

Accounting Information System Understanding and Student Financial Reporting Quality: Human Resource Quality as Moderator

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Abstract

This study examined the effects of Accounting Information System (AIS) understanding and human resource quality on students' financial reporting quality and tested the moderating role of human resource quality. An explanatory cross-sectional survey was conducted involving 150 accounting department students at Universitas Cenderawasih who had completed AIS coursework. Purposive sampling was applied and the data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). AIS understanding positively affected financial reporting quality ($\beta=0.482$, $t=8.063$, $p<0.001$), as did human resource quality ($\beta=0.474$, $t=6.071$, $p<0.001$). The interaction was not significant ($\beta=0.009$, $t=0.232$, $p=0.817$, $f^2=0.0004$). The model explained 75.7% of the variance and showed positive predictive relevance. AIS understanding and human resource quality operated mainly as parallel direct capabilities rather than complementary moderators. The single-institution, cross-sectional design and the single-indicator final AIS construct limited generalizability and measurement breadth. The study extends AIS and reporting-quality research to accounting education in Papua and clarifies the boundary of competence-based moderation.

Keywords: Accounting Information Systems, Digital Competence, Financial Reporting Quality, Human Resource Quality, PLS-SEM

1. INTRODUCTION

Digital transformation has repositioned accounting work around integrated information systems, analytics, automation, cloud applications, and artificial intelligence. These technologies broaden rather than replace professional competence because accountants must understand transaction capture, data flows, internal controls, information integrity, and the interpretation of system-generated outputs (Richins, Stapleton, Stratopoulos, & Wong, 2017; Rikhardsson, & Yigitbasioglu, 2018; Kokina, & Blanchette, 2019; Moll, & Yigitbasioglu, 2019; Leitner-Hanetseder, Lehner, Eisl, & Forstenlechner, 2021). Therefore, Accounting Information System (AIS) understanding is part of the competence required to connect accounting logic with digital execution for accounting students.

Accounting education has responded by integrating information systems, data analytics, and emerging technologies into the curriculum. Studies show that technology instruction is most useful when it is embedded in substantive accounting tasks rather than taught as an isolated software operation (Sledgianowski, Gomaa, & Tan, 2017; Dzurainin, Jones, & Olvera, 2018; Andiola, Masters, & Norman, 2020; Losi, Isaacson, & Boyle, 2022; Falgout, Boyle, Gaydon, & Hermanson, 2024; Caines, Hasson, & Kralik, 2025). Recent work on Artificial Intelligence (AI) and digital accounting further emphasizes technology readiness, information literacy, structured scaffolding, and instructor capability as conditions for effective learning (Abdo-Salloum, & Al-Mousawi, 2025; Al-Hattami, Al-Bukhrani, Almasria, & AlGhunaimi, 2026; Guo, 2026).

Financial reporting provides an applied setting in which these competencies can be evaluated. Producing a high-quality report requires students to identify transaction effects, classify accounts, maintain consistency across processing stages, apply control logic, and present useful information. When these tasks are completed through AIS, students must also understand system workflows, validation procedures, and the link between source transactions and final reports. Organizational evidence consistently associates AIS quality or effective digital accounting with better information and reporting outcomes (Pungboonpanich, & Nakyam, 2022; Febriansyah, & Kamisa, 2023; Frederica, Cristina, & Munandar, 2023; Monteiro, Vale, Leite, & Lis, 2024; Diah, Hasiara, & Yudaruddin, 2026). Indonesian studies published in the Jurnal Relevansi and Goodwood journals

similarly show that AIS and internal-control capability are relevant to organizational and reporting outcomes ([Hikmaini, Wijaya, Zakia, Astuti, & Makhsun, 2026](#); [Irianto, Usman, & Adiatma, 2026](#); [Riza, Rahayu, Arum, & Yudi, 2026](#)).

However, technology alone does not guarantee high-quality reporting. This study adapts human resource quality to the student context as a combination of academic competence, digital literacy, analytical ability and academic integrity. Higher-education research shows that digital competence is multidimensional and cannot be inferred from routine device familiarity ([Spante, Lundin, & Algers, 2018](#); [Sánchez-Caballé, Gisbert-Cervera, & Esteve-Mon, 2020](#); [Zhao, & Sánchez, 2021](#)). It is also associated with learning behavior and academic performance ([Mehrvarz, Heidari, Farrokhnia, & Noroozi, 2021](#)), while accounting-education studies indicate that self-efficacy, instructor competence, and analytical judgment shape performance in technology-mediated tasks ([Al-Hattami, 2023](#); [Sargent, & Winton, 2023](#); [Al-Hattami et al., 2026](#)).

The specific research gap is not simply a lack of AIS research. Most AIS–financial-reporting studies examine firms, public organizations, or SMEs, whereas accounting-education studies more often examine curriculum design, technology acceptance, or analytics. Evidence remains limited on whether students' AIS understanding is directly associated with the quality of financial reports they produce and whether broader student capability changes the strength of that relationship. This distinction matters because a capability may exert a strong direct effect without operating as a moderator ([Frederica et al., 2023](#); [Josepina, & Sujana, 2024](#)).

