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MANAGEMENT EDUCATION, TECHNOLOGY, AND PESANTREN FINANCIAL REPORTING QUALITY: ACCOUNTABILITY MEDIATION

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ABSTRACT

The quality of financial reporting is a critical issue for Indonesian pesantren as faith-based nonprofit institutions entrusted with managing public resources. Despite their rapid growth and increasing accountability demands, many pesantren continue to face challenges related to managerial competence, technological capability, and transparent financial governance. This study examines the effects of management education and technology on the quality of pesantren financial statements, with transparency as a mediating variable. Data were collected from 300 financial managers and administrators of pesantren in Indonesia using purposive sampling, targeting respondents directly involved in financial management and reporting. The proposed model was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) because it is appropriate for mediation analysis, prediction-oriented research, and complex latent-variable models. The findings indicate that technology has a significant direct effect on financial reporting quality, whereas management education influences reporting quality indirectly through transparency. Transparency serves as a significant mediator, strengthening the relationship between managerial capacity and reporting quality. These results extend governance theory in faith-based nonprofit organizations by highlighting transparency as a strategic governance mechanism and enrich the religious accounting literature by demonstrating how managerial competence and digital transformation jointly enhance financial accountability in pesantren.

1 Introduction

The governance of religious institutions in Indonesia has undergone a significant transformation in response to the increasing complexity of the economic and social activities undertaken by Islamic boarding schools (pesantren). Over the past decade, pesantren have evolved beyond their traditional role as Islamic educational institutions to become important actors within the socio-economic ecosystem through the management of substantial public resources. As the volume of zakat, infaq, sadaqah, waqf, community donations, and government funding allocated to pesantren continues to increase, the demand for credible and accountable financial governance has shifted from being a normative expectation to an essential prerequisite for institutional sustainability.

Despite this increasingly strategic role, a significant governance paradox remains unresolved. Many pesantren continue to operate with limited financial management capacity, relying on traditional bookkeeping practices that are inadequate for managing the complexity of contemporary financial transactions. The disparity between the magnitude of the fiduciary responsibilities entrusted to pesantren and their limited managerial infrastructure creates substantial accountability risks for both the institutions and the stakeholders who entrust them with public resources. Empirical evidence indicates that the implementation of nonprofit accounting standards, particularly ISAK 35, remains limited. Consequently, financial statements are frequently unstructured, poorly classified, and inconsistent with generally accepted financial reporting principles (Alfie & Triyoga, 2023).

These institutional limitations are further compounded by the relatively low adoption of digital technologies. The global literature on nonprofit governance consistently recognizes information technology as a critical catalyst for enhancing accountability, transparency, and financial reporting quality through improved information accessibility, data integrity, internal control, and reporting discipline (Gandia, 2011). However, technological adoption within pesantren has progressed considerably more slowly than in other nonprofit organizations. This slow transformation can be attributed to structural constraints, insufficient technical training, and cultural resistance to digital accounting systems. Consequently, many pesantren remain vulnerable to producing financial reports that fail to satisfy the growing expectations of regulators, donors, and other stakeholders who increasingly demand transparency and high-quality financial disclosure.

The challenge becomes even more pronounced when the quality of human resources is taken into consideration. Human Capital Theory posits that education and professional competence enhance an organization's capacity to manage financial resources effectively and produce high-quality financial reports. Nevertheless, empirical findings remain inconclusive. Several studies suggest that managerial competence does not necessarily translate into superior financial reporting because the absence of adequate organizational systems, standardized procedures, and technological support limits the practical application of managerial knowledge. In other words, educational attainment alone cannot guarantee high-quality financial reporting when institutional environments lack the governance infrastructure necessary to convert knowledge into effective accounting practices.

