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System and Information Quality Effects on ERP-SAP User Satisfaction: Accounting Department Case Study

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Abstract

This study investigates how system quality and information quality influence user satisfaction with ERP-SAP implementation within the Accounting and Finance Department at PTPN IV Regional II Medan. Employing quantitative methodology, the research surveyed 35 employees through structured questionnaires. Multiple linear regression analysis examined the relationships between variables. Results indicate that system quality exhibits positive yet statistically insignificant effects on user satisfaction, while information quality demonstrates significant positive influence. Collectively, both dimensions significantly affect user satisfaction levels. The model explains 38.4% of satisfaction variance, suggesting additional factors warrant investigation in future research within enterprise system contexts.

Keywords: *System Quality, Information Quality, User Satisfaction, ERP-SAP, Enterprise Systems*

Introduction

Information technology advancement fundamentally transforms accounting information systems within organizational contexts. Computer-integrated accounting systems have become essential for generating accurate, reliable information supporting strategic decision-making processes. Contemporary business environments demand technological adoption to maintain competitive positioning and optimize operational performance.

Enterprise Resource Planning (ERP) systems represent integrated solutions streamlining organizational business processes toward enhanced efficiency and effectiveness (O'Leary, 2020). ERP software coordinates diverse business activities including sales, marketing, manufacturing, logistics, accounting, and human resource management through unified platforms. Among ERP solutions, SAP (Systems Application and Products) dominates large enterprise implementations globally, serving critical roles in managing financial operations, human capital, manufacturing processes, logistics coordination, and analytical functions (Sharma & Daniel, 2021).

PTPN IV Regional II Medan initiated ERP-SAP implementation following comprehensive year-long training programs beginning in 2019. Employees transitioned from legacy NERP systems to SAP environments, encountering challenges including interface language barriers, modified account coding structures, and network connectivity issues during concurrent user access periods. These obstacles potentially contribute to data entry errors, financial reporting inaccuracies, and system delays affecting operational workflows (Kumar & Sharma, 2022).

The Information System Success Model encompasses six dimensions: system quality, information quality, service quality, system usage, user satisfaction, and organizational benefits (DeLone & McLean, 2020). This

investigation focuses specifically on system quality and information quality relationships with user satisfaction. Understanding these dynamics provides valuable insights for system designers and organizational decision-makers seeking to optimize enterprise system implementations and achieve strategic objectives.

Literature Review

Technology Acceptance Model and End User Computing Satisfaction

The Technology Acceptance Model (TAM), introduced by Davis (1989) and refined through subsequent research (Granić & Marangunić, 2019; Venkatesh et al., 2020), explains individual technology adoption through perceived usefulness and perceived ease of use constructs. These perceptions shape attitudes toward technology systems, subsequently influencing behavioral intentions and actual usage patterns.

End User Computing Satisfaction (EUCS) measures user satisfaction by comparing system expectations against experienced reality. EUCS represents comprehensive user evaluations of information systems based on actual usage experiences (Halawi & McCarthy, 2020). This framework provides structured approaches for assessing satisfaction levels across multiple system dimensions.

User Satisfaction

User satisfaction reflects individual responses and attitudes toward implemented information systems. These subjective evaluations indicate the extent users feel content, confident, and fulfilled by system capabilities meeting their functional requirements (Hwang & Schmidt, 2020). Satisfaction assessments reveal whether systems successfully address user needs and support task completion effectively.

Enterprise Resource Planning Systems

Enterprise Resource Planning embodies business technology innovations representing integrated management philosophies for coordinating organizational operations while optimizing resource utilization (Monk & Wagner, 2021). ERP solutions merge previously fragmented functional areas into cohesive platforms, enabling companies to achieve competitive advantages through process integration and resource optimization (Beheshti et al., 2021).

SAP System Applications

SAP (System Application and Product in Data Processing) constitutes comprehensive ERP software supporting operational planning and execution through enhanced efficiency and effectiveness (Magal & Word, 2021). SAP comprises interconnected application modules enabling complete transaction support across organizational functions, with each module operating interdependently to create unified business environments.

System Quality

System quality encompasses integrated hardware and software performance characteristics. It measures technological infrastructure capabilities including reliability, response time, accessibility, and functionality alignment with user requirements (Petter et al., 2020). Quality assessment evaluates whether systems deliver consistent, efficient, and user-friendly experiences supporting organizational workflows.

