systems in improving financial management efficiency within a chemical manufacturing organisation.

Secondary Objectives:

1. To assess ERP's role in enhancing interdepartmental coordination and communication for financial data sharing.
2. To evaluate the impact of ERP on resource planning and overall operational efficiency.
3. To examine ERP's contribution to strengthening internal controls and regulatory compliance.
4. To analyse the influence of ERP on managerial decision-making quality and speed.
5. To measure cost efficiency outcomes attributable to ERP implementation.

5. REVIEW OF LITERATURE

The literature on ERP systems and organisational performance is substantial, with a consistent body of evidence affirming ERP's capacity to transform financial management. However, nuanced differences in context, industry, and methodology yield a varied and evolving research landscape.

AlMuhayfith and Shaiti (2020) demonstrated that ERP implementation in SMEs yields significant gains in financial management efficiency through functional integration that eliminates data silos and ensures real-time financial information availability. Complementing this, Kumar and Gupta (2020) established that ERP automation of accounting processes reduces manual errors and accelerates the preparation of financial statements, thereby enhancing reporting transparency through comprehensive audit trails. Elragal (2021) extended this discourse to digital transformation, positioning ERP as the organisational backbone that integrates cloud computing and predictive analytics for more robust financial planning and control.

Barna et al. (2021) confirmed ERP's role in improving data consistency and internal control, finding that automated checks and real-time monitoring mitigate fraud risk and enhance stakeholder confidence. Nguyen and Nguyen (2022) advanced empirical evidence that ERP-enabled real-time financial data accelerates and improves managerial decision-making, while Ahmad and Cuenca (2022) provided a counterpoint, identifying implementation barriers — including high cost, insufficient training, and organisational resistance — that constrain ERP effectiveness in practice. Patel and Desai (2022) contextualised ERP adoption within India, finding notable improvements in financial reporting accuracy, tax compliance, and audit efficiency.

A cluster of 2023 studies reinforced the multidimensional nature of ERP effectiveness. Nguyen and Tran (2023) found ERP-embedded analytical tools significantly enhance financial forecasting accuracy; Kaur and Singh (2023) confirmed that automated audit trails and standardised procedures embedded in ERP systems strengthen financial governance; and Ahmed and Khan (2023) underscored user training as a critical success factor, with

trained employees demonstrating measurably superior ERP utilisation and financial reporting outcomes. Wulan et al. (2023) provided sector-specific evidence from manufacturing, confirming ERP's capacity to optimise cost control, inventory management, and resource allocation.

More recent contributions include Lipelis (2024), who found ERP systems reduce budget variance and improve financial discipline across multiple national contexts; Zohry and Al-Dhubaibi (2024), who established a direct link between ERP-driven information quality and financial decision-making performance; and Sarker (2025), who identified cloud-based ERP as a particularly potent mechanism for improving reporting flexibility, scalability, and real-time accessibility. Emerging work by Crudu (2025) and Ishwar (2025) reaffirmed ERP's role in reducing operational costs and improving accounting efficiency in manufacturing and SME contexts respectively. Studies from 2025 and 2026 examining AI-integrated ERP systems indicate a frontier of capability expansion, with machine-learning-enhanced ERP demonstrating superior forecasting accuracy, anomaly detection, and automated financial reporting.

Collectively, the literature identifies five recurring themes germane to this study: ERP and financial data accuracy; ERP and internal control; ERP and decision-making quality; ERP and cost efficiency; and ERP implementation challenges. A notable gap persists, however, in empirical studies that simultaneously examine all five dimensions within a single Indian manufacturing organisation using an integrated quantitative framework — a gap this study directly addresses.

6. RESEARCH METHODOLOGY

Research Design: This study employs a quantitative, descriptive survey research design. The descriptive orientation enables systematic documentation and analysis of the current state of ERP utilisation in relation to financial management efficiency, while the quantitative approach ensures objectivity and statistical rigour in measurement and inference.

Population and Sample: The study population comprises all employees engaged in financial management and ERP-related activities within a chemical and mould manufacturing organisation in South India. A convenience sampling technique was employed, yielding a final sample of 110 respondents drawn from four departments: Finance and Accounts (45.5%), Marketing (31.8%), Production (12.7%), and Human Resources (10.0%). This sampling approach was selected for its practical efficiency and the homogeneity of the target population's ERP interaction.

