

Digital Financial Inclusion in Islamic Boarding Schools: Practices, Challenges, and Socioeconomic Impacts on Indonesian Students

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 <http://ejournal.iainmadura.ac.id/index.php/iqtishadia>
10.1905/iqtishadia.v12i2.21906

ARTICLE INFO

Keywords
Digital Financial,
Islamic Boarding Schools,
Students

Article history

Received: 6 Sep 2025
Revised: 27 Okt 2025
Accepted: 25 Nov 2025
Available online: 22 Dec 2025

ABSTRACT

This study examines the implementation of digital financial inclusion in Islamic boarding schools (pesantren) by analyzing transaction practices, barriers to adoption, and socioeconomic implications for students and institutional governance. Using a qualitative approach, this case study was conducted at Puncak Darussalam Islamic Boarding School and Al Amien Prenduan Islamic Boarding School in Madura, Indonesia, with data collected through in-depth interviews, observations, and documentation involving school administrators and students. Findings indicate that the adoption of digital financial services, both card-based and biometric, has transformed traditional cash transactions into a more efficient, secure, and transparent system, reducing the risk of money loss and improving parental monitoring of students' spending. Students demonstrated positive acceptance of these systems, as their ease of use and usability encourage continued utilization, which aligns with the Technology Acceptance Model. Limiting the number of digital transactions for students contributes to the development of responsible consumption behavior and savings habits, supporting the principles of Behavioral Finance Theory. However, technological infrastructure constraints, cybersecurity concerns, and the digital literacy gap among parents remain significant challenges that may hinder optimal adoption. This study highlights the need for infrastructure strengthening, enhanced cybersecurity, and ongoing digital financial education for students and parents, as well as broader collaboration with banking and fintech institutions to improve system interoperability and sustainability. This research makes an original contribution by positioning Islamic boarding schools (pesantren) as strategic agents of financial inclusion within the religious education ecosystem and as catalysts for digital economic transformation in Indonesia.

INTRODUCTION

Islamic boarding schools (Islamic boarding schools), as the oldest Islamic educational institutions in Indonesia, hold a strategic role not only in the development of religious education but also in the socio-economic empowerment of communities¹. Currently, the number of Islamic boarding schools has reached 41,599 with a total of 4,834,107 students (santri), positioning Islamic boarding schools as a significant and socially influential ecosystem with strong potential to drive digital-based economic transformation². In the context of national financial inclusion, Islamic boarding schools represent a promising avenue for expanding the reach of digital financial inclusion, given that Indonesia's financial inclusion index is still at 75.02%, indicating an urgent need to widen access to financial services for communities that remain excluded from formal financial services³. Digital financial inclusion refers to the utilization of technology-based financial services to expand public access to formal financial systems⁴.

Along with the acceleration of digital transformation, Islamic boarding schools face both opportunities and challenges in adopting digital financial services to strengthen institutional independence and enhance transparency in students' financial administration. Several Islamic boarding schools have begun implementing digital financial services for administrative payments and food and beverage transactions within the school environment. The implementation schemes include card-based payment systems and biometric technologies such as fingerprint authentication. This transformation is not only expected to increase efficiency but also to cultivate a culture of digital financial literacy among students.

However, academic studies on digital financial services within Islamic boarding schools remain limited. Most previous studies emphasize educational dimensions and curriculum development⁵⁶⁷, whereas economic studies in Islamic boarding schools primarily focus on entrepreneurship and business training⁸⁹¹⁰. Very few studies have examined the

¹ Dedy Achmad Kurniady and Zaini Hafidh, "Empowerment Boarding School Institution - Study Fenomenologis Enterpreneurship Role of Kyai in Pondok Pesantren in Indonesia" 1, no. Ices 2017 (2018): 158–65, <https://doi.org/10.5220/0007037601580165>.

² M. TaufiqurRakhman, "Kebijakan Kementerian Agama Dalam Membangun Kemandirian Pesantren Di Indonesia," 2024, https://web.iaiglobal.or.id/assets/files/file_publikasi/Mukhammad_Taufiqur_Rakhman_RASHID_September_2024.pdf?utm.

³ OJK, "Survei Nasional Literasi Dan Inklusi Keuangan Tahun 2024," 2024, [https://ojk.go.id/berita-dan-kegiatan/publikasi/Documents/Pages/Survei-Nasional-Literasi-dan-Inklusi-Keuangan-\(SNLIK\)-2024/Survei-Nasional-Literasi-dan-Inklusi-Keuangan-\(SNLIK\)-2024.pdf](https://ojk.go.id/berita-dan-kegiatan/publikasi/Documents/Pages/Survei-Nasional-Literasi-dan-Inklusi-Keuangan-(SNLIK)-2024/Survei-Nasional-Literasi-dan-Inklusi-Keuangan-(SNLIK)-2024.pdf).

