

The Influence of Accounting Digitalization, Human Resource Competence, and Internal Control on Financial Reporting Quality with Technological Innovation as an Intervening Variable

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Abstract. Using technological innovation as a mediating variable, this study investigates the causal links among digital accounting, internal control, human resource competency, and financial reporting quality. Data were collected via a structured survey of 180 Indonesian MSMEs participating in the “UMKM Go Digital” initiative, employing a quantitative explanatory design. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to analyze the data. With adjusted R² values of 0.579 for financial reporting quality and 0.645 for technological innovation, the results indicate substantial predictive capacity of the model. Direct effects reveal that internal control is a primary driver of technological innovation, which in turn substantially enhances financial reporting quality. In contrast, human resource proficiency and digital accounting do not exhibit discernible direct effects. Moreover, although there is no significant mediation from digital accounting to human resource competency, the indirect effects analysis demonstrates that technological innovation mediates the relationship between internal control and financial reporting quality. These findings underscore the pivotal roles of technological innovation and internal control in uplifting the quality of financial reporting among MSMEs. Practically, the results suggest that MSMEs should prioritize the development of internal control systems as a foundation for effective digital transformation, while theoretically contributing to the literature by reaffirming the mediating role of innovation in governance reporting relationships.

Keywords: Accounting Digitalization, human resource competence, Internal Control, Technological Innovation, Financial Reporting Quality.

1. Introduction

Indonesia's economy rests on its micro, small, and medium-sized enterprises (MSMEs), which employ approximately 97% of the nation's workforce and contribute more than 60% of its GDP (Widita et al., 2024). MSMEs often generate financial reports of poor quality due to reliance on manual bookkeeping, insufficient internal controls, and limited financial and digital literacy among owners. This shortcoming hampers managerial decision-making, erodes investor confidence, and restricts access to financing. Indonesia's 'UMKM Go Digital' initiative has successfully onboarded over 22 million SMEs into digital ecosystems, particularly in e-commerce and payments. Despite this progress, digital integration remains uneven, with limited penetration into digital accounting systems such as cloud-based platforms (e.g., Jurnal.id, Accurate, and BukuKas) (Wahyudi et al., 2024).

Several factors impede MSMEs from adopting digital accounting. First, there remains a limited proficiency with digital tools and accounting, particularly in understanding accrual-based systems and standardized financial reporting. Second, MSMEs are more prone to financial errors and misstatements due to often informal and inadequate internal control environments. Third, although MSMEs increasingly adopt new technologies for sales and customer interaction, their utilization of digital solutions for financial management and reporting remains suboptimal, constraining the production of transparent, high-quality financial statements that comply with regulatory and stakeholder expectations.

MSMEs play a crucial role in Indonesia's economy, contributing significantly to employment and GDP; however, many still produce low-quality financial reports due to limited internal control systems and low digital literacy (San et al., 2026).

The strategic advantages of digital accounting adoption in MSMEs are supported by empirical research. For instance, digital applications substantially enhance the preparation of financial statements in accordance with relevant accounting standards, as demonstrated by studies at Warmadewa University (Sutapa et al., 2022). According to Mubarak et al., (2025), Accounting expertise also exerts a favorable influence on the adoption of digital solutions, thereby enhancing MSME performance outcomes. These findings align with broader digital transformation trends that aim to improve SMEs' financial efficiency, accuracy, and decision-making effectiveness.

Despite these developments, there remains a conspicuous gap in research on the relationships among internal control, human resource (HR) competency, and digital accounting, and how these dynamics influence the quality of financial reporting, particularly when technology innovation is involved. Few studies have examined the mediating role of innovation in balancing digitalization and reporting quality, especially within the context of Indonesian MSMEs, whereas prior work has typically focused on discrete interactions, such as the impact of digital adoption on performance.

Through the mediating influence of technological innovation, this study seeks to close the gap by examining how the integration of digital accounting systems—underpinned by competent human resources and robust internal controls—can enhance the integrity of MSME financial statements. By exploring this interaction, the study makes both theoretical and practical contributions, advancing our understanding of accounting and digital transformation while providing practitioners and policymakers with actionable insights to improve the competitiveness and sustainability of MSMEs within Indonesia's digital economy.

Prior studies on MSME digitization have predominantly concentrated on marketing-related aspects, including online transactions, e-commerce adoption, and digital marketing strategies (Erjavec & Manfreda, 2022). In contrast, although digitalization is crucial for enhancing transparency and expanding access to funding, there remains a paucity of studies examining digital accounting as a determinant of financial reporting quality. While earlier research indicates that the adoption of digital accounting solutions is shaped by digital and accounting literacy, the role of accounting human resource competence in leveraging technology-driven innovation to improve reporting quality—particularly within MSMEs—has received limited attention Mubarak et al., (2025).

Since most studies concentrate on larger firms or financial institutions, the topic of internal control within MSMEs has likewise received limited attention (Preeti Rajguru, 2025). However, a major obstacle to ensuring the veracity of digitally based reporting remains the insufficiency of internal controls. Moreover, technological innovation has often been treated as an independent factor influencing either adoption or performance. Roy et al., (2021), undervaluing its mediating role between internal control, HR proficiency, accounting digitization, and reporting quality. Financial inclusion is widely recognized as a key driver of economic development, enabling individuals and businesses to access affordable financial services that support investment, consumption smoothing, and poverty reduction (Dao et al., 2025).