Research Instrument: Data were collected using a structured, self-administered questionnaire incorporating a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) across 27 measurement items. The instrument covers nine thematic domains: respondent profile, financial data accuracy and reporting, budgeting and financial planning, internal controls and compliance, decision-making, cost efficiency, user satisfaction, challenges, and overall ERP effectiveness. Content validity was established through alignment with established literature constructs, and reliability was confirmed via Cronbach's Alpha ($\alpha = 0.736$), meeting the threshold of acceptable internal consistency.

Data Analysis: Collected data were subjected to a multi-layered statistical analysis using SPSS. Descriptive statistics (mean, standard deviation) characterised construct-level responses. Pearson correlation analysis examined inter-construct relationships. Multiple regression identified the predictive contributions of key ERP dimensions to overall ERP role effectiveness. One-way ANOVA with Tukey HSD post hoc testing assessed departmental differences in ERP perceptions. Chi-square tests evaluated associations between demographic variables and ERP construct scores.

7. ANALYSIS AND INTERPRETATION

7.1 Demographic Profile

The sample is predominantly drawn from the 36–45 age group (57.3%), with female respondents comprising a slight majority (57.0%). In terms of educational background, 60.0% hold undergraduate qualifications, 25.5% are postgraduates, and 14.5% are diploma holders. The majority of respondents (61.8%) possess between one and three years of ERP experience, indicating a functionally familiar but not deeply expert user base.

7.2 Descriptive Statistics and Reliability

Mean scores across the five ERP constructs range from 4.28 to 4.35 on a five-point scale, reflecting a consistently high level of agreement regarding ERP's effectiveness in financial management. Standard deviations between 0.35 and 0.44 indicate low response dispersion, affirming the internal coherence of respondent perceptions. The Cronbach's Alpha of 0.736 confirms acceptable instrument reliability.

Construct	Mean	Std. Dev.	Pearson r	Sig.
Role of ERP	4.33	0.364	0.605**	<.001
Impact on Fin. Mgmt.	4.28	0.354	0.591**	<.001
Internal Control	4.32	0.375	0.600**	<.001
Decision Making	4.32	0.435	0.610**	<.001
Cost Efficiency	4.35	0.358	0.512**	<.001

7.3 Correlation Analysis

Pearson correlation analysis reveals that all five ERP constructs are positively and significantly inter-correlated ($p < 0.001$). The strongest correlation is observed between Decision Making and Cost Efficiency ($r = 0.610$), followed by Role of ERP and Impact on Financial Management ($r = 0.605$), and Internal Control with Decision Making ($r = 0.600$). These moderate-to-strong correlations confirm that ERP effectiveness is a multidimensional but internally cohesive construct — improvements in one dimension systematically associate with improvements across all others.

7.4 Regression Analysis

A multiple regression model was specified with Role_ERP as the dependent variable and Impact_ERP, Internal Control_ERP, and Decision Making_ERP as independent predictors. The model yields an R of 0.621 and an R^2 of 0.461, indicating that approximately 46.1% of the variance in ERP role effectiveness is accounted for by these three dimensions. The overall model is statistically significant ($F = 22.174$, $df = 3, 106$; $p < 0.001$), confirming the collective predictive validity of the chosen constructs. These results underscore that perceived system impact, strength of internal controls, and quality of decision-making support are the primary organisational levers through which ERP realises its financial management potential.

7.5 One-Way ANOVA: Departmental Differences

One-way ANOVA testing reveals a statistically significant difference in ERP role perceptions across departments ($F = 7.180$, $df = 3, 106$; $p < 0.001$). Post hoc comparison via Tukey's HSD indicates that Production department employees hold significantly different perceptions compared to Finance and Accounts ($p = 0.007$), Marketing ($p < 0.001$), and Human Resources ($p = 0.004$). This divergence likely reflects the relatively indirect financial interface of production personnel with ERP modules, as compared to the finance-intensive engagement

of accounting and management staff. These findings highlight the importance of department-tailored ERP training and sensitisation strategies.

