iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 13 **Issue:** VIII **Month of publication:** August 2025

DOI: https://doi.org/10.22214/ijraset.2025.73644

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 13 Issue VIII Aug 2025- Available at www.ijraset.com

Application of Modern ERP System in the Era of Digital Transformation

Dr. Priyanka K Suchak[1], Mr. Jayendra P. Siddhapura[2], Ms. Neepa Davda[3], Ms. Khushboo Murjani[4]
School of Management, RK University, RK University, Rajkot 360020, Gujarat, India

Abstract: ***In the rapidly evolving digital era, businesses are increasingly leveraging modern Enterprise Resource Planning (ERP) systems to enhance operational efficiency, data accuracy, and strategic decision-making. Unlike traditional ERP systems that were often rigid, isolated, and limited to back-end processes such as accounting or inventory management, modern ERP platforms are highly integrated, cloud-based, and scalable. This research employed judgemental sampling using structural questionnaire carrying having licart scale and rank based questions collecting 122 responses and further cleaning the researchers had 100 responses and analysis by Regression analysis and ANOVA. The objectives of this study Are 1To identify the challenges and benefits of ERP in the digital transformation era. 2. To study perception of employee towards ERP system in the organization. The study found that According to the respondents' demographic study, Welspun Anjar has a somewhat male-dominant gender distribution, with a somewhat higher percentage of male employees (57%) than female employees (43%). The majority of respondents (82%) said they had fewer than five years of job experience, with 41% saying they had less than two years and another 41% saying they had between two and five years. This suggests that the organization's personnel are largely youthful and in their early careers.***

The largest percentage of respondents (22%) were connected to the Corporate or Registered Office, followed by the TMT & Steel Plant (17%), when looking at the distribution of workers across different facilities at Welspun Anjar (Gujarat). The Flooring Plant (11%), Coating Facility (11%), and Home Textiles Plant (12%) were further noteworthy facilities. The LSAW Pipe Plant (8%), HSAW Pipe Plant (9%), and DI Pipe Plant (10%) all recorded lower percentages. With a small concentration in corporate and manufacturing activities, this distribution shows a broad workforce across functional areas.

Results from the regression analysis that looked at how using an ERP system affected the decrease in manual procedures were statistically significant. ERP use accounts for almost 9.9% of the variance in the reduction of manual labour, according to the model's R Square value of 0.099. The ANOVA test validated the model's statistical significance (F = 10.821, p = 0.001) despite its modest explanatory power, indicating that ERP use significantly lowers manual labour. Additionally, with a normalized beta coefficient of -0.315, the coefficients table demonstrated a strong inverse link between the use of ERP and the reduction of physical labour (B = -0.220, p = 0.001). This suggests that a noticeable decline in manual interventions in organizational processes is linked to greater use of ERP systems. These results provide credence to ERP systems' ability to improve operational effectiveness and lessen an organization's dependency on manual labour.

Keywords: Digital transformation, Modern ERP Systems, Organizational Agility, Cloud-based ERP.

I. INTRODUCTION

Organisations are depending more and more on technology in today's digital-first environment in order to increase efficiency, stay competitive, and react to market developments more quickly. The Enterprise Resource Planning (ERP) system is one example of a technology that has revolutionised how businesses operate. ERP systems assist businesses in streamlining operations and making data-driven choices by combining key company functions like finance, human resources, procurement, supply chain, and customer relationship management onto a single, cohesive platform.

ERP systems have evolved over the last ten years beyond being only automation tools. As cloud computing, artificial intelligence (AI), and mobile accessibility have grown in popularity, contemporary ERP systems today provide companies of all sizes with flexibility, scalability, and real-time information (Mathew, 2024).

