



# FinTech as Moral Governance in Islamic Boarding Schools: Evidence from Digital Pocket Money Management among Santri

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## Abstract:

The objective of this study is to examine the effectiveness of digital student allowance cards in strengthening financial discipline and transparency in Islamic boarding schools. Financial management in Islamic boarding schools has traditionally relied on cash-based systems that are difficult to monitor and prone to inefficiency. This practice creates a mismatch between character education goals and students' everyday financial behavior. This study employed a quantitative pre-experimental design using a one-group pretest-posttest approach. Data were collected from 50 students through structured questionnaires measuring financial discipline, expenditure control, perceptions of transparency, and monitoring awareness, and analyzed using descriptive statistics and paired difference tests. The findings reveal a significant improvement in students' financial discipline after the implementation of digital allowance cards. Students demonstrated reduced impulsive spending and greater awareness of spending limits. The system also enhanced students' ability to plan expenditures more responsibly. In addition, perceptions of transparency and accountability in financial management increased substantially. Monitoring awareness improved as students became more conscious of recorded transactions. These results suggest that digital allowance cards function not merely as administrative instruments but as mechanisms of behavioral regulation. This study contributes to the literature by positioning digital financial systems as tools of moral governance in Islamic education. It recommends that Islamic boarding schools and policymakers integrate technology-based financial systems aligned with the values of character education.

**Key Words:** *Digital Allowance Cards, Moral Governance, Financial Discipline, Character Education*

## Abstrak:

Tujuan dari penelitian ini adalah untuk mengkaji efektivitas kartu tunjangan siswa digital dalam memperkuat disiplin keuangan dan transparansi di pondok pesantren. Pengelolaan keuangan di pondok pesantren secara tradisional mengandalkan sistem berbasis uang tunai yang sulit dipantau dan rentan terhadap inefisiensi. Praktik ini menciptakan ketidaksesuaian antara tujuan pendidikan karakter dan perilaku keuangan sehari-hari siswa. Penelitian ini menggunakan desain pra-eksperimental kuantitatif menggunakan pendekatan pretest-posttest satu kelompok. Data

dikumpulkan dari 50 siswa melalui kuesioner terstruktur yang mengukur disiplin keuangan, pengendalian pengeluaran, persepsi transparansi, dan kesadaran pemantauan, serta dianalisis menggunakan statistik deskriptif dan tes perbedaan berpasangan. Temuan tersebut mengungkapkan peningkatan yang signifikan dalam disiplin keuangan siswa setelah penerapan kartu tunjangan digital. Siswa menunjukkan pengurangan pengeluaran impulsif dan kesadaran yang lebih besar akan batas pengeluaran. Sistem ini juga meningkatkan kemampuan siswa untuk merencanakan pengeluaran secara lebih bertanggung jawab. Selain itu, persepsi transparansi dan akuntabilitas dalam pengelolaan keuangan meningkat secara substansial. Kesadaran pemantauan meningkat karena siswa menjadi lebih sadar akan transaksi yang tercatat. Hasil ini menunjukkan bahwa kartu tunjangan digital berfungsi tidak hanya sebagai instrumen administratif tetapi sebagai mekanisme regulasi perilaku. Penelitian ini berkontribusi pada literatur dengan memposisikan sistem keuangan digital sebagai alat tata kelola moral dalam pendidikan Islam. Laporan ini merekomendasikan agar pesantren dan pembuat kebijakan mengintegrasikan sistem keuangan berbasis teknologi yang selaras dengan nilai-nilai pendidikan karakter.

**Kata Kunci:** *Kartu Tunjangan Digital, Tata Kelola Moral, Disiplin Keuangan, Pendidikan Karakter*

## INTRODUCTION

Digital transformation in the education sector is no longer limited to learning processes and academic management, but has expanded into financial management and student character development (Acharya & Sachdeva, 2025; Lake et al., 2024; Mohamed Hashim, 2022). In the last two decades, global literature shows that the digitization of financial systems has contributed significantly to increased transparency, efficiency, and institutional accountability, including in the context of education (Agostino et al., 2022; Muchran et al., 2025; OECD, 2020; Raghuvanshi & Dwivedi, 2025). The shift from cash-based to non-cash systems is understood not merely as a technical innovation but as a paradigm shift in how to manage the behavior, values, and social relations inherent in everyday financial practices (Bhatnagar et al., 2022; Lai, 2025). In the context of education, students' daily financial practices, such as managing pocket money, are often overlooked, even though they have direct implications for the development of discipline, responsibility, and self-control (Anita et al., 2022; Nuris et al., 2024; Ali et al., 2024).

