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Digital-Based Madrasas: Approaches to Improve the Performance Quality of Madrasah Ibtidaiyah

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ABSTRACT

This study investigates the internal and external factors influencing the improvement of digital-based performance quality in Madrasah Ibtidaiyah located in Tanjung Balai Municipality, North Sumatra, Indonesia. Employing a descriptive-analytical approach, the research utilized field data collected through observation, interviews, and documentation. The Internal Factor Evaluation (IFE), External Factor Evaluation (EFE), and Internal-External (IE) matrices were applied to analyze the data comprehensively. The results reveal that the three Madrasah Ibtidaiyah under study possess strong internal capabilities particularly in leadership, human resources, and digital initiative implementation that outweigh their identified weaknesses. Externally, these schools demonstrate significant adaptability to dynamic environmental conditions and exhibit strategic responsiveness that allows them to leverage existing opportunities, despite external constraints such as limited infrastructure and digital disparities. A SWOT analysis was conducted to formulate strategic alternatives, leading to the recommendation of an intensive strategy that combines market penetration through the use of data analytics to strengthen digital-based educational services and product development, especially in administrative and financial management systems. These strategic initiatives are expected to enhance the professionalism of educational personnel and improve institutional performance. The findings offer practical implications for policymakers and educational leaders committed to advancing the digital transformation of Islamic primary education.

Keywords: digital madrasa, performance, SWOT, internal and external analysis

INTRODUCTION

The global landscape is undergoing rapid transformation due to advances in digital technology, communication devices, and internet-based information systems [1],[2],[3]. In the context of education, the influence of the Fourth Industrial Revolution (Industry 4.0) has become increasingly apparent, requiring educational institutions to adopt digital technologies to remain relevant and competitive [4], [5]. Educators and education personnel must therefore acquire digital competencies to meet evolving pedagogical and administrative demands.

As institutions formally recognized within Indonesia's national education system, madrasahs are required to adapt to these technological advancements [6]. The government, along with non-governmental stakeholders, mandates that educational management adhere to the National Education Standards (SNP), which include benchmarks for graduation, curriculum content, teaching and learning processes, infrastructure, educator qualifications, institutional management, financing, and assessment [7] [8]. In Tanjung Balai Municipality, North Sumatra, madrasahs have made various efforts to innovate and align with these standards [9][10][11]. However, many madrasahs still struggle to meet them consistently and effectively [12], [13].

To address this challenge, the Ministry of Religious Affairs has launched several initiatives under the Directorate of Curriculum, Infrastructure, Institutional Development, and Student Affairs of Madrasahs (KSKK). One such initiative is the Madrasah Digital Transformation Program, aimed at improving the quality and competitiveness of madrasahs through digital integration. Since 2021, the Regional Office of the Ministry of Religious Affairs in North Sumatra, in collaboration with InfraDigital, has implemented a series of digitalization programs targeting madrasah performance improvement. These programs offer training, mentoring, and support to school leaders and education personnel, focusing on digital management tools and data systems.

In particular, the collaboration with InfraDigital emphasizes the integration of data analytics to enhance educational performance. The program seeks to develop madrasah managerial capacity through the use of technology that enables real-time data processing and decision-making. This aligns with broader global trends

in which digital technology—especially data analytics—is used to streamline educational administration and improve institutional outcomes [14], [15]. Organizations are now expected to invest in technological capabilities across several domains: data connectivity, analytical intelligence, human-machine interaction, and physical-digital integration [16], [17].

In the educational sector, this shift is reshaping how institutions operate and how educators teach and interact with students [18],[19],[20]. Educational personnel performance is now more closely tied to digital competence, efficiency in task execution, discipline, collaboration, and innovation [22],[23]. ffective digital transformation in madrasahs depends not only on infrastructure but also on the readiness and motivation of human resources, particularly principals and teachers.

Prior studies have shown that digital management systems positively affect the performance of educational personnel [24], [25]. The adoption of online and digital platforms helps maintain educational effectiveness and ensure continuity, especially in the context of remote learning and managerial processes [25], [27]. Moreover, educators must continuously upgrade their digital teaching competencies to remain relevant in the 4.0 industrial era [28], [29]. Research has also highlighted that principal leadership and teacher digital literacy significantly contribute to the success of digital learning strategies [30].

Despite these developments, the specific use of Data Analytics for Targeting (DAT) in madrasah performance management remains underexplored, particularly in Tanjung Balai Municipality. Preliminary observations indicate that only a limited number of madrasahs have adopted this technology. This study focuses on three such institutions that have implemented the DAT application in their management practices. The DAT platform enables digital collection, administration, and financial reporting, facilitating real-time monitoring of educator, student, and infrastructure data through an integrated dashboard.