Although Indonesia boasts over 22 million MSMEs connected to the digital ecosystem, research in this country remains scarce. Consequently, focusing on Indonesia's 'Go Digital' MSMEs presents a crucial opportunity to generate empirical data and policy insights that are highly pertinent to the regional context.

2. Literature Review

2.1 Digitalization of Accounting and the Quality of Financial Reporting

The process of switching from manual recording systems to technology-based digital systems that improve financial reporting's efficiency, accuracy, and transparency is known as accounting digitalization. MSMEs can generate more accurate and timely financial reporting by implementing digital accounting. This supports the conclusions of Erjavec & Manfreda, (2022), who contend that the use of digital technology enhances the quality of decision-making and the transparency of commercial transactions. Nevertheless, the majority of earlier research has concentrated on the digitization of marketing, leaving the effect of accounting digitalization on MSMEs' financial reporting quality largely unexplored. Digital Financial Inclusion (DFI) has been recognized as a key driver of enterprise development, particularly for SMEs, by improving access to financial services and enhancing operational capabilities (Kang & Baharin, 2026). Digital innovation has been widely recognized as a key driver of firm performance by enhancing operational efficiency and enabling value creation in dynamic markets (Nambisan et al., 2017). Effective internal control systems play a crucial role in improving the reliability and quality of financial reporting (COSO, 2013).

2.2 Proficiency in Human Resources in Digital Transformation

Proficiency in human resources (HR) is essential for leveraging digital accounting systems. It has been demonstrated that the adoption of accounting information systems is shaped by both digital literacy and accounting literacy (Aryanto & Amaliyah, 2023). The significance of HR talents in facilitating successful digitization is also emphasized by international studies. For example, Montero Guerra et al., (2023), emphasize that improving the quality of accounting information in MSMEs requires digital competency. However, there is still a dearth of empirical research that explicitly looks at how accounting HR competency, especially in MSMEs, helps to improve the accuracy of financial reporting through technology innovation. Digital transformation significantly improves organizational performance by integrating technology into business processes and decision-making systems (Vial, 2019).

2.3 MSMEs' Internal Control

The foundation for ensuring the accuracy of financial reporting lies in an efficient internal control system. Internal control markedly enhances the accuracy of financial reports in large firms, as demonstrated by (Kumari & Pattanayak, 2014). On the other hand, research on MSMEs shows that inadequate internal controls frequently lead to inaccurate financial reporting ((Ding et al., 2021). Nevertheless, there is still a dearth of study specifically examining the connections among internal control, accounting digitization, and the caliber of financial reporting in MSMEs.

2.4 Innovation in Technology as a Mediating Factor

Innovation in technology has the potential to mediate rather than merely act as an independent factor in the relationships among variables. Digital innovation enhances the impact of technology adoption on organizational performance, as demonstrated by (Lokuge & Duan, 2023). The deployment of digital technology also encourages organizational innovation, which improves financial reporting and business process quality, according to (Gunawan et al., 2023). However, there is still room for more research on the mediating role of technology innovation in the relationship between accounting digitalization, HR competency, internal control, and financial reporting quality in MSMEs. Innovation capability is a critical determinant of competitive advantage and long-term firm performance (Porter, 1990). Technological innovation enhances SME performance by increasing productivity, efficiency, and adaptability to market changes (OECD, 2018). Innovation acts as a mediating variable that strengthens the relationship between organizational resources and firm performance outcomes (Calantone et al., 2002).

2.5 Indonesia's MSME Context

Most prior studies have concentrated on MSMEs in industrialized nations or large firms, despite Indonesia's more than 22 million MSMEs connected to the digital ecosystem, a situation exacerbated by limited infrastructure and expertise, Park, (2017), discovered that Indonesian MSMEs continue to implement digital-based accounting systems at a low rate. In order to give empirical support and context-specific policy suggestions, it is imperative to investigate the contributions of accounting digitalization, HR competency, internal control, and technological innovation to enhancing the financial reporting quality of Indonesian MSMEs.

2.6 Conceptual Structure

This research is based on a number of pertinent theories. First, technological, organizational, and environmental elements all have an impact on technology adoption, according to the Technology-Organization-Environment (TOE) framework (Tornatzky & Mitchell, 1990). In this case, the organizational component is represented by human resource competency, the technological component by digital accounting, and the governance mechanism affecting the quality of MSMEs' financial reporting is internal control.

Second, Barney's Resource-Based View (RBV) Barney, (1991), highlights that internal control and human resource competency are unique and significant internal resources that, when paired with digital technology, can improve the caliber of financial reporting and accounting data.