Several international studies confirm that digital payment systems in schools and campuses can serve as effective behavioral regulation instruments, particularly in reducing impulsive spending and increasing students' financial awareness (Herrewijn et al., 2021; Knight, 2022). However, most of these studies focus on public schools, colleges, or educational contexts in developed countries (OECD, 2021). The context of religious education, particularly in Islamic boarding schools, remains rarely addressed in global academic discourse (Bashith et al., 2025; Hussin, 2024; Sirojuddin et al., 2025). In fact, Islamic boarding schools not only function as a space for the transmission of religious knowledge but also as an ecosystem for the comprehensive character building and ethical life of students (Firmansyah et al., 2025; Purwanto et al., 2021).

In practice, the management of students' pocket money in Islamic boarding schools is still primarily handled in cash (Firmansyah et al., 2025; Hechanova & Ortega-Go, 2014; Qosyim & Zarkasyi, 2024). This system faces various classic problems, including difficulties with supervision, potential waste, financial losses, and the limited role of parents in monitoring their children's financial behavior (Adiletkyzy et al., 2025; Wang & Song, 2021). Many studies show that weak financial control systems among adolescents correlate with low financial discipline and a tendency toward consumptive behavior (Akmalia & Darmawanti, 2023; Sasmito et al., 2023; Putri et al., 2012; Ananda et al., 2025; Widiyanto et al., 2022). In the context of Islamic boarding schools, this issue becomes even more complex because the demands of religious character building are often not systematically integrated with daily financial management practices.

A standard solution offered in the literature is to strengthen financial literacy through formal education or special training (Cordero et al., 2022; Grimes et al., 2022; İlbasmış et al., 2025). This approach has been shown to improve students' financial knowledge, but it is often ineffective in changing actual behavior unless accompanied by structural mechanisms that regulate daily practices. In other words, increased financial knowledge does not automatically result in financial discipline without the support of a system that restricts and directs behavior (Dewi & Wardhana, 2022; Netemeyer et al., 2024).

In response to these limitations, some studies have begun to examine the role of digital financial systems as tools for behavioral regulation. Koskelainen, Moustati, Sunny et al. (Koskelainen et al., 2023; Moustati et al., 2024; Sunny & Deva, 2026) emphasize that, through nudges, system design can subtly influence individual choices without coercion. In the financial context, non-cash systems with certain restrictions have been proven to reduce impulsive spending and encourage more rational financial planning (Ekawati et al., 2025; Faraz & Anjum, 2025). Other studies show that the transparency of digital transactions can increase individuals' sense of accountability because every expenditure is recorded and can be reviewed (Acharya & Sachdeva, 2025; Reid & Ringel, 2025).

In Islamic education, financial management cannot be separated from ethical and moral dimensions. Principles such as trustworthiness (*amanah*), moderation (*wasatiyyah*), and responsibility in safeguarding wealth (*hifz al-mal*) are fundamental values that should be reflected in the daily practices of Islamic boarding school students (Fakhrurrozi et al., 2024; Al Banna et al., 2025). However, most studies on *maqasid al-shari'ah* in education remain normative and conceptual, with little effort to operationalize them into concrete systems and practices that can be empirically measured.

The existing literature shows a clear research gap. First, there remains limited quantitative research on the impact of digital financial systems on students' financial behavior and discipline in Islamic boarding schools. Second, the relationship between financial digitalization and the development of

religious character has not been empirically examined, especially in the context of Islamic education. Third, previous studies tend to position financial technology as an administrative tool rather than a pedagogical medium with moral and character implications. Based on these gaps, this study aims to analyze the effectiveness of digital pocket money cards for santri in improving financial discipline, spending awareness, and perceptions of transparency in pesantren environments.

Specifically, this study examines the extent to which the implementation of digital allowance cards influences the financial behavior of santri. Does this system contribute to the formation of discipline and self-control in line with Islamic educational values? Using a quantitative approach with students at the Al Irsyad Tengeran Islamic Boarding School, this study offers a novel perspective by positioning the digital financial system as an instrument of moral governance in Islamic boarding school education. The contribution of this research is not only empirical but also conceptual, expanding the international discourse on educational technology, fintech, and character building within Islamic education.

