THE ROLE OF DIGITAL TRANSFORMATION AUDIT IN MANAGING DIGITAL PAYMENT VALIDATION COMPLEXITY AND ITS IMPLICATIONS FOR AUDIT QUALITY

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ABSTRACT

This study analyzes the role of digital transformation audit in managing the complexity of digital payment validation and its implications for external audit quality. With the growing use of digital transactions such as QRIS in the Society 5.0 era, auditors face challenges validating real-time, large-scale data. A digital transformation audit leveraging AI, Big Data Analytics, Machine Learning, and other technologies is proposed to enhance efficiency and accuracy. Using an explanatory quantitative approach based on the DeLone and McLean IS Success Model, data were collected from external auditors in Indonesia and analyzed with PLS-SEM. The findings revealed that System Quality, Information Quality, and the Complexity of Digital Payment Validation exerted significant direct effects on Audit Quality. In contrast, the mediation role of complexity was not supported. These results indicated that technological quality contributes to audit quality primarily through direct pathways, underscoring the importance of improvements in system performance and information accuracy for strengthening external audit outcomes in digital transaction environments.

Keywords: *Digital Transformation Audit, External Audit, Digital Payment, Complexity Validation, Audit Quality*

1. INTRODUCTION

1.1 Research Background

This study was conducted to empirically evaluate how digital transformation in auditing can mitigate the technical challenges arising from the rapid growth of digital payment transactions, ensuring that audit quality remains robust within an increasingly complex financial ecosystem. The urgency of this issue has intensified alongside the acceleration of technology in global financial transactions during the Society 5.0 era and the global pandemic, which has significantly driven the adoption of digital payment systems. This phenomenon has become more prominent in Indonesia alongside the government's push toward a digital economy, such as through the National Non-Cash Movement (GNNT) policy and innovations in payment systems like the Quick Response Code Indonesian Standard (QRIS) [1]. Data from Bank Indonesia in Table I shows a drastic increase in QRIS transaction volume in the first quarter of 2025, reaching 2.6 billion, reflecting a surge of 594% compared to the same period in 2024, accompanied by a 150% growth in transaction value [2].

Table I: QRIS Growth In The First Quarter Of 2025

Indicator	First quarter of 2024	First quarter of 2025
Transaction volume	374 million	2.6 billion
Transaction value	Rp 105 billion	Rp 262.1 billion
Number of users	48 million	56.3 million
Number of merchants	32 million	38.1 million

The digital transformation of payment systems not only creates convenience for consumers and businesses but also introduces new challenges in the audit process, particularly in real-time, large-scale, and distributed transaction data validation. The complexity of digital transactions can create potential risks of recording errors, inaccurate reconciliations, and even fraud or data manipulation if not accompanied by strong control and validation systems [3]. For external auditors, this complexity represents a critical problem, as it may limit the ability to effectively validate digital transactions and, consequently, to maintain high audit quality. This issue is problematic because ineffective validation increases the risk of undetected misstatements and weakens the reliability of audited financial information, which is relied upon by regulators, investors, and other financial statement users. Therefore, the growing complexity of digital payment validation poses a significant challenge primarily for external auditors and public accounting firms operating in an increasingly digital financial environment [4].

In response to these complexities, digital transformation in the audit process has been introduced as a potential solution. Digital transformation audit using technologies such as Artificial Intelligence (AI), Big Data Analytics, Machine Learning, Computer-Assisted Audit Techniques (CAATs), and other technologies are becoming increasingly important to optimize the efficiency, effectiveness, and accuracy of the audit process. This approach enables auditors to automatically validate transactions, detect anomalies in real-time, and enhance risk assessment capabilities for digital transactions that are massive, decentralized, and dynamic [5].

Several previous studies have highlighted the role of technology in improving audit effectiveness. Zhang [6] found that applying Machine Learning in internal auditing, particularly in architecture, improved the speed, accuracy, and efficiency of data processing, thereby driving the transformation of auditing toward a smarter, more adaptive digital model. Li [7] demonstrated that the development of a machine learning based digital audit system combined with wireless network technology for audit engineering improved efficiency, accuracy, and the security of digital audit management, leading to more reliable audits based on digital transformation. On the other hand, Kazbekova et al. [8] established that applying risk modeling integrated with modern technologies, including artificial intelligence, could predict and prevent corruption in public procurement, thereby enhancing transparency, accountability, and audit system effectiveness. Despite these advances, existing studies predominantly emphasize internal auditing or public-sector applications, leaving the external audit context, particularly audits involving high-volume digital payment transactions, insufficiently examined.

Although prior studies have consistently demonstrated that advanced technologies such as artificial intelligence, Machine Learning, and data analytics can improve audit efficiency and effectiveness, several important research gaps remain. First, most existing studies focus on internal auditing or public-sector contexts, leaving external auditing, particularly in environments dominated by high-volume digital payment transactions, largely underexplored. Second, while the rapid expansion of fintech-based payment systems has significantly increased the complexity of digital transaction validation, prior research has not empirically examined whether this complexity functions as a structural mechanism linking audit technology quality to audit quality. Consequently, limited empirical evidence explains how system and information quality simultaneously influence external audit quality under these conditions, especially within the Indonesian context.

To address these research gaps, the study adopted the DeLone and McLean IS Success Model as its underlying theoretical framework, as the model provides a well-established explanation of how system quality and information quality translate into organizational benefits, which in this context are reflected in external audit quality [9]. The inclusion of digital payment validation complexity as a mediating variable was theoretically plausible, given the increasing technical challenges associated with high-volume digital transactions, yet this mechanism remains underexplored in prior empirical studies. Furthermore, an explanatory quantitative approach using Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed, as it is suitable for testing complex relationships involving multiple constructs and mediation effects, particularly in exploratory and technology-driven research contexts [10]. Accordingly, the selected framework and methodological approach provided a justified and coherent means of addressing the research problem.

In Indonesia, studies on digital auditing are still generally limited to conceptual aspects and the readiness of external auditors to face the digital era, without empirically examining the relationships among digital audit transformation, digital payment validation complexity, and

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external audit quality. However, with the value of digital payment transactions projected to reach USD 760 billion by 2030, this issue is increasingly strategic to explore [11]. By empirically testing these relationships within the Indonesian external audit context, this study offered novel evidence on how digital audit technology quality directly shaped audit outcomes in complex digital payment environments. Consequently, this research focused on the role of digital transformation in helping auditors effectively validate digital transactions to maintain the relevance and quality of audits in the dynamic digital economy era.

1.2 Research Question

Based on the above background, the research problems in this study are formulated as follows:

1. Does system quality have a significant effect on managing the complexity of digital payment validation?
2. Does system quality have a significant effect on audit quality?
3. Does information quality have a significant effect on managing the complexity of digital payment validation?
4. Does information quality have a significant effect on audit quality?
5. Does the complexity of digital payment validation have a significant effect on audit quality?
6. Does the complexity of digital payment validation mediate the effect of system quality on audit quality?
7. Does the complexity of digital payment validation mediate the effect of information quality on audit quality?

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 DeLone and McLean Information System Success Model

The Information System Success Model (IS Success Model) developed by DeLone and McLean in 2003 is a comprehensive framework for assessing the extent to which an information system can be considered successful. This model identifies six main dimensions: system quality, information quality, service quality, use, user satisfaction, and net benefits. The first three dimensions, namely system quality, information quality, and service quality, are considered important factors that directly influence user satisfaction and the level of system use. Furthermore, this satisfaction and intensity of use affect the net benefits generated, such as improved organizational efficiency, better decision-making, and enhanced performance. This model is well acknowledged for its multidimensional perspective, as it combines system quality aspects with user interactions to evaluate the overall influence of information systems on the achievement of organizational objectives. Various studies across different contexts and systems have shown that the model remains relevant, widely applicable, and adaptable to ongoing developments [9].

2.2 System Quality on the Complexity of Digital Payment Validation and Audit Quality

Research conducted by Guo et al. [12] found that digital audit transformation, such as the use of digital bank confirmations, significantly improved audit quality, particularly in cash flow audits. This effect is especially evident when auditors face a higher risk of material misstatements, possess greater industry expertise, or carry heavier workloads. Reliable and integrated systems within digital transformation can help auditors efficiently verify and test digital payment data. These findings align with the DeLone and McLean IS Success Model, which states that system quality plays a central role in enhancing net benefits, including managing complex data validation processes. Furthermore, research by Fotoh & Lorentzon [13] revealed that the use of digital technology in auditing, manifested through system quality, promotes audit efficiency and timeliness in report preparation. Based on the above studies, the following hypothesis can be formulated:

H1: System quality has a significant effect on managing the complexity of digital payment validation.

The study by Fotoh & Lorentzon [13] revealed that the use of digital technology in auditing, manifested through system quality, drove audit efficiency and timeliness in report preparation. A responsive, secure, and automated audit system enhances auditors' ability to provide objective and well-targeted opinions. This finding is reinforced by Purnamasari & Hartanto [14], who found that system quality significantly influenced the effectiveness of CAATs in the Indonesian public sector. Their study emphasized that a high-quality system, characterized by accessibility, reliability, and efficiency, supports the audit process by improving both effectiveness and audit outcomes. This research underscores that adequate audit system quality is a prerequisite for auditors to deliver high-quality audits. Based on the above studies, the following hypothesis can be formulated:

H2: System quality has a significant effect on audit quality.

2.3 Information Quality on the Complexity of Digital Payment Validation and Audit Quality

Research by Landu et al. [15] showed that the quality of audit information, such as accuracy, completeness, and relevance of data, was crucial in the process of digital payment validation. In the context of audit digitalization, high-quality information enables auditors to assess the validity of transactions based on QRIS, e-wallets, and other fintech platforms more effectively. The DeLone and McLean theory emphasizes that information quality is a determinant of information system success and directly influences the effectiveness of the validation process. This is reinforced by the study of Prasad et al. [16], which stated that blockchain served as a core technology underlying digital payments and positively affected audit quality. The study highlighted that the improvements in transparency and efficiency brought by blockchain allow auditors to address challenges associated with the complexity of data validation. Based on the above studies, the following hypothesis can be formulated:

H3: Information quality has a significant effect on managing the complexity of digital payment validation.

Research by Mujalli [17] found that the quality of audit information greatly influenced the auditor's decision-making process. When auditors received accurate and relevant data, the likelihood of producing appropriate audit opinions increased. In digital payment transactions, which are prone to input errors and data noise, information quality becomes crucial to ensuring the integrity of audit results. The study of Fang et al. [18] reinforced this, which documented that adopting blockchain technology significantly improved the quality of accounting information. Their findings showed that blockchain enhanced information reliability through mechanisms such as stronger corporate governance and synergies with large audit firms. However, the effect weakened in industries with high IT development or when audit firms changed. Consequently, this evidence indicates that technological adoption aimed at improving information quality contributes to better decision-making and more reliable assurance in auditing. These findings suggest that using technology focused on the quality of the information produced can enhance the effectiveness, efficiency, and reliability of the audit process. Based on the above studies, the following hypothesis can be formulated:

H4: Information quality has a significant effect on audit quality.

2.4 Complexity of Digital Payment Validation on Audit Quality

Research by De Luna et al. [19] stated that the complexity of digital transaction data could hinder the audit process if not addressed with appropriate strategies and tools. The higher the level of validation complexity, the greater the cognitive and technical burden faced by auditors, which may ultimately affect overall audit quality. However, if such complexity can be managed through adequate digital audit approaches, audit quality may in fact improve. Similarly, Meng et al. [20] demonstrated that fintech development, as a driver of enterprise digitalization, significantly influenced audit efficiency and quality. Their findings revealed that the rise of fintech reduced audit fees while simultaneously strengthening governance, enhancing the quality of financial statement audits, lowering the probability of violations, and improving internal controls. These results suggest that while digitalization increases the complexity of audit environments, it can also enhance audit quality when effectively managed. Based on these studies, the following hypothesis is proposed:

H5: The complexity of digital payment validation has a significant effect on audit quality.

2.5 Mediation of Complexity of Digital Payment Validation in the Relationship between Technology and Audit Quality

Based on the DeLone and McLean model, system quality and information quality not only have a direct impact on outcomes (net benefits) but also an indirect impact through intermediary variables such as "use" or "effectiveness." In this context, the complexity of digital payment validation acts as a mediator between audit technology quality and the resulting audit quality. A study by Bradford et al. [21] supported the view that the success of digital auditing largely depended on how auditors managed the complexity of digital transactions with the support of available systems and information. In addition, Hong et al. [22] emphasized through their evaluation of a barcode system in a manufacturing setting that system quality and information quality influenced efficiency and effectiveness indirectly via user interaction and organizational impact. This reinforces the notion that technological quality affects outcomes not only directly but also through mediating factors, aligning with the proposed role of digital payment validation complexity in the audit context. Based on these studies, the following hypotheses are proposed:

H6: The complexity of digital payment validation mediates the effect of system quality on audit quality.

H7: The complexity of digital payment validation mediates the effect of information quality on audit quality.

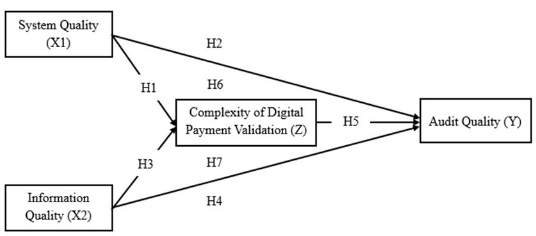

Figure. 1: Research Framework

3. RESEARCH METHODOLOGY

3.1 Research Method

This study applied a quantitative approach, a method that relies on numerical data to analyze relationships between variables and test hypotheses using statistical techniques. The research variables were derived from theoretical indicators so that they can be operationalized into measurable questions that generated numerical data for analysis [23]. To ensure methodological transparency, the research protocol was executed through a systematic four-stage process: (1) instrument development based on the DeLone and McLean IS Success Model, (2) purposive sampling, (3) data collection via an online survey platform, and (4) a two-stage PLS-SEM analysis. In the data collection stage, primary data were obtained through a survey using an online questionnaire via Google Forms, which was designed around the main indicators for each variable and distributed to external auditors in Indonesia working at Public Accounting Firms. Sampling was conducted using purposive sampling, with the following inclusion criteria: (a) external auditors actively working at Public Accounting Firms; (b) having experience auditing entities that use digital payment systems (such as QRIS, e-wallets, or mobile banking); and (c) being directly involved in the use of digital audit technologies, such as AI-based audit software, Machine Learning, Big Data Analytics, or similar technologies in the audit process. Given that the exact population size of external auditors is difficult to determine due to high labor mobility, the minimum sample size was determined by referring to Hair et al. [24], who state that the minimum number of respondents should be ten times the number of indicators in the research model. Based on this guideline, the minimum number of respondents was set for this study was 100 external auditors.

To measure the research variables, which included system quality, information quality, digital payment validation complexity, and external audit quality, the questionnaire instrument used a five-point Likert scale. This scale was structured with 1 representing "strongly disagree" and 5 representing "strongly agree." Each item was developed based on the indicators of each variable, adapted from the DeLone and McLean IS Success Model framework, to reflect respondents' perceptions of the phenomenon under study in a measurable, consistent manner.

For data analysis, this study employed PLS-SEM. This method was chosen because it can test models with complex structures, involving multiple variables simultaneously, and is suitable for studies with relatively small sample sizes. Data processing was conducted using the latest version of SmartPLS, which provides more comprehensive and efficient PLS-SEM analysis capabilities. The research data source is available online at: https://zenodo.org/records/17836618

3.2 Operation of Variable

To quantitatively assess how digital audit transformation affected the complexity of digital payment validation and its impact on audit quality, this study formulated several main variables and their indicators. The set of indicators was structured based on relevant literature reviews, thereby providing a strong conceptual foundation. Table II presents the operationalization of the variables, with each variable elaborated using specific indicators to ensure systematic and measurable data collection and analysis, aligned with the research objectives.

Table II: Operational Variable

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Variable	Indicator	Source
System Quality	1. Audit technology is reliable for fragmented, high-volume transactions. 2. Audit technology is flexible across different recording methods. 3. Audit technology's response time is acceptable with additional components (fees, cashback, vouchers). 4. Audit technology is user-friendly for various data formats. 5. Audit technology is stable against errors and manipulation.	[25]
Informati-on Quality	1. Audit technology provides precise information despite high-volume transactions. 2. Audit technology provides accurate information across systems. 3. Audit technology provides sufficient information including fees, cashback, and vouchers. 4. Audit technology provides reliable information across formats. 5. Audit technology provides information that fits audit needs and reduces manipulation risks.	[25]
Complexi-ty of Digital Payment Validation	1. Digital payment validation is difficult due to high transaction volume and fragmentation. 2. Digital payment validation is complex because of cross-system recording differences. 3. Validating digital payments is difficult with components like fees, cashback, or vouchers. 4. Digital payment validation requires effort due to varied data formats and audit tools. 5. Learning digital payment validation is hard because of manipulation risks.	[26]
Audit Quality	1. Audit technology in auditing will aid professional skepticism. 2. Audit technology in auditing will facilitate robust risk assessment through the analysis of entire populations. 3. Audit technology in auditing will facilitate the focus of audit testing on the areas of the highest risk through the stratification of large populations. 4. Audit technology in auditing will enable performance testing on large or complex datasets where a manual approach would not be feasible. 5. Audit technology in auditing will help identify potential fraud, unusual patterns, and exceptions that might not be detected with traditional audit techniques.	[27]

4. RESEARCH RESULTS AND DISCUSSION

4.1 Identity of Respondents

This study used a questionnaire to collect data from auditors working at various public accounting firms in Indonesia. The survey yielded 126 valid responses, which satisfied the minimum sampling guideline of five respondents per indicator suggested by Hair et al. [24], thereby ensuring the data were adequate and representative for analysis. In addition to the main variables, the questionnaire collected essential demographic details, including gender, years of professional experience, job position, and level of digital literacy. These demographic characteristics were compiled and presented in Table III, offering an overview of the respondents' profiles.

Table III: Identity Of Respondents

Characteristics	“	%
Gender		
Male	63	50%
Female	63	50%
Work Experience		
Under 1 year	32	25.4%
1 - 3 years	68	54%
4 - 6 years	19	15.1%
More than 6 years	7	5.6%

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Position		
Junior Auditor	91	72.2%
Senior Auditor	22	17.5%
Manager	11	8.7%
Partner	2	1.6%
Digital Literacy		
Good	99	78.6%
Fair	26	20.6%
Poor	1	0.8%

Table III presents the distribution of respondent characteristics included in this study. Gender distribution was balanced between male and female auditors. In terms of work experience, most respondents fell within the 1-3 years range, followed by those with less than one year of experience. Most participants held the position of Junior Auditor, followed by Senior Auditor, while only a small number occupied Manager or Partner roles. Furthermore, the digital literacy levels indicated that most auditors possessed good digital skills, with a smaller proportion classified as fair and only a few categorized as poor. These demographic details were gathered in the initial section of the questionnaire, prior to items measuring the study variables. The relationships among variables were later analyzed using the Partial Least Squares (PLS) method with SmartPLS 4, as outlined in the following section.

4.2 Outer Loading Test

The questionnaire was assessed using outer loadings to confirm that each item reflected its intended construct, and significance was tested via bootstrapping. Loadings of 0.70 or higher were considered optimal, while values between 0.40 and 0.70 were retained only if they did not weaken convergent validity or reliability. Items below 0.40 or statistically insignificant were removed to preserve measurement accuracy [10].

In this study, two indicators, IQ2 and SQ4, showed loading values of 0.668 and 0.666, which fall within the acceptable range. However, further evaluation demonstrated that retaining them reduced Composite Reliability and Average Variance Extracted (AVE). Because their inclusion undermined the overall measurement quality, both indicators were removed to maintain a reliable and valid model.

Table IV: Outer Loading Value

Indicators	Loading
AQ1	0.795
AQ2	0.825
AQ3	0.789
AQ4	0.784
AQ5	0.857
CDPV1	0.875
CDPV2	0.837
CDPV3	0.884
CDPV4	0.780
CDPV5	0.857
IQ1	0.765
IQ3	0.822
IQ4	0.789
IQ5	0.875
SQ1	0.807
SQ2	0.737
SQ3	0.730
SQ5	0.840

4.3 Validity and Reliability Test

To ensure the accuracy and consistency of the measurement instruments in this study, validity and reliability tests were conducted to confirm that the results genuinely reflected the constructs being examined. Validity assesses the extent to which indicators reflect the intended concept, while reliability evaluates the instrument's stability and internal consistency over time. Convergent validity is assessed using the AVE; a minimum value of 0.50 indicates that the latent construct explains most of the variance in its indicators. Meanwhile, reliability is assessed using composite reliability, which is considered adequate when it exceeds 0.60 [28]. Based on these criteria, the instruments in this study met the requirements for both convergent validity and internal reliability, making them suitable for subsequent analysis.

Table V: Composite Reliability And Average Variance Extracted

Variable	AVE	Composite reliability
AQ	0.657	0.905
CDPV	0.718	0.927
IQ	0.662	0.886
SQ	0.608	0.861

Discriminant validity refers to the extent to which the constructs in a model are truly distinct from one another and do not exhibit excessive correlations. This assessment is conducted using the Fornell Larcker criterion, which requires that the square root of the AVE for each construct be greater than its correlations with other constructs

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[29]. Based on Table VI, the diagonal values for Audit Quality (AQ), Complexity of Digital Payment Validation (CDPV), Information Quality (IQ), and System Quality (SQ) were 0.811, 0.847, 0.813, and 0.780, respectively, all of which were higher than the corresponding correlation values in their rows and columns. This pattern indicated that each construct explained the variance of its own indicators better than the variance of indicators belonging to other constructs. These findings confirmed that the measurement instrument did not suffer from construct overlap and that each variable was conceptually well distinguished, thereby supporting the accuracy and credibility of the overall measurement model.

Table VI: Fornell-Larcker Criterion

	AQ	CDPV	IQ	SQ
AQ	0.811			
CDPV	0.365	0.847		
IQ	0.696	0.252	0.813	
SQ	0.691	0.329	0.788	0.780

4.4 Coefficient Determination Test

After establishing the validity and reliability of the construct measures, the next phase was to evaluate the structural model (inner model). The coefficient of determination is used to assess the extent to which the model is able to explain the variance in the dependent variable and the predictive contribution of the tested constructs [30]. Based on the results in the table VII, the adjusted R-square value for AQ of 0.550 indicated that the model could explain approximately 55 percent of the variation in audit quality, reflecting solid predictive strength and a substantial structural relationship. Meanwhile, the adjusted R-square for CDPV as a mediating variable was only 0.094, indicating that the independent constructs explained only about 9.4 percent of the variance in CDPV. This relatively low value for the mediating variable indicated that the influence directed toward CDPV was weak, suggesting that the resulting mediation effect was likely small or partial. Nevertheless, the value remained informative because, in theory, mediating variables may contribute less explanatory power than the primary dependent variable.

Table VII: Coefficient Of Determination

	R-square	R-square adjusted
AQ	0.561	0.550
CDPV	0.108	0.094

4.5 Hypothesis Testing

The path coefficients that describe the relationships among constructs in the structural model are generated after the PLS-SEM algorithm is executed. To evaluate the significance of each coefficient, SmartPLS uses a bootstrapping procedure, which produces standard errors that are then used to calculate t-values and p-values for hypothesis testing. A hypothesis is verified when the evidence from the statistical test shows a sufficiently strong deviation from what would be expected under the null assumption. In the context of this study, the benchmark for that evidence was a two-tailed critical t-statistic of 1.96, paired with a significance requirement of $p \leq 0.05$. Whenever a path coefficient produced a t-statistic greater than 1.96 while maintaining a p-value at or below the 0.05 level, the result was interpreted as statistically reliable. Under those circumstances, the null hypothesis was dismissed, and the alternative hypothesis was regarded as empirically supported [31].

Table VIII: Hypothesis Testing (Direct Effects)

Hypothesis	Original Sample	T Statistics	P Values
CDPV→AQ	0.158	2.117	0.034
IQ→AQ	0.404	3.764	0.000
IQ→CDPV	-0.020	0.138	0.890
SQ→AQ	0.320	3.050	0.002
SQ→CDPV	0.344	2.295	0.022

As presented in Table VIII, five structural relationships were tested to evaluate the direct effects among the constructs. The results indicated that most paths in the model were significant, although one relationship was found to be insignificant. First, the path CDPV → AQ was significant, with a p-value of 0.034 and a t-statistic of 2.117, indicating that CDPV made a meaningful contribution to audit quality. Furthermore, IQ → AQ yielded a p-value of 0.000 and a t-statistic of 3.764, confirming that information quality had a strong and significant effect on audit quality. In contrast, the path IQ → CDPV was not significant, as reflected by a p-value of 0.890 and a t-statistic of 0.138, indicating that information quality did not substantially influence the mediating role of CDPV. On the other hand, the path SQ → AQ produced a p-value of 0.002 and a t-statistic of 3.050, demonstrating that system quality significantly impacted audit quality. Lastly, SQ → CDPV was also significant, supported by a p-value of 0.022 and a t-statistic of 2.295, showing that system quality contributed to the formation of CDPV as a mediating variable.

After testing the direct relationships, the indirect effects were analyzed to evaluate the role of the CDPV as a mediating variable between the quality of digital audit technology (SQ and IQ) and AQ. This testing specifically addressed the hypothesized mediation relationships. The significance of these indirect effects was determined through the bootstrapping procedure in SmartPLS, which generated t-statistics and p-values for the compounded paths. The results of the indirect effects testing were presented in Table IX.

Table IX: Hypothesis Testing (Indirect Effects)

Hypothesis	Original Sample	T Statistics	P Values
IQ→CDPV→AQ	-0.003	0.128	0.898
SQ→CDPV→AQ	0.054	1.735	0.083

As shown in Table IX, two indirect structural paths were examined to assess the mediating role of CDPV. The results indicated that neither mediation hypothesis was statistically significant. The first hypothesis tested whether information quality influenced audit quality through CDPV; the analysis yielded a p-value of 0.898 and a t-statistic of 0.128. Because the p-value was far above the 0.05 significance level and the t-statistic was well below the critical value of 1.96, the null hypothesis was accepted, and the mediation is not supported. The second hypothesis examined whether system quality affected audit quality through CDPV, yielding a p-value of 0.083 with a t-statistic of 1.735. Although the t-statistic was close to the critical threshold, the p-value still exceeded 0.05, indicating that the mediation was not supported. These results justified that CDPV did not operate as a meaningful mediator in either relationship, since the indirect effects did not reach the required significance level even though mediation remained theoretically plausible in the context of digital payment validation.

Based on these results, the test showed that the hypothesized relationships where CDPV acted as an intermediary variable were statistically insignificant. This suggested that the influence of technological quality (Information Quality and System Quality) on Audit Quality operated primarily through direct effects, and the complexity of digital payment validation did not function as a significant mediator in the tested model.

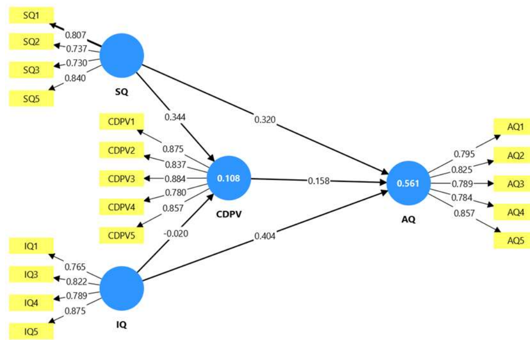

Figure 2: Research Path Coefficient

4.6 Discussion

The hypothesis testing results indicated that not all the analyzed relationships showed significant effects, particularly in the mediation path involving the Complexity of Digital Payment Validation (CDPV). Nevertheless, several key constructs were shown to have strong direct effects on audit quality. These findings demonstrated that CDPV, Information Quality (IQ), and System Quality (SQ) significantly enhanced Audit Quality (AQ). This is consistent with previous research by Mujalli [17], which emphasizes that information quality and system quality are essential foundations in supporting the effectiveness of digital audits. The significant effects of IQ and SQ on AQ indicated that the quality of the audit technology used by auditors, both in terms of information accuracy and system performance, plays an essential role in achieving better audit quality.

Conversely, the relationship between IQ and CDPV was not significant. This condition is reasonable because information quality does not always determine auditors' perceptions of the complexity of digital transaction validation. Auditors may receive high-quality information from audit technologies while still perceiving digital transaction validation as complex due to other factors, such as variations in payment features, differences across platforms, or inconsistencies in data structures among service providers. This finding is in line with the study by Khando et al. [32], which shows that complexity in digital payment systems mainly stems from the diversity of technological architectures,

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differences in data formats, and interoperability challenges across platforms, meaning that perceived complexity does not depend on the quality of information received by auditors. In other words, digital complexity may arise from the characteristics of payment systems rather than from the quality of information supplied by audit technology. This justified the path's non-significance, as it does not contradict theoretical logic.

However, the mediation test results indicated that CDPV did not mediate between technological quality (SQ and IQ) and AQ. Although SQ was found to influence CDPV significantly, this effect was not sufficiently strong to be transmitted through CDPV and did not have a significant impact on AQ. This suggested that the influence of technological quality on Audit Quality operates primarily through direct effects. Factors outside the model's scope (such as external dynamics, payment provider policies, or changing data formats) may represent the main sources of the complexity faced by auditor, thereby preventing CDPV from serving as a key mechanism bridging technology quality and audit outcomes. This interpretation is supported by empirical evidence from Guo et al. [12], which shows that industry-level technological complexity can directly affect audit quality, independent of any intermediate variable representing auditor perceptions of complexity.

Overall, the PLS-SEM analysis confirmed that SQ and IQ remain the primary factors that significantly and directly influenced AQ, while CDPV did not function as a mediating mechanism. This study contributed to the academic literature by providing empirical evidence on the direct role of digital audit technology dimensions in enhancing audit quality within the context of digital transaction validation challenges in Indonesia. From a practical perspective, the findings suggest that Public Accounting Firms should prioritize investments in improving both system quality and information quality to strengthen external audit quality directly [33].

5. CONCLUSION

This study provided important insights into the role of digital transformation audit in managing the complexity of digital payment validation and its implications for external audit quality. One of the key findings was that System Quality and Information Quality served as the primary drivers that significantly and directly enhance Audit Quality. Although the rapid growth of digital transactions like QRIS introduced inherent complexities, such as fragmented platforms and varying data formats, the study revealed that this complexity did not significantly mediate the relationship between technology and audit quality. This finding indicated that when auditors were equipped with reliable systems and high-quality information, they were able to maintain high audit standards despite the validation challenges posed by the external digital environment.

For public accounting firms and partners, these findings highlight the need to invest in superior audit technologies strategically. Firms should prioritize upgrading their System Quality and Information Quality, ensuring that tools are not only reliable and flexible but also capable of processing large-scale, real-time data with high accuracy. Leadership should focus on adopting technologies that support automated anomaly detection and the handling of decentralized data, as the results of this study showed that these capabilities directly strengthen audit outcomes. By ensuring that audit infrastructure delivers precise information and stable system performance, firms can effectively mitigate the risks associated with increasing digital transaction volumes without relying on the reduction of transaction complexity as a prerequisite for achieving audit quality.

Based on the findings, several key themes emerged from this study. First, the results indicated that the influence of digital audit technology on audit quality operated primarily through the direct effects of System Quality and Information Quality, rather than through the complexity of digital payment validation. Second, the findings suggested that digital payment validation complexity was shaped more by external environmental factors than by internal audit system characteristics. Building on these themes, future research is encouraged to expand the scope of investigation beyond the internal qualities of audit systems by incorporating external factors such as payment service provider policies, regulatory developments, and platform interoperability challenges. Given the relatively low explanatory power of the mediating variable in this study, future research may apply alternative theoretical frameworks or examine additional variables, including auditor competency, client data governance, and regulatory technology adoption, to provide a more comprehensive understanding of the challenges faced by external auditors in the digital economy.

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