Transparency constitutes another critical dimension of nonprofit governance. Within the global nonprofit sector, transparency has become a fundamental determinant of organizational legitimacy and public trust (Ortega-Rodríguez et al., 2020). In the context of pesantren, however, transparency practices remain highly heterogeneous due to the distinctive institutional values, religious norms, and traditional governance structures that characterize these organizations. Some pesantren maintain relatively robust internal reporting systems but provide limited public access to financial information, whereas others rely primarily on informal financial communication grounded in personal relationships with donors and local communities. Such variation suggests that transparency extends beyond administrative disclosure and represents an integral component of religious institutional governance that has yet to be systematically formalized and standardized.

The existing empirical evidence concerning the determinants of financial reporting quality in nonprofit and faith-based organizations remains inconclusive, revealing a significant research gap. Previous studies consistently demonstrate that information technology improves reporting accuracy, timeliness, and accountability by strengthening data processing capabilities and internal control systems (Gandia, 2011). In contrast, evidence regarding the role of management education is mixed. While several studies report that higher levels of managerial education and financial competence positively influence financial reporting quality, others conclude that educational attainment alone produces limited improvements in the absence of robust institutional systems, effective governance mechanisms, and adequate technological support.

Similarly, research on transparency presents inconsistent findings. Although transparency has been widely recognized as a critical determinant of organizational legitimacy and financial reporting quality (Ortega-Rodríguez et al., 2020), other studies argue that transparency is more appropriately conceptualized as an organizational outcome rather than an independent governance determinant, particularly within nonprofit organizations characterized by informal administrative practices. These inconsistencies indicate that the relationships among management education, technological capability, transparency, and financial reporting quality remain theoretically and empirically unresolved, especially within Islamic boarding schools whose governance structures differ substantially from those of other nonprofit organizations.

Against this backdrop, the present study focuses on management education, technology utilization, and transparency because these variables represent three complementary dimensions of governance capacity: human capital, technological capability, and institutional accountability. Compared with other governance determinants, such as organizational size, funding diversity, leadership style, or internal audit systems, these three factors are more directly associated with the operational processes involved in financial statement preparation and are more readily amenable to policy interventions through capacity-building initiatives, digital transformation, and governance reform. More importantly, the mediating role of transparency has received limited empirical attention within faith-based nonprofit organizations despite its theoretical significance in explaining how managerial competence and technological capability are translated into higher-quality financial reporting. By conceptualizing transparency as a governance mechanism rather than merely an organizational outcome, this study addresses an important gap in the literature and contributes to a more comprehensive understanding of financial accountability within the distinctive institutional context of Indonesian pesantren.

Taken together, these dynamics suggest that the quality of financial reporting in pesantren is not merely a technical accounting issue but also an institutional, governance, and epistemological challenge. A persistent gap exists between the ethical principles of trust (amanah) and accountability embedded in Islamic institutional values and the governance mechanisms available to operationalize those principles in financial reporting practices. At the same time, pesantren face increasing pressure to reconcile the demands of financial modernization with their capacity for organizational and technological adaptation. Consequently, understanding how management education, technology utilization, and transparency interact to influence financial reporting quality is both theoretically important and practically relevant.

Accordingly, this study seeks to examine how key dimensions of governance capacity management education, technological capability, and transparency shape the quality of financial reporting in Indonesian pesantren. By investigating both the direct relationships among these variables and the mediating role of transparency, this research extends the literature on nonprofit governance while offering practical insights into how pesantren can strengthen their financial accountability systems in response to increasingly complex regulatory requirements and stakeholder expectations.

2 Literature Review

a. Management and Human Capital Education in Islamic Boarding School Governance

Human Capital Theory posits that education enhances individuals' knowledge, skills, and competencies, thereby improving their capacity to make effective decisions and perform organizational tasks efficiently (Becker, 1993). Within nonprofit and faith-based organizations, managerial education represents a critical component of governance because it equips managers with the competencies required to implement sound financial management practices, including financial planning, bookkeeping, internal control, and the preparation of high-quality financial reports. In the context of Islamic boarding schools (*pesantren*), management education is expected to strengthen the ability of administrators to manage increasingly complex financial resources while complying with established accounting standards and accountability requirements. Empirical evidence supports this argument. For example, Kaheeru et al. (2024) and Ibrahim et al. (2024) demonstrate that higher levels of managerial education are associated with improved administrative performance, stronger financial management practices, and greater organizational accountability within public service and nonprofit institutions.

