

# Analysis of the Success and Acceptance of ERP SAP Implementation Using an Integrated UTAUT3 and DeLone & McLean (D&M) Model at PT Semen Padang

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## ***Abstract***

### **Keywords:**

SAP ERP, User Satisfaction, Net Benefit, UTAUT3, DeLone and McLean.

## ***Abstract***

*This study aims to analyze the determinants of User Satisfaction and its influence on Net Benefit in the implementation of SAP ERP at PT Semen Padang. The research model integrates UTAUT3 (Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Condition) with the DeLone & McLean IS Success Model (Information Quality, System Quality). A quantitative approach was applied using a Likert-scale survey distributed to 251 active SAP users from various job levels, with data analyzed using Structural Equation Modeling (SEM) based on Confirmatory Factor Analysis (CFA) in AMOS. The results indicate that Performance Expectancy ( $\beta = 0.256$ ;  $p < 0.001$ ), Effort Expectancy ( $\beta = 0.357$ ;  $p < 0.001$ ), Facilitating Condition ( $\beta = 0.189$ ;  $p = 0.006$ ), Information Quality ( $\beta = 0.262$ ;  $p < 0.001$ ), and System Quality ( $\beta = 0.179$ ;  $p = 0.009$ ) have a significantly positive effect on User Satisfaction, whereas Social Influence ( $\beta = 0.055$ ;  $p = 0.410$ ) is not significant. Furthermore, User Satisfaction shows a significant positive influence on Net Benefit ( $\beta = 0.183$ ;  $p = 0.020$ ). The structural model demonstrates a good level of model fit across multiple goodness-of-fit indices and model stability based on Hoelter's Critical N. These findings confirm that expected performance, ease of use, technical support conditions, and both information and system quality are key determinants of User Satisfaction. The practical implications encourage the organization to continuously improve system and information quality, strengthen technical support, and enhance user competency to maximize the value of SAP ERP in supporting operational performance and strategic decision-making at PT Semen Padang.*

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## INTRODUCTION

Infrastructure development plays a crucial role in driving national economic growth by enhancing productivity and facilitating the distribution of goods and services, thereby promoting equitable development. The Indonesian government has prioritized infrastructure investment to improve regional connectivity and strengthen the construction sector's contribution to the national economy. In 2023, the construction sector accounted for 9.92% of Indonesia's Gross Domestic Product (GDP), ranking fifth after the food processing industry, trade, agriculture, and mining (Kementerian Pekerjaan Umum, 2024).

The construction sector is closely linked to the cement industry, which currently faces significant overcapacity. In 2023, Indonesia's cement production capacity reached 118.1 million

tons, while domestic demand was only 64 million tons, resulting in a utilization rate of 54.2% (Revo M, 2024). This oversupply, combined with slowing production growth and increasing competition from foreign producers offering lower prices, has created an unfavorable industry environment. Nevertheless, infrastructure development continues to provide opportunities for market expansion, innovation, and cost efficiency improvements (KJPP FAST & Partners, 2023).

In response to increasing competitive pressures, organizations rely on information systems to enhance performance and operational efficiency. Information systems facilitate collaboration, improve service delivery, and support decision-making (Kenneth & Jane, 2020). One of the most widely adopted systems is Enterprise Resource Planning (ERP), which integrates business processes such as finance, inventory, production, procurement, and human resources, providing real-time and accurate information (Febrianto & Soediantono, 2022; Insana & Mayndarto, 2019).

SAP ERP, as a leading solution, enables cross-functional data integration, reduces redundancy, minimizes errors, and supports real-time reporting, thereby improving efficiency, reducing costs, and enhancing organizational control (Artsyltech, 2022). However, ERP implementation requires substantial investment, reaching over \$100 million for large enterprises and \$10–20 million for medium-sized companies (Monk & Wagner, 2013).

Despite these advantages, ERP success is not determined solely by technical factors but also by user acceptance and utilization. Organizations often face challenges such as user resistance, system complexity, and misalignment between system design and operational needs. At PT Semen Padang, these challenges are reflected in user difficulties, continued reliance on manual processes, and uneven system utilization, indicating a gap between expected and actual system performance.