This study addresses this gap among accounting department students at Universitas Cenderawasih in Papua. Its novelty lies in treating AIS understanding as an educational process capability, student human resource quality as both a direct capability and a proposed boundary condition, and student financial reporting quality as the applied learning outcome. Therefore, this study tests whether system-related and human capabilities operate additively or interactively in an accounting-education setting that remains underrepresented in the literature. Accordingly, this study has three objectives, such as to analyze the effect of AIS understanding on students' financial reporting quality, to analyze the direct effect of human resource quality on students' financial reporting quality and to test whether human resource quality strengthens the effect of AIS understanding on financial reporting quality. The results are intended to inform curriculum design while remaining bounded by the study's cross-sectional, self-reported, and single-institution design.

2. LITERATURE REVIEW

2.1 Accounting Information System Understanding

AIS is an organized process for capturing, recording, processing, storing, controlling, and transforming transaction data into information for reporting and decision making. In an educational setting, AIS understanding should therefore be distinguished from mere software familiarity. It includes knowledge of transaction cycles, accounting procedures, data relationships, internal controls, and the connection between system processing and reporting outputs ([Sledgianowski et al., 2017](#); [Al-Htaybat et al., 2018](#); [Andiola et al., 2020](#)).

This distinction is important because automation can hide the reasoning embedded in the accounting processes. Students who know only how to enter data may fail to identify classification errors, inappropriate account mapping, or control weaknesses, whereas students who understand the underlying process can evaluate whether the system outputs are consistent with accounting logic. Research on analytics-rich accounting curricula therefore favors integrated cases, hands-on projects, and tasks that require an explanation of how digital tools generate accounting outcomes ([Dzuranin et al., 2018](#); [Losi et al., 2022](#); [Falgout et al., 2024](#)).

The technological environment surrounding AIS continues to expand through business intelligence, robotic process automation, blockchain, cloud accounting, and artificial intelligence ([Richins et al., 2017](#); [Rikhardsson & Yigitbasioglu, 2018](#); [Kokina & Blanchette, 2019](#); [Qasim & Kharbat, 2020](#)). These developments increase the value of transferable process understanding because

interfaces change more rapidly than the accounting logic of transaction flows, controls, and reporting. Accordingly, the present study operationalizes AIS understanding through knowledge of AIS concepts, accounting software, transaction flows, and internal controls.

2.2 Student Financial Reporting Quality

Student financial reporting quality refers to the quality of reports produced when students apply accounting principles and AIS procedures. The construct is adapted from the broader qualitative logic of useful financial information and is reflected in relevance, faithful representation, comparability, and understandability, together with consistent classification and low procedural error. Therefore, the focus is on applied academic output rather than an audited corporate financial statement.

AIS understanding supports reporting quality because it helps students trace information from source transactions through journals, ledgers, adjustments, controls, and final reports. Organizational studies provide indirect but consistent support for this process mechanism: digital accounting and AIS quality are associated with better financial information or reporting quality across different settings ([Pungboonpanich & Nakym, 2022](#); [Febriansyah & Kamisa, 2023](#); [Frederica et al., 2023](#); [Monteiro et al., 2024](#); [Diah et al., 2026](#); [Riza et al., 2026](#)). In the student context, this mechanism is interpreted as improved coherence between the accounting event, system treatment, and reported output.

2.3 Human Resource Quality as Student Capability

Human resource quality is translated here from an organizational concept to individual student capability. It comprises academic competence, digital literacy, analytical ability, and academic integrity. These dimensions represent the knowledge, digital fluency, reasoning, and responsible judgment needed to perform accounting tasks rather than conventional staffing practices.

The construct is theoretically distinct from the understanding of AIS. AIS understanding concerns knowledge of accounting system processes, whereas human resource quality concerns the broader capability of the user who applies and evaluates those processes. Higher-education literature supports this distinction by showing that digital competence involves information handling, problem-solving, communication, and ethical use rather than a single technical skill ([Spante, Lundin, & Algers, 2018](#); [Sánchez-Caballé, Gisbert-Cervera, & Esteve-Mon, 2020](#); [Zhao, & Sánchez, 2021](#)). Digital competence also contributes to academic performance ([Mehrvarz, Heidari, Farrokhnia, & Noroozi, 2021](#)), while reflective judgment and cognitive ability are important in accounting analytics tasks ([Sargent & Winton, 2023](#)).

Organizational evidence similarly links human resource competence with information or reporting quality ([Bawono, Suroso, & Yuniarso, 2021](#); [Frederica, Cristina, & Munandar, 2023](#); [Nusa, & Devi, 2023](#); [Nasution, & Supriadi, 2024](#)). Within Jurnal Relevansi, [Susilo, Parela, Zaenudin, and Mustakim \(2022\)](#), further emphasize that human capability can be strengthened through systematic development. Taken together, these studies support treating human resource quality as a direct predictor of student reporting quality, while keeping it conceptually separate from AIS understanding.

2.4 Integrated Capability Perspective and Research Gap

The three constructs can be organized from an integrated capability perspective. AIS understanding represents technology-related process capability, human resource quality represents user capability, and financial reporting quality is the applied outcome. Two mechanisms are possible for this. Under the additive mechanism, each capability contributes independently to the reporting quality. Under a complementary mechanism, the value of AIS understanding increases when the human resource quality is higher.

The moderating mechanism is narrower than the direct effect of the interaction. A direct effect asks whether capable students produce better reports. Moderation analysis was used to determine whether broader student capability specifically changed how strongly AIS understanding was translated into reporting quality. Conceptually, this could occur because analytical ability helps students diagnose system errors, digital literacy helps them exploit system features, and integrity

supports the consistent application of controls. Thus, students with the same level of AIS knowledge could obtain different reporting outcomes if they differed in these complementary capabilities.