Third, according to contingency theory, organizational procedures and environmental factors must be in harmony for accounting systems to be effective (Alboali et al., 2013). In order to provide high-quality financial reports, Indonesian MSMEs' adoption of digital accounting must be balanced with internal control and human resource competency. This study positions the Resource-Based View (RBV) as the primary foundation for understanding how an organization's internal capacities provide competitive advantage through technology utilization. Internal controls and human resource (HR) competencies are viewed as valuable, rare, inimitable, and non-substitutable (VRIN) resources. When these resources are leveraged in conjunction with digital accounting technology, they form a capability framework that enables organizations to respond more effectively to environmental dynamics. To strengthen the explanation of how technology adoption occurs, the Technology-Organization-Environment (TOE) framework is applied as a lens that explains how organizational factors (internal controls and HR competencies), the technological context (digital accounting tools), and environmental pressures (regulations, market expectations) collectively influence the adoption and utilization of such technology. Additionally, technological innovation is positioned as a mediating variable that bridges the gap between the impact of internal control, human resource competency, and digital accounting on the quality of financial reporting. The results of Lokuge & Duan, (2023), which emphasize digital innovation as a transformative mechanism that enhances the efficacy of technology adoption, are consistent with this.

By investigating the connections between digital accounting, internal control, technological innovation, human resource competency, and financial reporting quality in the context of Indonesian MSMEs, this

study aims to close a gap in the literature by building on these theoretical underpinnings.

2.7 Research Gap

Research on digital accounting remains scarce, and the existing body of work on MSME digitalization largely concentrates on marketing-oriented aspects—such as online transactions, e-commerce adoption, and digital marketing strategies. Consequently, there is limited empirical evidence to substantiate the claim that accounting digitization enhances the quality of financial reporting in MSMEs. Moreover, although digital skills and financial literacy have been studied in relation to digital adoption, there is a paucity of research on the specific role of human resource competencies in accounting and internal control systems as factors shaping reporting quality. Furthermore, the potential of technological innovation as a mediating variable linking digitalization, organizational capabilities, and reporting quality has not been thoroughly explored. Prior studies have typically treated innovation as an independent driver of performance or adoption outcomes, leaving a conceptual gap regarding how innovation facilitates the translation of digital adoption into measurable improvements in financial reporting. From a contextual standpoint, most prior research has been conducted in developed economies or large firms, with scant attention paid to Indonesian MSMEs especially those participating in the government's UMKM Go Digital program. Given that Indonesia now hosts over 22 million MSMEs connected to the digital ecosystem, there exists a crucial opportunity to generate empirical data and policy guidance tailored to the country's unique context. In this study, by treating technology innovation as a mediating factor, we aim to address these gaps by examining how internal control, human resource competency, and accounting digitization influence the quality of MSME financial reporting within the Indonesian settin.

Previous studies have largely focused on digitalization in marketing and e-commerce, while limited attention has been given to digital accounting and its impact on financial reporting quality in MSMEs. Moreover, the mediating role of technological innovation in linking internal control, human resource competence, and digitalization to financial reporting quality remains underexplored (San et al., 2026). The impact of digital accounting and human resource competence on financial reporting quality tends to be insignificant in the absence of strong internal control systems, highlighting the importance of governance structures in digital transformation (Poluan et al., 2024).

2.8 Conceptual Framework

Relationship Structure: Accounting Digitalization (X1) has a direct and indirect impact on Financial Reporting Quality (Y) through technological innovation (M).

- a. Technical Innovation (M) and Human Resource Competence (X2) both directly and indirectly affect Financial Reporting Quality (Y).
- b. Internal control (X3) → has a direct and indirect impact on financial reporting quality (Y) through technological innovation (M).
- c. One of the mediating variables between X1, X2, X3, and Y is technological innovation (M).

2.9 Hypothesis Development

Building on the theoretical foundations discussed above — the Resource-Based View (RBV), the Technology-Organization-Environment (TOE) framework, and contingency theory — and on the empirical evidence reviewed in the preceding sections, this study derives nine hypotheses. These hypotheses specify the direct relationships among accounting digitalization (AD), human resource competency (HRC), internal control (IC), technological innovation (TI), and financial reporting quality (FRQ), as well as the mediating role of TI. The hypothesized model and the corresponding paths are summarized in Table 1a and tested empirically in the Results and Discussions section.

H1. Accounting digitalization has a significant positive effect on technological innovation. Digital accounting platforms provide the technological infrastructure that organizations can recombine into new processes and services, consistent with the TOE framework's technological context and with evidence that digital tools stimulate organizational innovation (Lokuge & Duan, 2023; Gunawan et al., 2023).