Information Quality

Information quality represents the degree to which system-generated outputs provide accurate, timely, complete, and relevant content meeting user information needs (Wixom & Todd, 2020). Quality information enhances

decision-making processes and operational effectiveness. When systems deliver high-quality information, user engagement and satisfaction levels increase substantially, as information quality directly impacts system acceptance and continued usage (Tam & Oliveira, 2021).

Methods

Research Design

This quantitative descriptive study employs causal relationship analysis examining how independent variables influence dependent variables. The research utilizes primary data collected through structured questionnaires distributed to ERP-SAP users within the Accounting and Finance Department at PTPN IV Regional II Medan.

Population and Sample

The research population comprised 35 employees utilizing ERP-SAP systems. Complete census sampling was employed, using the entire population as the sample to ensure comprehensive data coverage and representative findings.

Variable Operationalization

Independent Variables:

- System Quality (X_1): Measured through dimensions including reliability, response time, ease of use, functionality, and integration capabilities
- Information Quality (X_2): Assessed via accuracy, timeliness, completeness, relevance, and format appropriateness

Dependent Variable:

- User Satisfaction (Y): Evaluated through overall satisfaction, system confidence, information fulfillment, and continued usage intentions

Results

Multiple Linear Regression Analysis

Table 1 presents the multiple linear regression analysis results examining the relationship between system quality, information quality, and user satisfaction.

Table 1. Multiple Linear Regression Analysis Results

Model	Unstandardized Coefficients		Standardized Coefficients	t
	B	Std. error	Beta	
(Constant)	11.274	6.089		1.852
System Quality (X_1)	0.134	.151	.134	.891
Information Quality (X_2)	1.015	.264	.577	3.839

Source: Primary data processed, 2024

The regression equation derived from the analysis:

User Satisfaction = 11.274 + 0.134(System Quality) + 1.015(Information Quality) + ε

Interpretation:
Constant (11.274): Baseline user satisfaction when independent variables equal zero
β_1 (0.134): Each unit increase in system quality increases user satisfaction by 0.134 units
β_2 (1.015): Each unit increase in information quality increases user satisfaction by 1.015 units

Hypothesis Test

Partial Significance Test (t-Test)

Table 2 displays the partial significance testing results for individual variable effects on user satisfaction.

Table 2. Partial Significance Test Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.274	6.089		1.852	.073
	System Quality (X_1)	.134	.151	.134	.891	.379
	Information Quality (X_2)	1.015	.264	.577	3.839	.001

Source: Primary data processed, 2024

Findings:

1. **System Quality Effect:** The t-calculated value (0.891) falls below t-table (2.035), with significance value (0.379) exceeding 0.05. Results indicate system quality demonstrates positive yet statistically insignificant effects on user satisfaction, leading to H_1 rejection.
2. **Information Quality Effect:** The t-calculated value (3.839) exceeds t-table (2.035), with significance value (0.001) below 0.05. Results confirm information quality exerts significant positive influence on user satisfaction, supporting H_2 acceptance.

Simultaneous Significance Test (F-Test)

Table 3 presents simultaneous testing results examining combined variable effects on user satisfaction.

Table 3. Simultaneous Significance Test Results

Model	Sum of Squares	df	Mean Square	F-calculated	Sig.	Decision
Regression	206.818	2	103.409	11.596	0.000	H_3 Accepted
Residual	285.353	32	8.917			
Total	492.171	34				

Source: Primary data processed, 2024

The F-calculated value (11.596) with significance level (0.000 < 0.05) confirms that system quality and information quality simultaneously exert significant effects on user satisfaction, supporting H_3 acceptance.

Coefficient of Determination (R^2)

Table 4 illustrates the explanatory power of independent variables on the dependent variable.

Table 4. Coefficient of Determination Results

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.648	0.420	0.384	2.828

Source: Primary data processed, 2024

The Adjusted R Square value (0.384) indicates that system quality and information quality collectively explain 38.4% of user satisfaction variance. The remaining 61.6% reflects influences from other variables not included in the research model, such as service quality, system benefits, and user experience factors.

Discussion

System Quality Effect on User Satisfaction

Statistical analysis reveals system quality demonstrates positive yet insignificant influence on user satisfaction. The regression coefficient (0.134) with significance value (0.379 > 0.05) suggests that while system quality improvements may enhance satisfaction, the relationship lacks statistical significance in this context.