ERP use among MSMEs in India is rapidly increasing. According to research, 73% of MSMEs grew their businesses using digital tools like cell phones and UPI, which suggests that business practices are increasingly integrating technology. (PayNearby, 2025) ERP installation does, however, still present certain difficulties, such as expense, training, and change aversion, especially for smaller businesses with less resources.(Gibran Hafiz Sagala, 2024)

More than half of Indian SMEs now give cloud ERP solutions top priority in order to grow their companies and increase operational effectiveness, per a survey by Tata Tele Business Services & Cyber Media Research (2024). The move to cloud-based ERP, which provides scalability without requiring significant infrastructure investments, is viewed as a major facilitator for small enterprises to engage in the digital economy. Moreover, a recent case study by (Goel, 2025) showed that MSMEs in Delhi who implemented ERP systems reported increased effectiveness in financial reporting, inventory control, and customer service. This is consistent with the results of Synovia Digital (2024), which showed a steady growth in ERP adoption among Indian SMEs, driven by government initiatives, digital payment systems, and increased internet penetration.

ERP systems have become a potent tool to automate and integrate operations, improve decision-making, and achieve sustainable growth as more MSMEs embrace digital transformation. (JDAAS, 2025) Understanding the impact of ERP on organizational performance and its role in digital transformation is essential to help MSMEs scale successfully in a tech-driven environment.

A. Objectives

1) To identify the challenges and benefits of ERP in the digital transformation era.

2) To study perception of employee towards ERP system in the organization.

II. LITERATURE REVIEW

Possibly dating back to 1970, the ERP archive was created to integrate company processes. ERP was introduced at the beginning of 1990 and was named by the Gartner Group. At the beginning of the 1990s, software companies like SAP started implementing ERP. Addition of hardware for customer-server construction to function on several stages simultaneously. All of the major ERP software system providers had solved the Y2K problem by the year 2000. With service providers offering a wide range of applications and functionalities for business-wide use, the ERP software market has grown significantly over the past ten years. (Kenge, 2020)

Given how quickly digital technologies are developing, many supply chain professionals are unsure of their next steps. Three technologies—blockchain, artificial intelligence (AI)/machine learning (ML), and robotic process automation (RPA)—have the potential to transform supply chain business operations. Develop a digital technology strategy for their supply chain operations, (1) find a supply chain technology visionary who can guide them through the tangle of technologies and the evolving digital world, and (2) update key information systems. (Hartley, 2019)

Numerous facets of modern civilisation have been irrevocably impacted by the expanding use of digital technologies. Business models and industrial architectures were both reimagined by digital transformation (DT). As a result, financial and accounting services encounter new risks, difficulties, and opportunities as a result of Industry 4.0. What is the perception of this phenomenon among the accounting industry's business players? Using three case studies and a qualitative, exploratory methodology, this research seeks to provide an answer to this query. (Gonçalves, 2022)

The term "digital disruption," which has become somewhat of a cliché in recent years, refers to the influence that new digital technologies and business models have on the value propositions of already-existing goods and services as well as business models. The concept of digitalisation has emerged as a significant aspect that goes beyond a technological shift as a result of the increased impact of digital disruption. Industries are moving towards the core of the digital vortex in order to avoid the risk of disappearing from the market. In addition, to accomplish a digital transformation, the article sought to explore and answer the most important question: "What to transform?" It has come after (Udovita, 2020)

Because digital leaders outperform their rivals in almost every area, businesses invest $1.3 trillion annually in digital transformation efforts to increase productivity. Nevertheless, up to 90% of digital transformations aimed at increasing efficiency fail, which has a negative effect on businesses' operations and desire to innovate further. We propose that five elements—a) innovation qualities, b) opinion leaders, c) diffusion strategy, d) timing, and e) duration—are important determinants of the success of digital transformation. This research will not only advance theory but also assist practitioners in improving the success rate of next digital transitions. (Ramesh, 2021)

To enhance an organization's management effectiveness, enterprise resource planning (ERP) systems are required. However, it is unknown how information technology (IT) professionals see the incorporation of machine learning and artificial intelligence (AI) with ERP cloud service platforms. As a result of these discoveries, managerial performance can be improved for individuals and organisations. This study adds to the body of knowledge on the application of theories pertaining to technology integration, even if it does not put forth any new theories. (Yathiraju, 2022)