Nevertheless, empirical evidence cautions against the assumption of synergy. [Frederica et al. \(2023\)](#) show that human resource competence can remain important without significantly strengthening the AIS–reporting relationship, while [Josepina and Sujana \(2024\)](#) report a similar limitation for another proposed contextual moderator. Related studies indicate that digital resources create value only when implementation conditions allow capability conversion ([Bhimasta et al., 2025](#); [Saraswati et al., 2026](#)). Therefore, the unresolved issue is whether student capability acts primarily as an antecedent, a boundary condition, or both. This study addresses this issue in the accounting education context. By simultaneously estimating the direct effects and interaction, the model distinguishes whether AIS understanding and human resource quality operate as parallel capabilities or whether stronger human capabilities amplify the reporting benefit of AIS understanding.

2.5 Hypothesis Development

2.5.1 AIS Understanding and Financial Reporting Quality

AIS understanding should improve reporting quality because it links accounting rules with the sequence through which information is processed. Knowledge of transaction flows and controls helps students trace errors, verify classifications, and understand how software-generated outputs arise. Prior studies consistently associate AIS or digital accounting with information and reporting quality ([Pungboonpanich & Nakym, 2022](#); [Febriansyah & Kamisa, 2023](#); [Frederica et al., 2023](#); [Monteiro et al., 2024](#); [Diah et al., 2026](#); [Riza et al., 2026](#)). Therefore, a stronger AIS understanding is expected to support more relevant, faithfully represented, comparable, and understandable student reports.

H₁: Understanding accounting information systems positively affects the quality of students' financial reporting

2.5.2 Human Resource Quality and Financial Reporting Quality

The quality of human resources should also contribute directly to the quality of reporting. Academic competence supports correct accounting treatment, analytical ability supports error detection and reasonableness assessment, digital literacy supports the effective use of information tools, and integrity supports the disciplined application of procedures. This expectation is consistent with organizational evidence on human resource competence and reporting quality and higher-education evidence linking digital and cognitive capabilities to learning performance ([Bawono, Suroso, & Yuniarso, 2021](#); [Mehrvarz, Heidari, Farrokhnia, & Noroozi, 2021](#); [Sargent, & Winton, 2023](#); [Nasution, & Supriadi, 2024](#); [Riza, Rahayu, Arum, & Yudi, 2026](#)).

H₂: Human resource quality positively affects students' financial reporting quality

2.5.3 Moderating Role of Human Resource Quality

Human resource quality was proposed as a moderator only if it changed the conversion of AIS understanding into reporting quality. The mechanism is that students with stronger analytical abilities can diagnose anomalies in system outputs, digitally literate students can use system features more effectively, and students with stronger academic integrity can apply controls more consistently. In this case, the same increase in AIS understanding should yield a larger reporting-quality gain when human resource quality is high.

This mechanism is distinct from the direct effect of human resource quality: the direct effect reflects a general contribution to reporting quality, whereas moderation requires the AIS slope to vary with student capability. Because prior evidence shows that supportive capabilities do not always produce significant interactions ([Frederica et al., 2023](#); [Josepina & Sujana, 2024](#)), the moderation hypothesis is treated as an empirical test, rather than an assumed synergy.

H₃: Human resource quality strengthens the positive effect of accounting information system understanding on the quality of students' financial reporting

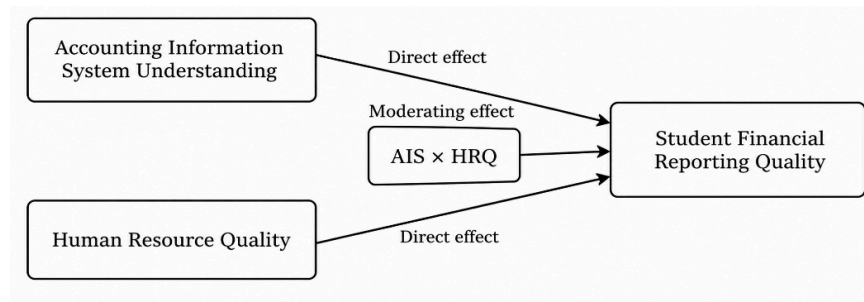


Figure 1. Conceptual framework of the study

Figure 1 shows Accounting Information System (AIS) understanding is proposed to have a direct positive effect on student financial reporting quality. Human resource quality is also proposed to have a direct positive effect on student financial reporting quality. In addition, human resource quality is hypothesized to moderate the relationship between AIS understanding and student financial reporting quality, such that the positive effect of AIS understanding is stronger when human resource quality is higher.

3. RESEARCH METHODOLOGY

3.1 Research Design and Unit of Analysis

This study used a quantitative explanatory survey with a cross-sectional design. The unit of analysis was an individual accounting student. AIS understanding was specified as the focal predictor, human resource quality as both a direct predictor and moderator, and financial reporting quality as the endogenous construct. This design permits simultaneous estimation of direct capability effects and the proposed interaction while recognizing that cross-sectional associations do not establish temporal causality.

3.2 Population, Sample, and Data Collection

The population consisted of active accounting department students at Universitas Cenderawasih who had completed the accounting information systems course. Purposive sampling was used because the respondents needed direct exposure to AIS. Eligibility required active status, at least fifth-semester standing, completion of the AIS course, and willingness to participate. A total of 150 questionnaires were analyzed. The retained research record did not contain the original a priori power calculation or the exact fieldwork dates; these details are therefore not retrospectively reconstructed. The achieved sample is reported transparently as a limitation of methodological documentation rather than presented as the result of a calculation that cannot be verified.