⁴ Sulisty Rusgianto, "Dampak Inklusi Keuangan Digital Terhadap Pertumbuhan Ekonomi Berkelanjutan : Perspektif Indonesia Berita Terkini," 2024, <https://unair.ac.id/dampak-inklusi-keuangan-digital-terhadap-pertumbuhan-ekonomi-berkelanjutan-perspektif-indonesia/?utm>.

⁵ Moh Syafi and Lestari Widodo, "Improving the Quality of Education in Islamic Boarding School-Based Schools" 2, no. 1 (2024): 249–60, <https://doi.org/https://doi.org/10.62740/jppuq.v2i1.224>.

⁶ Ahmad Barizi Ahmad Faisol, Baharuddin, Moh. Padil, "Implementation of Character-Based Holistic Education in Islamic Boarding School Educational Institutions" 2, no. 9 (2024): 1–12, <https://doi.org/https://journalenrichment.com/index.php/jr/article/view/234>.

⁷ Nur Agus Salim et al., "Islamic Boarding School Leadership Innovation: From Traditional to Modernization of Education," *Munaddhomah* 5, no. 4 (2024): 447–60, <https://doi.org/10.31538/munaddhomah.v5i4.1392>.

⁸ Naimah et al., "Entrepreneurship Empowerment Strategy in Islamic Boarding Schools: Lesson from Indonesia," *Jurnal Pendidikan Islam* 9, no. 2 (2020): 235–62, <https://doi.org/10.14421/jpi.2020.92.235-262>.

adoption of digital financial services specifically, including the dynamics of implementation challenges, technology resistance, digital literacy among students, or the socio-economic impacts of digital financial inclusion. As a result, there remains a considerable research gap in understanding the role of financial digitalization as an instrument for economic transformation within Islamic boarding schools.

This article aims to bridge that gap by comprehensively analyzing the practice of digital financial inclusion in Islamic boarding schools while highlighting its theoretical contribution to enriching the literature on economics and digital transformation within religious-based institutions. The theoretical contribution of this study lies in introducing a new perspective that positions Islamic boarding schools as agents of financial inclusion, capable of accelerating national financial inclusion by adopting digital financial services. Empirically, this article provides deeper insights into how digital payment governance can foster independence, efficiency, and transparency within the Islamic boarding school ecosystem.

In line with this objective, the article addresses three main research questions: (1) how digital financial inclusion is practiced in Islamic boarding schools, (2) what challenges arise during its implementation, and (3) what socio-economic impacts digital financial inclusion has on students and Islamic boarding school administrators. This study is built on the assumption that the digitalization of payment systems constitutes a strategic effort to replace traditional cash-based transactions, which have long dominated economic activities within Islamic boarding schools.

METHODS

In the current era of technological transformation, Islamic boarding schools are faced with the challenge of adapting to technology, including in financial management. Boarding schools not only serve as religious educational institutions but also as centers for financial literacy for the students who study there. Therefore, this article focuses on digital financial inclusion in Islamic boarding schools as a strategic step to strengthen their role and existence in modern era.

This research is qualitative, using two Islamic boarding schools on Madura Island, Indonesia, as research objects, namely Pondok Pesantren Puncak Darussalam in Pamekasan and Pondok Pesantren Al Amien Prenduen in Sumenep. Data were obtained through interviews, observations, and documentation. Interviews were conducted with the management and students of the boarding schools to understand the practices of digital financial inclusion and the challenges faced. Observations were used to see the socioeconomic impact of digital financial inclusion on students' behavior in the boarding schools. Interviews and observations were conducted over three weeks, involving dozens of students and boarding school managers as informants.

The collected research data were analyzed through three stages, as indicated by Sugiono, starting from data exploration, data reduction, data validity testing, and conclusion

⁹ Ahmad Ghifary Rizalun Nafis, Nurfatin Nazilah Binti Zainol, and Millaturrofi'ah Millaturrofi'ah, "The Implementation Strategy of Non-Cash Payment Systems in The Islamic Boarding School Through Analytical Hierarchy Process Approach," *Economica: Jurnal Ekonomi Islam* 12, no. 1 (2021): 27–53, <https://doi.org/10.21580/economica.2021.12.1.6557>.

¹⁰ Dahlan Susilo, Muhammad Dwi Nugroho, and Diyah Ruswanti, "Student Tuition Fee Management Using Web-Based Application System," *Tepian* 4, no. 2 (2023): 80–88, <https://doi.org/10.51967/tepiant.4i2.2643>.

drawing¹¹. The data analysis process in this research began with exploring and testing data from theoretical studies and previous findings, which facilitated the researcher in describing the main issues. The researcher sorted and examined the field data collected and performed data reduction according to the research problems. Subsequently, the researcher conducted data validity testing through source triangulation, which included interviews, observations, and documentation. After that, the researcher interpreted the data and drew conclusions regarding digital financial inclusion in Islamic boarding schools in terms of practices, challenges, and socioeconomic impacts

RESULT AND DISCUSSION

Implementation of Digital Financial Inclusion in Islamic Boarding Schools.

