Harmony Management: International Journal of Management Science and Business
Volume.1, Number. 4, Year 2024
e-ISSN : 3063-6248; p-ISSN : 3048-4189, Page 175-186
DOI: https://doi.org/10.70062/harmonymanagement.v1i4.340
Available online at: https://management.ifrel.org/index.php/HarmonyManagement

Impact of AIS Implementation and HR Competence on Financial Reporting Quality in Indonesian Manufacturing Companies

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Abstract. *The quality of financial reporting has become increasingly important in the digital era, particularly for manufacturing companies facing complex operational challenges. The implementation of accounting information systems (AIS) and human resource competency are critical factors that may influence financial reporting quality. This study aims to examine the effect of accounting information systems implementation and human resource competency on the financial reporting quality of manufacturing companies listed on the Indonesia Stock Exchange (IDX). This quantitative study employed a survey design with primary and secondary data collection. The sample consisted of 150 manufacturing companies listed on IDX during 2020-2023, selected using purposive sampling. Data were collected through structured questionnaires distributed to finance managers and financial statement analysis. Multiple regression analysis was used to test the hypotheses. The findings indicate that accounting information systems implementation has a significant positive effect on financial reporting quality ($\beta = 0.456$, $p < 0.01$). Human resource competency also shows a significant positive effect on financial reporting quality ($\beta = 0.387$, $p < 0.01$). The simultaneous effect of both variables explains 68.7% of the variance in financial reporting quality ($R^2 = 0.687$, $F = 165.42$, $p < 0.01$). Both accounting information systems implementation and human resource competency significantly enhance financial reporting quality. Manufacturing companies should prioritize investing in advanced AIS technology and developing human resource competencies to improve their financial reporting quality.*

Keywords: *Accounting Information Systems, Financial Reporting Quality, Human Resource Competency, Indonesia Stock Exchange, Manufacturing Companies.*

1. INTRODUCTION

The quality of financial reporting has become a cornerstone of corporate transparency and stakeholder decision-making in the modern business environment (Chen et al., 2023). Manufacturing companies, in particular, face unique challenges in maintaining high-quality financial reporting due to their complex operational structures, diverse inventory management systems, and intricate cost allocation mechanisms (Rodriguez & Thompson, 2022). The Indonesia Stock Exchange (IDX) has witnessed significant growth in manufacturing sector listings, making the quality of financial reporting in this sector crucial for market integrity and investor confidence (Sari et al., 2021).

Financial reporting quality encompasses several dimensions, including relevance, reliability, comparability, and understandability of financial information (IASB, 2020). High-quality financial reports enable stakeholders to make informed economic decisions, reduce information asymmetry, and enhance market efficiency (Williams & Davis, 2023). However, achieving superior financial reporting quality requires sophisticated systems and competent human resources capable of managing complex accounting processes (Kumar & Patel, 2022).

Received: November 11, 2024; Revised: November 28, 2024; Accepted: December 14, 2024; Published: December 30, 2024

The implementation of accounting information systems (AIS) has emerged as a critical factor in enhancing financial reporting quality. AIS integration facilitates real-time data processing, reduces manual errors, and improves the accuracy and timeliness of financial information (Zhang et al., 2024). Modern AIS platforms incorporate advanced technologies such as artificial intelligence, blockchain, and cloud computing, which can significantly enhance the quality of financial reporting outputs (Anderson & Lee, 2023).

Equally important is human resource competency, which encompasses the knowledge, skills, abilities, and attitudes of accounting personnel responsible for financial reporting processes (Johnson et al., 2022). The complexity of modern accounting standards, regulatory requirements, and technological systems demands highly competent human resources who can effectively utilize AIS capabilities and ensure compliance with reporting standards (Brown & Wilson, 2021).

Despite the recognized importance of these factors, empirical evidence regarding their specific effects on financial reporting quality in the Indonesian manufacturing sector remains limited. Previous studies have primarily focused on developed markets or have examined these variables in isolation (Nguyen & Kim, 2023). This research gap necessitates a comprehensive investigation of how AIS implementation and human resource competency jointly influence financial reporting quality in Indonesian manufacturing companies.

The research objectives of this study are: (1) to examine the effect of accounting information systems implementation on financial reporting quality, (2) to analyze the effect of human resource competency on financial reporting quality, and (3) to investigate the simultaneous effect of accounting information systems implementation and human resource competency on financial reporting quality of manufacturing companies listed on IDX.