To address this issue, ERP evaluation can be conducted using established frameworks such as the Unified Theory of Acceptance and Use of Technology (UTAUT) and the DeLone & McLean (D&M) model. UTAUT explains user acceptance through factors such as performance expectancy and effort expectancy (Chauhan & Jaiswal, 2016; Hoque & Sorwar, 2017; Tessema & Cavus, 2024; Zulaikah et al., 2023), while the D&M model evaluates system success through dimensions such as system quality, information quality, and net benefits (Fathurohman & Legowo, 2023; Firdausi & Nuryana, 2023; Guo & Lyu, 2023; Ilmawawn & Pujani, 2020; Mirandi & Tricahyono, 2023; Shim & Jo, 2020).

However, user acceptance does not necessarily guarantee system success, and vice versa. Therefore, integrating UTAUT and the D&M model provides a more comprehensive evaluation framework, as demonstrated in prior studies across various digital platforms (Bayastura et al., 2022; Firdausi & Nuryana, 2023; Mirandi & Tricahyono, 2023; Sholihah & Nurhapsari, 2023).

Accordingly, this study addresses the research gap by integrating UTAUT3 and the DeLone & McLean model to analyze both user acceptance and system success of SAP ERP implementation at PT Semen Padang, providing a more holistic understanding of ERP effectiveness in capital-intensive and complex industries such as cement manufacturing (Thabet et al., 2023).

## **METHODS**

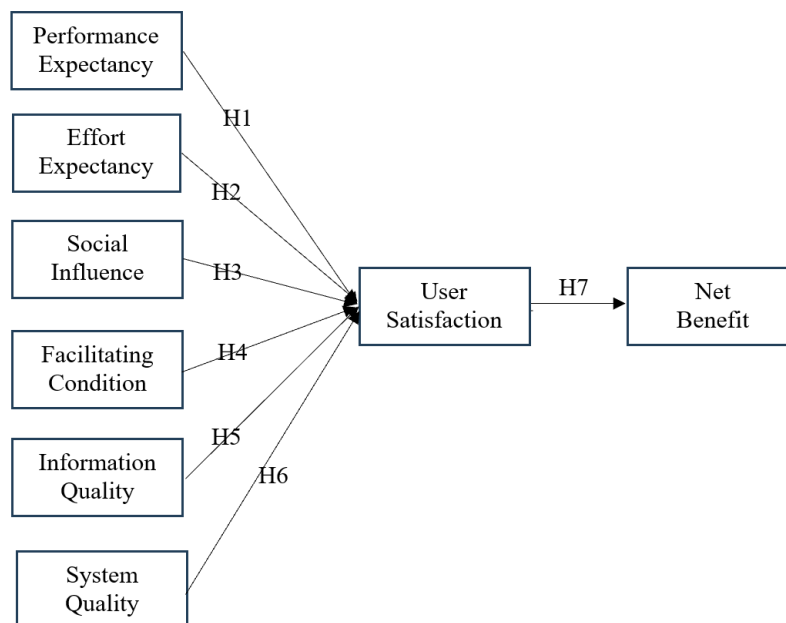
This study employs a causal research design within a quantitative framework to rigorously examine the causal relationships among variables associated with ERP SAP implementation. The use of a quantitative approach enables the empirical testing of hypotheses through statistical modeling, ensuring objectivity and generalizability of findings (Sekaran & Bougie, 2017). The population comprises 314 employees of PT Semen Padang who actively utilize the SAP ERP

system in their operational activities. Given the hierarchical structure of the organization, stratified random sampling is applied based on job bands to enhance representativeness, minimize sampling bias, and allow meaningful comparisons across organizational levels. Using the Isaac and Michael formula with a 5% margin of error, a total sample of 173 respondents is determined as adequate for statistical inference (Sekaran & Bougie, 2017).

The study relies primarily on first-hand data collected through structured questionnaires, complemented by observation and documentation to ensure contextual relevance and theoretical alignment. The measurement of variables adopts a five-point Likert scale, enabling the quantification of subjective perceptions into analyzable data. The conceptual framework integrates constructs from the Unified Theory of Acceptance and Use of Technology (UTAUT)—including performance expectancy, effort expectancy, social influence, and facilitating conditions—with dimensions from the DeLone and McLean Information Systems Success Model, namely information quality, system quality, user satisfaction, and net benefits. These constructs are adapted from established and validated prior studies to ensure measurement robustness and theoretical validity (Delone & McLean, 2003; Gable et al., 2008; Iivari, 2005; Venkatesh et al., 2003).

**Table 1.** Indicators of Variables

No	Variable	Indicators	Key References
1	Performance Expectancy (PE)	Perceived Usefulness, Relative Advantage, Outcome Expectation	(Venkatesh et al., 2003)
2.	Effort expectancy (EE)	Perceived Ease of Use, Easy of Use	(Venkatesh et al., 2003)
3.	Social Influence (SI)	Subjective Norms, Social Factors	(Venkatesh et al., 2003)
4.	Facilitating condition (FC)	Perceived Behavioral Control, Facilitating Condition	(Venkatesh et al., 2003)
5.	Information Quality (IQ)	Completeness, Security, Personalization, Relevance	DeLone dan McLean (2003)
6.	System Quality (SQ)	Availability, Reliability, Response time, Adaptability	DeLone dan McLean (2003)
7.	User Satisfaction (US)	Repeat Visit, Repeat Purchase, User survey	DeLone dan McLean (2003)
8.	Net Benefit (NB)	Decision Effectiveness, Job Effectiveness, Job Simplification, Learning, Job Performance	Gable et al., (2008);Iivari (2005)



**Figure 1.** Research Conceptual Framework

**Table 2.** Summary of Hypotheses and Construct Relationships

Construct Relationship	Hypothesis	Key References
<b>Performance Expectancy → User Satisfaction</b>	H1: Performance Expectancy has a positive and significant effect on User Satisfaction	(Alalwan et al., 2020; Lee et al., 2022; Pramudita et al., 2023; Shah & Khanna, 2024; Shaya et al., 2023; Venkatesh et al., 2003; Wu et al., 2022)
<b>Effort Expectancy → User Satisfaction</b>	H2: Effort Expectancy has a positive and significant effect on User Satisfaction	(Alalwan et al., 2020; Asgari et al., 2024; Handayani et al., 2021; Lee et al., 2022; Pramudita et al., 2023; Shah & Khanna, 2024; Venkatesh et al., 2003; Ye et al., 2022)
<b>Social Influence → User Satisfaction</b>	H3: Social Influence has a positive and significant effect on User Satisfaction	(Alalwan et al., 2020; Carrera et al., 2023; Fu et al., 2020; Hsiao et al., 2016; Lee et al., 2022; Shah & Khanna, 2024; Venkatesh et al., 2003; Ye et al., 2022; Yuan & Marzuki, 2024)
<b>Facilitating Conditions → User Satisfaction</b>	H4: Facilitating Conditions have a positive and significant effect on User Satisfaction	(Alalwan et al., 2020; Carrera et al., 2023; Fu et al., 2020; Hsiao et al., 2016; Lee et al., 2022; Maillet et al., 2015; Shah & Khanna, 2024; Venkatesh et al., 2003; Ye et al., 2022)
<b>Information Quality → User Satisfaction</b>	H5: Information Quality has a positive and significant effect on User Satisfaction	(Al-Okaily et al., 2025; Hidayatullah et al., 2020; Mehta et al., 2017; Rachmawati et al., 2019; Shah & Khanna, 2024; Tilahun & Fritz, 2015; Ye et al., 2022)
<b>System Quality → User Satisfaction</b>	H6: System Quality has a positive and significant effect on User Satisfaction	(Angelina et al., 2019; Lee et al., 2022; Shah & Khanna, 2024; Tilahun & Fritz, 2015; Ye et al., 2022)

<b>User Satisfaction</b> → <b>Net Benefits</b>	H7: User Satisfaction has a positive and significant effect on Net Benefits	(Ariyanto et al., 2022; Irawan & Syah, 2017; Nguyen et al., 2024; Shah & Khanna, 2024; Tilahun & Fritz, 2015; Umaroh & Barmawi, 2020; Ye et al., 2022)
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To capture the complexity of interrelationships among latent constructs, the study employs Structural Equation Modeling (SEM) using AMOS. SEM is particularly appropriate as it allows simultaneous estimation of multiple dependency relationships and provides a comprehensive assessment of both measurement and structural models (Hair et al., 2014). Prior to model estimation, the data undergo systematic preprocessing procedures—including editing, coding, data entry, and tabulation—followed by descriptive statistical analysis to ensure data quality, consistency, and suitability for multivariate analysis.

The robustness of the measurement model is rigorously evaluated through validity and reliability testing. Construct validity is assessed using Confirmatory Factor Analysis (CFA), encompassing both convergent and discriminant validity. Convergent validity is established through standardized loading factors ( $\geq 0.50$ ), Average Variance Extracted (AVE  $\geq 0.50$ ), and Composite Reliability ( $\geq 0.70$ ), while discriminant validity is verified using the Fornell–Larcker criterion. Reliability is further confirmed through Cronbach’s Alpha to ensure internal consistency across indicators. Additionally, model adequacy is assessed through a comprehensive set of Goodness-of-Fit (GOF) indices, including absolute, incremental, and parsimonious fit measures, ensuring that the proposed model sufficiently represents the observed data.

Subsequently, the structural model is evaluated to test the hypothesized relationships among constructs. Hypothesis testing is conducted by examining the statistical significance and direction of path coefficients, where relationships are considered significant if the t-statistic exceeds 1.96 or the p-value is below 0.05 (Hair et al., 2014). Beyond statistical significance, particular attention is given to the magnitude of effects to ensure that the findings are not only statistically valid but also substantively meaningful. This dual evaluation strengthens the explanatory power of the model and ensures that conclusions drawn are both theoretically grounded and practically relevant in the context of ERP SAP implementation.

## RESULTS AND DISCUSSION

### Response Rate

This study employed a quantitative approach using structured questionnaires distributed to 314 SAP ERP users at PT Semen Padang. A total of 251 valid responses were returned, resulting in a response rate of 79.94%, which is categorized as very good in survey-based research. Response rates above 70% are considered highly acceptable (Babbie, 2020), and exceed the minimum threshold suggested for organizational research (Sekaran & Bougie, 2017). The high response rate indicates strong participation and suggests that the dataset is sufficiently robust for further statistical analysis, reducing the likelihood of non-response bias.

### Descriptive Analysis of Respondents

The descriptive analysis indicates that respondents are predominantly mid-level employees, with the majority occupying Band 3 (37.1%) and Band 4 (35.1%) positions. These roles are closely associated with operational execution and supervisory responsibilities, indicating that respondents represent core system users actively engaged in SAP utilization. In terms of educational

background, most respondents hold Bachelor's degrees (51.4%), followed by Diploma qualifications (24.7%), suggesting a relatively high level of technical and analytical capability. The average work tenure is 18.40 years, indicating that respondents are experienced employees with strong familiarity with organizational processes.

Furthermore, SAP usage experience is extensive, with 90% of respondents having used the system for more than eight years, reflecting a mature system implementation environment. The intensity of usage is also high, with 52.6% of respondents using SAP daily, confirming that the system has been deeply integrated into routine business operations. The average age of respondents is 43.76 years, indicating a workforce that is both experienced and within a productive age range. Respondents are distributed across multiple departments, including maintenance, finance, project management, and production, suggesting that SAP is utilized across diverse functional areas. Overall, these characteristics indicate that the respondents represent a competent, experienced, and relevant user group, providing a reliable basis for evaluating ERP SAP implementation

### **Descriptive Analysis of Research Variables**

The descriptive analysis of research variables indicates that respondents generally hold positive perceptions toward SAP ERP implementation across all constructs. Performance Expectancy shows a mean value of 3.45, suggesting that users perceive SAP as beneficial in improving productivity and work performance.

Similarly, Effort Expectancy (mean = 3.48) indicates that the system is perceived as easy to use and learn. Social Influence (mean = 3.51) reflects the presence of organizational and managerial support for system usage, while Facilitating Conditions (mean = 3.58) indicate that respondents perceive sufficient infrastructure and technical support to operate the system effectively.

Across all variables, the relatively low standard deviation values suggest limited variability in responses, indicating consistent and homogeneous user perceptions. Overall, these findings demonstrate that SAP ERP is positively evaluated across multiple dimensions and is perceived as supporting operational efficiency and task performance within the organization

### **Validity and Reliability Testing**

The measurement model was rigorously evaluated using Confirmatory Factor Analysis (CFA) to ensure the adequacy of construct validity and reliability prior to structural analysis. The results indicate that all indicators meet the required criteria for convergent validity, with standardized loading factors exceeding the acceptable threshold of 0.50. This confirms that each indicator adequately represents its corresponding latent construct.

Additionally, all constructs achieve Average Variance Extracted (AVE) values above 0.50, indicating that each construct explains more than half of the variance of its indicators. This satisfies the recommended criteria for convergent validity and demonstrates that the measurement model has strong explanatory power at the indicator level.

Reliability testing further confirms the robustness of the measurement model. Both Composite Reliability (CR) and Cronbach's Alpha values exceed 0.70 across all constructs, indicating high internal consistency and reliability. The use of CR is particularly relevant in SEM analysis, as it accounts for the contribution of each indicator through factor loadings, providing a more accurate measure of reliability.

Discriminant validity is also established using the Fornell–Larcker criterion, where the square root of AVE for each construct exceeds its correlations with other constructs. This

confirms that each construct is empirically distinct and captures a unique dimension of the ERP SAP implementation framework.

Prior to CFA, preliminary tests including Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were conducted to assess data suitability. The KMO values exceed the acceptable threshold, while Bartlett's test is statistically significant ( $p < 0.05$ ), confirming that the dataset is appropriate for factor analysis.

Furthermore, the measurement model demonstrates acceptable fit across multiple Goodness-of-Fit (GOF) indices, including absolute fit (e.g., RMSEA), incremental fit (e.g., CFI, TLI), and parsimonious fit (e.g., CMIN/DF). These results indicate that the measurement model adequately represents the observed data structure. Overall, the findings confirm that the measurement model satisfies the requirements for validity, reliability, and model fit, thereby providing a solid foundation for structural model evaluation

### Structural Model Analysis (Structural Equation Modeling / SEM)

**Table 3.** Summary of Structural Model Analysis

Construct Relationship	$\beta$ (Std)	CR (t-stat)	p-value	Information
PE → US	0,256	3,685	< 0,001	Significant
EE → US	0,357	4,902	< 0,001	Significant
SI → US	0,055	0,823	0,410	Not Significant
FC → US	0,189	2,729	0,006	Significant
IQ → US	0,262	3,707	< 0,001	Significant
SQ → US	0,179	2,622	0,009	Significant
US → NB	0,183	2,319	0,020	Significant

The structural model analysis was conducted using Structural Equation Modeling (SEM) with AMOS to examine the hypothesized causal relationships among latent constructs. The model evaluates the effects of six exogenous variables—Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Information Quality (IQ), and System Quality (SQ)—on User Satisfaction (US), as well as the impact of US on Net Benefit (NB).

The results indicate that five constructs (EE, IQ, PE, FC, and SQ) have a positive and significant effect on User Satisfaction ( $p < 0.05$ ). Among these, Effort Expectancy exhibits the strongest influence, followed by Information Quality, Performance Expectancy, Facilitating Conditions, and System Quality. In contrast, Social Influence shows a positive but non-significant effect ( $p > 0.05$ ), suggesting that social pressure does not play a substantial role in determining user satisfaction within a mandatory ERP usage context.

Furthermore, User Satisfaction significantly influences Net Benefit ( $p < 0.05$ ), confirming its role as a key mediating variable. Since no direct paths exist between exogenous variables and Net Benefit, all effects are transmitted indirectly through User Satisfaction. The largest indirect effect on Net Benefit originates from Effort Expectancy, followed by Information Quality, Performance Expectancy, Facilitating Conditions, and System Quality, while Social Influence contributes minimally.

**Table 3.** Summary of Hypotheses Evaluation

<b>Construct Relationship</b>	<b>Hypothesis</b>	<b>Information</b>
<b>Performance Expectancy → User Satisfaction</b>	H1: Performance Expectancy has a positive and significant effect on User Satisfaction	Accepted
<b>Effort Expectancy → User Satisfaction</b>	H2: Effort Expectancy has a positive and significant effect on User Satisfaction	Accepted
<b>Social Influence → User Satisfaction</b>	H3: Social Influence has a positive and significant effect on User Satisfaction	Rejected
<b>Facilitating Conditions → User Satisfaction</b>	H4: Facilitating Conditions have a positive and significant effect on User Satisfaction	Accepted
<b>Information Quality → User Satisfaction</b>	H5: Information Quality has a positive and significant effect on User Satisfaction	Accepted
<b>System Quality → User Satisfaction</b>	H6: System Quality has a positive and significant effect on User Satisfaction	Accepted
<b>User Satisfaction → Net Benefits</b>	H7: User Satisfaction has a positive and significant effect on Net Benefits	Accepted

Overall, six out of seven hypotheses are supported, indicating that the proposed model demonstrates strong empirical validity. The findings highlight that system usability and information quality are the most critical drivers of user satisfaction and, consequently, organizational benefits, whereas social influence is not a significant determinant in a mandatory system environment.

## DISCUSSION

### The Effect of Performance Expectancy on User Satisfaction

The results indicate that performance expectancy has a significant positive effect on user satisfaction, suggesting that users tend to evaluate SAP ERP more favorably when it demonstrably enhances productivity, improves work efficiency, and supports faster task completion. This finding is consistent with the UTAUT framework, which identifies perceived usefulness as a primary determinant of technology acceptance (Venkatesh et al., 2003). However, this study goes beyond prior research by showing that performance expectancy does not only influence behavioral intention at the pre-adoption stage, but also exerts a direct and sustained effect on post-adoption evaluation, particularly user satisfaction in a mature ERP environment.

In this context, SAP is perceived as closely aligned with job requirements, indicating a strong task–technology fit, which reinforces its perceived value among users. The relatively homogeneous responses further suggest that this perception is consistently shared across different user groups, strengthening the robustness of the finding. This study therefore extends prior literature by highlighting that perceived usefulness remains a dominant driver even after long-term system use, challenging the assumption that its importance diminishes once adoption becomes routine.

### **The Effect of Effort Expectancy on User Satisfaction**

The results show that effort expectancy has a significant positive effect on user satisfaction, indicating that ease of use remains a critical determinant of user experience even in a mature system environment. Users perceive SAP as relatively easy to learn, understandable, and not cognitively demanding, which reduces operational complexity and facilitates continuous interaction with the system.

This finding supports prior studies emphasizing that usability is a key driver of technology acceptance (Venkatesh et al., 2003). More importantly, this study extends existing research by demonstrating that effort expectancy continues to influence user satisfaction beyond the initial adoption phase. While earlier studies often position ease of use as a factor primarily relevant during early adoption, the present findings suggest that usability remains essential for long-term system sustainability and user retention.

In complex ERP systems, where users are required to interact with multiple modules and processes, reducing perceived complexity becomes increasingly important. The findings imply that sustained usability improvements can contribute to maintaining positive user perceptions, even when the system is already deeply embedded in organizational routines.

### **The Effect of Social Influence on User Satisfaction**

The findings reveal that social influence does not have a significant effect on user satisfaction, indicating that users' evaluation of SAP ERP is not primarily shaped by social or normative pressures. This result is particularly noteworthy, as it contradicts a substantial body of prior research that identifies social influence as a significant determinant of technology acceptance, especially in early adoption contexts (Venkatesh et al., 2003).

However, the finding is consistent with studies conducted in mandatory-use environments, where system usage is institutionalized and embedded into organizational processes. In such contexts, users are required to use the system regardless of social encouragement, which reduces the relevance of normative factors. Instead, users rely more on direct experience, perceived system performance, and functional value when forming their evaluations.

This result provides an important theoretical implication by reinforcing the argument that the effect of social influence is highly context-dependent, particularly influenced by the level of voluntariness and system maturity. It suggests that as systems become more established and integrated into daily operations, behavioral determinants shift from social persuasion toward experiential and performance-based evaluation.

### **The Effect of Facilitating Conditions on User Satisfaction**

The results demonstrate that facilitating conditions have a significant positive effect on user satisfaction, indicating that the availability of organizational support, infrastructure, and technical resources plays a critical role in enhancing user experience. Users perceive that sufficient resources, system support, and technical assistance are available, which reduces barriers to system usage and improves overall satisfaction.

This finding aligns with the UTAUT model, which emphasizes facilitating conditions as a key determinant of system usage. However, this study extends prior research by demonstrating that facilitating conditions not only support system usage behavior but also directly influence user satisfaction, particularly in complex and interdependent systems such as ERP.

In large-scale enterprise environments, system usage often depends on coordination across multiple functions and units. Therefore, the presence of reliable infrastructure and

responsive support mechanisms becomes essential for ensuring smooth system operation. The findings imply that organizations should view facilitating conditions not merely as supporting factors, but as strategic enablers of system success.

### **The Effect of Information Quality on User Satisfaction**

The findings indicate that information quality has a significant positive effect on user satisfaction, suggesting that users highly value the accuracy, relevance, and timeliness of information generated by the SAP system. This result is consistent with the DeLone and McLean model (DeLone & McLean, 2003), which identifies information quality as a core determinant of system success.

Moreover, this study reinforces and extends prior findings by demonstrating that in data-intensive ERP environments, information quality serves as a primary driver of user trust and confidence. High-quality information reduces uncertainty, improves decision-making accuracy, and enhances the perceived reliability of the system.

The findings also suggest that information quality plays a more central role in post-adoption evaluation compared to behavioral factors, highlighting its importance in sustaining long-term system value. This underscores the need for organizations to ensure continuous data accuracy, consistency, and relevance in ERP systems.

### **The Effect of System Quality on User Satisfaction**

The results show that system quality has a significant positive effect on user satisfaction, indicating that system reliability, stability, and responsiveness are critical determinants of user perception. Users are more likely to evaluate the system positively when it operates consistently, minimizes errors, and provides timely responses.

This finding supports prior research within the DeLone and McLean framework, which identifies system quality as a fundamental component of information system success. However, this study extends existing literature by demonstrating that system quality remains a dominant factor even in a mature implementation stage, where users have extensive experience with the system.

This suggests that technical performance is not a one-time requirement during system implementation but a continuous determinant of user satisfaction. Any decline in system performance may directly affect user perception, even in environments where the system has already been fully adopted.

### **The Effect of User Satisfaction on Net Benefits**

The findings reveal that user satisfaction has a significant positive effect on net benefits, indicating that higher levels of satisfaction lead to greater perceived organizational outcomes, including improved efficiency, productivity, and decision-making quality. This result is consistent with the DeLone and McLean model, which positions user satisfaction as a key mediator between system characteristics and organizational benefits.

More importantly, this study extends prior research by providing empirical evidence that user satisfaction functions as a critical linkage mechanism, translating system attributes into tangible business value. This highlights that the success of ERP systems cannot be evaluated solely based on technical performance, but must also consider user perception and experience.

However, these findings should be interpreted with caution. The study is conducted within a single organization and in a mandatory-use context, which may limit generalizability. In voluntary-use environments or organizations with lower system maturity, the strength and direction of these relationships may differ. Therefore, while the results provide strong empirical

support, their applicability should be considered within specific organizational contexts.

## CONCLUSION

This study critically examines the determinants of SAP ERP implementation success at PT Semen Padang by integrating constructs from the UTAUT3 and DeLone and McLean models. The findings demonstrate that performance expectancy, effort expectancy, facilitating conditions, information quality, and system quality significantly influence user satisfaction, which in turn drives net benefits at the organizational level. These results confirm that both utilitarian perceptions and system-related qualities play a central role in shaping user evaluation of enterprise systems. In particular, user satisfaction emerges as a key mediating construct, linking system characteristics to tangible organizational outcomes such as improved efficiency, decision-making quality, and work performance.

However, the study also reveals that social influence does not significantly affect user satisfaction, indicating that normative pressures may be less relevant in mandatory system environments. This finding suggests that users rely more on direct experience and perceived system value rather than social cues, thereby highlighting an important boundary condition in the application of the UTAUT framework. Accordingly, the study contributes to the existing body of knowledge by demonstrating that the integration of technology acceptance and system success models provides a more comprehensive explanation of ERP outcomes, particularly in structured organizational contexts. At the same time, the findings should be interpreted with caution, as they are derived from a single organizational setting and may not be fully generalizable to different industries or voluntary-use environments.

Despite its contributions, this study has several limitations. First, the use of self-reported questionnaire data may introduce subjective bias and common method variance. Second, the focus on a single manufacturing organization limits the external validity of the findings. Third, the cross-sectional design does not capture changes in user perception and system impact over time. Finally, the model is restricted to selected constructs and does not include other potentially relevant variables such as user experience, digital competence, or organizational culture, which may further explain variations in ERP success.

Based on these findings, several recommendations are proposed for future research. First, subsequent studies should expand the research context across different industries and organizational settings to enhance generalizability. Second, comparative studies between mandatory and voluntary system usage are recommended to further explore the role of social influence and other behavioral factors. Third, the use of longitudinal or mixed-method approaches is encouraged to capture the dynamic nature of user satisfaction and system benefits over time. Finally, future research should consider incorporating additional constructs such as user experience, self-efficacy, and IT service quality, as well as moderating variables (e.g., age, job level, and system usage experience), to develop a more comprehensive and context-sensitive model of ERP implementation success.

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