The development of digital financial services in Indonesia is a result of the 4.0 industrial era, which has driven changes in information technology and influenced changes in people's lifestyles in transactions, namely through the presence of financial technology innovations that offer digital financial services (e-money) as a transaction medium. This digital financial service has transformed the cash payment system into digital payments (e-money), including card-based systems such as debit and credit cards, and the use of artificial intelligence to present payment options via QR codes, mobile banking, fingerprint, and others.

Bank Indonesia, in 2017, implemented various programs to enhance community access to financial services in Indonesia using the boarding school community approach as a strategy for Islamic Financial Inclusion¹². Bank Indonesia chose Islamic Boarding schools as agents of Digital Financial Services because they are known influencers, have communities, and have experience serving zakat, infak, and other micro-financial transactions at the boarding schools. In terms of products, digital money (e-money) lacks interest factors that could lead to usury, which contradicts Sharia principles (Indonesia, 2023).

As one of the oldest educational institutions in Indonesia, boarding schools have great potential to enhance financial literacy and community inclusion through digital financial services within the school environment. According to the Ministry of Religious Affairs, in 2024, the number of boarding schools in Indonesia increased to 41,599, with 4,834,107 students and 362,558 educators and educational staff¹³. This number indicates that Indonesia's large number of boarding schools has untapped potential, especially for improving financial literacy and community inclusion through digital financial services.

The use of digital financial services in boarding schools is expected to enhance students' financial literacy in making financial decisions, especially in prioritizing needs to avoid irrational consumer behavior and ensure their financial expenditures do not exceed their income. This approach aligns with Behavioral Financial Theory, which states that financial behavior is influenced by psychological factors such as locus of control, financial attitudes, and financial literacy. People with a positive locus of control tend to avoid

¹¹ Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif Dan Kombinasi (Mixed Methods)*, Alfabeta (Bandung: Alfabeta, 2016).

¹² Ahmad Winarno, "BI Gandeng Pondok Pesantren Untuk Percepat Gerakan Non-Tunai," 2017, <https://ekonomi.kompas.com/read/2017/11/07/150418226/bi-gandeng-pondok-pesantren-untuk-percepat-gerakan-non-tunai>.

¹³ TaufiqurRakhman, "Kebijakan Kementerian Agama Dalam Membangun Kemandirian Pesantren Di Indonesia."

impulsive purchases and prioritize future needs¹⁴. In the current era of technological transformation, boarding schools continue to evolve in line with the demands of the times while maintaining traditional values and adopting new practices (المحافظة على القديم الصالح والأخذ بالجديد الأصلح)¹⁵. One of these is adopting digital financial services technology as a transaction medium to improve students' financial literacy, including the function of money, while also educating them to be wiser spenders by prioritizing needs over wants.

Currently, several Islamic boarding schools in Indonesia have begun using digital financial services in the school environment, both for administrative fee payments and for purchasing food and beverages within the school environment, using digital payment systems based on cards, as seen in Pondok Pesantren Puncak Darussalam Pamekasan, or digital payment systems based on fingerprint technology, as seen in Pondok Pesantren Al Amien Prenduan. The implementation of digital financial services in Pondok Pesantren Puncak Darussalam began around 2015 under the name E-NuQood via a Short Message System (SMS) Gateway, which has since evolved into a Cash Management System integrated with Bank Syariah Indonesia (BSI) and synchronized with the E-NuQood digital financial service application¹⁶. Meanwhile, the implementation of digital financial services in Pondok Pesantren Al Amien Prenduen began around 2010 using a card-based payment system, which in 2019 was replaced by a Cash Management System with Bank BNI, synchronized with a fingerprint-based digital financial service application called SASTMI¹⁷.

In general, the education on digital financial services E-NuQood and SASTMI is introduced at the beginning of new student registration, covering how to use e-money services in boarding schools. Students are required to create a profile data recording in the application database, followed by printing student cards that contain a unique registered barcode with student information. Subsequently, the boarding school management distributes Virtual Accounts to students' parents as a substitute for bank account numbers to top up funds that students can later use for shopping. When making transactions, students only need to scan the unique barcode on their student card at the cashier's scanner. At Pondok Pesantren Al Amien, in addition to scanning the unique registered barcode, the cashier will request that students provide additional instructions to record their fingerprints on the fingerprint machine as validation for the transaction.

In implementing digital financial services, boarding schools set transaction limits as a learning tool to help students live frugally and avoid wasteful behavior. Pondok Pesantren Puncak Darussalam sets a daily transaction limit of IDR 10,000 for all transactions, which can be increased with the E-NuQood admin's permission to accommodate urgent funding needs, such as purchasing toiletries or prayer equipment¹⁸. As for Pondok Pesantren Al Amien, the

¹⁴ Nely Asma Dewi, Buyung Sarita, and Nuryamin Budi, "Pengaruh Literasi Keuangan , Pengetahuan Keuangan , Locus of Control , Dan Hedonisme Lifestyle Terhadap Financial Management Behavior (Pada Mahasiswa Jurusan Manajemen FEB-UHO)," *Jurnal HOMANIS: Halu Oleo Manajemen Dan Bisnis* 2, no. 3 (2025): 754–69, <https://doi.org/10.55598/homanis.v2i3>.

¹⁵ Anton Mukarrom and Ibn Thoyib, "Moderasi Beragama Pesantren Dalam Setiap Modernisasi Pendidikan (Telaah Kaidah Maslahat Ushul Fiqh)," *Jurnal Dampar: Dirasat Asriyah Mutahadirah*, no. 2 (2023): 273, <https://ejournal.uit-lirboyo.ac.id/index.php/mujalasat/article/view/3630>.

¹⁶ Abdullah, "Financial Treasurer of Pondok Pesantren Puncak Darussalam, Direct Interview (12 July 2023).," 2023.

¹⁷ Sumardi, "Financial Staff of the Al Amien Islamic Boarding School of Tahfidz, Live Interview (July 14, 2023).," vol. 80, 2023.

¹⁸ Muzammil, "Chairman of the Management of Puncak Darussalam Islamic Boarding School, Live Interview (July 19, 2023).," 2023.

management classifies transactions into two types. The first transaction for buying snacks and beverages is limited to IDR 100,000 per week. For transactions outside of buying snacks and drinks, such as purchasing toiletries, prayer equipment, books, or learning materials, there are no restrictions based on the need to facilitate students' transactions¹⁹. Students can monitor all transactions by opening the digital financial services application or by requesting a transaction report from the digital financial services management admin via WhatsApp.

Currently, the E-NuQood digital financial service system at Pondok Pesantren Puncak Darussalam focuses solely on financial transactions. It will be expanded to include financial reports for the boarding school, donor reports, and academic reports for students, such as report card grades, student achievements, disciplinary cases, etc. Meanwhile, the SASTMI digital financial service system at Pondok Pesantren Al Amien Prenduen has provided several integrated services, ranging from financial transaction services to student administration systems for academic achievements, permissions, violations, and more. The boarding school management has responded positively to this digital service, as it supports the digitalization of boarding schools by reducing student losses from theft and other issues. In other words, the presence of digital financial inclusion can reduce the incidence of theft and other crimes²⁰. From the perspective of students' parents, there is a positive response and support for the implementation of digital financial services because this system is very efficient in involving parental control to monitor students' spending and to know how much balance remains in E-NuQood and SASTMI. Parents can request reports on students' expenditures through the application or contact the digital financial services management admin via WhatsApp or phone.

Challenges of Implementing Digital Financial Inclusion in Islamic Boarding Schools

Limited technological infrastructure is the primary challenge boarding schools face in implementing digital financial inclusion. Some boarding schools experience technical difficulties, such as unstable internet connections. The implementation of digital financial inclusion in boarding schools still relies on local-area Wi-Fi networks, making network quality for accessing digital financial service applications unstable. This local network condition also makes digital financial services only accessible within the boarding school environment covered by the network²¹. This condition offers greater security against external hacking threats, but it also makes digital financial services exclusive to the boarding school environment. This aligns with findings from Bank Indonesia, which states that the availability of infrastructure is one of the main challenges in developing the digital payment ecosystem in Indonesia²².

This network issue is closely related to the electricity conditions in the boarding school environment. Many boarding schools located in remote areas face an unstable electricity supply. Until now, a stable, continuous electricity supply has remained a significant

¹⁹ Lutfiyanto, "Administrative Staff of the Al Amien Islamic Boarding School of Tahfidz, Direct Interview (July 18, 2023).," 2023.

²⁰ Richard Wright et al., "Less Cash, Less Crime: Evidence from the Electronic Benefit Transfer Program," *Journal of Law and Economics* 60, no. 2 (2017): 361–83, <https://doi.org/10.1086/693745>.

²¹ Abdullah, "Financial Treasurer of Pondok Pesantren Puncak Darussalam, Direct Interview (12 July 2023)."

²² Bank Indonesia, "Laporan Tahunan Bank Indonesia 2021" (Jakarta, 2021), https://www.bi.go.id/id/publikasi/laporan/Documents/LTBI-2021_.pdf.

obstacle to the development of digital financial services outside Java Island²³, including in Madura Island. When the electricity goes out, the local network used to access digital financial services will also be affected. To address this issue, boarding schools have implemented emergency power backup systems to support electricity needs during outages. This system consists of an Uninterruptible Power Supply (UPS) and generator sets. The use of UPS on computer servers allows them to remain operational for about two hours after a power outage. This two-hour window provides management with an opportunity to turn on the second backup power source, the generator set. However, this method incurs additional costs, especially if the power outage is long enough²⁴.

The implication of using a local network for digital financial services is the need for interoperability between financial transaction data from boarding schools and bank data in real time. Every transaction with external parties, including incoming and outgoing transfers, must be manually authorized by the boarding school's financial staff. Students sometimes have to wait up to 2 hours for their parents' money to be credited to their digital financial accounts. The issue of interoperability and integration between banking systems and digital financial services is a major challenge to accelerating financial inclusion in Indonesia²⁵. Meanwhile, studies from the Asian Development Bank emphasize the importance of real-time interoperability to enhance the efficiency of this digital financial ecosystem²⁶.

In addition to technical challenges, implementing digital financial inclusion in boarding schools also faces human resources challenges. Students and their parents who are still technologically illiterate, especially those from rural areas, require special support from boarding schools to help them become familiar with these financial services. This finding reinforces data from the 2023 Sharia Financial Literacy Index, which remains at 39%, while sharia financial inclusion is at 13%²⁷. This indicates a knowledge gap that needs to be addressed collectively to ensure the successful implementation of digital finance in boarding schools.

Due to a lack of financial literacy, many parents still provide cash directly to students, even though a digital system is available that allows them to send money to their children without visiting the boarding school. This phenomenon aligns with Rogers' Diffusion of Innovations theory, which explains that the adoption of new technologies, such as digital finance, takes time and goes through several stages, from resistance to eventual widespread acceptance²⁸. Some parents can break free from the old habit of giving cash to their children, even though the boarding school has provided a digital platform to facilitate it. A study by the Center for Indonesian Policy Studies found that the shift from cash to digital payments is a socio-cultural challenge that requires a comprehensive approach, including ongoing

²³ Izzani Ulfî, "Tantangan Dan Peluang Kebijakan Non-Tunai: Sebuah Studi Literatur," *Jurnal Ilmiah Ekonomi Bisnis* 25, no. 1 (2020): 55–65, <https://doi.org/10.35760/EB.2020.V25I1.2379>.

²⁴ Sumardi, "Financial Staff of the Al Amien Islamic Boarding School of Tahfidz, Live Interview (July 14, 2023)."

²⁵ OJK, "Strategi Nasional Literasi Keuangan Indonesia 2021-2025" (Jakarta, 2021), <https://www.ojk.go.id/id/berita-dan-kegiatan/publikasi/Documents/Pages/Strategi-Nasional-Literasi-Keuangan-Indonesia-2021-2025/Strategi Nasional Literasi Keuangan Indonesia 2021-2025.pdf>.

²⁶ Asian Development Bank, "Asian Development Bank Annual Report 2021: Toward a Green and Inclusive Recovery" (Manila, Philippines, 2022), <https://doi.org/10.22617/FLS220104>.

²⁷ OJK, "Survei Nasional Literasi Dan Inklusi Keuangan" (Jakarta, 2024), [https://ojk.go.id/id/berita-dan-kegiatan/publikasi/Documents/Pages/Survei-Nasional-Literasi-dan-Inklusi-Keuangan-\(SNLIK\)-2024/Survei Nasional Literasi dan Inklusi Keuangan \(SNLIK\) 2024.pdf](https://ojk.go.id/id/berita-dan-kegiatan/publikasi/Documents/Pages/Survei-Nasional-Literasi-dan-Inklusi-Keuangan-(SNLIK)-2024/Survei Nasional Literasi dan Inklusi Keuangan (SNLIK) 2024.pdf).

²⁸ Everett M Rogers, *Diffusion of Innovations 5th Edition*, 5th ed. (New York: Free Press, 2003).

education²⁹. Islamic boarding schools are required to consistently provide parents with students' education on the benefits of digital finance, so that the shift from resistance to absolute acceptance can be accelerated.

The resistance of some parents to adopting digital financial systems in boarding schools is partly driven by security concerns about the digital financial services systems used by the boarding schools themselves. The Student Card, which serves as the main instrument of the digital financial services, has the potential to be misused by others. Misuse can occur if the student card is lost and then found by someone else, allowing that person to use it without the original owner's knowledge. Such misuse is very likely to happen because some boarding schools still use barcodes printed on the card as the sole authentication system. This authentication system is much more vulnerable to misuse than biometric systems, such as fingerprint and face recognition. Trust issues also arise because boarding schools do not yet have adequate cybersecurity systems, leaving their digital financial services systems vulnerable to hacking by malicious actors.

Cybersecurity and data protection are critical factors in encouraging the adoption of digital financial services, especially in communities new to financial technology³⁰. Therefore, boarding schools must be willing to invest in IT experts to sustain the existing digital financial systems. Long-term investments in infrastructure, system maintenance, and the development of human resource competencies are essential for the sustainability of digital financial system adaptation³¹. Currently, short-term solutions being implemented include installing several CCTV cameras at each payment outlet to enhance transaction security at the Islamic boarding School.