2. Literature Review and Hypothesis Development

Theoretical Foundation

This study is grounded in the Technology Acceptance Model (TAM) and Resource-Based View (RBV) theory. TAM explains how users adopt and utilize technology systems, which is relevant for understanding AIS implementation effects (Venkatesh et al., 2022). RBV theory posits that firms can achieve competitive advantages through valuable, rare, inimitable, and organized resources, including technological systems and human capital (Barney & Arikan, 2021).

Accounting Information Systems and Financial Reporting Quality

Accounting information systems represent integrated technology platforms that capture, process, and report financial data across organizational functions (Romney & Steinbart, 2023). Modern AIS implementations incorporate enterprise resource planning (ERP) systems, automated data validation, and real-time reporting capabilities that enhance the accuracy, timeliness, and reliability of financial information (Garcia & Martinez, 2024).

Empirical evidence supports the positive relationship between AIS implementation and financial reporting quality. Turner et al. (2023) found that companies with advanced AIS demonstrated significantly higher financial reporting quality scores compared to those with basic systems. Similarly, Hassan & Ahmed (2022) reported that AIS sophistication was positively associated with earnings quality and reduced restatement probability.

The mechanisms through which AIS enhances financial reporting quality include automated data capture, reduced manual processing errors, improved internal controls, and enhanced audit trails (Peterson & Clark, 2021). Advanced AIS platforms also facilitate compliance with accounting standards and regulatory requirements through built-in validation rules and automated reporting templates (Liu & Wang, 2024).

H1: Accounting information systems implementation has a positive effect on financial reporting quality.

Human Resource Competency and Financial Reporting Quality

Human resource competency in accounting encompasses technical knowledge, professional skills, ethical behavior, and continuous learning capabilities (Miller & Jackson, 2022). Competent accounting personnel are essential for interpreting complex transactions, applying appropriate accounting treatments, and ensuring compliance with evolving standards (Thompson & Roberts, 2023).

Research has consistently demonstrated the importance of human resource competency for financial reporting quality. Edwards & Green (2021) found that companies with higher levels of accounting personnel competency exhibited superior financial reporting quality metrics. Foster et al. (2024) reported that professional development investments in accounting staff were positively correlated with reduced financial reporting deficiencies.

The competency framework for accounting professionals includes technical competencies (knowledge of accounting standards, financial analysis skills), functional competencies (problem-solving abilities, decision-making skills), and behavioral competencies (ethical conduct, communication skills) (IFAC, 2023). These competencies collectively

contribute to the preparation of high-quality financial reports that meet stakeholder expectations (Taylor & Moore, 2022).

H2: Human resource competency has a positive effect on financial reporting quality.

Simultaneous Effect

The interaction between AIS implementation and human resource competency may create synergistic effects on financial reporting quality. Competent human resources can maximize the benefits of advanced AIS by effectively utilizing system capabilities, interpreting system outputs, and making informed judgments (Cooper & Stewart, 2023). Conversely, sophisticated AIS can enhance human resource effectiveness by providing better tools, automated processes, and comprehensive information (Kelly & Murphy, 2021).

H3: Accounting information systems implementation and human resource competency simultaneously have a positive effect on financial reporting quality.

3. RESEARCH METHODS

Research Design

This study employed a quantitative approach using explanatory research design to examine causal relationships between variables. The research utilized both primary data (through questionnaires) and secondary data (from financial statements and annual reports) to ensure comprehensive measurement of variables.

Population and Sample

The population consisted of manufacturing companies listed on the Indonesia Stock Exchange during 2020-2023. Using purposive sampling criteria, the final sample included 150 companies that met the following requirements: (1) continuously listed during the observation period, (2) published complete annual reports, (3) had accessible financial data, and (4) had identifiable key finance personnel for questionnaire distribution.

Variables and Measurement

Dependent Variable: Financial Reporting Quality (FRQ) Financial reporting quality was measured using a composite index incorporating four dimensions: relevance, reliability, comparability, and understandability. The measurement instrument was adapted from Francis et al. (2021) and included 16 indicators assessed on a 5-point Likert scale.

Independent Variables:

Accounting Information Systems Implementation (AIS) AIS implementation was measured using an instrument adapted from Hall & Singleton (2023), encompassing system integration, data quality, user interface, and technical support dimensions with 20 indicators on a 5-point Likert scale.

Human Resource Competency (HRC) Human resource competency was measured using a framework based on IFAC (2023) competency standards, including technical competency, functional competency, and behavioral competency dimensions with 18 indicators on a 5-point Likert scale.

Data Collection

Primary data were collected through structured questionnaires distributed to finance managers, accounting managers, and senior accounting staff. The questionnaire achieved a response rate of 87.3% (131 responses from 150 companies). Secondary data were obtained from IDX databases, company annual reports, and financial statements.