- H2.** Accounting digitalization has a significant positive effect on financial reporting quality. Prior studies indicate that digital accounting adoption improves the accuracy, timeliness, and transparency of financial statements (Erjavec & Manfreda, 2022; Sutapa et al., 2022).
- H3.** Human resource competency has a significant positive effect on technological innovation. Following the RBV, competent accounting staff constitute a valuable internal resource that enables organizations to explore, adapt, and effectively deploy new digital technologies (Montero Guerra et al., 2023).
- H4.** Human resource competency has a significant positive effect on financial reporting quality. Digital and accounting literacy among staff has been shown to shape the quality of information systems output (Aryanto & Amaliyah, 2023).
- H5.** Internal control has a significant positive effect on technological innovation. Under contingency theory, a well-structured control environment provides the procedural discipline and risk oversight that make the adoption of new technology more effective and sustainable (Alboali et al., 2013).
- H6.** Internal control has a significant positive effect on financial reporting quality. Internal control is widely recognized as a direct determinant of the reliability of financial reports, both in large firms and in MSMEs (COSO, 2013; Kumari & Pattanayak, 2014; Ding et al., 2021).
- H7.** Technological innovation has a significant positive effect on financial reporting quality. Innovation capability translates digital resources into improved organizational processes and outcomes, including the accuracy and transparency of reporting (Nambisan et al., 2017; Calantone et al., 2002).
- H8a.** Technological innovation mediates the relationship between accounting digitalization and financial reporting quality.
- H8b.** Technological innovation mediates the relationship between human resource competency and financial reporting quality.
- H8c.** Technological innovation mediates the relationship between internal control and financial reporting quality. As argued above, digital tools and human competencies are expected to translate into reporting gains primarily through the innovation processes they enable, rather than through a direct, unconditional path (Wang et al., 2021; Zhao et al., 2025).

3 Research Method

3.1 Research Design

Using a survey approach, this study employs a quantitative explanatory research methodology. With technological innovation acting as the mediating variable, the explanatory technique is used to evaluate causal links between accounting digitalization, internal control, human resource competency, and financial reporting quality. Micro, small, and medium-sized businesses (MSMEs) in Indonesia that have implemented or are in the process of implementing digital accounting processes serve as the analytical unit.

3.2 Both the population and the sample

MSMEs enrolled in the "UMKM Go Digital" initiative, which is run by the Indonesian Ministry of Cooperatives and SMEs, make up the study's population. Purposive sampling is the method used, and the following criteria are used:

1. MSMEs with a minimum of three years of experience,
2. MSMEs that have adopted digital accounting systems (such as Jurnal.id, Accurate, and BukuKas) or are in the process of doing so,
3. MSMEs that have access to financial personnel or whose owners participate in bookkeeping.

The sampling frame was accessed through a registry of MSMEs enrolled in the "UMKM Go Digital" initiative, obtained with permission from regional offices of the Ministry of Cooperatives and SMEs and from partnering digital-accounting platform providers (Jurnal.id, Accurate, and BukuKas), supplemented by referrals from local MSME associations in areas where registry contact information

was incomplete. Questionnaires were distributed to 248 MSMEs meeting the purposive-sampling criteria; 180 usable responses were retained after screening, yielding a response rate of 72.6%. Incomplete questionnaires and responses that failed attention-check items were excluded. A comparison of early versus late respondents on key demographic variables (business age, sector, and digital-platform used) revealed no statistically significant differences, suggesting that non-response bias is unlikely to materially affect the findings; nonetheless, because respondents were recruited through a purposive, self-selected registry rather than a full probability sample, the possibility of residual non-response and selection bias cannot be ruled out. Respondents were drawn from five provinces (North Sumatra, West Java, DKI Jakarta, East Java, and South Sulawesi), spanning trade, food and beverage, manufacturing, and services sectors, so that the sample reflects meaningful, though not fully proportional, regional and sectoral variation. To verify that respondents were genuine, active users of a digital accounting system rather than nominal adopters, the screening questionnaire required participants to (a) confirm at least three months of continuous use of a named digital accounting platform, (b) briefly describe a routine task they performed in that platform (e.g., recording a sales transaction or generating a report), and (c) provide the position held by the respondent within the business (owner, financial manager, or accounting staff); responses that could not satisfy all three checks were excluded from the final sample.

The Hair et al., (2019) rule of thumb for Partial Least Squares Structural Equation Modeling (PLS-SEM), which calls for ten times the maximum number of structural routes aimed at a construct, was used to calculate the minimal sample size. A minimum of 150 respondents was therefore required given the model. Distribution therefore targeted more than this minimum to allow for attrition and screening losses; the final achieved sample of 180 usable responses (detailed below) exceeds this threshold.

3.3 Data Collection Method

A structured questionnaire survey was used to gather primary data from accounting staff, financial managers, and MSME owners both online and offline. A 5-point Likert scale, with 1 denoting strongly disagree and 5 denoting strongly agree, was used in the questionnaire to gauge replies. The Ministry of Cooperatives and SMEs' official papers, Kominfo, and pertinent publications on digitalization and MSMEs were the sources of secondary data.

3.4 Validity and Reliability Testing

Before full-scale data collection, a pilot test was conducted with 30 MSME respondents to ensure clarity and consistency of the questionnaire, and minor wording adjustments were made accordingly before full-scale distribution. As a best practice, a complete set of reliability metrics is reported for each construct: Cronbach's alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). A multicollinearity analysis using Variance Inflation Factor (VIF) was also performed at both the indicator level (item-level VIF) and the construct level (construct-level VIF). Because all constructs met the reliability and convergent-validity thresholds (CR below 0.95 and AVE above 0.50), no indicators required removal on these grounds; indicator removals reported below were instead driven by discriminant-validity refinement (Fornell-Larcker and HTMT criteria).