The Enterprise Resource Planning (ERP) system is a popular and widely used solution for process automation and integration, performance improvements, and cost reduction in commercial companies. benefits to the relevant organizations in terms of

information, operations, and strategy. Reports from major manufacturing and service companies now provide the majority of the information on the successes and failures of such systems. However, ERP suppliers are increasingly targeting small and medium-sized businesses with their marketing campaigns. In this article, we discuss some of the consequences of ERP systems for the upcoming generation of potential departmental applications in enterprise management and manufacturing. (Chopra, 2022)

The authors underlined the importance of digital technologies and artificial intelligence in HR management. They identified three primary ways that digital technologies are affecting HR management: the introduction of new management techniques, the practical application of digital technologies by HR staff, and a lack of funding for their deployment. The authors outlined the prerequisites for the digital transformation of HR management's success, such as the necessity of organizational culture shifts. (Mitrofanova, 2019)

III. RESEARCH GAP

While traditional ERP systems have been extensively studied for their operational roles, there is limits research on how modern ERP system-integrated with AI, clouds computing and LOT- optimise financial workflows, such as invoice processing. Most studies focus on large enterprises, neglecting the specific challenges faced during digital transformation at the functional level, such as finance or supply chain. This report bridges that gap by analysing workflow efficiency using SAP in real-world industry settings.

IV. RESEARCH METHODOLOGY

A. *Research Hypothesis*

- $H_0$1: Modern ERP systems do not significantly contribute to digital transformation in organizations.
- $H_1$1: Modern ERP systems significantly contribute to digits transformation in organizations.
- $H_0$2: ERP systems do not have a significant effect on the automation and integration of core business processes.
- $H_1$2: ERP systems have a significant effect on the automation and integration of core business processes.

B. *Research Design*

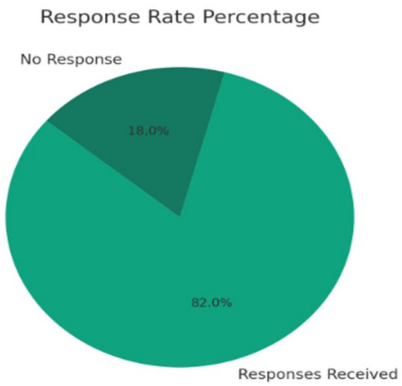
1) Type of Research:

Descriptive Research: To describe ERP system usage and its impact.

Exploratory Research: To explore new insights and trends in ERP implementation.

2) Data Collection Method:

100 responses from Welspun world Anjar Kutch fill up the questionnaire created with the help of google form.



3) Data Type:

Quantitative data

4) Sampling unit:

The data was gathered from the employees of Welspun world

➢ Sample Size

100 respondents from Welspun world using modern ERP systems.

5) Unit Area:

Welspun world Anjar Kutch. ERP users, IT professionals, finance/supply chain employees in companies.

6) Ethical Considerations

Informed Consent: Participants were briefed about the study and gave consent.
Confidentiality: All responses are kept private and used only for academic purposes.
Voluntary Participation: No force or pressure on respondents to participate.
Anonymity: No disclosure of names or sensitive data without permission.

V. ANALYSIS

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	ERP Usage[b]	.	Enter
a. Dependent Variable: Manual Reduction			
b. All requested variables entered.			

The variables that are part of the regression model are listed in the table called "Variables Entered/Removed." In order to investigate its influence on the dependent variable, manual reduction, ERP usage has been included as the independent variable in this analysis. All designated predictors were included in the analysis, as evidenced by the fact that no variables were eliminated from the model. By using the "Enter" technique to enter the variable, ERP Usage was directly inserted into the regression equation without the use of any automatic selection criteria, such as forward or stepwise selection. The footnotes make it clear that Manual Reduction is the dependent variable in this analysis and that the model has taken into account all desired variables, in this case ERP Usage. In essence, this table lays the groundwork for comprehending which variables will be examined in the regression result that follows.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.315[a]	.099	.090	.663
a. Predictors: (Constant), ERP Usage				

The Model Summary table offers important statistical metrics for assessing how well the regression model fits data. A modest to moderately favourable association between ERP usage and manual reduction is indicated by the correlation coefficient (R), which is at 0.315. ERP usage accounts for about 9.9% of the variance in manual reduction, according to the R Square value of 0.099. In order to account for the amount of predictors in the model and provide a more accurate estimate for the population, the Adjusted R Square is marginally lower at 0.090. The average separation between the observed values and the regression line is indicated by the Standard Error of the Estimate, which is 0.663.