Data Analysis

Data analysis employed descriptive statistics, validity and reliability testing, classical assumption testing, and multiple regression analysis using SPSS 28.0. The regression model specification was:

$FRQ = \alpha + \beta_1 AIS + \beta_2 HRC + \varepsilon$

Where:

- FRQ = Financial Reporting Quality
- AIS = Accounting Information Systems Implementation
- HRC = Human Resource Competency
- α = Constant
- β_1, β_2 = Regression coefficients
- ε = Error term

4. RESULTS

Descriptive Statistics

Table 1 presents descriptive statistics for all variables. The mean score for financial reporting quality was 3.78 (SD = 0.62), indicating above-average quality levels among sample companies. Accounting information systems implementation showed a mean of 3.65 (SD = 0.71), while human resource competency averaged 3.82 (SD = 0.58).

Table 1. Descriptive Statistics

Variable	N	Mean	Std. Deviation	Minimum	Maximum
Financial Reporting Quality	131	3.78	0.62	2.31	4.94
AIS Implementation	131	3.65	0.71	2.15	4.85
Human Resource Competency	131	3.82	0.58	2.44	4.89

Validity and Reliability Testing

All measurement instruments demonstrated adequate validity and reliability. Cronbach's alpha coefficients exceeded 0.70 for all variables: Financial Reporting Quality ($\alpha = 0.893$), AIS Implementation ($\alpha = 0.876$), and Human Resource Competency ($\alpha = 0.869$). Factor loadings for all indicators exceeded 0.50, confirming convergent validity.

Classical Assumption Testing

Normality testing using the Kolmogorov-Smirnov test showed a normal distribution ($p > 0.05$). Multicollinearity was not detected as VIF values were below 10 (AIS: 1.234, HRC: 1.234). Heteroscedasticity testing using White's test indicated homoscedastic residuals ($p > 0.05$). Autocorrelation was not present based on Durbin-Watson test (1.987).

Hypothesis Testing

Table 2 presents the multiple regression analysis results. The model achieved high explanatory power with an adjusted R^2 of 0.687, indicating that 68.7% of variance in financial reporting quality is explained by the independent variables.

Table 2. Multiple Regression Analysis Results

Variable	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Std. Error	Beta	
(Constant)	0.423	0.187		2.262
AIS Implementation	0.398	0.065	0.456	6.123

Variable	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
Human Resource Competency	0.413	0.078	0.387	5.295

$R^2 = 0.694$, Adjusted $R^2 = 0.687$, $F = 165.42$, Sig. $F = 0.000$

Hypothesis 1 Testing The regression coefficient for AIS implementation is 0.398 with t-value of 6.123 ($p < 0.01$), indicating a significant positive effect on financial reporting quality. Therefore, H1 is supported.

Hypothesis 2 Testing Human resource competency shows a regression coefficient of 0.413 with t-value of 5.295 ($p < 0.01$), demonstrating a significant positive effect on financial reporting quality. Thus, H2 is supported.

Hypothesis 3 Testing The F-test result ($F = 165.42$, $p < 0.01$) indicates that AIS implementation and human resource competency simultaneously have a significant positive effect on financial reporting quality. Therefore, H3 is supported.

Additional Analysis

Relative importance analysis revealed that AIS implementation contributes 52.1% to the explained variance, while human resource competency contributes 47.9%. This suggests that while both variables are important, AIS implementation has a slightly stronger influence on financial reporting quality.

5. DISCUSSION

Effect of AIS Implementation on Financial Reporting Quality

The finding that AIS implementation significantly enhances financial reporting quality aligns with technology adoption literature and supports previous empirical studies (Zhang et al., 2024; Garcia & Martinez, 2024). The positive effect can be attributed to several mechanisms: automated data processing reduces manual errors, integrated systems improve data consistency, real-time capabilities enhance timeliness, and sophisticated controls strengthen reliability.

Manufacturing companies with advanced AIS demonstrated superior performance in all financial reporting quality dimensions. The integration of ERP systems, automated reconciliation processes, and real-time reporting capabilities particularly contributed to enhanced accuracy and timeliness. These findings support the Technology Acceptance Model's prediction that effective technology utilization leads to improved outcomes.

The standardized coefficient of 0.456 indicates a moderate to strong effect size, suggesting that AIS implementation represents a substantial driver of financial reporting quality. This finding has important implications for manufacturing companies considering technology investments, as AIS upgrades can yield significant improvements in reporting capabilities.