Several factors potentially explain this finding. First, users may prioritize output quality over technical system characteristics when evaluating satisfaction. Second, after the initial adaptation period, users become accustomed to system interfaces and technical features, diminishing their perceived importance. Third, organizational support mechanisms may compensate for system limitations, reducing direct quality-satisfaction correlations (Sternad Zabukovšek et al., 2020).

These findings contrast with some prior research demonstrating significant system quality effects (Tam & Oliveira, 2021), yet align with studies suggesting information content supersedes technical infrastructure in determining user satisfaction within established ERP environments (Chou & Chang, 2020). Context-specific factors including organizational culture, user technical competency, and system maturity levels may moderate system quality-satisfaction relationships.

Information Quality Effect on User Satisfaction

Information quality exhibits robust positive and significant effects on user satisfaction, with regression coefficient (1.015) and significance value (0.001 < 0.05). This substantial relationship underscores information quality's critical role in determining user satisfaction levels.

High-quality information characterized by accuracy, timeliness, completeness, and relevance directly supports effective decision-making and operational task completion. When systems consistently deliver quality information, users develop confidence in system reliability and perceive greater value from system utilization (Petter et al., 2020). Within accounting and finance contexts, where precision and timeliness critically impact financial reporting and analysis, information quality becomes paramount for professional responsibilities.

This finding supports signaling theory applications, where quality information serves as positive signals regarding system effectiveness and organizational support (Ghasemaghaei & Calic, 2020). Users receiving accurate, timely information perceive systems as valuable tools enhancing professional performance, thereby increasing satisfaction and continued usage intentions. Results align with contemporary research emphasizing

information quality as primary determinant of ERP success and user satisfaction (Sharma & Daniel, 2021; Wixom & Todd, 2020).

Simultaneous Effects on User Satisfaction

Combined analysis confirms that system quality and information quality jointly influence user satisfaction significantly (F-calculated = 11.596, $p < 0.001$). This simultaneous effect validates the Information System Success Model premise that multiple quality dimensions collectively determine system success outcomes (DeLone & McLean, 2020).

The Adjusted R Square (0.384) indicates moderate explanatory power, suggesting these quality dimensions substantially influence satisfaction while acknowledging additional factors' contributions. The 61.6% unexplained variance highlights opportunities for future research incorporating service quality, organizational support, user training effectiveness, and change management practices as potential satisfaction determinants (Beheshti et al., 2021).

Organizations seeking to maximize ERP-SAP satisfaction should adopt holistic approaches addressing both technical infrastructure and information output quality, alongside complementary factors including user training, technical support services, and organizational change management strategies.

Conclusion

This investigation examined system quality and information quality effects on ERP-SAP user satisfaction within the Accounting and Finance Department at PTPN IV Regional II Medan. Key conclusions include:

1. System Quality: Demonstrates positive yet statistically insignificant effects on user satisfaction. While system improvements may enhance user experiences, the relationship lacks statistical significance in this organizational context, suggesting users prioritize other dimensions when evaluating satisfaction.
2. Information Quality: Exhibits significant positive influence on user satisfaction. High-quality information substantially enhances user confidence, perceived system value, and overall satisfaction levels, confirming information quality's critical role in ERP success.
3. Simultaneous Effects: System quality and information quality collectively exert significant influence on user satisfaction, explaining 38.4% of satisfaction variance. This finding validates comprehensive quality management approaches addressing multiple system dimensions.
4. Unexplained Variance: The remaining 61.6% variance suggests additional factors including service quality, system benefits, organizational support, and user competency warrant investigation in future research.

Practical Implications

Organizations implementing ERP-SAP systems should:

1. Prioritize information quality enhancements through data validation procedures, quality control mechanisms, and continuous monitoring
2. Invest in comprehensive user training programs emphasizing information interpretation and application
3. Establish feedback mechanisms enabling continuous system improvement based on user experiences
4. Develop integrated quality management frameworks addressing technical infrastructure, information outputs, and service delivery

Research Limitations and Future Directions

This study's limitations include single-organization focus, limited sample size, and cross-sectional design. Future research should:

1. Expand investigations across multiple organizations and industries
2. Incorporate additional variables including service quality, organizational support, and user competency
3. Employ longitudinal designs examining satisfaction evolution over extended implementation periods
4. Investigate moderating factors including user experience levels, organizational culture, and change management effectiveness

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