Socioeconomic Impacts of Digital Financial Services in Islamic Boarding Schools

Generally, there are three reasons behind the presence of digital financial inclusion services in Islamic boarding schools in Indonesia: to provide facilities for students to shop³², to provide a sense of security from money theft³³, and to enhance parental control in monitoring and educating students' consumption behavior to avoid wasteful habits³⁴. Additionally, digital financial services facilitate financial management in boarding schools by replacing manual financial record-keeping, which is prone to errors, with a systematic electronic system for administrative payments, cooperatives, canteens, and other boarding school service units.

²⁹ Ajisatria Suleiman, Thomas Dewaranu, and Noor Halimah Anjani, "Creating Informed Consumers: Tracking Financial Literacy Programs in Indonesia," 2022, <https://doi.org/https://doi.org/10.35497/358319>.

³⁰ Chairul Suhendra, Ahmad Junaidi, and Muhammad Al Faridho Awwal, *Keuangan Digital: Mengelola Risiko Dan Keamanan*, 1st ed. (Padang: Takaza Innovatix Labs, 2024).

³¹ Sonia Barquin et al., "Digital Banking in Indonesia: Building Loyalty and Generating Growth Global Banking," McKinsey & Company, 2019, <https://www.mckinsey.com/~/media/McKinsey/Industries/Financial Services/Our Insights/Digital banking in Indonesia Building loyalty and generating growth/Digital-banking-in-Indonesia-final.ashx>.

³² Marvello Yang et al., "Cashless Transactions: A Study on Intention and Adoption of e-Wallets," *Sustainability (Switzerland)* 13, no. 2 (2021): 1–18, <https://doi.org/10.3390/su13020831>.

³³ Wright et al., "Less Cash, Less Crime: Evidence from the Electronic Benefit Transfer Program."

³⁴ Mariya Stoilova, Monica Bulger, and Sonia Livingstone, "Do Parental Control Tools Fulfil Family Expectations for Child Protection? A Rapid Evidence Review of the Contexts and Outcomes of Use," *Journal of Children and Media* 18, no. 1 (2024): 29–49, <https://doi.org/10.1080/17482798.2023.2265512>.

Financial digitalization enhances transparency and accountability in the implementation of education and financial management in Islamic boarding schools³⁵. Parents can easily monitor and evaluate their children's financial expenditures on their gadgets without having to visit the boarding school, while also instilling a sense of responsibility for money use in fulfilling their needs. Through digital financial services, parents can request a recap of all their children's expenditures through the digital financial application. Ease of use and a sense of security accelerate the acceptance of digital systems by students and parents. Parents are satisfied because they can monitor their children's consumption behavior through transaction notifications on their devices without having to visit the Islamic boarding school. This aligns with the Technology Acceptance Model (TAM), which posits that perceived ease of use and perceived usefulness are the primary determinants of technology acceptance³⁶. Here is a quote from an interview with Rudi, a parent of a student at Pondok Pesantren Al Amien Prenduen:

The digital financial service system is already sound. I can directly top up funds through bank transfers to my Virtual Account in the SASTMI application. Every day I can control my child's expenditures and see where he spends his money through the notifications in the SASTMI application. Additionally, the boarding school's policy of limiting consumption to IDR 100,000 per week certainly has a positive impact on my child to learn to prioritize his consumption needs from an early age, so he learns to manage his finances early on. Moreover, the system is very secure because it uses my child's fingerprint, which is very difficult to forge.

Digital financial inclusion in Islamic boarding schools certainly provides a sense of security for students, especially in eliminating cases of money loss within the boarding school environment, as all their digital money is stored in a digital wallet managed by the boarding school's IT team. Additionally, the boarding schools have placed several CCTV cameras at each payment outlet, cooperative, and canteen to enhance transaction security. Here is a quote from Hattaruddin, a parent of a student at Pondok Pesantren Puncak Darussalam:

The presence of digital financial services in the boarding school provides a sense of security compared to cash. My child needs to scan the barcode on the student card to shop. So far, I have never had any issues using this digital financial service. The money balance remains safe in the E-NuQood application, and my child has never experienced any cases of money loss because every transaction is notified in the E-NuQood application. The limit of IDR 10,000 per day makes me not worry about my child being wasteful in shopping. Additionally, the presence of CCTV at every payment outlet adds to the security of the transactions made by my child.

Students can check all transactions and remaining e-money balances at payment outlets and cashiers within the boarding school simply by scanning the unique registered

³⁵ Ihsanul Windsasari, "Akuntabilitas Dan Transparansi Pengelolaan Keuangan Dalam Perspektif Islam," *Hasina: Jurnal Akuntansi Dan Bisnis Syariah* 1, no. 1 (2024): 10–25, <https://doi.org/https://doi.org/10.35897/hasina.v1i1.1395>.

³⁶ Oom Tikaromah et al., "Technology Acceptance Model Dalam Mendorong Intention To Use Pada Sistem Informasi Akuntansi," *AKUBIS: Jurnal Akuntansi Bisnis Pelita Bangsa* 9, no. 2 (2025): 246–56, <https://doi.org/https://doi.org/10.37366/akubis.v9i02.2278>.

barcode on their student cards or by stating their student identification number (NIS). On the other hand, parents do not need to worry about the misuse of money functions by students because all transactions can be tracked and monitored from their gadgets. This indicates that transacting with digital money is perceived as more effective and efficient compared to cash, as digital money has several advantages, such as the ability to process financial information quickly, instant dissemination of information, and low costs³⁷.

Interview results with students show that they are satisfied with digital financial services. This is evident from an interview with Dafa Ahmad Fajrul, a student at Pondok Pesantren Puncak Darussalam, as follows

I feel more comfortable using the card-based payment system than using cash because I don't have to prepare change. This digital financial system is safer. I have never experienced money loss because my balance is always stored in the E-NuQood application. This would be different if I used cash, as that money could be lost if dropped on the road or stolen.

Additionally, students believe that digital financial services in the boarding schools are easy to use and help them manage their consumption activities. This is reflected in the summary of interviews in the following table:

Table 1. Students' Views on Digital Financial Inclusion in Islamic Boarding Schools

No	Name	Location	Argument
1	Dafa Ahmad Fajrul	Puncak Darussalam Islamic Boarding School	The card-based payment system is easier to use because there is no need to prepare change. In addition, this digital financial service at the Pondok Pesantren makes me more efficient in shopping because the pesantren limits transactions to Rp10,000/day. As a result, I cannot buy snacks carelessly. Therefore, I have to manage my daily expenses.
2	Hilman	Puncak Darussalam Islamic Boarding School	Digital financial transactions at Pondok Pesantren are easy to use. Scan the barcode on the card with a maximum transaction limit of Rp10,000/day. However, I did not spend all of the Rp10,000. I saved some of it. Alhamdulillah, my savings currently reach Rp300,000.
3	Noval	Puncak Darussalam Islamic Boarding School	This digital financial service makes it easier to transact and makes spending more efficient when compared to cash because there is a transaction limit of Rp10,000 a day. I usually do not spend Rp10,000 in a day, only Rp8,000 at most. I only shop according to my needs. I spend my Rp10,000 shopping allowance only if there is an urgent need. If there is no urgent need, I

³⁷ Dan Luo, Man Luo, and Jiamin Lv, "Can Digital Finance Contribute to the Promotion of Financial Sustainability? A Financial Efficiency Perspective," *Sustainability (Switzerland)* 14, no. 7 (2022), <https://doi.org/10.3390/su14073979>.

			usually only spend Rp8,000.
4	Muzakki	Puncak Darussalam Islamic Boarding School	It is easier to use digital financial services than using cash. I do not need to prepare cash; I can scan the barcode for payment. The use of digital money is more economical when compared to cash, because the money is deposited into the boarding school account, and we are limited to a maximum transaction of only Rp 10,000/day. From the Rp10,000 balance, I usually leave Rp2,000 or Rp3,000 as savings.
5	Moh. Ramdhani	Puncak Darussalam Islamic Boarding School	The shopping restrictions on E-Nuqood have made me more frugal. The Rp10,000/day allowance sometimes runs out, and sometimes I put it aside for savings, so the shopping depends on my needs.
6	Moh. Asy'ari	Puncak Darussalam Islamic Boarding School	I prefer to shop using the card rather than using cash because the money is guaranteed to be safe, cannot be stolen, and at the same time, it trains students to live frugally because transactions are limited to Rp10,000/day. I usually do not spend all of the Rp10,000 because I usually only spend it on side dishes.
7	Muhammad Asrof	Puncak Darussalam Islamic Boarding School	It is more convenient to shop using a card than using cash because cash is at risk of being lost or dropped. This digital money system makes me more efficient because there is a maximum transaction limit.
8	Miftahul Khoir	The Al Amien Islamic Boarding School	The digital financial services system at the Al Amien Islamic boarding school is so easy to use that sometimes I have already spent Rp100,000/ week in less than a week, making it seem wasteful. This is certainly different if I use cash, where we really hold the money ourselves, so it is not easy to spend it
9	Arya Deva	The Al Amien Islamic Boarding School	This digital financial transaction system is perfect and convenient for transactions. Until now, I have never experienced problems in transactions. I need to do a fingerprint to make a payment
10	Deswa	The Al Amien Islamic Boarding School	In general, digital payments were smooth and convenient. It is just that when my finger was injured, I had difficulty making payments with a fingerprint. I used the student identification number (NIS) on the student card. In addition, I can check my balance at any time at any payment point by using the NIS number on the student card.

