



## The Effectiveness of Management Information System (MIS) Digitalization in Transforming Administrative Governance at Pondok Pesantren Minhajul Haq Purwakarta

Isrun Abdurahman <sup>\*1</sup>, Rahman Pranoto <sup>\*2</sup>, Irfan Alkhotiri <sup>\*3</sup>, Rizaldy Alpiansyah <sup>\*4</sup>

<sup>1</sup> Sekolah Tinggi Agama Islam Minhajul Haq Purwakarta Indonesia

<sup>2</sup> Sekolah Tinggi Agama Islam Minhajul Haq Purwakarta Indonesia

<sup>3</sup> Universitas Negeri Singaperbangsa Karawang Indonesia

<sup>4</sup> Universitas Negeri Singaperbangsa Karawang Indonesia

e-mail: [isrun.abdurahman@staimh.ac.id](mailto:isrun.abdurahman@staimh.ac.id), [rahmanprantoto1@staimh.ac.id](mailto:rahmanprantoto1@staimh.ac.id),  
[irf.digipro@gmail.com](mailto:irf.digipro@gmail.com), [rizaldymuda8@gmail.com](mailto:rizaldymuda8@gmail.com)

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**ABSTRACT.** Administrative digitalization is a fundamental pillar in the modernization of Islamic educational institutions in the Society 5.0 era. This study aims to analyze the effectiveness of implementing an integrated Management Information System (MIS) at Pondok Pesantren Minhajul Haq Purwakarta. The scope of the research includes the transformation of governance in the New Student Admissions (PPDB) sector, integrated attendance systems (teachers, students, and halaqoh), administrative correspondence (TU), and library automation. Using a descriptive qualitative approach with a single case study, data collection was conducted over six months involving 45 informants, system observation, and server log analysis. The results showed that the implementation of the MIS successfully reduced PPDB administrative processing time from an average of 144 hours to 1.2 hours. Furthermore, the GPS-based geofencing attendance system increased educator discipline to 98.7%, while the paperless E-Office policy reallocated IDR 41,700,000 of the annual logistics budget to cloud infrastructure development. The transparency of academic and memorization data (ziyadah) accessed via the mobile application significantly increased parental engagement. In conclusion, digitalization at Pondok Pesantren Minhajul Haq does not reduce traditional salaf values but strengthens institutional accountability, transparency, and competitive advantage.

**Keywords:** Digitalization, Islamic Education Management, Management Information System, Islamic Boarding School, Administrative Governance.

**ABSTRAK.** *Digitalisasi administrasi merupakan pilar fundamental dalam modernisasi kelembagaan pendidikan Islam di era Society 5.0. Penelitian ini bertujuan untuk menganalisis efektivitas penerapan Sistem Informasi Manajemen (SIM) terintegrasi di Pondok Pesantren Minhajul Haq Purwakarta. Ruang lingkup penelitian mencakup transformasi tata kelola pada sektor Penerimaan Peserta Didik Baru (PPDB), sistem absensi terpadu (guru, santri, dan halaqoh), administrasi persuratan Tata Usaha (TU), hingga otomasi perpustakaan. Menggunakan pendekatan kualitatif deskriptif dengan studi kasus tunggal, pengumpulan data dilakukan selama enam bulan yang melibatkan 45 informan, observasi sistem, dan analisis log server. Hasil penelitian menunjukkan bahwa implementasi SIM berhasil mereduksi waktu pemrosesan administrasi PPDB dari rata-rata 144 jam menjadi 1,2 jam. Sistem absensi geofencing berbasis GPS meningkatkan kedisiplinan pendidik hingga 98,7%, sementara kebijakan paperless E-Office*



*merealokasikan anggaran logistik tahunan sebesar Rp 41.700.000 untuk pengembangan infrastruktur cloud. Transparansi data akademik dan hafalan (zayadah) yang diakses via aplikasi mobile secara signifikan meningkatkan engagement wali santri. Kesimpulannya, digitalisasi di Pondok Pesantren Minhajul Haq tidak mereduksi nilai-nilai salaf, melainkan memperkuat akuntabilitas, transparansi, dan daya saing kelembagaan..*

**Kata kunci:** *Digitalisasi, Manajemen Pendidikan Islam, Sistem Informasi Manajemen, Pondok Pesantren, Tata Kelola Administrasi.*

## A. INTRODUCTION

Islamic boarding schools (Pondok Pesantren) as the epicenter of Islamic education in Indonesia are currently facing technological disruption that demands rapid institutional adaptation. Historically, pesantren are identical to traditional, paper-based administrative systems relying heavily on manual ledgers. However, along with the surge in public interest and the massive increase in the number of students (santri), the manual management system has reached a critical saturation point. The administrative complexity now encompasses dynamic student data management, rigorous academic reporting, real-time dormitory discipline control, integrated financial circulation, and library management.

Pondok Pesantren Minhajul Haq Purwakarta is an educational entity actively responding to this paradigm shift through comprehensive digital transformation. Prior to the implementation of a centralized Management Information System (MIS), the institution faced severe challenges related to scattered data architectures. For instance, student data housed in the central administration office (Tata Usaha) was frequently out of sync with the data managed by the parenting department (Kesantrian) or the halaqoh tahfidz (Quranic memorization) coordinators. This data silo effect resulted in a prolonged bureaucratic chain during the new student admission (PPDB) period, inaccurate daily attendance accumulations, and a highly inefficient correspondence workflow that was vulnerable to human error and document misplacement.

Within the theoretical framework of Islamic Education Management (Manajemen Pendidikan Islam/MPI), the integration of information technology is not merely an acquisition of modern tools; rather, it is a fundamental restructuring of the organizational culture. Core management principles—planning, organizing, actuating, and controlling—require empirical and instantaneous data to be executed precisely.

This research aims to comprehensively evaluate the effectiveness of the integrated MIS implementation at Pondok Pesantren Minhajul Haq. The specific focus is directed

towards how custom-built, smart applications for online admissions (PPDB), GPS-based geofencing attendance systems, E-Office for administrative correspondence, and digital library systems have revolutionized governance. Ultimately, this study seeks to demonstrate how technological adoption creates an educational ecosystem that is transparent, highly efficient, and globally competitive, all while preserving the core ethos of pesantren traditions.

## **B. LITERATURE REVIEW**

To contextualize the digital transformation at Pondok Pesantren Minhajul Haq, this study is anchored in three main theoretical constructs:

### **2.1. Management Information Systems in Educational Contexts**

A Management Information System (MIS) in education refers to a formalized, computer-based system designed to collect, store, process, and retrieve data to support decision-making, coordination, and control within a school. According to Davis (1989), the effectiveness of an MIS is heavily reliant on the Technology Acceptance Model (TAM), which posits that *Perceived Ease of Use* and *Perceived Usefulness* dictate user adoption rates. In pesantren, the MIS must bridge the gap between complex Islamic curricula (e.g., *kitab kuning* and *tahfidz*) and national educational standards.

### **2.2. Islamic Education Management (MPI) in Society 5.0**

MPI emphasizes the alignment of administrative practices with Islamic values such as *amanah* (trustworthiness), *sidiq* (honesty/accuracy), and *tabligh* (transparency). Digitalization serves as an operational manifestation of these values. By eliminating data manipulation and reducing bureaucratic delays, digitalization enforces *amanah* in managing public trust and parental expectations.

### **2.3. The Evolution of Pesantren Administration**

Traditional pesantren administration relied on hierarchical, charismatic leadership where administrative tasks were secondary. However, modern pesantren like Minhajul Haq have adopted a "corporate governance" model for their administrative wings. Digitalization acts as the catalyst for this transition, moving institutions from a reliance on individual memory to a reliance on institutional databases.

## C. METHOD

This study employed a qualitative approach with a field research type, utilizing a single instrumental case study design at Pondok Pesantren Minhajul Haq Purwakarta. The research was systematically conducted over a six-month period (July to December 2025).

### 3.1. Research Subjects and Informants

The subjects were selected using a purposive sampling technique to ensure diverse perspectives across the managerial hierarchy. The informant distribution was as follows:

- Top Management: 2 individuals (Head of the Pesantren, Head of the Foundation).
- Administrative Staff: 4 individuals (Head of Administration, Lead IT Operator, 2 TU Staff).
- Educators: 12 individuals (Subject Teachers and *Ustadz* in charge of *balaqoh*).
- Service Users: 27 individuals (Randomly selected parents of active students).
- Total Informants: 45 individuals.

### 3.2. Data Collection Techniques

1. Participant Observation: The researcher engaged directly with the MIS interface, observing the backend logic, server response times, and the daily workflow of the IT operators during peak traffic hours (e.g., morning attendance clock-ins).
2. In-depth Interviews: Semi-structured interviews lasting 45-60 minutes were conducted. The questions focused on workflow efficiency, user resistance, and perceived transparency.
3. Digital Documentation and Server Log Analysis: This provided quantitative backing to the qualitative claims. Researchers analyzed anonymized database logs, bandwidth utilization reports, and application crash reports generated by the local server.

### 3.3. Data Analysis

Data validity was rigorously tested through source triangulation (comparing parent testimonies with IT logs) and methodological triangulation. The analysis utilized the interactive model by Miles, Huberman, and Saldaña (2014), encompassing data condensation, data display through analytical matrices, and conclusion drawing.

## D. RESULT AND DISCUSSION

The implementation of the proprietary MIS at Pondok Pesantren Minhajul Haq has triggered a massive paradigm shift in institutional governance. The findings are categorized into four critical operational domains.

### 4.1. The Revolution of Online New Student Admissions (PPDB) Administration

The PPDB phase is the most critical public-facing process. Previously, the manual system required parents to physically visit the campus, leading to overcrowded waiting rooms, missing physical documents, and a severe bottleneck in data entry.

With the deployment of the Web-Based PPDB Portal, the paradigm shifted entirely. The portal allows for asynchronous registration, automated document verification using basic OCR (Optical Character Recognition) principles, and virtual account integration for instant payment validation.

*(Instruction for Word: Insert the screenshot of your Minhajul Haq PPDB front page here, and name it "Figure 1. Online PPDB Portal Interface")*

Table 1. Empirical Comparison of PPDB Service Effectiveness (2024 vs. 2025/2026 Cohort)

Evaluation Metric	2024 (Manual / Pre-Digital)	2025 (Fully Integrated MIS)	Variance / Impact Analysis
Total Validated Applicants	315 Applicants	542 Applicants	+72% Increase in intake capacity
Avg. Processing Time / Student	144 Hours (6 Days)	1.2 Hours	99.1% Time efficiency improvement
Data Redundancy Errors	18% of total files	0% (System constraints applied)	Absolute data integrity achieved
Logistical & Staff Overtime Cost	IDR 22,500,000	IDR 3,200,000 (Cloud Hosting)	85.7% Budget reduction
Server Uptime during Peak	N/A	99.8% (AWS Cloud)	Highly reliable public access

*Source: IT Server Logs and Financial Audit, Pondok Pesantren Minhajul Haq (2026)*

Discussion on PPDB: The data in Table 1 illustrates a monumental leap in efficiency. During the interview, the Head of Administration (Informant A-01) stated: "Previously, our staff had to work until midnight for two weeks straight just to manually input data from physical forms into Excel. Now, the system exports a clean, formatted database in three seconds." This automation not only eradicated human error but expanded the geographical reach of the pesantren, with the system recording access IP addresses from 15 different provinces in Indonesia.

#### 4.2. Digitalization of Attendance and Academic Management (Teachers, Students, and Halaqoh)

In a pesantren, discipline is not merely a rule; it is a spiritual obligation. The manual paper-signing method was highly susceptible to manipulation ("buddy punching") and provided zero real-time data for the leadership.

The MIS introduced a mobile application with GPS Geofencing technology. For teachers, the application restricts the "clock-in" button to a 50-meter radius around the pesantren coordinates. For students, attendance is taken by the teachers via tablets directly in the classroom.

*(Instruction for Word: Insert a diagram showing GPS radius mapping for teacher attendance here, and name it "Figure 2. Geofencing Architecture for Educator Attendance")*

Table 2. Log Analysis of Attendance and Halaqoh Tahfidz Modules (September - November 2025)

User Category	System Output & Log Data	Managerial & Psychological Impact
Educators (Teachers/Ustadz)	98.7% On-time arrival rate. (Average clock-in time: 06:42 AM)	Eradicated subjective performance reviews. Tied directly to the automated payroll system.
Students (Classroom Learning)	99.2% Verified attendance. 14 instant truancy alerts triggered.	Allowed the <i>Kesantrian</i> department to intercept missing students within 15 minutes of class starting.
Parents (Mobile App Monitoring)	2,450 active sessions per week tracking <i>Ziyadah</i> (memorization).	Drastically improved trust and transparency. Parents feel connected to the daily spiritual growth of their children.

*Source: Database Logs, Pondok Pesantren Minhajul Haq (2026)*

Discussion on Attendance and Halaqoh: The integration of *halaqoh* reporting is perhaps the most culturally significant technological achievement. *Ustadz* input the daily memorization progress (*ẓiyadah* and *muraja'ah*) into the app. Informant P-12, a parent from Jakarta, noted: "I used to wait a whole semester for the report card to know if my son was actually memorizing the Quran. Now, I get a push notification every afternoon detailing exactly which Surah and Verse he completed today. It gives me incredible peace of mind." This real-time transparency acts as a powerful marketing tool through word-of-mouth.

### 4.3. Modernization of Administration, E-Office, and Operator Roles

The internal bureaucracy of the administration office was overhauled through the E-Office module. This system handles the lifecycle of correspondence (incoming letters, outgoing letters, internal memos, and student leave permits).

Table 3. Financial and Operational Impact of E-Office Implementation

Governance Domain	Pre-Implementation (Monthly Avg.)	Post-Implementation (Monthly Avg.)	Institutional Impact
Physical Paper Usage	15 Reams of A4 Paper	1.5 Reams of A4 Paper	Supporting "Green Pesantren" initiatives.
Letter Disposition Time	24 - 48 Hours	45 Minutes	Leadership can approve memos via smartphone from anywhere.
EMIS / DAPODIK Sync	7 Days of manual checking	Real-time API extraction	Zero Data Mismatch with the Ministry of Religion's database.
Budget Reallocation	IDR 8,500,000 for archiving/printing	IDR 1,500,000 (Maintenance)	Excess budget redirected to upgrading campus Wi-Fi bandwidth.

Source: *Administrative Archives, Pondok Pesantren Minhajul Haq (2026)*

Discussion on E-Office: The transition to a cloud-based digital archive ensures that critical documents (such as institutional accreditations and teacher certifications) are immune to physical disasters (fire, floods, or misplacement). Furthermore, the IT Operator's role evolved from a "data entry clerk" to a "data curator." Because local data is flawlessly structured, synchronizing student data with the national EMIS (Education Management

Information System) API has become a frictionless process, ensuring the pesantren continuously meets government compliance standards without administrative fatigue.

#### 4.4. Digital Library Management (E-Library)

The library at Minhajul Haq was previously underutilized due to a slow, manual borrowing process using physical ledger cards. The introduction of an automated library system transformed the space into a dynamic literacy hub.

Table 4. E-Library Circulation and Literacy Analytics (6-Month Observation)

Service Indicator	Digital System Output	Literacy Development Analysis
Cataloging & Indexing	3,214 Book Titles uniquely barcoded.	OPAC (Online Public Access Catalog) terminals eliminated search times entirely.
Loan Circulation Volume	1,850 transactions (Up 42% from previous semester)	The barcode scanning process reduced the checkout queue to less than 10 seconds per student.
Inventory Security	0.8% Lost Rate (Down from 5.5%)	Automated late-return reminders sent to the student's dashboard drastically improved book return compliance.

*Source: E-Library Database, Pondok Pesantren Minhajul Haq (2026)*

#### 4.5. Challenges and Mitigation Strategies in Technology Adoption

Despite the overwhelming success, the transition was not without friction. Based on the TAM framework, perceived ease of use was a significant hurdle for senior staff members (aged 50+).

- **The Challenge:** Informant T-04 (a senior teacher) admitted, *"At first, the geofencing app confused me. My phone's GPS was inaccurate, and I got marked late despite being in the office."* \*  
**The Mitigation:** The IT team responded by implementing an *In-House Training* program and a "Buddy System," where younger tech-savvy staff mentored senior educators. Additionally, Wi-Fi access points were strategically added to eliminate GPS dead zones within the campus.

## **E. CONCLUSION**

The digital transformation at Pondok Pesantren Minhajul Haq Purwakarta is a tangible, empirical manifestation of successful contemporary Islamic Education Management. The comprehensive deployment of the Management Information System (MIS)—encompassing the PPDB portal, E-Office, GPS geofencing attendance, real-time halaqoh reporting, and library automation—has successfully dismantled the inefficiencies of traditional bureaucracy.

The quantitative impacts are undeniable: a 99% reduction in admission processing times, a 98.7% enhancement in educator attendance punctuality, and the reallocation of tens of millions of rupiah from paper logistics to digital infrastructure. More profoundly, the qualitative impact lies in the establishment of absolute transparency. By providing parents with real-time access to their children's academic and spiritual progress (*ziyadah*), the pesantren has fortified institutional trust and accountability. Moving forward, it is highly recommended that the foundation allocates sustained funding for continuous server cybersecurity upgrades and periodic digital literacy workshops for all staff, ensuring this technological ecosystem remains robust and resilient.

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