Although the comparatively bigger standard error in this instance implies that there is still a significant amount of unexplained variability, a lower value denotes a better fit. ERP Usage is the model's predictor variable, as the footnote attests.

All things considered, the model indicates that although ERP usage and manual reduction are related, their explanatory power is somewhat low, indicating that manual reduction may also be influenced by other factors.

Anova						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.752	1	4.752	10.821	.001[b]
	Residual	43.038	98	.439		
	Total	47.790	99			
a. Dependent Variable: Manual Reduction						
b. Predictors: (Constant), ERP Usage						

The regression model's overall significance is evaluated using the ANOVA (Analysis of Variance) Table. In order to determine whether the regression model fits the data better than a model without independent variables, the F-value is 10.821. At 0.001, the associated Significance (Sig.) value is significantly lower than the widely accepted cutoff of 0.05. This shows that the regression model is statistically significant, indicating that manual reduction is significantly impacted by ERP usage. The Sum of Squares for Regression is 4.752, representing the amount of variance in Manual Reduction explained by ERP Usage. The Residual Sum of Squares is 43.038, which reflects the variance in Manual Reduction not explained by the model. The Total Sum of Squares is 47.790, which is the total variance in the dependent variable (Manual Reduction). The degrees of freedom (df) for Regression is 1, corresponding to the single predictor (ERP Usage), while the Residual df is 98, based on the sample size minus the number of parameters estimated.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.957	.185		10.597	.000	1.591	2.324
	ERP Usage	-.220	.067	-.315	-3.290	.001	-.352	-.087

a. Dependent Variable: Manual Reduction

The Coefficients Table reveals the impact of ERP Usage on Manual Reduction. A negative relationship is indicated by the unstandardised coefficient (B) for ERP Usage, which is -0.220. This suggests that for every unit increase in ERP Usage, Manual Reduction falls by 0.220 units. This implies that an organization's manual processes decrease as ERP systems are adopted or used more frequently. The standardized Beta coefficient is -0.315, highlighting a moderate negative effect size when variables are standardized.

This relationship is statistically significant at the 0.05 level, as indicated by the t-value of -3.290 and the corresponding significance value (p-value) of 0.001. The 95% confidence interval for ERP Usage spans from -0.352 to -0.087, excluding zero, further supporting the statistical significance of this finding. The constant (intercept) has a coefficient of 1.957, which is also statistically significant (p = 0.000), indicating that the expected value of Manual Reduction would be 1.957 units when ERP Usage is zero. Overall, the analysis shows that ERP Usage significantly reduces manual work, improving automation, albeit with a moderately strong influence.

VI. LIMITATION OF THE STUDY

The Overall accuracy and generalisability of the ERP Systems study may be impacted by a number of constraints. First off, a small sample size may limit the study's representativeness because the opinions of a small number of respondents might not fully represent the experience of ERP users in different industries. Furthermore, because to time constraints, the study may only focus on short- term observations rather than capturing the long-term effects and advantage of ERP deployment. Another difficulty is that important information required for a thorough study may not be available due to restricted access to internal data or sensitive company insights. Furthermore, response bias may be a problem, as some participants may give false or socially acceptable answers in place of candid criticism. Because different ERP system (such SAP, ORACLE, and Microsoft Dynamics) has distinct features and functionalities, technological diversity adds another layer of complexity and may make cross-platform state or region may reduce the conclusion relevance to organisation in other places with distinct operating circumstances.

VII. FINDING

According to the respondents' demographic study, Welspun Anjar has a somewhat male-dominant gender distribution, with a somewhat higher percentage of male employees (57%) than female employees (43%). The majority of respondents (82%) said they had fewer than five years of job experience, with 41% saying they had less than two years and another 41% saying they had between two and five years. This suggests that the organization's personnel are largely youthful and in their early careers.