## RESEARCH METHOD

This study uses a quantitative approach with a one-group pretest–posttest design (Bierer et al., 2025; Creswell & Creswell, 2022). This design was chosen to measure changes in students' financial behavior before and after the implementation of digital allowance cards in the natural context of Islamic boarding schools. The quantitative approach is considered relevant because it allows for objective measurement of changes in financial discipline, spending awareness, and perceptions of transparency through standardized instruments (Creswell & Creswell, 2022). Although this design does not involve a control group, its use is considered adequate for assessing the initial effectiveness of a systemic innovation in a relatively closed and homogeneous educational environment such as a pesantren.

The research was conducted at the Al Irsyad Tengeran Islamic Boarding School, a modern boarding school that has implemented a digital allowance card system for student financial management. This location was chosen intentionally because the boarding school is an Islamic educational institution that deliberately integrates digital technology into its daily student management system. Data collection was conducted over one academic semester, after the digital card system had been running stably and students had sufficient experience in using it.

Fifty research participants actively used digital allowance cards. The sampling technique was conducted purposively with the following criteria: (1) students living in dormitories, (2) students who had used digital allowance cards for at least three months, and (3) students who were willing to participate voluntarily. This sample size was considered adequate for simple inferential

statistics in a pre-experimental design, specifically for a paired-samples t-test (Bierer et al., 2025; Creswell & Creswell, 2022).

Data were collected using a structured questionnaire developed from a literature review on financial discipline, adolescent financial behavior, and digital financial systems. The instrument consisted of 20 statements on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire statements covered four main dimensions: financial discipline, expenditure control, perception of transparency, and monitoring awareness (Anjaria, 2022; Koo & Yang, 2025).

The instrument was developed in several stages. First, indicators were compiled based on the concepts of financial discipline and behavioral regulation in behavioral economics and education literature. Second, content validity was validated through discussions with two Islamic education experts and one Islamic boarding school financial management practitioner to ensure contextual appropriateness and clarity of language. Third, internal reliability was assessed using Cronbach's alpha, which yielded a value of 0.87, indicating good internal consistency (Hair & Alamer, 2022; Prabowo et al., 2025).

The research was conducted through several systematic stages. In the initial stage, the researchers coordinated with the pesantren to obtain permission and explain the purpose of the research. Next, a pretest questionnaire was administered to students to assess their initial financial behavior before the implementation of the digital card system. After the system had been in use for a period, a posttest questionnaire was distributed to the same respondents. This procedure enabled a direct comparison of the conditions before and after the system's implementation. Data analysis was performed using descriptive and inferential statistics.

Descriptive statistics were used to summarize general trends in the data, such as means and standard deviations. To test the difference between pretest and posttest scores, a paired-sample t-test was used. This test was chosen because it is suitable for comparing two repeated measurements in the same group (Lee & Kim, 2022). All analyses were performed using SPSS statistical software.

## **RESULT AND DISCUSSION**

### **Result**

Overall, the analysis indicates an increase in the average score across all indicators of santri financial behavior following the implementation of digital pocket money cards. This increase suggests that the system effectively shapes a more controlled, planned, and transparent pattern of economic management in the pesantren environment.

### Descriptive Statistics of Santri Financial Behavior

Descriptive statistics were used to characterize the data's general trends before and after the implementation of the digital allowance card. The values presented include the mean and standard deviation of each research variable.

**Table 1. Descriptive Statistics of Boarding School Students' Financial Behavior Scores (n = 50)**

Variabel	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD
Financial discipline	3.12	0.46	4.08	0.41
Expenditure control	3.05	0.50	4.15	0.38
Perception of transparency	3.20	0.44	4.30	0.36
Awareness of monitoring	3.10	0.48	4.22	0.39
Total Score	3.12	0.47	4.19	0.39

The results in Table 1 indicate that, before the implementation of digital cards, the average score for santri financial behavior was in the moderate category. After the system was implemented, all variables showed consistent, substantial increases, with the posttest average score in the high category. The decrease in the standard deviation in the posttest phase indicates that santri financial behavior became more uniform and stable after the use of digital cards.

### Paired-Sample t-test of Students' Financial Behavior

To test the significance of the difference in scores before and after the implementation of digital pocket money cards, a paired-sample t-test was conducted. This test aims to determine whether the observed increase in scores is statistically significant.