Based on the interview results, it is evident that students in Islamic boarding schools can easily adopt digital financial services. Almost all respondents stated that they feel more comfortable using digital finance than cash. The ease of digital financial services indirectly helps students understand financial products, such as their digital savings stored in the E-NuQood and SASTMI applications. It encourages them to use that money wisely. This phenomenon aligns with the Theory of Technology Acceptance Model (TAM), which explains that perceived ease of use and perceived usefulness will encourage users to accept and continue using technology³⁸. In this context, the ease of digital transactions without having to carry cash and the speed of payment processes strengthen students' positive attitudes toward digital finance. In other words, the practice of financial inclusion in boarding schools plays an important role in shaping students' financial literacy to understand, analyze, and manage their personal finances well³⁹.

Additionally, the interview results with these students indicate that with the transaction limits, they are accustomed to managing and planning their personal finances in every transaction activity. Many respondents even stated that they are able to set aside some of their transaction limit balance for savings. From the perspective of Financial Behaviour Theory, direct experience in managing finances through digital platforms is an effective financial learning mechanism so that students not only understand financial concepts, but also apply them in their daily habits. This research aligns with Margaret et al.'s findings, which state that students' financial capabilities will improve if they have access to financial education and participate in meaningful financial services⁴⁰. Digital financial inclusion in Islamic boarding schools has indirectly provided practical financial education to students from an early age. This teaches them to manage finances by identifying necessary expenditures and prioritizing important expenses⁴¹. Thus, students can spend their digital money wisely and avoid wasteful behavior.

CONCLUSION

This study concludes that the implementation of digital financial inclusion in Islamic boarding schools has successfully transformed the transaction ecosystem from a conventional cash-based system to a more efficient, transparent, and secure digital system. Empirical evidence from Puncak Darussalam Islamic Boarding School and Al Amien Prenduan Islamic Boarding School shows that digital payment services, both card-based and biometric, can facilitate financial transactions, reduce the risk of money loss, and improve parental oversight of student spending. Students also demonstrated a high level of acceptance of digital financial services, consistent with the Technology Acceptance Model (TAM), where

³⁸ Namora Army et al., "Analisis Technology Acceptance Model (TAM) Dalam Penggunaan Aplikasi E-Commerce," *Jurnal Pendidikan Sains Dan Komputer* 5, no. 1 (2025): 85–95, <https://doi.org/https://doi.org/10.47709/jpsk.v5i01.5500> Analisis.

³⁹ Mirza Hedismarlina Yuneline and Maria Firnandya Christian Rosanti, "The Role of Digital Finance, Financial Literacy, and Lifestyle on Financial Behaviour," *HOLISTICA – Journal of Business and Public Administration* 14, no. 2 (2023): 97–115, <https://doi.org/10.2478/hjbpa-2023-0018>.

⁴⁰ Margaret Sherrard Sherraden et al., "Financial Capability in Children: Effects of Participation in a School-Based Financial Education and Savings Program," *Journal of Family and Economic Issues* 32, no. 3 (2011): 385–99, <https://doi.org/10.1007/s10834-010-9220-5>.

⁴¹ Veronica Frisancho, "The Impact of School-Based Financial Education on High School Students and Their Teachers: Experimental Evidence from Peru," *SSRN Electronic Journal*, no. March (2019), <https://doi.org/10.2139/ssrn.3305510>.

perceived usefulness and perceived ease of use shape positive behavioural intentions and continued use.

The socioeconomic impact of digital financial inclusion in Islamic boarding schools is reflected in the growth of financial literacy and more responsible financial behaviour among students. Transaction limits integrated into the digital system serve as financial learning tools that encourage students to prioritise needs over wants, manage daily consumption more responsibly, and even develop savings habits. These findings support Behavioural Finance Theory, which suggests that financial attitudes and self-control can be strengthened through direct experience and exposure to digital financial platforms. Furthermore, administrative digitisation improves transparency and governance in Islamic boarding schools, creating a positive synergy between technology adoption and educational goals.

Based on the findings of this study, several recommendations are proposed to deepen and broaden the impact of digital financial inclusion in Islamic boarding schools. First, improving technological infrastructure, including internet access, electricity stability, and cybersecurity, is urgently needed to ensure system reliability and security. Second, ongoing financial and digital literacy education should be provided not only to students but also to parents to overcome technology resistance and strengthen adoption behaviour in accordance with the TAM framework. Third, collaboration with banks and fintech institutions needs to be expanded to achieve interoperability, real-time integration, and broader service features that support financial reporting, academic administration, and future institutional sustainability. Further research could expand to quantitative assessments of changes in financial behaviour among students or comparative studies across regions to enrich the scientific discourse on digital financial inclusion in Islamic education.

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