Nevertheless, the relationship between managerial education and financial reporting quality is not always straightforward, particularly in the context of *pesantren*. Despite possessing relatively well-educated administrators, many Islamic boarding schools continue to experience difficulties in producing financial statements that comply with applicable accounting standards, including ISAK 35. These challenges are largely attributed to organizational constraints such as inadequate accounting systems, limited technological infrastructure, and underdeveloped transparency mechanisms rather than to deficiencies in managerial competence itself (Inayah, 2024; Mukaromah et al., 2023). Such findings suggest that educational attainment alone is insufficient to ensure high-quality financial reporting when the institutional environment does not adequately support the application of managerial knowledge.

This perspective is consistent with the Resource-Based View (RBV), which argues that organizational resources create competitive advantage only when they are effectively integrated with complementary organizational capabilities and governance mechanisms (Barney, 1991). From this standpoint, managerial knowledge constitutes a valuable organizational resource; however, its contribution to organizational performance depends on the existence of supporting systems, standardized procedures, and technological infrastructure that enable knowledge to be transformed into effective financial reporting practices. Consequently, educational qualifications should be viewed as necessary but not sufficient conditions for achieving high-quality financial reporting.

Furthermore, nonprofit governance theory emphasizes that the effectiveness of human capital depends not only on individual competence but also on the institutional context in which governance is exercised. Cordery and Simpkins (2016) and Cornforth (2014) argue that governance quality emerges from the interaction between capable human resources, accountability mechanisms, organizational norms, and effective communication systems. Within *pesantren*, managers with strong educational backgrounds may be unable to realize their full potential in financial reporting when transparency practices remain weak or institutional governance lacks formalized procedures. Accordingly, management education should not be considered an isolated determinant of financial reporting quality but rather a governance resource whose effectiveness depends on complementary organizational mechanisms.

Based on the theoretical arguments and empirical evidence discussed above, this study proposes that management education contributes positively to the quality of financial reporting in Islamic boarding schools. Managers possessing higher levels of education are expected to have stronger financial literacy, greater accounting competence, and a better understanding of governance principles, enabling them to produce more reliable, relevant, and accountable financial statements.

H_1: Management education has a positive effect on the quality of financial statements in Islamic boarding schools.

b. Technology in Nonprofit Reporting Systems

The adoption of information technology has become a fundamental driver of effective financial governance in nonprofit organizations. The Technology Acceptance Model (TAM) (Davis, 1989) posits that individuals' acceptance and use of technology are primarily influenced by perceived usefulness and perceived ease of use. Extending this perspective, the Unified Theory of Acceptance and Use of Technology (UTAUT) argues that technology adoption is also shaped by facilitating conditions, social influence, and users' behavioral intentions (Venkatesh et al., 2003). Together, these theories suggest that technological infrastructure alone is insufficient to improve organizational performance; rather, technology generates value only when it is effectively accepted, utilized, and supported within the organizational environment.

In the context of nonprofit organizations, information technology serves as a strategic governance instrument that enhances the quality of financial reporting by improving the accuracy, timeliness, consistency, and reliability of financial information. Digital accounting systems facilitate standardized recording processes, strengthen internal controls, minimize human error, and enable organizations to produce financial reports that meet stakeholders' expectations for accountability and transparency (Gandia, 2011; Guillamón et al., 2016). More recent evidence further demonstrates that cloud-based Enterprise Resource Planning (ERP) systems significantly improve accounting efficiency by integrating financial processes, automating transaction recording, and reducing the risk of reporting errors (Fatimah et al., 2025). Consequently, technology has evolved from a purely operational tool into an essential component of organizational governance that supports financial accountability.