The largest percentage of respondents (22%) were connected to the Corporate or Registered Office, followed by the TMT & Steel Plant (17%), when looking at the distribution of workers across different facilities at Welspun Anjar (Gujarat). The Flooring Plant (11%), Coating Facility (11%), and Home Textiles Plant (12%) were further noteworthy facilities.

The LSAW Pipe Plant (8%), HSAW Pipe Plant (9%), and DI Pipe Plant (10%) all recorded lower percentages. With a small concentration in corporate and manufacturing activities, this distribution shows a broad workforce across functional areas.

Results from the regression analysis that looked at how using an ERP system affected the decrease in manual procedures were statistically significant. ERP use accounts for almost 9.9% of the variance in the reduction of manual labour, according to the model's R Square value of 0.099. The ANOVA test validated the model's statistical significance ($F = 10.821$, $p = 0.001$) despite its modest explanatory power, indicating that ERP use significantly lowers manual labour. Additionally, with a normalized beta coefficient of -0.315, the coefficients table demonstrated a strong inverse link between the use of ERP and the reduction of physical labour ($B = -0.220$, $p = 0.001$). This suggests that a noticeable decline in manual interventions in organizational processes is linked to greater use of ERP systems. These results provide credence to ERP systems' ability to improve operational effectiveness and lessen an organization's dependency on manual labour.

VIII. CONCLUSION

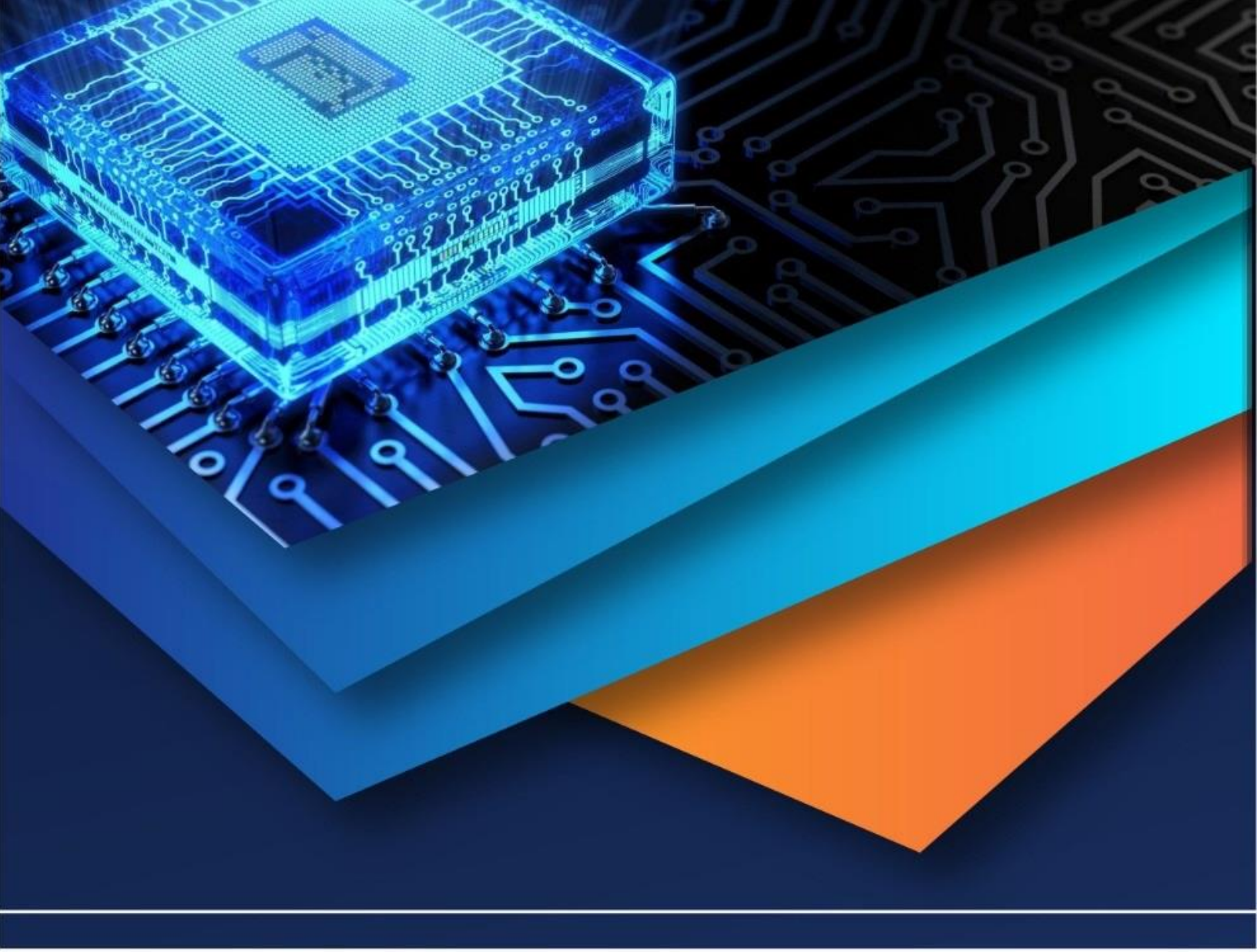
The goal of the current study was to investigate how the use of ERP (Enterprise Resource Planning) systems affected the decrease in manual procedures throughout the various operating facilities of Welspun Anjar. According to the demographic data, the majority of employees have less than five years of experience, and the workforce is comparatively young and male. A high degree of adaptability to new technology systems, like ERP, is suggested by this demographic profile.