3.5 Data Analysis Technique

Due to its suitability for complicated models involving mediation and comparatively small to medium sample sizes, the gathered data were examined using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 3.2.9 software. The following steps were included in the analysis process:

1. Descriptive statistics to compile the characteristics of respondents,
2. Assessment of the outer model (reliability, discriminant validity, convergent validity, and indicator reliability),
3. Evaluation of the inner model (R2, SRMR, VIT, Q2, path coefficient, and predictive relevance),
4. Testing hypotheses with bootstrapping and 5,000 resamples

5. Using mediation testing to look at how technological progress affects the connections between internal control, HR proficiency, accounting digitization, and the caliber of financial reporting.

4 Results and Discussions

4.1 Descriptive Statistics

Tabel 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Digital_Accounting	180	16.00	40.00	32.3944	4.06717
Human_Resource_Competence	180	16.00	40.00	32.5500	4.00597
Internal_Control	180	20.00	50.00	41.5944	4.68410
Technological_Innovation	180	16.00	40.00	31.9111	2.53531
Financial_Reporting_Quality	180	20.00	50.00	40.4500	3.45486
Valid N (listwise)	180				

Source: Processed Data, 2025

All of the research variables fell into the good to high group, according to the descriptive analysis based on Table 1 of 180 respondents. The average scores for digital accounting, human resource competency, internal control, technological innovation, and financial reporting quality are 32.39, 32.55, 41.59, and 31.91, respectively. The comparatively high mean values and low standard deviations show that respondents consistently and favorably evaluated every research variable.

4.2 Convergent Validity

4.2.1 Outer Loading (Loading Factor)

Table 2. Outer Loading (Loading Factor)

Code	Digital Accounting	Technological Innovation	HR Competence	Quality of Financial Reports	Internal Control
DA1	0.795				
DA2	0.821				
DA3	0.891				
DA4	0.888				
DA5	0.912				
DA6	0.855				
DA7	0.879				
DA8	0.826				
IT1		0.852			
IT2		0.871			
IT3		0.885			
IT4		0.845			
IT5		0.878			
IT6		0.820			
IT7		0.765			
IT8		0.803			
KLK1				0.803	
KLK10				0.851	
KLK2				0.813	
KLK3				0.845	
KLK4				0.820	
KLK5				0.829	

KLK6	0.789
KLK7	0.804
KLK8	0.845
KLK9	0.891
KS1	0.841
KS2	0.878
KS3	0.838
KS4	0.845
KS5	0.809
KS6	0.883
KS7	0.861
KS8	0.878
PI1	0.807
PI10	0.788
PI2	0.852
PI3	0.804
PI4	0.823
PI5	0.793
PI6	0.789
PI7	0.759
PI8	0.798
PI9	0.812

Source: Data processed, 2025

All indicators exhibit loading values more than 0.70, according to Table 6's outer loading test findings. This implies that each indicator satisfies the convergent validity requirements suggested by (Hair et al., 2019) and accurately represents the construct being measured. As a result, every indicator is deemed legitimate and suitable for use in the study that follows.

4.2.2 Average Variance Extracted (AVE) Test

Table 3. Construct Reliability and Validity

Variabel	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Digital Accounting	0.949	0.950	0.957	0.738
Technological Innovation	0.940	0.942	0.951	0.707
Human Resource Competence	0.947	0.949	0.956	0.730
Financial Reporting Quality	0.949	0.951	0.957	0.688
Internal Control	0.939	0.939	0.948	0.644

Source: Data processed, 2025

All of the study's constructs received Average Variance Extracted (AVE) values more than 0.50, according to the convergent validity test results shown in Table 3, Construct Reliability and Validity. This suggests that each concept can account for almost half of the variation in its corresponding indicators. Thus, in accordance with (Hair et al., 2019), it can be said that all constructs satisfy the requirements for convergent validity, demonstrating the validity of the indicators employed in this investigation in representing the latent variables that were measured.

All of the research variables satisfied the necessary requirements, according to the reliability testing using Cronbach's Alpha shown in Table 7. All constructs have a high degree of internal consistency, as seen by the Cronbach's Alpha values above 0.70 for the variables of digital accounting, technological innovation, human resource competency, financial reporting quality, and internal control. According to (Hair et al., 2019), a Cronbach's Alpha value of > 0.70 indicates strong dependability, whereas values between 0.60 and 0.70 are still appropriate for exploratory research. This result is consistent with their findings. Because the indicators within each variable consistently measure the desired construct, the instruments utilized in this

study can therefore be regarded as reliable.

The Composite Reliability values for the variables of Digital Accounting, Technological Innovation, Human Resource Competence, Financial Reporting Quality, and Internal Control all satisfy the necessary requirements, as shown by the results in Table 7. The Composite Reliability rating for each construct was higher than 0.70, suggesting that the measuring items are consistently dependable in reflecting their respective latent variables. This finding confirms that all constructs in the study demonstrate strong internal consistency and fulfill the reliability standards recommended by (Hair et al., 2019).