Data were collected using a closed-ended questionnaire distributed directly and through Google Forms. Participation was based on the willingness to complete the questionnaire. The retained documentation does not include a formal ethics-approval identifier or a detailed consent script, therefore, the revised manuscript does not claim procedures that cannot be verified. Future replication should document the fieldwork period, ethics review where applicable, consent wording, response rate, and sample-size planning before data collection.

3.3 Measurement of Constructs

All indicators used a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. AIS understanding was initially represented by four dimensions, such as AIS concepts, accounting software operation, transaction flows, and internal control. Financial reporting quality was represented by relevance, faithful representation, comparability, and understandability. Human resource quality was represented by academic competence, digital literacy, analytical ability, and academic integrity.

Table 1. Operational definitions of variables

Variables	Operational definition	Indicators	Role in model
AIS understanding	Students' ability to understand AIS concepts, procedures, controls, and operations.	AIS concepts, accounting software, transaction flows, and internal controls.	Predictor
Financial reporting quality	Students' ability to prepare reports that are relevant, appropriately represented, comparable, and understandable.	Relevance, faithful representation, comparability, and understandability.	Endogenous variable
Human resource quality	Student capability supports information processing and accounting-task performance.	Academic competence, digital literacy, analytical ability, and academic integrity.	Predictor and moderator

Table 1 shows the available research record identifies these construct dimensions but does not preserve item-by-item source mapping to a previously validated questionnaire. Accordingly, the revised manuscript treats the instrument as an operationalization of the study's conceptual definitions and does not claim verbatim adoption from a named scale. This limitation is important because construct validity depends on both theoretical coverage and empirical measurement performance. Future studies should provide a complete item pool, source/adaptation history, content-validity procedure, pilot testing, and final retained items.

3.4 PLS-SEM Analysis Strategy

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) because the model contains latent constructs, direct effects, and an interaction term, and is oriented toward explanation and prediction. Following established guidance, measurement-model assessment should include indicator reliability, internal consistency, convergent validity, and discriminant validity, while structural assessment should include path coefficients, collinearity, R^2 , effect sizes, confidence intervals, and predictive assessment ([Henseler et al., 2015, 2016](#); [Hair et al., 2019, 2020](#); [Benitez et al., 2020](#)).

The analytical record retained for this manuscript contains the final structural coefficients, R^2 , interaction f^2 , and a positive Q^2 predict conclusion, but it does not preserve the complete post-purification set of outer loadings, composite reliability, Average Variance Extracted (AVE), Heterotrait–Monotrait (HTMT), collinearity statistics, bootstrap confidence intervals, or indicator-level PLSpredict comparisons. No unreported values are reconstructed. This reporting gap materially limits the comprehensive evaluation of the measurement and structural models.

A further concern is that the final AIS-understanding construct was represented by one indicator after measurement model purification. A single-indicator construct cannot be evaluated for internal consistency or convergent validity in the same way as a multi-item reflective construct. Consequently, all findings involving AIS understanding are interpreted cautiously as evidence from the retained final model rather than as strong validation of the full conceptual domain. Common-method bias also remains a concern because all constructs were obtained from the same respondents; the retained record does not contain complete full-collinearity diagnostics ([Kock, 2015](#)).

3.5 Moderation and Predictive Interpretation

Moderation was evaluated through the interaction between AIS understanding and human resource quality. The statistical interpretation considered the interaction coefficient, its significance, and f^2 . A significant positive interaction indicates that AIS understanding has a stronger association with reporting quality at higher levels of human resource quality. A non-significant interaction with a near-zero effect size would support an additive rather than a multiplicative interpretation. Because the available records do not include bootstrap confidence intervals or indicator-level predictive errors, inferential and predictive claims are deliberately limited to the statistics that can be

verified. This conservative approach avoids treating missing diagnostics as evidence of model adequacy.

4. RESULTS AND DISCUSSION

4.1 Structural Model Results

AIS understanding showed a positive and statistically significant association with students' financial reporting quality ($\beta=0.482$, $t=8.063$, $p<0.001$), supporting H_1 . Human resource quality also showed a positive and significant association ($\beta=0.474$, $t=6.071$, $p<0.001$), supporting H_2 . The coefficients are similar in magnitude, suggesting that system-related understanding and broader student capabilities make comparable direct contributions within the estimated model. The interaction between AIS understanding and human resource quality was not significant ($\beta=0.009$, $t=0.232$, $p=0.817$), and its effect size was negligible ($f^2=0.0004$). Therefore, H_3 was not supported. In this sample, human resource quality contributes directly to reporting quality but does not measurably change the strength of the AIS-understanding relationship.

The model explained 75.7% of the variance in financial reporting quality ($R^2=0.757$), and the retained output indicated a positive Q^2 predict. However, the absence of indicator-level PLSpredict comparisons prevents a stronger claim of out-of-sample predictive superiority. Likewise, the missing post-purification measurement statistics and the single-indicator AIS measure require the structural findings to be treated as provisional evidence rather than a complete validation of the conceptual model.