Despite these advantages, the adoption of digital financial systems among Islamic boarding schools (*pesantren*) remains uneven. Many *pesantren* continue to rely on manual bookkeeping practices due to limited technological infrastructure, inadequate financial resources, low levels of digital literacy among managers, and the absence of integrated accounting information systems (Wulan et al., 2023). These institutional constraints reduce the effectiveness of technology implementation and limit its potential contribution to improving financial reporting quality. Accordingly, the quality of financial statements depends not merely on the availability of technological resources but also on the organization's capability to adopt, integrate, and utilize those technologies consistently and sustainably within its governance processes.

From a nonprofit governance perspective, technology represents more than an operational resource; it functions as a governance mechanism that enhances institutional accountability and legitimacy. Digital information systems improve organizational transparency by increasing data accessibility, facilitating timely disclosure, strengthening auditability, and enabling stakeholders to access more reliable financial information (Tremblay-Boire & Prakash, 2015). Through these mechanisms, technology contributes not only to operational efficiency but also to stronger governance practices that reinforce public trust and institutional credibility. In faith-based nonprofit organizations such as *pesantren*, where accountability is grounded in both organizational governance and religious values, the strategic use of technology is expected to strengthen financial reporting practices while supporting broader principles of transparency and stewardship.

Drawing upon TAM, UTAUT, and nonprofit governance theory, this study argues that the effective utilization of information technology enhances the quality of financial reporting in Islamic boarding schools. Organizations that successfully adopt and integrate digital accounting technologies are expected to produce financial statements that are more accurate, timely, reliable, and compliant with applicable accounting standards.

H_2: Technology utilization has a positive effect on the quality of financial statements in Islamic boarding schools.

c. Transparency as a Governance Mechanism

Transparency is widely recognized as a fundamental principle of good governance and a cornerstone of public accountability in nonprofit organizations (Bovens, 2007; Ebrahim, 2003). It refers to the extent to which organizations openly disclose relevant, accurate, timely, and understandable information regarding their activities, financial resources, and decision-making processes to stakeholders. In faith-based nonprofit organizations, transparency is particularly important because institutional legitimacy is derived not only from regulatory compliance but also from public trust and moral responsibility. Ortega-Rodríguez et al. (2020) argue that transparency extends beyond the mere disclosure of financial information; it encompasses the quality, accessibility, comprehensibility, and verifiability of financial communication, enabling stakeholders to effectively evaluate organizational accountability and stewardship.

Within the context of Islamic boarding schools (*pesantren*), transparency remains a significant governance challenge. Financial reporting and accountability practices are often characterized by informal administrative procedures, limited documentation, and highly centralized decision-making processes. Financial information is frequently communicated through personal interactions with donors or community members rather than through standardized reporting mechanisms, while formal disclosure practices remain underdeveloped (Murdayanti & Puruwita, 2019; Nurkhin et al., 2024). Consequently, accountability often depends more on the personal credibility of institutional leaders than on transparent governance systems capable of ensuring consistent financial disclosure.

Similar governance challenges have been identified in other faith-based nonprofit organizations. Atan et al. (2017) found that religious institutions in Malaysia frequently experience a discrepancy between the ethical values that emphasize accountability and the formal governance mechanisms required to operationalize those values. Although religious organizations generally possess strong normative commitments to honesty, stewardship, and public responsibility, these values are not always translated into structured financial reporting systems that satisfy contemporary standards of transparency and accountability. This evidence suggests that transparency remains a critical governance issue across faith-based nonprofit organizations, including *pesantren*.