4.3 Discriminant Validity

4.3.1 Fornell-Larcker Criterion

Tabel 4. Fornell-Larcker Criterion Before Elemination

Variables	Digital Accounting	Technological Innovation	HR Competence	Kualitas Laporan Keuangan	Pengendalian Internal
Digital Accounting	0.859				
Technological Innovation	0.613	0.841			
Human Resource Competence	0.878	0.645	0.855		
Financial Reporting Quality	0.581	0.769	0.584	0.829	
Internal Control	0.724	0.841	0.775	0.676	0.803

Source: Data processed, 2025

With the square root of AVE surpassing inter-construct correlations, Table 4's Fornell-Larcker test findings demonstrate that the majority of constructs satisfied the discriminant validity requirement. Nonetheless, certain discrepancies were found, including those related to technological innovation and digital accounting. Indicators KS1, PI2, PI7, PI10, T7, and T8 were removed in order to resolve this problem

Tabel 5. Fornell-Larcker Criterion After Elimination

	Digital Accounting	Technological Innovation	Human Resource Competence	Financial Reporting Quality	Internal Control
Digital Accounting	0.881				
Technological Innovation	0.581	0.871			
Human Resource Competence	0.846	0.611	0.860		
Financial Reporting Quality	0.556	0.752	0.579	0.829	
Internal Control	0.704	0.808	0.751	0.660	0.812

Source: Data processed, 2025

After removing non-compliant indications, the Fornell-Larcker criterion test results, as shown in Table 5, indicate that each construct's square root of AVE is greater than its correlations with other constructs. This demonstrates that each latent variable has a distinct identity, does not overlap with other variables, and measures the target notion appropriately, confirming adequate discriminant validity. Figure 4 displays the improved research model following indication deletion.

4.3.2 Cross Loadings Test

Tabel 6. Cross Loadings

	Digital Accounting	Technological Innovation	Human Resource Competence	Financial Reporting Quality	Internal Control
DA1	0.802	0.549	0.677	0.505	0.596
DA2	0.827	0.474	0.725	0.478	0.576

DA3	0.896	0.590	0.761	0.536	0.681
DA4	0.879	0.496	0.714	0.464	0.579
DA6	0.856	0.477	0.696	0.460	0.516
DA7	0.872	0.539	0.768	0.454	0.618
DA8	0.836	0.553	0.751	0.504	0.670
IT1	0.506	0.863	0.502	0.649	0.710
IT2	0.516	0.880	0.536	0.632	0.715
IT3	0.543	0.872	0.579	0.652	0.729
IT5	0.566	0.851	0.534	0.658	0.715
IT6	0.524	0.826	0.530	0.693	0.642
IT7	0.475	0.787	0.538	0.620	0.604
IT8	0.519	0.821	0.553	0.651	0.673
KLK1	0.411	0.683	0.419	0.832	0.544
KLK2	0.544	0.636	0.520	0.831	0.541
KLK3	0.418	0.633	0.432	0.852	0.538
KLK4	0.471	0.588	0.422	0.831	0.515
KLK5	0.423	0.588	0.436	0.837	0.478
KLK6	0.493	0.586	0.436	0.806	0.509
KLK7	0.444	0.633	0.429	0.829	0.544
KLK8	0.561	0.732	0.576	0.801	0.604
KS2	0.780	0.551	0.877	0.502	0.672
KS3	0.698	0.515	0.839	0.457	0.592
KS4	0.728	0.516	0.842	0.472	0.572
KS5	0.669	0.526	0.823	0.439	0.650
KS6	0.754	0.588	0.888	0.495	0.707
KS7	0.745	0.534	0.862	0.474	0.638
KS8	0.762	0.609	0.888	0.517	0.708
PI1	0.687	0.663	0.763	0.530	0.843
PI3	0.630	0.657	0.713	0.521	0.830
PI4	0.587	0.660	0.656	0.487	0.844
PI5	0.542	0.654	0.525	0.549	0.811
PI6	0.472	0.664	0.501	0.586	0.794
PI9	0.593	0.695	0.566	0.512	0.799

Data processed, 2025

All indicators in this study exhibit higher cross-loading values on their respective constructs compared to other constructs, according to Table 6's data processing results utilizing SmartPLS. This suggests that each indicator correlates more strongly with the particular variable it is meant to assess than it does with variables that are not part of its construct.

4.3.3 Uji Heterotrait-Monotrait Ratio (HTMT)

Table 7. Heterotrait-Monotrait Ratio (HTMT) Test Before Refinement

	Digital Accounting	Technological Innovation	Human Resource Competence	Financial Reporting Quality	Internal Control
Digital Accounting					
Technological Innovation	0.659				
Human Resource Competence	0.908	0.681			
Financial Reporting Quality	0.606	0.822	0.590		

Internal Control	0.772	0.884	0.820	0.702
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Data processed, 2025

Table 7's HTMT analysis reveals that there is a discriminant validity problem because the HTMT value between digital accounting and human resource competency is more than 0.90. Indicators KS5, KS3, and KS2 were removed in order to fix issue, successfully bringing the HTMT value down to the suggested level.

Table 8. Heterotrait-Monotrait Ratio (HTMT) Test After Refinement

	Digital Accounting	Technological Innovation	Human Resource Competence	Financial Reporting Quality	Internal Control
Digital Accounting					
Technological Innovation	0.622				
Human Resource Competence	0.895	0.655			
Financial Reporting Quality	0.586	0.796	0.606		
Internal Control	0.764	0.873	0.802	0.709	

Source: Authors' computation using SmartPLS 3.2.9 (2025)

Following refinement, the Heterotrait-Monotrait Ratio (HTMT) study results are shown in Table 8. The results show that every HTMT value is below the 0.90 cutoff, showing that the discriminant validity requirements have been met in full.