Table 2. Hypothesis testing results

Hypothesis	Relationship	β	t -statistic	p -value	f^2	Decision
H_1	AIS understanding $\rightarrow$ Financial reporting quality	0.482	8.063	<0.001	–	Supported
H_2	Human resource quality $\rightarrow$ Financial reporting quality	0.474	6.071	<0.001	–	Supported
H_3	AIS $\times$ HRQ $\rightarrow$ Financial reporting quality	0.009	0.232	0.817	0.0004	Not supported

Table 2 shows H_1 and H_2 were supported, whereas H_3 was not. The significant direct effects of AIS understanding and human resource quality indicate that both constructs independently contribute to students' financial reporting quality. In contrast, the insignificant interaction coefficient suggests that human resource quality does not materially alter the strength of the relationship between AIS understanding and financial reporting quality. The negligible interaction effect size further reinforces this interpretation. Beyond the significance of individual paths, it is also necessary to evaluate the extent to which the model explains and predicts the endogenous construct. Accordingly,

Table 3. Explanatory and predictive capacity of the model

Model indicator	Value	Interpretation
R^2 Financial reporting quality	0.757	The model explained 75.7% of the variance in the endogenous construct.
Q^2 predict	>0	The model showed a positive predictive relevance.
Interaction f^2	0.0004	The practical contribution of the moderating effect is negligible.

Table 3 summarizes the model's explanatory and predictive capacity using the R^2 , Q^2 predict, and interaction f^2 values. These indicators provide additional evidence regarding the model's ability to explain variance, predict the endogenous construct, and assess the substantive contribution of the moderating effect. The R^2 value of 0.757 indicates that the model explains 75.7% of the variance in financial reporting quality, demonstrating strong explanatory capacity. The Q^2 predict value greater than zero indicates that the model has positive predictive relevance for the endogenous construct. Meanwhile, the interaction f^2 value of 0.0004 indicates that the moderating effect contributes negligibly to the model. Thus, although the model demonstrates strong explanatory and predictive capacity, the interaction between AIS understanding and human resource quality provides only a negligible substantive contribution to financial reporting quality.

4.2 Effect of AIS Understanding on Financial Reporting Quality

The positive AIS coefficient is consistent with the process argument that system understanding helps students connect accounting concepts to the execution of reporting tasks. Students who can trace data from transactions through the processing and control stages are better positioned to identify classification errors and explain how they affect final reports. This interpretation is consistent with prior evidence linking AIS and digital accounting to information or reporting quality ([Pungboonpanich & Nakym, 2022](#); [Febriansyah & Kamisa, 2023](#); [Frederica et al., 2023](#); [Monteiro et al., 2024](#); [Diah et al., 2026](#); [Riza et al., 2026](#)).

The educational implication is not that software exposure alone improves reporting. Rather, AIS instruction should connect transaction-cycle logic, internal controls, system operation, and interpretation of outputs. This aligns with accounting-education research that favors technology embedded in applied accounting problems ([Dzuranin et al., 2018](#); [Andiola et al., 2020](#); [Losi et al., 2022](#); [Falgout et al., 2024](#)). However, because AIS understanding was ultimately represented by one retained indicator, the result should be interpreted as support for the final measured representation, not as definitive evidence for every conceptual dimension of AIS understanding.

4.3 Effect of Human Resource Quality on Financial Reporting Quality

Human resource quality also had a positive direct association with reporting quality. This result supports the view that reporting requires a broader capability base beyond system-specific knowledge. Academic competence supports appropriate accounting treatment, analytical ability supports reasonableness assessment, digital literacy supports the use of information tools, and integrity supports disciplined procedures.

The result is consistent with organizational studies linking human resource competence to information and reporting quality ([Bawono et al., 2021](#); [Nusa & Devi, 2023](#); [Nasution & Supriadi, 2024](#); [Riza et al., 2026](#)) and higher-education studies showing that digital competence and cognitive ability contribute to academic or analytics performance ([Mehrvarz et al., 2021](#); [Sargent & Winton, 2023](#)). For curriculum design, the implication is to combine AIS practice with case analysis, reconciliation, error diagnosis, reflective explanation and integrity-oriented assessment.

4.4 Moderating Role of Human Resource Quality

The nonsignificant interaction is theoretically informative because it separates a strong direct capability effect from the moderating mechanism. Human resource quality matters in its own right, but the data do not show that it amplifies the AIS-understanding slope. Therefore, the observed pattern is additive, a stronger AIS understanding and student capability are each associated with better reporting, but their statistical interaction is negligible.

This pattern is consistent with [Frederica et al. \(2023\)](#), who found that human resource competence need not strengthen the AIS–financial-statement-quality relationship, and with [Josepina and Sujana \(2024\)](#), who likewise found that a contextual variable did not automatically function as a moderator. Related work on capability integration suggests that technology and human judgment can be complementary conceptually, while value conversion still depends on implementation conditions ([Bhimasta et al., 2025](#); [Saraswati et al., 2026](#)).

Several explanations remain plausible but cannot be tested using the retained data. The AIS course may provide a relatively standardized knowledge base, human resource quality may affect reporting through processes that are not AIS-specific, and the single-indicator AIS measure may reduce sensitivity to the interaction effects. Therefore, these interpretations should be viewed as hypotheses for replication rather than as additional findings.

4.5 Explanatory and Predictive Capacity of the Model

The R^2 value indicates substantial in-sample explanatory power, whereas a positive Q^2 predict indicates predictive relevance in the retained output. These results are consistent with the two strong direct paths identified in this study. Nevertheless, without indicator-level prediction errors and

benchmark comparisons, predictive conclusions should remain limited. These findings support an explanatory pattern in this sample, not a claim of universal predictive performance.