From a theoretical perspective, transparency can be conceptualized as a governance mechanism that connects organizational resources with governance outcomes. Governance scholars argue that transparency functions not only as an outcome of effective governance but also as an enabling mechanism through which organizational capabilities are transformed into greater accountability and improved organizational performance (Christensen & Ebrahim, 2006). In this study, transparency is positioned as an intermediary governance mechanism that links management education and technology utilization to financial reporting quality.

Managers with higher levels of education are expected to possess greater awareness of accountability principles, financial disclosure requirements, and stakeholder information needs, thereby encouraging more transparent reporting practices. Likewise, information technology facilitates transparency by improving the accessibility, accuracy, consistency, and timeliness of financial information through digital accounting systems and standardized reporting procedures. Consequently, transparency represents the governance process through which managerial competence and technological capability are translated into higher-quality financial reporting.

Positioning transparency as a mediating mechanism is consistent with governance theory, which emphasizes that organizational resources do not directly generate governance outcomes without appropriate institutional processes. Human capital provides the knowledge and competencies necessary for accountability, while technology supplies the infrastructure required for efficient financial management. However, these resources contribute to financial reporting quality only when they are embedded within transparent governance practices that promote information disclosure, stakeholder engagement, and institutional accountability.

Accordingly, this study proposes that transparency directly enhances the quality of financial reporting while simultaneously mediating the effects of management education and technology utilization on financial reporting quality in Islamic boarding schools.

H_3: Transparency has a positive effect on the quality of financial statements in Islamic boarding schools.

H_4: Transparency mediates the relationship between management education and the quality of financial statements in Islamic boarding schools.

H_5: Transparency mediates the relationship between technology utilization and the quality of financial statements in Islamic boarding schools.

d. Quality of Financial Statements

The quality of financial statements refers to the extent to which financial reports meet the characteristics of relevance, reliability, comparability, consistency, and understandability (Safari & Areeb, 2020; Sari, 2022). In the nonprofit sector, the quality of financial reporting is closely associated with public trust, organizational credibility, and the effectiveness of external oversight (Hyndman & McConville, 2018).

In Islamic boarding schools (*pesantren*), the implementation of the Islamic Boarding School Accounting Guidelines and ISAK 35 remains incomplete (Alfie & Triyoga, 2023). Gaps in managerial competence, limited infrastructure, and weak internal control systems prevent financial reporting from achieving the expected standards of quality. A review of the international literature (Cordery & Simpkins, 2016; Tremblay-Boire & Prakash, 2015) indicates that the quality of financial reporting in faith-based organizations is largely influenced by governance-related factors, particularly managerial professionalism, technological capability, and the level of transparency. Accordingly, the quality of financial statements is understood as the outcome of the combined influence of structural factors (technology), human resource factors (management education), and governance factors (transparency)

3 Research Methods

This study employs an explanatory quantitative approach to examine the causal relationships among management education, technology utilization, transparency, and the quality of financial statements in Islamic boarding schools (pesantren). The proposed model was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM), which is appropriate for moderate sample sizes, complex research models, and data that do not necessarily satisfy the assumption of normal distribution (Hair et al., 2021; Lisboa, 2018).

The unit of analysis consists of pesantren financial managers who are responsible for financial recording, financial reporting, and the use of digital financial systems. All respondents were drawn from pesantren that had previously participated in a governance strengthening assessment. Purposive sampling was employed based on the following criteria: (1) actively managing financial administration for at least one year; (2) involved in the preparation or verification of financial statements; and (3) familiar with or actively using digital financial recording applications. A total of approximately 300 respondents participated in the study, which is considered an adequate sample size for PLS-SEM analysis.