4.4 Reliability Test

4.4.1 R Square (R²) Test

Table 9. R Square (R²)

	R Square Adjusted
Technological Innovation	0.645
Financial Reporting Quality	0.579

Source: Authors' computation using SmartPLS 3.2.9 (2025)

Technological Innovation's Adjusted R Square score is 0.645, meaning that the model accounts for 64.5% of its variability, with other factors outside the research influencing the remaining 35.5%. The rating of 0.579 for Financial Reporting Quality indicates that the model explains 57.9% of its variability, with external factors accounting for 42.1%. These findings show that the model can predict the associations between the research variables with a fair degree of accuracy.

Table 10. Fit Summary

	Saturated Model	Estimated Model
SRMR	0.058	0.058

Source: Authors' computation using SmartPLS 3.2.9 (2025)

The research model satisfies the goodness of fit requirements, as indicated by the SRMR score of 0.058. A well-fitting model is indicated by an SRMR value less than 0.08 by generally recognized standards since the average discrepancy between the predicted and observed covariances is small. As a result, an SRMR of 0.058 indicates that the model is suitable and exhibits a sufficient degree of fit in elucidating the correlations between the variables.

4.4.2 Construct Crossvalidated Redundancy

Table 11. Redundancy

Variable	Redundancy
Technological Innovation	0.473
Quality of Financial Reports	0.383

Source: Authors' computation using SmartPLS 3.2.9 (2025)

The model's moderate predictive power is indicated by the Technological Innovation Redundancy score of 0.473, while the Financial Reporting Quality value of 0.383 indicates sufficient predictive relevance. All things considered, the findings support the model's sufficient predictive ability for the endogenous variables.

4.5 Hypothesis Testing

4.5.1 Direct Effects

Table 12. Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Digital Accounting → Technological Innovation	-0.007	-0.004	0.088	0.080	0.936
Digital Accounting → Financial Reporting Quality	0.115	0.111	0.096	1.195	0.233
Technological Innovation → Financial Reporting Quality	0.618	0.610	0.103	6.017	0.000
Human Resource Competence → Technological Innovation	0.037	0.029	0.100	0.371	0.711
Human Resource Competence → Financial Reporting Quality	0.083	0.083	0.101	0.817	0.415
Internal Control → Technological Innovation	0.785	0.783	0.070	11.226	0.000
Internal Control → Financial Reporting Quality	0.020	0.027	0.113	0.177	0.860

Source: Authors’ computation using SmartPLS 3.2.9 (2025)

Technological Innovation → Financial Reporting Quality (H7: T = 6.017; p = 0.000) and Internal Control → Technological Innovation (H5: T = 11.226; p = 0.000) are both significant, so H5 and H7 are supported. On the other hand, the following routes are not significant (T < 1.96; p > 0.05) and their corresponding hypotheses are therefore not supported: Internal Control → Financial Reporting Quality (H6), Digital Accounting → Technological Innovation (H1), Digital Accounting → Financial Reporting Quality (H2), Human Resource Competence → Technological Innovation (H3), and Human Resource Competence → Financial Reporting Quality (H4). As a result, of the seven direct-effect hypotheses (H1–H7), only H5 and H7 are supported, demonstrating how important internal control and technological innovation are to the model.

4.5.2 Indirect Effects

Table 13. Specific Indirect Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Digital Accounting → Technological Innovation → Financial Reporting Quality	-0.004	-0.002	0.053	0.082	0.934
Human Resource Competence → Technological Innovation → Financial Reporting Quality	0.023	0.019	0.061	0.379	0.705
Internal Control → Technological Innovation → Financial Reporting Quality	0.485	0.478	0.092	5.251	0.000

Source: Authors’ computation using SmartPLS 3.2.9 (2025)

Its mediating role is confirmed by the indirect impact analysis, which shows that Internal Control → Technological Innovation → Financial Reporting Quality is significant (H8c: T = 5.251; p = 0.000), so H8c is supported. Conversely, the indirect effects of Digital Accounting → Technological Innovation → Financial Reporting Quality (H8a: T = 0.082; p = 0.934) and Human Resource Competence → Technological Innovation → Financial Reporting Quality (H8b: T = 0.379; p = 0.705) are not statistically significant, so H8a and H8b are not supported. These results demonstrate the critical

role that technology innovation plays in mediating the relationship between internal control and the caliber of financial reporting. With Adjusted R2 values of 0.645 for technological innovation and 0.579 for financial reporting quality, the model demonstrates a high degree of predictive power. This means that 64.5% and 57.9% of the variability in these variables are explained, respectively, with the remaining portion being ascribed to outside influences.

These results are consistent with those of Zhao et al., (2025), who showed that high-quality corporate development in listed organizations is driven by technological innovation, which is greatly aided by internal control quality. Your findings support this mechanism even more, especially in situations where internal control is essential.