4.6 Theoretical Contributions

This study makes three bounded theoretical contributions. First, it extends the AIS-reporting-quality relationship into accounting education by treating AIS understanding as an educational process capability and student reporting quality as an applied learning outcome. Second, it distinguishes direct capability effects from capability complementarity: human resource quality is strongly associated with reporting quality directly but does not significantly moderate the AIS relationship. Third, it adds evidence from an underrepresented higher-education setting in Papua. These contributions should be interpreted in light of the single-institution design and measurement limitations of the AIS construct.

4.7 Educational and Practical Implications

Table 4. Synthesis of findings and educational implications

Empirical finding	Interpretation	Educational implication
AIS understanding → reporting quality was positive and significant.	A direct understanding of the system/process supports higher-quality reporting.	Integrate transaction flows, controls, software use, and report interpretation into AIS learning.
Human resource quality → reporting quality was positive and significant.	Academic, digital, analytical, and integrity capabilities contribute independently to the overall capability.	Develop case analysis, digital literacy, reflective reasoning, and integrity, alongside technical skills.
AIS × HRQ was not significant.	These two capabilities operate mainly in parallel rather than through synergy.	Simultaneously strengthen both capability streams without relying on an interaction effect.
$R^2 = 0.757$ and $Q^2_{\text{predict}} > 0$.	The model has a strong in-sample explanation and positive predictive relevance.	The model can be used as a curriculum diagnostic while improving measurement and predictive reporting in replication.

Table 4 shows the results support a two-track curriculum strategy. AIS instruction should integrate transaction flows, control reasoning, software use, and interpretation of financial outputs, while broader capability development should strengthen digital literacy, analytical reasoning, academic competence, and academic integrity. Active learning tasks that require students to diagnose errors, reconcile inconsistencies, and justify system-generated outputs can connect these two streams without assuming a statistical interaction. Assessment should also distinguish process understanding from merely obtaining the correct final number. Rubrics can be used to evaluate conceptual explanations, system-process reasoning, error identification, control awareness, and reporting clarity. Because the moderation effect was not significant, program improvement should strengthen AIS understanding and broader student capability in parallel rather than relying on one to amplify the other.

5. CONCLUSIONS

5.1 Conclusion

This study addressed three objectives. First, AIS understanding was positively associated with students' financial reporting quality ($\beta=0.482$, $p<0.001$). Second, human resource quality was also positively associated with financial reporting quality ($\beta=0.474$, $p<0.001$). Third, human resource quality did not significantly moderate the AIS-understanding relationship ($\beta=0.009$, $p=0.817$, $f^2=0.0004$). Within the estimated model, the two capabilities therefore operate mainly as parallel direct predictors rather than through a measurable interaction. These conclusions are deliberately qualified. The study is cross-sectional, self-reported, and based on one accounting department; the final AIS construct was represented by a single indicator; and complete post-purification measurement, collinearity, confidence-interval, and indicator-level predictive diagnostics were not retained.

Therefore, the findings should be read as context-specific evidence that supports further replication, not as definitive causal or measurement validation.

5.2 Research Limitations

The principal limitations are external validity, common method risk, and measurement documentation. First, the single-institution sample restricts generalization. Second, the cross-sectional self-report design does not establish temporal causality. Finally, all focal variables were collected from the same respondents. Most importantly, the single-indicator final AIS construct narrows the construct coverage and prevents standard multi-item reliability and convergent validity assessment. The retained research record does not contain the original a priori sample size calculation, exact data collection dates, item-level questionnaire source mapping, formal ethics-approval identifier, complete post-purification outer-model statistics, full-collinearity diagnostics, bootstrap confidence intervals, or full PLSpredict comparisons. These omissions are stated explicitly rather than reconstructed retrospectively.

5.3 Suggestions and Directions for Future Research

Future research should replicate the model across multiple universities and use a prospectively documented sampling plan. The AIS-understanding construct should be redeveloped as a validated multi-item scale covering concepts, transaction flows, internal controls, and software applications, with item sources, content validation, pilot testing, and complete reliability and validity statistics reported. Subsequent studies should combine self-report measures with objective reporting tasks, longitudinal designs and instructional experiments. Potential moderators more proximal to AIS use, such as accounting software experience, technology self-efficacy, quality of AIS instruction, instructor digital competence, and task complexity, may provide stronger tests of conditional effects. Finally, future PLS-SEM reporting should include outer loadings, composite reliability, Average Variance Extracted (AVE), HTMT, collinearity diagnostics, bootstrap confidence intervals, R^2 , f^2 , and complete PLSpredict benchmark comparisons.

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AUTHOR CONTRIBUTIONS

KW contributed to the conceptualization, research design, data collection, data analysis, interpretation of findings, and manuscript preparation. MTB contributed to the development of the research framework, methodology, critical review, and revision of the manuscript. MAP contributed to data collection, literature review, interpretation of results, and manuscript revision. All authors reviewed and approved the final version of the manuscript.

REFERENCES

- Abdo-Salloum, A. M., & Al-Mousawi, H. Y. (2025). Accounting students' technology readiness, perceptions, and digital competence toward artificial intelligence adoption in accounting curricula. *Journal of Accounting Education*, 70, 100951. <https://doi.org/10.1016/j.jaccedu.2025.100951>
- Al-Hattami, H. M. (2023). Understanding perceptions of academics toward technology acceptance in accounting education. *Heliyon*, 9(1). <https://doi.org/10.1016/j.heliyon.2023.e13141>
- Al-Hattami, H. M., Al-Bukhrani, M. A., Almasria, N. A., & AlGhunaimi, H. (2026). Exploring student acceptance of digital accounting courses: An empirical analysis. *Journal of International Education in Business*, 19(1), 9-28. <https://doi.org/10.1108/JIEB-01-2025-0009>
- Al-Htaybat, K., von Alberti-Alhtaybat, L., & Alhatabat, Z. (2018). Educating digital natives for the future: Accounting educators' evaluation of the accounting curriculum. *Accounting Education*, 27(4), 333-357. <https://doi.org/10.1080/09639284.2018.1437758>

- Andiola, L. M., Masters, E., & Norman, C. (2020). Integrating technology and data analytic skills into the accounting curriculum: Accounting department leaders' experiences and insights. *Journal of Accounting Education*, 50, 100655. <https://doi.org/10.1016/j.jaccedu.2020.100655>
- Bawono, I. R., Suroso, A., & Yuniarso, G. P. (2021). Assessing effect of the factors that influence financial reporting information quality. *AKRUAL: Jurnal Akuntansi*, 12(2), 107-116. <https://doi.org/10.26740/jaj.v12n2.p107-116>
- Benitez, J., Henseler, J., Castillo, A., & Schuberth, F. (2020). How to perform and report an impactful analysis using partial least squares: Guidelines for confirmatory and explanatory IS research. *Information & Management*, 57(2), 103168. <https://doi.org/10.1016/j.im.2019.05.003>
- Bhimasta, R. A., Surya, R. A., & Pramudita, D. P. D. (2025). Integrating marketing, HRM, and accounting systems for customer value sustainability. *Jurnal Relevansi : Ekonomi, Manajemen Dan Bisnis*, 9(2), 210-223. <https://doi.org/10.61401/relevansi.v9i2.307>
- Cainas, J. M., Hasson, B. K., & Kralik, J. (2025). Accounting faculty perspectives on data analytics: Course design, competency assessment, and employer needs and response. *Issues in Accounting Education*, 40(2), 23-44. <https://doi.org/10.2308/ISSUES-2022-031>
- Diah, A. M., Hasiara, L. O., & Yudaruddin, R. (2026). Information technology capability and financial reporting quality in local governments: The mediating role of accounting information system quality. *Cogent Business & Management*, 13(1), 2654816. <https://doi.org/10.1080/23311975.2026.2654816>
- Dzuranin, A. C., Jones, J. R., & Olvera, R. M. (2018). Infusing data analytics into the accounting curriculum: A framework and insights from faculty. *Journal of Accounting Education*, 43, 24-39. <https://doi.org/10.1016/j.jaccedu.2018.03.004>
- Falgout, S., Boyle, D. M., Gaydon, D. J., & Hermanson, D. R. (2024). Data analytics integration approaches: Insights from accounting chairs. *Issues in Accounting Education*, 39(3), 31-44. <https://doi.org/10.2308/ISSUES-2022-030>
- Febriansyah, A., & Kamisa, S. U. (2023). Accounting information systems on the quality of MSME financial reports. *Jurnal Riset Akuntansi*, 15(1), 34-45. <https://doi.org/10.34010/jra.v15i1.9515>
- Frederica, D., Cristina, V., & Munandar, A. (2023). The quality of financial statements with human resource competence as moderating variables. *JIA (Jurnal Ilmiah Akuntansi)*, 8(1), 91-105. <https://doi.org/10.23887/jia.v8i1.57263>
- Guo, X. (2026). Accounting students' perceptions of learning Python: A technology acceptance model study using natural language processing. *Journal of Accounting Education*, 73, 101004. <https://doi.org/10.1016/j.jaccedu.2026.101004>
- Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101-110. <https://doi.org/10.1016/j.jbusres.2019.11.069>
- Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: Updated guidelines. *Industrial Management & Data Systems*, 116(1), 2-20. <https://doi.org/10.1108/IMDS-09-2015-0382>
- Hikmaini, A., Wijaya, L. R. P., Zakia, D., Astuti, S., & Makhsun, A. (2026). The influence of e-commerce, digital payments, and accounting information systems on micro business performance. *Jurnal Relevansi: Ekonomi, Manajemen Dan Bisnis*, 10(4), 809-828. <https://doi.org/10.61401/relevansi.v10i4.635>
- Irianto, O., Usman, R., & Adiatma, T. (2026). Budget transparency and internal control systems in enhancing financial reporting quality. *Jurnal Akuntansi, Keuangan, dan Manajemen*, 7(4), 47-60. <https://doi.org/10.35912/jakman.v7.n4.p47-60.2026>
- Josepina, A., & Sujana, I. K. (2024). Sistem informasi akuntansi, kualitas laporan keuangan dan sistem pengendalian internal sebagai variabel moderasi. *E-Jurnal Akuntansi*, 34(5), 1264-1269. <https://doi.org/10.24843/EJA.2024.v34.i05.p14>

- Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, 11(4), 1-10. <https://doi.org/10.4018/ijec.2015100101>
- Kokina, J., & Blanchette, S. (2019). Early evidence of digital labor in accounting: Innovation with robotic process automation. *International Journal of Accounting Information Systems*, 35, 100431. <https://doi.org/10.1016/j.accinf.2019.100431>
- Leitner-Hanetseder, S., Lehner, O. M., Eisl, C., & Forstenlechner, C. (2021). A profession in transition: Actors, tasks and roles in AI-based accounting. *Journal of Applied Accounting Research*, 22(3), 539-556. <https://doi.org/10.1108/JAAR-10-2020-0201>
- Losi, H. J., Isaacson, E. V., & Boyle, D. M. (2022). Integrating data analytics into the accounting curriculum: Faculty perceptions and insights. *Issues in Accounting Education*, 37(4), 1-23. <https://doi.org/10.2308/ISSUES-2021-086>
- Mehrvarz, M., Heidari, E., Farrokhnia, M., & Noroozi, O. (2021). The mediating role of digital informal learning in the relationship between students' digital competence and their academic performance. *Computers & Education*, 167, 104184. <https://doi.org/10.1016/j.compedu.2021.104184>
- Moll, J., & Yigitbasioglu, O. (2019). The role of internet-related technologies in shaping the work of accountants: New directions for accounting research. *The British Accounting Review*, 51(6), 100833. <https://doi.org/10.1016/j.bar.2019.04.002>
- Monteiro, A. P., Vale, J., Leite, E., & Lis, M. (2024). Linking quality of accounting information system and financial reporting to non-financial performance: The role of women managers. *International Journal of Accounting Information Systems*, 54, 100692. <https://doi.org/10.1016/j.acinf.2024.100692>
- Nasution, Y. N., & Supriadi, Y. (2024). The role of human resources competence in improving quality of the financial reports of the Indonesian state-owned enterprises. *Jurnal Ilmiah Akuntansi Kesatuan*, 12(6), 567-578. <https://doi.org/10.37641/jiakes.v12i6.3217>
- Nusa, I. B. S., & Devi, S. S. (2023). Analisa pengaruh sistem pengendalian internal dan kompetensi sumber daya manusia terhadap kualitas laporan keuangan. *Journal of Economics, Management, Business and Accounting*, 3(2), 193-207. <https://doi.org/10.34010/jemba.v3i2.11635>
- Pungboonpanich, P., & Nakym, N. (2022). The effect of digital accounting on the quality of financial reports. *Suranaree Journal of Social Science*, 16(1), 26-43. <https://doi.org/10.55766/LMMC9398>
- Qasim, A., & Kharbat, F. F. (2020). Blockchain technology, business data analytics, and artificial intelligence: Use in the accounting profession and ideas for inclusion into the accounting curriculum. *Journal of Emerging Technologies in Accounting*, 17(1), 107-117. <https://doi.org/10.2308/jeta-52649>
- Richins, G., Stapleton, A., Stratopoulos, T. C., & Wong, C. (2017). Big data analytics: Opportunity or threat for the accounting profession?. *Journal of Information Systems*, 31(3), 63-79. <https://doi.org/10.2308/isys-51805>
- Rikhardsson, P., & Yigitbasioglu, O. (2018). Business intelligence & analytics in management accounting research: Status and future focus. *International Journal of Accounting Information Systems*, 29, 37-58. <https://doi.org/10.1016/j.accinf.2018.03.001>
- Riza, P., Rahayu, S., Arum, E. D. P., & Yudi, Y. (2026). Financial reporting quality: The mediating role of accounting information systems in Indonesia's religious affairs ministry. *Jurnal Akuntansi, Keuangan, dan Manajemen*, 7(4), 411-430. <https://doi.org/10.35912/jakman.v7.n4.p411-430.2026>
- Saraswati, E., Omar, A. A., & Kristianto, G. B. (2026). Capability conversion gap in accounting systems and digital finance: Evidence from semi-urban MSMEs. *Jurnal Akuntansi, Keuangan, dan Manajemen*, 7(4), 395-409. <https://doi.org/10.35912/jakman.v7.n4.p395-409.2026>
- Sargent, M. J., & Winton, B. G. (2023). Cognitive ability and performance in accounting students: The importance of data analytics assignments. *Journal of Accounting Education*, 65, 100870. <https://doi.org/10.1016/j.jaccedu.2023.100870>

- Sledgianowski, D., Gomaa, M., & Tan, C. (2017). Toward integration of big data, technology and information systems competencies into the accounting curriculum. *Journal of Accounting Education*, 38, 81–93. <https://doi.org/10.1016/j.jaccedu.2016.12.008>
- Spante, M., Sofkova Hashemi, S., Lundin, M., & Algers, A. (2018). Digital competence and digital literacy in higher education research: Systematic review of concept use. *Cogent Education*, 5(1), 1519143. <https://doi.org/10.1080/2331186X.2018.1519143>
- Susilo, A. S., Parella, E., Zaenudin, B., & Mustakim, S. (2022). Pengaruh pengembangan sumber daya manusia dan motivasi kerja terhadap kualitas sumber daya manusia pada Dinas Sosial Kabupaten Pesawaran. *Jurnal Relevansi: Ekonomi, Manajemen Dan Bisnis*, 6(2), 94-104. <https://doi.org/10.61401/relevansi.v6i2.70>
- Sánchez-Caballé, A., Gisbert-Cervera, M., & Esteve-Mon, F. (2020). The digital competence of university students: A systematic literature review. *Aloma*, 38(1), 63-74. <https://doi.org/10.51698/aloma.2020.38.1.63-74>
- Zhao, Y., Pinto Llorente, A. M., & Sánchez Gómez, M. C. (2021). Digital competence in higher education research: A systematic literature review. *Computers & Education*, 168, 104212. <https://doi.org/10.1016/j.compedu.2021.104212>