Effect of Human Resource Competency on Financial Reporting Quality

The significant positive effect of human resource competency on financial reporting quality confirms the critical role of human capital in accounting processes. Despite technological advances, competent personnel remain essential for interpreting complex transactions, exercising professional judgment, and ensuring compliance with evolving standards (Miller & Jackson, 2022).

The competency framework encompassing technical, functional, and behavioral dimensions proved effective in explaining financial reporting quality variations. Technical competencies (accounting standards knowledge, analytical skills) directly influenced the accuracy and compliance of financial reports. Functional competencies (problem-solving, decision-making) enhanced the quality of accounting judgments. Behavioral competencies (ethics, communication) strengthened the reliability and transparency of reporting processes.

The standardized coefficient of 0.387 demonstrates that human resource competency represents a substantial predictor of financial reporting quality. This finding emphasizes the importance of continuous professional development, training programs, and competency-based recruitment in manufacturing companies.

Simultaneous Effect and Synergy

The simultaneous effect of AIS implementation and human resource competency explains 68.7% of financial reporting quality variance, indicating strong combined predictive power. This high explanatory power suggests that these variables capture the essential elements influencing financial reporting quality in manufacturing companies.

The synergistic relationship between technology and human capital aligns with Resource-Based View theory, which emphasizes the importance of complementary resources for competitive advantage. Advanced AIS provides tools and capabilities, while competent human resources maximize the utilization of these technological assets. This complementarity creates value beyond the sum of individual effects.

The relative importance analysis revealing AIS implementation's slightly stronger influence (52.1% vs. 47.9%) suggests that technological infrastructure may be a fundamental prerequisite for high-quality financial reporting. However, the substantial contribution of human resource competency underscores that technology alone is insufficient without capable personnel.

Practical Implications

The findings offer several practical implications for manufacturing companies seeking to enhance financial reporting quality. First, investments in AIS technology should be prioritized, particularly integrated ERP systems with advanced reporting capabilities. Second, human resource development programs focusing on technical, functional, and behavioral competencies should be implemented. Third, companies should adopt a holistic approach that simultaneously enhances both technological capabilities and human capital.

The study also provides insights for regulators and standard-setters. The strong relationship between AIS implementation and financial reporting quality suggests that technology adoption guidelines could support reporting quality improvements. Similarly, competency-based certification requirements for accounting professionals could enhance overall reporting standards.

Limitations and Future Research

This study has several limitations that suggest avenues for future research. The cross-sectional design limits causal inference; longitudinal studies could provide stronger evidence of causal relationships. The focus on manufacturing companies may limit generalizability to other sectors. Self-reported measures for AIS implementation and human resource competency may introduce response bias.

Future research could examine mediating variables in the relationship between AIS/human resource competency and financial reporting quality. The role of organizational culture, management support, and external auditor quality could provide additional insights. Comparative studies across different industries or countries could enhance understanding of contextual factors.

6. CONCLUSION

This study provides empirical evidence that both accounting information systems implementation and human resource competency significantly enhance financial reporting quality in Indonesian manufacturing companies. The findings demonstrate that AIS implementation has a positive effect on financial reporting quality ($\beta = 0.456$, $p < 0.01$), confirming that technological investments yield substantial improvements in reporting capabilities. Human resource competency also shows a significant positive effect ($\beta = 0.387$, $p < 0.01$), emphasizing the continued importance of human capital in the digital era.

The simultaneous effect of both variables explains 68.7% of financial reporting quality variance, indicating strong combined predictive power and suggesting synergistic relationships between technology and human resources. These findings contribute to the accounting information systems literature by providing empirical evidence from an emerging market context and demonstrating the joint importance of technological and human factors.

The practical implications are clear: manufacturing companies should pursue integrated strategies that simultaneously enhance AIS capabilities and develop human resource competencies. Technology investments should be accompanied by comprehensive training programs and competency development initiatives to maximize benefits. The study also supports policy recommendations for technology adoption guidelines and competency-based professional requirements.

The research contributes to theoretical understanding by supporting both Technology Acceptance Model and Resource-Based View predictions in the accounting context. The findings emphasize that sustainable competitive advantages in financial reporting quality require complementary investments in both technological infrastructure and human capital development.

Manufacturing companies, regulators, and professional bodies should recognize that high-quality financial reporting in the modern business environment requires sophisticated information systems operated by competent professionals. The synergistic effects of these factors create opportunities for significant improvements in financial reporting quality, ultimately benefiting all stakeholders through enhanced transparency, reduced information asymmetry, and improved decision-making capabilities.

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