All variables were measured using a five-point Likert scale based on the following conceptual domains:

a) Management Education

Measures the level of formal and non-formal competencies related to accounting, administration, and technology. This construct is grounded in Human Capital Theory (Becker, 1993).

b) Utilization of Technology

Measures the intensity and extent of the use of digital financial applications, based on the Technology Acceptance Model (TAM) (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003).

c) Transparency

Measures the extent of information disclosure, accessibility, and the quality of financial communication, based on Ebrahim (2003) and Ortega-Rodríguez et al. (2020).

d) Quality of Financial Statements

Refers to relevance, reliability, comparability, readability, and timeliness (Hyndman & McConville, 2018). Data collection is carried out through; Structured surveys, documentation of financial statements, administrative observations, and following general literacy in research in faith-based nonprofits (Atan et al., 2017).

While data analysis includes: evaluation of measurement models (*Loading factor* > 0.70, *Average Variance Extracted* (AVE) > 0.50, *Composite Reliability* (CR) > 0.70; structural model evaluation (R^2 for predictive strength, f^2 for effect size, Q^2 for *predictive relevance*, *bootstrapping* For the path significance test, mediation evaluation using the (Zhao et al. (2010). The following is a table of the measurement model for this study:

Table 1 Measurement Model in this Study

Construct	The Main Basis of the Theory	Indicator	Measurement Type	Expectation of Validity
Management Education (X_1)	Becker (1993); Amanyire et al. (2024)	formal education, accounting training, technology training, understanding of ISAK 35 standards	Likert 1–5	Loading > .70, AVE > .50, CR > .70
Utilization of technology (X_2)	Davis (1989); Venkatesh et al. (2003); Gandia (2011)	use of accounting software, record-keeping applications, cloud/ERP, frequency of use	Likert 1–5	Loading > .70, AVE > .50, CR > .70

Transparency (M)	Ebrahim (2003); Ortega-Rodríguez et al. (2020)	Report disclosure, public access, documentation, financial communication	Likert 1–5	Loading > .70, AVE > .50, CR > .70
Quality of financial statements (Y)	Hyndman & McConville (2018); Sari (2022)	relevance, reliability, comparability, completeness, timeliness	Likert 1–5	Loading > .70, AVE > .50, CR > .70

4 Results and Discussion

4.1. Result

4.1.1. Evaluation of Measurement Models

Evaluation of the outer model shows that all indicators in the four constructs have *loading factor* above 0.70, so that it meets the criteria *indicator reliability* (Hair et al., 2021). Value *Composite Reliability* (CR) of each construct is in the range of 0.88-0.94, which indicates excellent internal reliability.

The *Average Variance Extracted* (AVE) value of the entire construct is in the range of 0.58-0.72, thus meeting the convergent validity criteria (AVE > 0.50). These findings confirm that each construct is able to adequately explain the proportion of variance of its indicators.

Discriminant validity testing using HTMT (*Heterotrait-Monotrait Ratio*) shows that the entire HTMT value is below 0.85, which means that each construct is distinctive and there are no concept redundancy issues. This emphasizes that manager education, technology utilization, transparency, and quality of financial statements are constructs that can be distinguished theoretically and empirically.

4.1.2. Structural Model Evaluation

a. R^2 Value

The coefficient of determination (R^2) indicates the proportion of variance explained by the exogenous variables in the structural model. As presented in Table 2, the R^2 value for Financial Reporting Quality is 0.670, indicating that 67.0% of the variance in financial reporting quality is explained by management education, technology utilization, and transparency. The remaining 33.0% is attributable to other factors not included in the model.

Meanwhile, the R^2 value for Transparency is 0.444, indicating that 44.4% of the variance in transparency is explained by management education and technology utilization, whereas the remaining 55.6% is explained by other variables outside the proposed model

Table 2. Coefficient of Determination (R^2)

Construct	R^2	Adjusted R^2
Financial Reporting Quality	0.670	0.662
Transparency	0.444	0.435

Source: Data processing results for this study

According to Hair et al. (2021), R^2 values of 0.75, 0.50, and 0.25 can be interpreted as substantial, moderate, and weak, respectively. Therefore, the R^2 value for Financial Reporting Quality (0.670) indicates moderate to substantial explanatory power, while the R^2 value for Transparency (0.444) indicates moderate explanatory power. These findings suggest that the proposed structural model has satisfactory predictive capability in explaining the endogenous constructs.

b. Path Significance Test (*Direct Effects*)

The bootstrapping results for the direct effects are presented in Table 3.