A substantial correlation between the use of ERP and the decrease in manual labour was validated by the statistical analysis. The regression model was statistically significant even though the explained variance was small ($R2 = 0.099$), suggesting that ERP systems significantly improve process efficiency. The idea that greater ERP use results in a quantifiable reduction in manual labour is supported by the negative regression coefficient, which also demonstrates how well the system drives automation and digital transformation.

All things considered, the results indicate that ERP systems are essential for increasing productivity and simplifying processes. Continued investment in ERP systems may be very beneficial to companies like Welspun, particularly when combined with change management techniques and staff training. Other factors that might affect ERP performance, like staff engagement, system usability, or department-specific difficulties, could be further investigated in future studies.

REFERENCES

[1] Chopra, R. S. (2022). Utilization of ERP systems in manufacturing industry for productivity improvement. SCIENCE DIRECT.
[2] Gibran Hafiz Sagala, D. Ő. (2024). Toward SMEs digital transformation success: A systematic literature review. . Information Systems and e-Business Management, 667–719.
[3] Goel, V. (2025). Adoption and Effectiveness of Enterprise Resource Planning (ERP) Systems: A Comparative Analysis of Key Performance Indicators (KPIs) Among MSMEs in Delhi, India. International Journal on Science and Technology.
[4] Gonçalves, M. J. (2022). The Future of Accounting: How Will Digital Transformation Impact the Sector? MDPI .
[5] Hartley, J. L. (2019). Tortoise, not the hare: Digital transformation of supply chain business processes. ELSEVIER.
[6] JDAAS. (2025). You need to specify the exact title of the blog post. Since you haven't provided it, I'll use a placeholdes. JDAAS Blog.
[7] Kenge, R. &. (2020). Kenge, R., & Khan, Z. (2020). A research study on the ERP system implementation and current trends in ERP. Shanlax International Journal of Management, 8(2), 34-39. maharashtra: SHANLAX INTERNATIONAL JOURNAL OF MANAGEMENT.
[8] Mathew, L. N. (2024). Examining pre- and post-ERP adoption challenges confronting SMEs: A study on South Indian companies. Contributions to Management Science, 167-175.
[9] Mitrofanova, E. A. (2019). Opportunities, Problems And Limitations Of Digital Transformation Of Hr Management. EUROPEAN PROCEEDINGS.
[10] PayNearby. (2025). 73% MSMEs report business growth via digital adoption, led by UPI and smartphones.
[11] Ramesh, N. &. (2021). Digital Transformation: How to Beat the 90% Failure Rate? IEEE XPLORE.
[12] Udovita, P. V. (2020). Conceptual Review on Dimensions of Digital Transformation in Modern Era. Lulu Press.
[13] Yathiraju, N. (2022). "Investigating the use of an Artificial Intelligence Model in. International Journal of Electrical, Electronics and Computers.



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY