

## Balancing Efficiency and Spirituality: Implementation of Virtual Accounts at Tebuireng Islamic Boarding School Indonesia

**ABSTRACT** - The rapid expansion of financial digitalization has transformed governance practices in educational institutions, including Islamic boarding schools (*pesantren*), where financial transactions are closely intertwined with social and spiritual values. This study aims to examine how the implementation of virtual account (VA) systems at Tebuireng Islamic Boarding School influences administrative efficiency, user satisfaction, and socio-spiritual dynamics. This study employs a qualitative approach with an interpretive phenomenological design. Data were collected through in-depth interviews, participatory observations, and document analysis involving fifteen participants, including financial staff, students' guardians, and institutional managers. The findings indicate that the adoption of VA significantly enhances administrative efficiency through real-time transaction processing, improved transparency, and reduced recording errors, reflecting the principles of New Public Management (NPM). From the perspective of the Technology Acceptance Model (TAM), perceived usefulness and ease of use contribute to increased satisfaction; however, trust and alignment with spiritual values emerge as equally important determinants. Using Cultural-Historical Activity Theory (CHAT), the study further reveals that digitalization reconfigures social interactions, reducing face-to-face engagement traditionally associated with *silaturahmi* and *barakah*, thereby generating tensions between efficiency and spirituality. This study contributes to the literature by demonstrating that financial digitalization in religious institutions is a value-laden process that requires balancing technological efficiency, user trust, and spiritual meaning, offering implications for the development of hybrid governance models in faith-based educational settings.

**ABSTRAK - Menyeimbangkan Efisiensi dan Spiritualitas: Implementasi Virtual Account di Pesantren Tebuireng.** Perkembangan digitalisasi keuangan telah membawa perubahan signifikan dalam tata kelola lembaga pendidikan, termasuk pesantren, yang praktik keuangannya tidak terlepas dari nilai sosial dan spiritual. Penelitian ini bertujuan untuk menganalisis bagaimana implementasi sistem virtual account (VA) di Pondok Pesantren Tebuireng memengaruhi efisiensi administrasi, kepuasan wali santri, serta dinamika sosial-spiritual yang menyertainya. Penelitian ini menggunakan pendekatan kualitatif dengan strategi fenomenologi interpretatif, melalui wawancara mendalam, observasi partisipatif, dan studi dokumen terhadap lima belas informan yang terdiri dari staf keuangan, wali santri, dan pengelola pesantren. Hasil penelitian menunjukkan bahwa penggunaan VA mampu meningkatkan efisiensi administrasi secara signifikan melalui pencatatan transaksi secara real-time, peningkatan transparansi, dan pengurangan kesalahan pencatatan, sejalan dengan prinsip New Public Management (NPM). Dari perspektif Technology Acceptance Model (TAM), kemudahan dan kegunaan sistem meningkatkan kepuasan pengguna, namun faktor kepercayaan serta kesesuaian dengan nilai spiritual juga menjadi penentu utama. Sementara itu, melalui pendekatan Cultural-Historical Activity Theory (CHAT), ditemukan bahwa digitalisasi mengubah pola interaksi sosial dengan berkurangnya kontak langsung yang sebelumnya mengandung nilai *silaturahmi* dan keberkahan, sehingga memunculkan ketegangan antara efisiensi dan spiritualitas. Penelitian ini menegaskan bahwa digitalisasi keuangan di pesantren merupakan proses yang sarat nilai, sehingga memerlukan keseimbangan antara efisiensi teknologi, kepercayaan pengguna, dan makna spiritual dalam pengembangan tata kelola yang berkelanjutan.

**Humaidi<sup>1\*</sup>**  
**Dwi Ari Pertiwi<sup>1</sup>**  
**Rachma Agustina<sup>1</sup>**  
**Meta Ardiana<sup>1</sup>**  
**Srikalimah<sup>2</sup>**

<sup>1</sup>Universitas Hasyim Asy'ari Tebuireng  
Jombang, Indonesia

<sup>2</sup>Universitas Islam Kadiri, Indonesia

\*Corresponding email:

[humaidi@unhasy.ac.id](mailto:humaidi@unhasy.ac.id)

### Article History

Submitted: 12 September 2025

Revised: 08 November 2025

Accepted: 09 December 2025

Published: 13 April 2026

### Keywords

Virtual Account, Financial Efficiency, Parents' Satisfaction, Spiritual Values, New Public Management, Technology Acceptance Model, Cultural-Historical Activity Theory

### JEL Classification

O33, G21, Z12, I22

## INTRODUCTION

The era of digital disruption has reshaped the governance of educational institutions, including religious-based institutions such as Islamic boarding schools (*pesantren*). One significant development is the adoption of digital payment systems through virtual accounts (VA), a form of financial innovation designed to improve efficiency, accountability, and transparency in financial management. According to Bank Indonesia (2024), digital transactions have increased by 13.48% annually, reflecting a clear shift from manual to digital financial practices. However, this transformation is not purely technical. It also involves social, cultural, and spiritual dimensions. In the context of *pesantren*, payment processes are not merely administrative tasks as they are embedded in social interactions and often carry religious meaning, particularly in the relationship between students' guardians and institutional authorities. In this regard, Tebuireng Islamic Boarding School—one of the largest and most influential *pesantren* in Indonesia—offers a compelling case for examining how financial modernization intersects with long-standing spiritual traditions.

Previous studies have demonstrated the advantages of virtual accounts in improving transaction speed, accuracy in financial record-keeping, and transparency (Baharun & Ardillah, 2019; Ahsan et al., 2024). Nevertheless, these studies predominantly emphasize administrative and quantitative dimensions, offering limited insight into the social meanings and spiritual experiences of users. While Anisa (2020) and Nurdiana et al. (2023) acknowledges changes in interaction patterns resulting from digitalization, these studies do not sufficiently conceptualize how technological efficiency intersects with, or potentially conflicts with, the spiritual values embedded within *pesantren* life. This gap highlights the absence of integrative research that examines the paradox between efficiency and spirituality in the financial digitalization of religious institutions through the triangulation of New Public Management (NPM), Technology Acceptance Model (TAM), and Cultural-Historical Activity Theory (CHAT).

To address this gap, the present study adopts a novel theoretical integration of three complementary perspectives. New Public Management (NPM) provides a framework for understanding the rationalization of efficiency and accountability in public institutions. The Technology Acceptance Model (TAM) focuses on factors influencing user acceptance and satisfaction with technological systems. Meanwhile, Cultural-Historical Activity Theory (CHAT) emphasizes the historical and cultural contexts that shape social practices. The integration of these frameworks enables a more comprehensive analysis that extends beyond administrative efficiency to explore the dynamic tensions between technological modernization and the preservation of *pesantren* spiritual identity.

Accordingly, this study investigates how the implementation of virtual accounts at the Tebuireng Islamic Boarding School enhances financial efficiency while simultaneously influencing the satisfaction and spiritual experiences of students' guardians. More specifically, it explores the paradoxes that emerge between efficiency and tradition, as well as between modernization and spirituality. Employing an interpretive phenomenological approach, this research seeks to uncover the subjective meanings constructed by *pesantren* stakeholders in response to financial digitalization. The findings are expected to contribute to the academic discourse on digital financial management in Islamic educational institutions and to offer practical insights for

developing governance models that balance technological innovation with socio-religious values.

## LITERATURE REVIEW

### Digital Payment Systems and Institutional Transformation

The digitization of payment systems within educational institutions has evolved into a critical domain of scholarly inquiry and institutional reform. Virtual accounts (VA), as a core component of digital financial infrastructure, are widely recognized for their capacity to enhance efficiency, transparency, and accountability in financial governance (Riza et al., 2022). Empirical evidence from Indonesia such as Baharun and Ardillah (2019), Ahsan et al. (2024) and global contexts such as Ozili (2021) consistently demonstrates that VA implementation reduces administrative errors, accelerates transaction processes, and strengthens payment compliance mechanisms.

However, the prevailing body of literature remains predominantly technocratic in orientation, privileging measurable administrative outcomes while under-theorizing the embeddedness of financial practices within socio-cultural and spiritual lifeworlds (Ibrahim, 2022). This limitation is particularly salient in *pesantren*, where financial transactions are not merely procedural but are symbolically and relationally constituted. Accordingly, the digitization of financial systems must be conceptualized not only as an efficiency-driven reform but also as a process of institutional transformation that reconfigures meaning, authority, and social interaction.

### Reassessing TAM in Socio-Religious Contexts

The Technology Acceptance Model (TAM) has long been recognized as a foundational framework for explaining user adoption of technological systems. Davis (1989) conceptualized technology acceptance as being primarily influenced by perceived usefulness and perceived ease of use. This framework was later expanded by Venkatesh and Davis (2000), who incorporated additional determinants, including social influence and organizational context, to enhance its explanatory power.

Despite its analytical utility, TAM exhibits epistemological limitations when applied to socio-religious environments characterized by collective identity and normative authority. Ma and Liu (2011) argued that TAM's individualistic and cognition-centered assumptions inadequately capture the moral, cultural, and spiritual dimensions that inform technology adoption in communal settings. In *pesantren*, acceptance of digital payment systems is mediated not only by functional considerations but also by religious legitimacy, *kyai* authority, and the ethical framing of financial practices. Therefore, this study advances a contextualized reinterpretation of TAM by repositioning its core constructs within a broader normative and relational framework. In doing so, it shifts the analytical focus from individual perception to socially embedded acceptance, thereby addressing a critical blind spot in mainstream technology adoption literature.

### NPM and the Limits of Managerial Rationality

New Public Management (NPM) offers a foundational lens for analyzing the diffusion of efficiency-oriented practices in public sector governance. Rooted in principles of managerialism,

performance measurement, and accountability (Hood, 1991), NPM provides a compelling explanation for the adoption of digital financial systems such as VA in institutional contexts.

In *pesantren*, the implementation of VA reflects an ongoing process of administrative rationalization aligned with NPM ideals. Nevertheless, the transposition of managerial logics into religious institutions is not without tension. The emphasis on efficiency and standardization may conflict with deeply embedded spiritual values that prioritize *barakah*, trust-based relationships, and personalized interaction between guardians and institutional actors.

This tension highlights the conceptual limits of NPM when applied to value-laden institutional settings. Rather than viewing efficiency as a purely technical objective, this study reconceptualizes it as a morally situated practice, where accountability extends beyond procedural compliance to encompass ethical and spiritual responsibility. Such a reframing is necessary to avoid the reductionist application of managerial rationality in contexts where meaning and legitimacy are socially constructed.

### **CHAT and the Socio-Cultural Mediation of Technology**

To address the limitations of both TAM and NPM, this study employs Cultural-Historical Activity Theory (CHAT) as an integrative analytical framework. CHAT conceptualizes human activity as a systemic and historically situated phenomenon comprising six interrelated components: subject, object, tools, rules, community, and division of labor (Engeström, 1987).

Within this framework, the implementation of VA is understood as a mediated activity system in which digital tools restructure interactions between administrative staff and students' guardians. The *object* of activity—financial efficiency and user satisfaction—is dynamically negotiated through *rules* (religious norms, institutional policies, digital ethics) and shaped by the *community* context of *pesantren*. The *division of labor* further elucidates how authority and responsibility are distributed among *kyai*, administrators, students, and guardians.

Building on the work of Sannino and Engeström (2018) and Cong-Lem (2022), CHAT enables a process-oriented analysis of how technological interventions generate contradictions, adaptations, and transformations within social systems. Crucially, it provides a mechanism for theorizing how spiritual values are not displaced by technology but are rearticulated through mediated practices. Thus, CHAT extends the analytical scope beyond adoption and efficiency toward understanding the dialectical relationship between technology and culture.

### **Toward an Integrated Theoretical Synthesis**

The integration of NPM, TAM, and CHAT in this study represents a deliberate effort to move beyond fragmented theoretical explanations toward a multi-layered analytical framework. Rather than treating these theories as discrete lenses, this study positions them in a complementary and dialectical relationship. NPM accounts for the structural and institutional drivers of financial digitalization, particularly the imperative for efficiency and accountability. TAM provides insight into the micro-level processes of user acceptance, albeit requiring contextual reinterpretation. CHAT, in turn, bridges these perspectives by situating both institutional rationality and user behavior within a broader socio-cultural and historical context.

This synthesis generates a novel conceptual contribution by framing financial digitalization as a contested and negotiated process, where managerial efficiency, technological acceptance, and spiritual meaning intersect. It highlights that the adoption of VA in *pesantren* is not a linear process of modernization but a dynamic reconfiguration of institutional identity and practice. Accordingly, this study advances the literature by proposing that technological innovation in religious institutions must be understood as a value-laden transformation, in which efficiency gains are continuously balanced against the preservation of spiritual and communal integrity. This integrative perspective responds directly to the identified research gap and provides a theoretically robust foundation for analyzing the paradox of efficiency and spirituality in *pesantren* financial governance.

## **METHODOLOGY**

### **Research Design**

This study employs a qualitative research design using an interpretive phenomenological approach to examine the subjective meanings and lived experiences of students' guardians and *pesantren* administrators in utilizing the virtual account (VA) system. This approach is particularly appropriate for capturing the social, emotional, and spiritual dimensions of financial digitalization, which are often overlooked in quantitative inquiries. Phenomenology facilitates an in-depth exploration of participants' lived experiences, while interpretive phenomenology emphasizes the researcher's role in meaning-making through reflective engagement with the data (Creswell & Poth, 2018; Tuffour, 2017).

Participants were selected through purposive sampling, focusing on individuals directly involved in the implementation and use of the VA system at Tebuireng Islamic Boarding School. A total of fifteen participants were included, consisting of five financial administration staff (aged 25–45 years), eight students' guardians (aged 32–58 years) with varying levels of digital literacy, and two *pesantren* managers responsible for policy and system oversight. All participants had used the VA system for approximately one to three years. Variation in demographic characteristics and technological familiarity was intentionally maintained to enrich the data and enhance transferability. The sample size was determined based on the principle of data saturation, whereby data collection ceased when no new themes emerged (Guest et al., 2006).

### **Data Collection Technique**

Data were collected through a triangulated approach consisting of in-depth semi-structured interviews, participatory observations, and document analysis. This combination of techniques enhances the richness and credibility of the findings. Semi-structured interviews served as the primary data source, allowing participants to express their experiences in a flexible yet focused manner. Each interview lasted between 30 and 60 minutes and was conducted either face-to-face within the *pesantren* environment or online for participants residing outside the area. All interviews were conducted with informed consent, audio-recorded, and transcribed verbatim for analysis.

Participatory observations were conducted to understand the contextual dynamics of VA usage within daily *pesantren* practices, including interactions between administrators and students'

guardians. In addition, institutional administrative documents were reviewed to provide contextual insights and serve as a means of data triangulation. Throughout the data collection process, the researcher remained attentive to cultural and religious norms within the *pesantrén*, ensuring that all interactions were conducted respectfully and ethically.

### **Data Analysis Method**

Data analysis was conducted using thematic analysis as outlined by Braun and Clarke (2006), following a systematic and iterative procedure. The analytical process involved: (1) familiarization with the data through repeated reading of transcripts, (2) generation of initial codes, (3) organization of codes into potential themes, (4) review and refinement of thematic relationships, and (5) interpretation of findings in relation to the theoretical frameworks of New Public Management (NPM), Technology Acceptance Model (TAM), and Cultural-Historical Activity Theory (CHAT). To enhance analytical rigor, NVivo 12 software was utilized to facilitate systematic coding, organization of data, and identification of patterns across participants. The use of qualitative data analysis software improves transparency, consistency, and auditability (Nowell et al., 2017).

Reflexivity was maintained throughout the analytical process to account for the researcher's positionality. As an academic familiar with *pesantrén* culture, the researcher engaged in continuous reflection to balance contextual understanding with analytical distance. To ensure trustworthiness, member checking, peer debriefing, and audit trail documentation were employed, thereby strengthening the credibility, dependability, and confirmability of the findings. Ethical considerations were strictly upheld, including obtaining informed consent, ensuring participant confidentiality, and restricting data use to academic purposes. The research process was conducted in alignment with the cultural and religious values of the Tebuireng Islamic Boarding School.

## **RESULTS AND DISCUSSION**

### **Financial Administrative Efficiency**

The findings indicate that the transformation of the financial management system at Tebuireng Islamic Boarding School through the implementation of virtual accounts (VA) has generated substantial changes in administrative practices. Prior to digitization, payment recording and verification were conducted manually, often resulting in delays, data reconciliation issues, and administrative inefficiencies. The adoption of the VA system enables automated recording and real-time integration with the banking system, allowing financial reports to be generated promptly and accurately. One financial administration staff member described this transition as follows: *"In the past, we had to manually match each proof of transfer. Now, transactions appear directly in the system, and daily reports no longer require days to finalize."*

These findings demonstrate that administrative efficiency extends beyond speed to encompass data accuracy and transparency. Within the framework of New Public Management (NPM), this transformation reflects the operationalization of efficiency and accountability in institutional governance (Hood, 1991). However, in the *pesantrén* context, efficiency is not narrowly understood as cost rationalization or procedural acceleration. Rather, it is framed as a moral and

spiritual obligation associated with the stewardship of public trust and religious accountability. As articulated by one financial manager: *“Transparency matters not only so guardians trust us, but also so we feel spiritually accountable that this mandate is recorded correctly before Allah SWT.”*

This articulation highlights that efficiency in *pesantren* is imbued with theological meaning. From the perspective of Cultural-Historical Activity Theory (CHAT), the VA system functions as a mediating artifact that reconfigures the interaction between the subject (financial administrators) and the object (efficiency and accountability) (Engeström, 1987). The transition from manual to digital tools alters institutional rules and the division of labor, producing contradictions between modern bureaucratic efficiency and long-standing religious traditions centered on *barakah* (blessing-based work).

These findings suggest that *pesantren* are not merely adopting technology but actively renegotiating spiritual and social values through its use. Consistent with Nurkhin et al. (2024), the implementation of accountability systems in *pesantren* produces hybrid governance practices that combine managerial professionalism with religious ethics. Consequently, the VA system not only enhances administrative efficiency but also expands the moral horizon of financial responsibility as a form of *muamalah* worship. Moreover, Pahlevi et al. (2023) demonstrate that trust and perceived ease of use significantly shape public acceptance of digital payment systems, particularly within religious communities. This reinforces the conclusion that financial efficiency in Islamic boarding schools is only considered legitimate when technological systems are perceived as secure, transparent, and aligned with users’ spiritual values.

Thus, VA implementation at Tebuireng Islamic Boarding School fulfills a dual function: as a technological instrument for administrative efficiency and accuracy, and as a medium for internalizing religious values of responsibility and trustworthiness. This challenges the assumption that digitalization necessarily promotes secularization. In *pesantren*, efficiency emerges as a means of reinforcing institutional spiritual integrity.

### **Guardians Satisfaction**

Empirical evidence reveals variations in the level of satisfaction among students’ guardians following VA implementation. Most guardians reported high levels of satisfaction due to increased payment flexibility via ATMs, mobile banking, internet banking, and local banking agents. The system is perceived as practical, time-efficient, and secure, particularly for guardians residing outside the *pesantren*’s locality. VA implementation thus not only enhances administrative efficiency but also shapes users’ perceptions and experiences of *pesantren* financial services.

From a phenomenological perspective, guardians’ satisfaction extends beyond transactional convenience to include feelings of security, transparency, and moral clarity regarding institutional responsibility. One guardian expressed: *“I feel calmer now. The money I transfer immediately appears in the pesantren application. Previously, I had to personally confirm with the treasurer.”*

This experience underscores the centrality of trust in shaping satisfaction. Within the Technology Acceptance Model (TAM), perceived usefulness and perceived ease of use are critical in fostering positive attitudes toward technological systems (Davis, 1989). However, findings from this study indicate that satisfaction among guardians is also significantly influenced by spiritual considerations, particularly beliefs regarding honesty and moral integrity. As another guardian noted: *“It’s not just about being fast. I feel confident because the system is trustworthy and transparent.”*

Such views illustrate that satisfaction in *pesantren* contexts encompasses moral and spiritual dimensions absent from conventional commercial financial systems. From the CHAT perspective, VA systems mediate economic activities (educational payments) and spiritual meanings (trust and inner peace), thereby reshaping social relations between institutions and guardians (Engeström, 1987; Sannino & Engeström, 2018). In parallel, NPM explains the modernization of institutional governance (Hood, 1991), although *pesantren* uniquely adapt these principles by embedding them within spiritual identities.

Consistent with Pahlevi et al. (2023), findings confirm that trust and perceived usefulness drive acceptance of digital systems in religious settings. Similarly, Wati et al. (2022) emphasize that financial accountability in *pesantren* remains inseparable from spiritual responsibility. Therefore, guardians’ satisfaction with the VA system reflects not only technological acceptance but also a broader transformation of spiritual values within *pesantren* governance.

### **Social–Spiritual Dimension**

Beyond efficiency and satisfaction, VA implementation reshapes the social and spiritual fabric of *pesantren* life. This transformation is ambivalent. While transparency and service speed improve, traditional values, such as direct interpersonal interaction and opportunities to seek blessings (*ngalap berkah*), are diminished. Previously, fee payments involved face-to-face interactions that facilitated social bonding and spiritual engagement. A financial manager reflected: *“Previously, guardians came in person, stayed in touch, and sought blessings. Now, everything is transferred. Efficient, but the sense of blessing feels reduced.”*

This transition illustrates an ambivalent impact of digitalization. While efficiency and transparency are enhanced, opportunities for social interaction and spiritual engagement are diminished. Some guardians expressed a perceived loss of spiritual meaning, particularly regarding the absence of direct encounters with religious authorities. These findings strongly align with CHAT, which posits that human activities are mediated by tools, rules, and cultural values (Engeström, 1987). The VA system, as a mediating artifact, transforms not only transactional processes but also the structure of social relations and cultural practices within the *pesantren*.

From the NPM perspective, the adoption of VA reflects a broader shift toward efficiency and accountability (Hood, 1991). However, within *pesantren*, these principles are reinterpreted as “blessed efficiency,” where financial practices are framed as acts of worship. TAM further explains that acceptance of the system is influenced not only by usability but also by its compatibility with religious values such as trust and honesty (Davis, 1989).

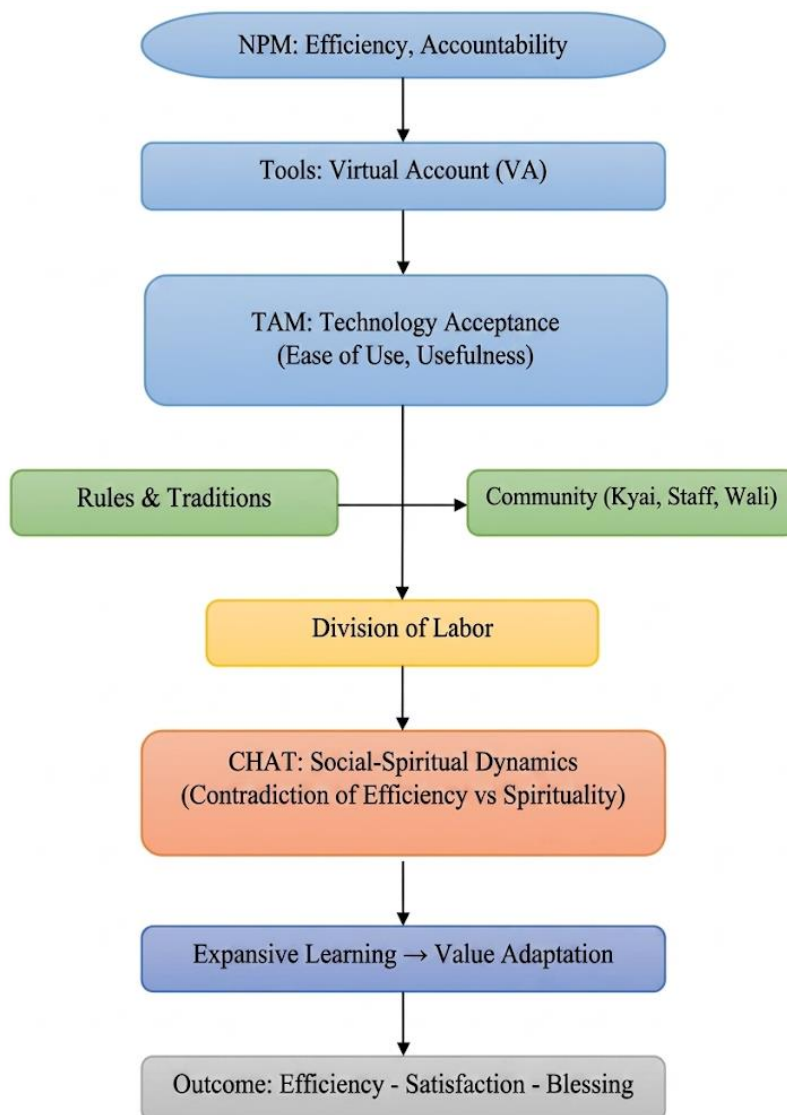
These findings resonate with Wati et al. (2022), Nurkhin et al. (2024), and Nurdiana et al. (2023), these findings indicate that digitalization in *pesantren* produces a hybridization of modern and traditional values, accompanied by feelings of both adaptation and alienation. Therefore, digitalization should not be viewed as a neutral or purely technical process but as a site of negotiation between efficiency and spirituality. Rather than eliminating spiritual values, technology can facilitate their reinterpretation within contemporary institutional practices.

**Table 1. Summary of Research Findings and Thematic Interpretation**

Theme	Findings (Empirical Results)	Interpretation (Theoretical and Literature Discussion)	Implications / Tensions
<b>Financial Administration Efficiency</b>	<ul style="list-style-type: none"> <li>- Administrative workload has been reduced through automated recording and reconciliation.</li> <li>- Time efficiency has improved significantly (approximately 50%) compared to previous manual processes.</li> <li>- Recording errors have decreased substantially, and financial reports are accessible in real time.</li> <li>- Staff are able to reallocate time toward more strategic tasks, such as serving guardians and preparing monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>- These findings support Baharun &amp; Ardillah (2019) and Ahsan et al. (2024), who emphasize the role of virtual accounts in enhancing administrative efficiency in Islamic educational institutions.</li> <li>- They align with New Public Management (NPM) principles (Le &amp; Nguyen, 2025), particularly in promoting efficiency, transparency, and accountability.</li> <li>- The results also reflect the synergy between managerial logic (NPM) and technology adoption (TAM), while highlighting potential tensions with value-laden practices such as <i>barokah</i> within the CHAT framework.</li> <li>- Furthermore, they confirm the concept of <i>perceived usefulness</i> in TAM (Davis, 1989), where system benefits drive user acceptance.</li> </ul>	<p><b>Implication:</b> Increasing professionalization of financial management.</p> <p><b>Tension:</b> Efficiency-driven systems (NPM) may shift or dilute traditional meanings of <i>barokah</i> and institutional flexibility (CHAT).</p>
<b>Guardians' Satisfaction</b>	<ul style="list-style-type: none"> <li>- Most guardians express satisfaction with the flexibility of payment channels (ATMs, mobile banking, bank agents).</li> <li>- Transactions are perceived as faster, safer, and more convenient, particularly for those living outside the region.</li> <li>- Satisfaction is reinforced by automated transaction records, which enhance transparency and reliability.</li> <li>- However, some guardians face challenges due to limited digital literacy, leading to dependence on third parties and concerns about transaction validity.</li> <li>- Several guardians suggest the need for digital assistance to ensure clarity and security in payment procedures.</li> </ul>	<ul style="list-style-type: none"> <li>- These findings are consistent with Anisa (2020), who reports increased user satisfaction with digital systems in religious education contexts.</li> <li>- The persistence of a digital divide (Ozili, 2021) highlights disparities in technological literacy among users.</li> <li>- The results affirm the role of <i>perceived ease of use</i> in TAM (Venkatesh &amp; Davis, 2000) as a determinant of user satisfaction.</li> <li>- From a CHAT perspective, acceptance is shaped not only by technical usability but also by social legitimacy, including the authority of <i>kyai</i> and prevailing community norms.</li> <li>- Thus, satisfaction is relational and socially constructed, rather than purely individual.</li> </ul>	<p><b>Implication:</b> The need to strengthen digital literacy and promote more human-centered communication strategies.</p> <p><b>Tension:</b> Functional utility (TAM) may conflict with spiritual and relational values that emphasize personal closeness (CHAT).</p>
<b>Social–Spiritual Dimension</b>	<ul style="list-style-type: none"> <li>- Face-to-face interactions in payment processes have declined.</li> <li>- Opportunities for social bonding (<i>silaturahmi</i>) and the experience of <i>barokah</i> are reduced.</li> </ul>	<ul style="list-style-type: none"> <li>- These findings support Orlikowski &amp; Iacono (2001), who conceptualize technology as a socially embedded artifact.</li> <li>- They align with CHAT, which emphasizes that technology adoption</li> </ul>	<p><b>Implication:</b> Potential erosion of spiritual meaning in financial</p>

Theme	Findings (Empirical Results)	Interpretation (Theoretical and Literature Discussion)	Implications / Tensions
	<ul style="list-style-type: none"> <li>- Some guardians perceive digital transactions as impersonal and lacking spiritual value compared to direct encounters.</li> <li>- Others view these changes as a necessary adaptation to technological advancement.</li> <li>- Many believe that efficiency does not negate religious values, as long as intentions remain aligned with worship and trust.</li> </ul>	<ul style="list-style-type: none"> <li>is shaped by historical values and community traditions.</li> <li>- The results are also consistent with Nurdiana et al. (2023), who identify feelings of social alienation in digitalized environments.</li> <li>- Overall, the findings reveal an ambivalence: while efficiency improves, social and spiritual dimensions may be reconfigured or diminished.</li> </ul>	<ul style="list-style-type: none"> <li>practices within <i>pesantren</i>.</li> <li><b>Tension:</b> Digital modernization (NPM) may conflict with values of <i>barokah</i> and communal relationships (CHAT).</li> </ul>

Table 1 synthesizes three core themes such as financial efficiency, guardian satisfaction, and social-spiritual transformation by linking empirical findings to NPM, TAM, and CHAT frameworks. It demonstrates how *pesantren* financial governance in the digital era reflects hybrid institutional logics integrating professionalism and spirituality.



**Figure 1. Integrative Conceptual Model of VA Implementation in *Pesantren***  
 (Source: Processed by the author, 2025)

Figure 1 illustrates an integrated conceptual model wherein NPM provides the rationalization for digital financial systems, TAM explains user acceptance mechanisms, and CHAT contextualizes social and spiritual mediation. The interaction of these frameworks forms an organizational learning cycle that supports sustainable financial governance and spiritual continuity.

## DISCUSSION

This study reveals that the implementation of the virtual account (VA) system at Tebuireng Islamic Boarding School constitutes a multifaceted institutional transformation that goes beyond mere technical enhancement of financial administration. Rather than serving exclusively as an efficiency-oriented instrument, digital financial systems within *pesantren* function as socially and spiritually embedded practices that reshape patterns of trust, user satisfaction, and institutional meaning. These findings challenge the conventional assumption that digitalization represents a purely technical or linear trajectory of modernization.

From the perspective of New Public Management (NPM), the adoption of VA clearly embodies the principles of efficiency, transparency, and accountability in financial governance (Hood, 1991). Features such as automated transaction recording, real-time reconciliation, and streamlined reporting processes significantly improve administrative performance and reduce the operational workload of staff. These results are consistent with prior studies emphasizing the role of digital financial systems in enhancing governance professionalism in Islamic educational institutions (Baharun & Ardillah, 2019; Ahsan et al., 2024). However, this study contributes additional insight by demonstrating that efficiency within *pesantren* is not interpreted solely through a managerial or technocratic lens. Instead, it is understood as a form of moral accountability, where transparent and accurate financial management is viewed as a responsibility not only to stakeholders but also to God.

The Technology Acceptance Model (TAM) provides a useful framework for understanding how students' guardians perceive and respond to the VA system. Perceived usefulness—manifested through faster transactions, flexible payment channels, and enhanced security—as well as perceived ease of use, positively influence user satisfaction and acceptance (Davis, 1989; Venkatesh & Davis, 2000). These findings are in line with prior research highlighting the importance of trust and usability in the adoption of digital payment systems, particularly in religious contexts (Pahlevi et al., 2023). Nevertheless, the findings also indicate that TAM alone is insufficient to fully capture user experiences in *pesantren*. Guardians' satisfaction is shaped not only by functional considerations but also by spiritual dimensions, including values of honesty, transparency, and psychological reassurance. In addition, disparities in digital literacy contribute to heightened anxiety among some users, thereby diminishing perceived ease of use and reinforcing concerns related to the digital divide in faith-based communities (Ozili, 2021).

Cultural-Historical Activity Theory (CHAT) offers a deeper analytical lens to understand the socio-spiritual tensions that accompany increased efficiency (Engeström, 1987; Sannino & Engeström, 2018). Within this framework, the VA system operates as a mediating artifact that reconfigures established activity systems within the *pesantren*. While digitalization enhances efficiency and accountability, it simultaneously reduces face-to-face interactions that previously

carried significant symbolic meanings, such as *silaturahmi* and *ngalap berkah*. This transformation creates a contradiction within the activity system, where technological rationality intersects—and at times conflicts—with deeply rooted cultural and religious practices, a dynamic similarly observed by Nurdiana et al. (2023). Importantly, not all participants perceive this shift negatively. Some guardians interpret the transition as a necessary adaptation, suggesting that spirituality is not diminished but rather recontextualized within digital practices.

Taken together, the integration of NPM, TAM, and CHAT highlights a central paradox in the financial digitalization of *pesantren*. While the implementation of VA enhances administrative efficiency (NPM), user satisfaction is contingent upon both technological acceptance factors (TAM) and the alignment of digital practices with spiritual and communal values (CHAT). These findings support prior studies indicating that *pesantren* governance operates through hybrid logics that combine modern managerial principles with religious ethics (Wati et al., 2022; Nurkhin et al., 2024). This study extends the existing literature by demonstrating that financial modernization in *pesantren* is not a complete shift toward managerial rationality but rather an ongoing process of negotiation among efficiency, social relations, and spiritual meaning.

Overall, this discussion underscores that digitalization in Islamic boarding schools is neither inherently secularizing nor purely instrumental. Instead, it represents a morally situated institutional process that requires continuous alignment between technological efficiency, users' digital competencies, and religious values. The effectiveness of VA systems depends not only on their technical reliability but also on their social legitimacy and spiritual resonance. Consequently, sustainable financial governance in *pesantren* relies on the ability of institutions to harmonize technological innovation with communal trust and religious intention.

## CONCLUSION

This study demonstrates that the implementation of virtual accounts (VA) at Tebuireng Islamic Boarding School constitutes a significant innovation that generates a paradox between administrative efficiency and the preservation of spiritual values. Through the integrative use of the New Public Management (NPM), Technology Acceptance Model (TAM), and Cultural-Historical Activity Theory (CHAT), the findings demonstrate that financial digitalization in *pesantren* is not a neutral technical process but one that actively reconstructs social relations and religious meanings embedded in financial practices. Three key dynamics emerge from the analysis. First, VA implementation enhances efficiency, transparency, and accountability in line with NPM principles, while simultaneously introducing moral and spiritual implications that require careful management. Second, students' guardians generally experience increased satisfaction due to transaction convenience and security; however, this satisfaction remains strongly dependent on trust and the perceived alignment of the system with values of honesty and *barakah*, which underpin the moral legitimacy of the *pesantren*. Third, the shift from face-to-face payment rituals to impersonal digital transactions alters the social-spiritual meaning of financial interactions, reflecting an ongoing tension between modernization and tradition.

From a practical and policy perspective, the findings suggest that *pesantren* need to cultivate a hybrid model of financial governance that balances managerial efficiency with spiritual wisdom. Such a model can be realized through several strategic measures: strengthening digital literacy

education grounded in Islamic ethical values, creating periodic opportunities for social and spiritual interaction despite the use of online transactions, and developing feedback mechanisms that connect system performance with the trust and satisfaction of students' guardians. Through these approaches, efficiency need not be positioned as an opposing force to spirituality. Instead, technological innovation can function as a means of reinforcing moral accountability and institutional trust, thereby supporting the long-term sustainability of *pesantren* governance in the digital era.

Despite its contributions, this study has several limitations. First, the findings are based on a single *pesantren* case study, which may limit their generalizability to other Islamic boarding schools with different institutional histories or governance structures. Second, the qualitative design captures in-depth perceptions but does not quantitatively measure the extent of efficiency or satisfaction changes. Future research could address these limitations by employing comparative multi-site studies, mixed-methods approaches, or longitudinal designs to examine how socio-spiritual negotiations around digital finance evolve over time. Further studies may also explore the perspectives of students and religious leaders more extensively to deepen understanding of how technological efficiency can be harmonized with communal rituals and spiritual continuity in diverse *pesantren* contexts.

## REFERENCES

- Ahsan, M. N., Imroni, M. H., & Kurnia, S. H. A. (2024). Dampak positif implementasi virtual account santri di pesantren. *Management of Education: Jurnal Manajemen Pendidikan Islam*, 10(2), 108–115. <https://doi.org/10.18592/moe.v10i2.12456>
- Anisa, L. N. (2020). Pelayanan prima berorientasi *customer satisfaction* melalui pembayaran virtual account di Pesantren Mahasiswa An Najah Purwokerto. *Jurnal Bisnis dan Manajemen*, 1(3), 1–86. <https://repository.uinsaizu.ac.id/7969/>
- Baharun, H., & Ardillah, R. (2019). Virtual account santri: Ikhtiyar pesantren dalam memberikan layanan prima berorientasi *customer satisfaction* di pondok pesantren. *Islamicconomic: Jurnal Ekonomi Islam*, 10(1), 1–20. <https://doi.org/10.32678/ije.v10i1.129>
- Bank Indonesia. (2024). *Laporan kelembagaan Bank Indonesia: Triwulan IV 2023*. Bank Indonesia.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://psychology.ukzn.ac.za/?mdocs-file=1176>
- Cong-Lem, N. (2022). Unravelling cultural-historical activity theory (CHAT): Leontiev's and Engeström's approaches to activity theory. *Knowledge Cultures*, 10(1), 84–103. <https://doi.org/10.22381/kc10120225>
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–339. <https://doi.org/10.2307/249008>
- Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research*. Orienta-Konsultit. <https://lchc.ucsd.edu/mca/Paper/Engestrom/Learning-by-Expanding.pdf>
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 59–82.

- <https://doi.org/10.1177/1525822X05279903>
- Hood, C. (1991). A public management for all seasons? *Public Administration*, 69(1), 3–19. <https://doi.org/10.1111/j.1467-9299.1991.tb00779.x>
- Ibrahim, A. (2022). Perspectives on the Islamic Economic and Financial System in the Contemporary World. *Share: Jurnal Ekonomi dan Keuangan Islam*, 11(1), vi-ix. <https://doi.org/10.22373/share.v11i1.14949>
- Le, D, Ha, P., & Nguyen, D. K. (2025). Financial inclusion and fintech: A state-of-the-art systematic literature review. *Financial Innovation*, 11(1), Article 41. <https://doi.org/10.1186/s40854-024-00741-0>
- Ma, Q., & Liu, L. (2011). The technology acceptance model. In *Advanced topics in end user computing* (Vol. 4). IGI Global. <https://doi.org/10.4018/9781591404743.ch006>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1), 1–13. <https://doi.org/10.1177/1609406917733847>
- Nurdiana, R., Rokhimah, A., & Yuliana, M. E. (2023). Penerapan teknologi komunikasi melalui sistem informasi manajemen di Pondok Pesantren Darul Arqom Karanganyar. *Sibatik Journal*, 2(12), 3877–3886. <https://publish.ojs-indonesia.com/index.php/SIBATIK>
- Nurkhin, A., Rohman, A., & Prabowo, T. J. W. (2024). Accountability of *pondok pesantren*: A systematic literature review. *Cogent Business & Management*, 11(1), Article 2332503. <https://doi.org/10.1080/23311975.2024.2332503>
- Orlikowski, W. J., & Iacono, C. S. (2001). Desperately seeking the “IT” in IT research: A call to theorizing the IT artifact. *Information Systems Research*, 12(2), 121–134.
- Ozili, P. K. (2021). Financial inclusion: Globally important determinants. *Financial Internet Quarterly*, 17(4), 1–11. <https://doi.org/10.2478/fiqf-2021-0023>
- Pahlevi, R., Zulpahmi, Z., Al-Azizah, U. S., & Hasibuan, A. A. (2023). Adoption of fintech services for sharia bank users in Indonesia: An extended TAM approach. *Equilibrium: Jurnal Ekonomi Syariah*, 11(1), 27–46. <https://doi.org/10.21043/equilibrium.v11i1.19641>
- Rahmati, A., & Ibrahim, A. (2022). Strategi pengembangan perbankan syariah dalam menghadapi financial technology. *Istinbath*, 21(1), 125-141. <https://doi.org/10.20414/ijhi.v21i1.490>
- Riza, A., Ibrahim, A., & Azhar, F. (2022). Pengaruh Teknologi Informasi dan Kualitas Layanan Terhadap Kepuasan Nasabah Bank Syariah Banda Aceh. *Jurnal Ilmiah Mahasiswa Ekonomi Dan Bisnis Islam*, 3(1), 9-21. <https://doi.org/10.22373/jimebis.v3i1.247>
- Sannino, A., & Engeström, Y. (2018). Cultural-historical activity theory: Founding insights and new challenges. *Cultural-Historical Psychology*, 14(3), 43–56. <https://doi.org/10.17759/chp.2018140304>
- Tuffour, I. (2017). A critical overview of interpretative phenomenological analysis: A contemporary qualitative research approach. *Journal of Healthcare Communications*, 2(4), Article 93. <https://doi.org/10.4172/2472-1654.100093>
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186–204. <https://doi.org/10.1287/mnsc.46.2.186.11926>
- Wati, R., Ardini, L., & Fidiana, F. (2022). The implementation of spiritual and financial accountability in Islamic boarding schools. *Al-Uqud: Journal of Islamic Economics*, 6(1), 84–95. <https://doi.org/10.26740/aluqud.v6n1.p84-95>