Table 3. Bootstrapping Results for Direct Effects

Path	Coefficient	t-Statistic	p-Value	Conclusion
Management Education → Transparency	Positive	Significant	< 0.01	Supported
Technology Utilization → Transparency	Positive	Significant	< 0.01	Supported
Management Education → Financial Reporting Quality	Weak positive	Not significant	> 0.05	Not Supported
Technology Utilization → Financial Reporting Quality	Positive	Significant	< 0.05	Supported
Transparency → Financial Reporting Quality	Positive	Significant	< 0.01	Supported

Source: Data processing results for this study

Table 3 shows that:

1) Managerial education does not have a direct effect on the quality of reports, but it has a strong effect on transparency. This is in line with research Mukaromah et al. (2023) who find education does not always produce quality reports without supporting institutional mechanisms.
2) Technology has a direct and significant effect on the quality of reports. These results are in line with the literature that digitization improves the accuracy and timeliness of reporting (Gandia, 2011; Toumi & Hamrouni, 2023).
3) Transparency is a key determinant of report quality, reinforcing the argument Ebrahim (2003), Top (2007), and Ortega-Rodríguez et al. (2020).

c. Mediation Test

This study uses a corrected bootstrapping bias approach (Zhao et al., 2010) in testing mediation.

1) Management Education → Transparency → Quality of Financial Statements

   The results of the analysis stated that directly the manager's education on the quality of the financial statements of the pesantren is not significant, but indirectly through transparency has a significant effect. This means that educated managers are only able to improve the quality of reports if transparency in the pesantren runs well. The results support the model *governance-based mediation* (Christensen & Ebrahim, 2006).

2) Technology → Transparency → Quality of Financial Statements

The results found that direct or indirect influences can have a significant effect on the quality of financial statements. This means that technology not only improves the quality of financial statements directly, but also through increased transparency.

d. *Goodness of Prediction* (Q2 dan *PLSpredict*)

The Q^2 value of the entire construct is in the range of 0.35-0.48, which means that the model has *good predictive relevance*. The *results of PLSpredict* show that the PLS model produces lower prediction *errors* than the linear regression model, confirming that the model has strong predictive capabilities.

4.2. Discussion

The findings of this study provide a deeper understanding of how management education, technology utilization, and transparency contribute to the quality of financial reporting in pesantren as faith-based nonprofit organizations. The observed pattern of relationships suggests that improvements in financial reporting quality are not solely determined by individual competencies but are largely influenced by the interaction between managerial capabilities, technological support, and governance mechanisms that promote information disclosure. Consequently, these findings offer a more comprehensive explanation than previous studies, which have generally examined these governance dimensions separately.

The findings indicate that management education has a positive effect on transparency but does not directly influence financial reporting quality. This pattern suggests that managerial competence alone is insufficient to produce higher-quality financial reports unless it is supported by governance mechanisms that translate knowledge into accountable organizational practices. These results are consistent with the governance capability perspective, which argues that reporting quality is primarily a function of organizational processes rather than individual competencies alone (Christensen & Ebrahim, 2006). Accordingly, management education serves as a form of intellectual capital whose effectiveness depends on a governance environment that promotes openness and public accountability. Within the pesantren context, managers' educational backgrounds are often not accompanied by standardized administrative procedures or formal documentation systems, limiting the direct contribution of managerial competence to financial reporting quality.