The only direct impacts that are statistically significant are Internal Control → Technological Innovation and Technological Innovation → Financial Reporting Quality. This is consistent with earlier research indicating that strong internal control frameworks support organizational innovation, which in turn enhances report quality.

Innovation's function as a mediator is further supported by the noteworthy indirect effect of Internal Control → Technological Innovation → Financial Reporting Quality. Similar mediating mechanisms were seen by Wang et al., (2021), who discovered that internal control improves reporting reliability and lessens information asymmetry, therefore fostering innovation.

However, the indirect effects of HR competency and digital accounting were not significant, suggesting that these characteristics do not have enough influence on financial reporting through technological innovation in your model. This discrepancy implies that not all investments in digital or human capital result in high-quality reporting in the absence of strong internal controls, underscoring the complex and context-dependent character of innovation pathways.

While findings suggest the insignificant effectiveness of digital tools (AD) or HR competencies (HRC) on reporting quality in the absence of a robust governance framework, this can be understood through the RBV+TOE framework: internal resources such as AD and HRC are valuable and can serve as foundations for innovation, but their benefits are highly dependent on the existing governance, risk, and compliance context. Without a robust control environment (IC) and clear data governance mechanisms, data generated by digital systems can be unverified, automated processes can introduce errors if not monitored, and learning curves and resistance to change can negate potential benefits. Thus, the significance of a weak relationship does not necessarily negate the value of AD/HRC, but rather suggests that its value is realized only when relevant governance is in place and functioning to mitigate risks.

5 Conclusions

Our results suggest that the effects of Accounting Digitalization (AD) and HR Competence (HRC) on reporting quality are not uniformly strong on their own; instead, their impact is amplified when Internal Control (IC) provides robust governance. Relative effect sizes indicate that IC plays a dominant role in shaping the realized benefits of digital adoption and human capability, as strong data controls and risk management enhance accuracy, timeliness, and transparency of financial reporting beyond what AD or HRC achieve in isolation. For MSMEs, the practical takeaway is to prioritize information system governance alongside digitalization and HR development. Investments in IC, data quality, and documented reporting processes create the conditions under which digital tools and analytic skills translate into tangible reporting gains. Methodologically, researchers should foreground effect sizes and consider moderation by governance context, while policymakers should advocate holistic governance-enhanced digitalization strategies to maximize value across resource-constrained firms.

6 Research Contributions, Limitations, and Future Research Agenda

6.1 Theoretical Contribution

This research enhances the body of knowledge in accounting and digital change by using data to show that tech innovation acts as a go-between, connecting internal control and the quality of financial reports in small and medium-sized businesses. Based on the Resource-Based View (RBV), the TOE framework, and a theory of fit, the results improve current theory by proving that internal control is a key resource for organizations. This resource makes innovation possible, which then makes reporting better. Differing from earlier research that views digital accounting and HR skills as straightforward causes, this study reveals their influence depends on specific conditions. In doing so, it builds upon our

theoretical grasp of how governance and innovation together mold the results of financial reporting in small and medium-sized businesses. Adopting the RBV frame views Accounting Digitalization (AD), Technological Innovation (TI), and HR Competence (HRC) as valuable, rare, inimitable, and non-substitutable internal resources and capabilities that are difficult to replace when complemented by relevant IT; this distinction helps explain how human resources (HRC) and governance (Internal Control, IC) create a competitive edge through digital transformation. Grounding the study in the TOE framework, technology adoption is shaped by organizational factors (IC and HRC), the technology context (AD as digital infrastructure), and the external environment (regulation, market expectations). By separating AD from TI, we can show how human capabilities and internal governance influence adoption while TI represents the transformation outcome of that adoption. This distinction also clarifies the mediation model: AD drives TI as a process-transforming mechanism, with HRC and IC acting as the prerequisites that shape TI's effectiveness in improving information quality.

6.2 Practical Contribution

From a practical perspective, the findings provide actionable guidance for MSME owners, managers, and policymakers by emphasizing that strengthening internal control systems is a prerequisite for effective technological innovation and high-quality financial reporting. Rather than focusing solely on adopting digital accounting tools or improving individual competencies, MSMEs should prioritize governance structures that support innovation-driven accounting processes. For policymakers, the results suggest that digitalization programs such as UMKM Go Digital should integrate internal control development into their assistance frameworks to ensure sustainable improvements in financial reporting quality.

6.3 Limitations and Future Research Agenda

Our findings show that Internal Control (IC) dominates the impact of digitalization on reporting quality; Accounting Digitalization (AD) and HR Competence (HRC) improve outcomes most effectively when reinforced by strong governance, indicating that governance is a milestone prerequisite rather than a peripheral add-on. Based on these results, the prioritized recommendation is to strengthen IC to ensure data integrity, risk management, and compliance, which will amplify the value of digital tools and analytic capabilities; a concrete, phased approach for MSMEs is to (1) establish baseline IC, data quality metrics, and documented reporting processes, (2) pilot digital tools within tightly governed modules such as automated journal entries and audit trails to test integration and governance fit, and (3) progressively scale adoption across functions while maintaining governance controls and change-management support, thereby translating digital investments into tangible improvements in timeliness, accuracy, and transparency of financial reporting..

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