7.6 Chi-Square Analysis: Demographic Associations

Chi-square tests were conducted to assess whether demographic variables significantly associate with ERP perceptions. Educational qualification ($\chi^2 = 21.548$, df = 16, p = 0.158) and gender ($\chi^2 = 3.015$, df = 8, p = 0.933) yield no significant associations, indicating that ERP perceptions are broadly uniform across these demographic categories. In contrast, age demonstrates a significant association with ERP perceptions ($\chi^2 = 46.603$, df = 24, p = 0.004), suggesting that generational differences in technological orientation and work experience shape how employees evaluate ERP effectiveness. This finding has actionable implications for age-differentiated training programme design.

8. FINDINGS

- ERP systems are positively perceived across all major financial management dimensions such as role effectiveness, system impact, internal control, decision-making, and cost efficiency, with mean scores above 4.28, indicating high employee satisfaction with ERP performance.
- Significant positive correlations exist among all ERP-related variables (r = 0.41 to 0.61; p < 0.001), showing that improvements in one ERP function positively influence other financial management functions.
- The regression analysis explains 46.1% of the variance in Role_ERP, with Impact_ERP, Internal Control_ERP, and Decision Making_ERP identified as the strongest contributors to ERP effectiveness in financial management.
- Departmental differences significantly influence employees' perceptions of ERP systems, particularly among Production department employees, who differ from Finance, Marketing, and HR employees in ERP usage and effectiveness perception.
- Age significantly affects ERP perception (p = 0.004), whereas gender and educational qualification do not show significant differences, suggesting that ERP effectiveness is generally accepted across demographic groups.
- The reliability analysis produced a Cronbach's Alpha value of 0.736, confirming that the research instrument is reliable and suitable for evaluating ERP system effectiveness.

9. SUGGESTIONS

- **Role-Based ERP Training:** The organization should provide structured and department-specific ERP training programmes to improve employee understanding and effective utilization of ERP systems in financial operations.
- **Departmental ERP Awareness:** Special attention should be given to Production department employees through ERP awareness and sensitisation programmes to improve system alignment and operational coordination.
- **Enhanced Financial Integration:** ERP financial modules such as budgeting, cost accounting, inventory control, and financial reporting should be fully integrated into day-to-day financial activities for improved efficiency.
- **Continuous Technical Support:** The organization should establish a dedicated ERP support system with regular software updates, troubleshooting assistance, and employee feedback mechanisms to maintain smooth system functioning.

- **Advanced ERP Technologies:** The company should explore cloud-based ERP platforms and AI-integrated ERP solutions to improve scalability, real-time financial monitoring, forecasting, and decision-making capabilities.
- **ERP-Based Performance Monitoring:** Financial performance indicators should be aligned with ERP-generated reports to support strategic planning, performance evaluation, and better financial governance.

10. CONCLUSIONS

This study provides empirical grounding for the proposition that ERP systems represent strategic financial management assets in manufacturing organisations, extending well beyond their conventional characterisation as operational software tools. Through a rigorous quantitative investigation involving 110 respondents and a multi-method analytical framework, the research affirms that ERP systems exert statistically significant positive influences on financial data accuracy, internal control mechanisms, decision-making quality, and cost efficiency within the studied organisation.

The regression findings, explaining 46.1% of variance in ERP role effectiveness, are particularly instructive: they identify the perceived system impact, strength of internal controls, and quality of decision-making support as the dominant levers through which ERP contributes to financial management efficiency. This suggests that organisations seeking to maximise ERP returns should prioritise these dimensions in their implementation and governance strategies.

The demographic analysis offers equally valuable insights. The absence of significant gender and educational qualification effects indicates that ERP adoption has achieved a degree of institutional normalisation across these dimensions. However, the significant age and departmental effects point to persistent experiential and contextual disparities in ERP engagement, which management must actively address through differentiated interventions.

In conclusion, as the technological landscape evolves toward cloud-native and AI-augmented ERP platforms, manufacturing organisations that proactively invest in user capability development, system integration, and financial governance alignment will be best positioned to extract enduring strategic value from their ERP investments. This study contributes a contextually grounded, empirically validated perspective to the broader discourse on ERP effectiveness in emerging market manufacturing contexts and offers a foundation for future longitudinal and comparative investigations.

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