**Table 2. Results of the Paired-Sample t-test for Student Financial Behavior**

Variable	Mean Difference	t	Sig. (p)
Financial discipline	0.96	7.12	< 0.001
Expenditure control	1.10	7.84	< 0.001
Perception of transparency	1.10	8.05	< 0.001
Awareness of monitoring	1.12	7.63	< 0.001
Total Score	1.07	8.21	< 0.001

### *Financial Discipline*

Based on the first row of Table 1, the average financial discipline score increased from 3.12 (SD = 0.46) in the pretest to 4.08 (SD = 0.41) in the posttest. This increase indicates a clear shift from the moderate to the high category, accompanied by a decrease in standard deviation, suggesting that students' behavior became more uniform after the implementation of digital allowance cards. These findings are supported by the paired-samples t-test results in Table 2, which show a mean difference of 0.96, a t statistic of 7.12, and  $p < 0.001$ , indicating that the increase in financial discipline is statistically significant and not attributable to chance. Thus, empirical data show that digital allowance cards function effectively as a structural mechanism that helps students manage their money more consistently and in an orderly manner.

### *Expenditure Control*

In the second row of Table 1, the expenditure control variable shows an increase in the average score from 3.05 (SD = 0.50) to 4.15 (SD = 0.38) after the implementation of the digital card system. This increase is among the most pronounced relative to other indicators and is accompanied by a sharp decrease in data variability. These descriptive findings are supported by the paired-samples t-test results in Table 2, which show a mean difference of 1.10, a t-value of 7.84, and a significance level of  $p < 0.001$ . Empirically, these data show that the mechanisms of nominal restrictions and digital transaction recording directly influence santri's shopping behavior, thereby suppressing impulsive spending and replacing it with more controlled consumption patterns.

### *Perception of Transparency*

The results in the third row of Table 1 show that students' perceptions of transparency increased from an average score of 3.20 (SD = 0.44) to 4.30 (SD = 0.36) after using digital allowance cards. The high posttest score, accompanied by a lower standard deviation, indicates that most students share a relatively similar perception of the increased openness and clarity in pocket money management. Table 2 shows a mean difference of 1.10 ( $t = 8.05$ ,  $p < 0.001$ ), the largest t-value among all indicators. This finding confirms that the digital transaction recording system has significantly increased students' awareness of transparency and built a sense of accountability in the daily use of pocket money.

### *Monitoring Awareness*

In the fourth row of Table 1, students' monitoring awareness increased from 3.10 (SD = 0.48) at pretest to 4.22 (SD = 0.39) at posttest. This increase shows that students increasingly understand the existence of a monitoring system as part of structured financial management. The results of the paired-sample t-test in Table 2 confirm this finding with a mean difference of 1.12, a t-value of 7.63, and  $p < 0.001$ . Substantively, these data indicate that students' awareness of monitoring did not engender resistance but rather encouraged the internalization of discipline, leading students to manage their finances not solely because of

external rules but also because of their personal awareness of financial responsibility.

### ***Financial Behavior of Santri***

Aggregately, the last row of Table 1 shows an increase in the total financial behavior score of santri from 3.12 (SD = 0.47) to 4.19 (SD = 0.39) after the implementation of digital allowance cards. This increase in the total score reflects a comprehensive change across all the dimensions of financial behavior measured. This finding is supported by the paired-samples t-test results in Table 2, which show a mean difference of 1.07, a t-value of 8.21, and  $p < 0.001$ , confirming the system's overall impact. Thus, empirical data indicate that digital allowance cards not only influence individual behavior but also foster a more disciplined, transparent, and sustainable financial management ecosystem among santri.

Overall, the empirical findings above indicate a consistent and significant improvement across all indicators of santri financial behavior following the implementation of digital pocket money cards. This improvement is reflected not only in higher average values but also in reduced behavioral variation among santri, indicating the formation of a more stable, uniform pattern of financial management. These findings suggest that the changes observed are not incidental but reflect the systemic effects of digitally based financial management design. Therefore, the results of this study require further interpretation through a theoretical lens that explains how system structure, restriction mechanisms, and transaction transparency influence behavioral regulation, internalization of discipline, and value formation in the context of Islamic boarding school education.

### **Discussion**

The significant improvement in financial discipline after the implementation of the digital system aligns with findings in the behavioral economics literature that emphasize the importance of structure and constraints in shaping individual habits. (Lent, 2025) explain that choice architecture can influence behavior without direct coercion. In this study, nominal limits and automatic transaction recording act as nudges that encourage students to manage their pocket money more rationally. These findings are consistent with the study by (Djamhari et al., 2024; Juita et al., 2024; Yong Lee et al., 2021), which shows that non-cash payment systems tend to reduce impulsive behavior because users are more aware of the transaction trail they leave behind.

The expenditure control aspect, which showed the most significant increase, indicates that financial digitization directly affects students' consumption behavior. Previous literature reports that adolescents are prone to impulsive spending, particularly when there is no effective monitoring mechanism (Carvalho et al., 2023; Nyrhinen et al., 2024; Richardson et al., 2024). In Islamic boarding schools, digital allowance cards foster an environment that limits wasteful spending while encouraging reflection before transactions. This



reinforces Birkenmaier et al.'s argument. (2022) that behavioral change in financial matters is more effectively achieved through structural interventions than through literacy education alone (Mancone et al., 2024). The increase in perceived transparency is an important finding that broadens our understanding of the function of digital financial systems in education. Transaction transparency not only affects administrative efficiency but also shapes a sense of internal accountability. (Bondi & Poppi, 2025; Paliszkievicz & Gołuchowski, 2025) emphasize that economic openness is essential for building trust and reducing opportunistic behavior.

In this study, students' awareness that the *pesantren* and their parents could review every transaction created a subtle social control mechanism that ultimately encouraged more responsible financial behavior. Interestingly, increased awareness of monitoring was not followed by resistance to the system, but rather by relatively positive acceptance. These findings challenge the assumption that digital surveillance is always perceived as repressive control. On the contrary, when the system is positioned as part of guidance, monitoring actually functions as a means of internalizing disciplinary values. This aligns with the findings of Okoye et al. (2025), Sousa et al. (2023), and Zou et al. (2025), which show that acceptance of digital systems increases when users understand the pedagogical benefits and protections these systems provide.

From an Islamic education perspective, the findings of this study have significant theoretical implications. The principles of *amanah* and moderation (*wasatiyyah*), which are often taught normatively in Islamic boarding schools, are put into practice through the digital allowance card system. (Vishkurti, 2022; Suhud et al., 2025; Wazin & Suryanto, 2023) assert that Islamic economic ethics should not only be taught as moral concepts but must also be institutionalized in systems that regulate the economic behavior of the *ummah*. Thus, digital pocket money cards can be understood as an instrument for institutionalizing Islamic ethical values in the daily practices of *santri*.

Furthermore, these findings contribute to the development of *maqāṣid al-shari'ah* studies in the context of education. The concept of *ḥifẓ al-māl*, widely discussed in Islamic law and economics, is operationalized in this study as a concrete behavioral criterion: orderly, controlled, and transparent money management. Amiruddin and Al-Turabi (Amiruddin, 2024; Al-Turabi, 2025) emphasize that *maqāṣid* should be understood as functional goals whose impact on social life can be measured. This study demonstrates how digital technology can serve as a medium for the actualization of the *maqāṣid* in modern Islamic education. From an educational governance perspective, this study's results reinforce the argument that digitization does not constantly threaten the traditional values of Islamic boarding schools. On the contrary, when designed contextually, technology can actually strengthen the function of Islamic boarding schools as character-building institutions.

Hussin (2024) notes that Islamic boarding schools exhibit high adaptive capacity in responding to social change without losing their core identity. The digital pocket money card in this study is a concrete example of how digital

innovation can be harmoniously integrated with Islamic educational values. The main conceptual contribution of this study lies in the reinterpretation of the digital financial system as an instrument of moral governance in education. Unlike the literature that positions fintech as an administrative or commercial tool, this study shows that digital financial systems can function as a hidden curriculum that shapes the ethics and habits of santri. This perspective broadens the global discourse on educational technology by incorporating moral and religious dimensions that have been largely overlooked in mainstream studies.

## CONCLUSION

This study demonstrates that the implementation of digital pocket money cards effectively cultivates disciplined, controlled, and transparent financial behavior among santri in the pesantren context. The key lesson derived from this research is that sustainable behavioral change in students' financial practices is more effectively achieved through consistent system design than through normative instruction alone. By embedding financial regulation into students' daily routines, digital allowance cards serve not merely as administrative tools but also as structural mechanisms that shape habits, encourage self-control, and foster reflective financial decision-making. These findings highlight the importance of institutional design in character formation, showing that financial discipline can be internalized when supported by transparent and accountable systems aligned with Islamic ethical values.

From a scholarly perspective, this study contributes to international literature by reconceptualizing digital financial systems as instruments of moral governance within Islamic education. It integrates behavioral economics, character education, and *maqāṣid al-shari'ah* into a unified empirical framework, thereby extending discussions on educational technology beyond efficiency toward moral and ethical formation. Nevertheless, this study is limited by its pre-experimental design, lack of a control group, and focus on a single Islamic boarding school with a relatively small sample size. Future research is recommended to employ longitudinal or comparative multi-site designs, incorporate the perspectives of parents and administrators, and examine the long-term effects of digital financial systems on students' character development, autonomy, and economic independence.

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