In contrast, technology utilization demonstrates a strong positive direct effect on financial reporting quality. These findings confirm the role of technology as an operational enabler that reduces dependence on manual administrative processes while facilitating more accurate, systematic, and well-documented financial records. Previous studies on nonprofit digitalization similarly emphasize that information technology not only improves operational efficiency but also minimizes reporting errors and reduces the risk of data inconsistency and manipulation (Gandia, 2011; Toumi & Hamrouni, 2023). In the context of pesantren, where administrative limitations and inadequate documentation practices remain common, technology functions as a mechanism for standardizing financial processes and improving the consistency of financial reporting.

Transparency is also found to be a significant determinant of financial reporting quality. This finding reinforces the view that faith-based nonprofit organizations are expected not only to prepare technically accurate financial reports but also to ensure openness in communicating financial information to stakeholders. Transparency enhances the credibility and reliability of financial reports by enabling stakeholders to assess the clarity of financial transactions, the consistency of reported information, and the timeliness of financial disclosure (Ortega-Rodríguez et al., 2020). Within pesantren, transparency also carries a moral dimension, as these institutions have an ethical responsibility to account for the use of funds entrusted by the public. Consequently, transparency functions not only as an administrative requirement but also as a source of institutional legitimacy and public trust.

The mediating role of transparency provides an important theoretical contribution. The full mediation effect observed between management education and financial reporting quality suggests that managerial competence must first be translated into transparent governance practices before it can improve reporting outcomes. These findings extend Human Capital Theory within the context of nonprofit organizations by demonstrating that investments in managerial education become effective only when supported by governance processes that facilitate accountability and information disclosure. Meanwhile, the partial mediation observed between technology utilization and financial reporting quality indicates that technology influences reporting quality through two complementary pathways: directly by improving the efficiency and accuracy of financial recording and indirectly by strengthening organizational transparency. This finding highlights that technology contributes not only to operational effectiveness but also to broader governance improvements.

The findings also have important implications for the governance literature on faith-based organizations. Previous studies have documented that pesantren frequently encounter challenges related to financial administration and accountability because reporting practices remain highly dependent on traditional administrative systems and individual leadership (Murdayanti & Puruwita, 2019; Nurkhin et al., 2024). This study extends the existing literature by demonstrating a more comprehensive pattern of relationships among governance variables and by identifying transparency as the primary mechanism through which management education and technology utilization improve financial reporting quality. In doing so, the study addresses an important gap in the literature concerning the structural dynamics and mediating mechanisms underlying financial accountability in pesantren.

Overall, the findings suggest that improving the quality of financial reporting in pesantren requires a systemic governance approach that integrates managerial capacity development, investment in technological infrastructure, and the institutionalization of transparency practices. These results not only reinforce the existing literature on nonprofit governance but also propose an integrated governance framework that may inform future policy initiatives aimed at strengthening financial management in Islamic boarding schools. As public expectations regarding accountability continue to increase, the integration of human capital, digital transformation, and transparency will become increasingly important for ensuring sustainable and accountable governance in faith-based nonprofit organizations.

5 Conclusion

This study demonstrates that improvements in the quality of financial reporting in pesantren cannot be explained solely by the individual capacity of managers but depend on how that capacity is translated into transparent governance practices. Management education is found to have an indirect effect on financial reporting quality through transparency, indicating that human capital requires a supportive institutional environment that promotes openness and accountability to generate higher-quality financial reporting.

In contrast, technology utilization has both direct and indirect effects on financial reporting quality. Digitalization not only facilitates financial recording and reporting processes but also strengthens transparency as a core component of pesantren governance. Accordingly, technology functions as a structural catalyst that enhances the consistency, accuracy, and accountability of financial reporting.

Conceptually, this study confirms that the quality of financial reporting in faith-based nonprofit organizations results from the interaction among human capital, technological infrastructure, and transparency practices. These findings extend the understanding of pesantren governance by positioning transparency as a critical governance mechanism linking management education and technology utilization to financial reporting quality. Furthermore, this study provides an empirical foundation for strengthening pesantren governance through integrated, systematic, and governance-oriented strategies.

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