Given the limited adoption and the lack of research on DAT in madrasahs, this study seeks to fill the existing research gap. It aims to analyze the effectiveness of DAT in improving madrasah performance in Tanjung Balai, thereby contributing to the discourse on digital transformation in Islamic education institutions. By focusing on the intersection of digital analytics and educational performance, this research provides insights into how madrasahs can leverage data-driven strategies to achieve quality improvements and meet national education standards in the digital era.

RESEARCH METHODS

This study employed a qualitative case study approach to explore the use of digital tools in enhancing the performance of madrasahs in Tanjung Balai Municipality, North Sumatra, Indonesia. This approach was chosen to provide an in-depth understanding of the context, processes, and implementation strategies of digitalization in Islamic educational institutions. Three madrasahs were purposively selected as research sites based on their active use of digital systems in administrative and managerial activities. These institutions were also part of a national initiative supported by the Ministry of Religious Affairs in collaboration with private sector partners to promote digital transformation in Islamic schools. The selection was further justified by the variation in their digital readiness and performance levels, enabling a more comprehensive analysis.

Primary data were collected through structured interviews with key informants, including principals, vice principals, treasurers, and administrative staff. The interviews were guided by a semi-structured protocol covering themes such as digital infrastructure readiness, staff digital competency, policy support, implementation challenges, and direct impacts on institutional performance. Each interview lasted approximately 45 to 60 minutes, was audio-recorded with participant consent, and subsequently transcribed for analysis. To ensure validity, the interview protocol was piloted in a madrasah outside the sample and reviewed by education management experts. Complementing the interviews, direct observations were conducted to examine the practical use of digital systems such as financial management applications, school information systems, and electronic attendance. Observations were guided by a checklist aligned with internal and external factor indicators derived from strategic management tools.

Data triangulation was strengthened through document analysis, including performance reports, screenshots of digital dashboards, and internal and external policy documents related to digitalization. The data analysis followed three stages: the input stage, the synchronization stage, and the decision stage. In the input stage, internal and external factors influencing madrasah performance were identified and assessed using the Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE) matrices. Internal factors included leadership readiness, staff competency in digital tools, infrastructure availability, and organizational culture, while external factors comprised government policy support, training opportunities, and community expectations regarding digital services.

During the synchronization stage, the combined IFE and EFE scores were plotted into an Internal-External (IE) Matrix to determine the strategic position of each madrasah. This mapping process provided insights into whether the institutions needed to strengthen, transform, or sustain their performance levels. Finally, in the decision stage, strategic directions for enhancing madrasah performance were formulated based on the matrix position and each institution's digital capacity. The adaptation of these business strategy matrices into an educational context was achieved by thematically weighting qualitative data and triangulating sources (interviews, observations, and documents). This method allowed for structured and practical strategy formulation grounded in qualitative

insights, suitable for digital-based madrasah development.

RESULT AND DISCUSSION

This research was conducted in three madrasas in Tanjung Balai Municipality, North Sumatra, Indonesia. The researcher also discusses the strengths, weaknesses, possibilities, and dangers of internal and external to the performance of digital-based madrasas. The following is data on alternative techniques to improve the performance of digital madrasas.

Analysis of internal and external factors (Internal Factor Evaluation / IFE) along with its strengths and weaknesses will help improve the performance of digital-based Madrasah Ibtidaiyah in Tanjung Balai Municipality, North Sumatra, Indonesia. Table 1 shows the SWOT Matrix of internal and external environmental aspects that improve the performance of digital-based madrasas in Madrasah Ibtidaiyah. SWOT analysis is used to create a digital madrasah strategy based on performance improvement in many madrasas are shown in Table 1.

Table 1. SWOT Analysis (Internal and External Factors)

Strengths (S)	**Weaknesses (W)**
1. High commitment from the madrasah principal to improve quality through applying Data Analytics for Targeting. 2. Full digitalization of educator, staff, student, and parent data. 3. A single platform for the entire digital ecosystem. 4. Diverse payment transactions via Gojek, Tokopedia, LinkAja, Banks, Indomart, Alfamart, etc. 5. Two-way communication between the institution and parents/guardians regarding digital data, financial updates, regulations, and assignments. 6. Effective digital attendance system for students and teachers.	1. Lack of IT-skilled human resources (parents/guardians). 2. Low motivation among operators to input data. 3. Low motivation among parents to adopt cashless payments.
Opportunities (O)	**Threats (T)**
1. Accurate and accountable online financial data. 2. Organized online administrative data collection. 3. Potential rewards/bonuses from proactively using Data Analytics for Targeting. 4. Opportunity to win the National Best Digital Madrasah Innovation Award.	1. Increased workload for operators. 2. Low parent motivation for timely payments. 3. Growing competition in madrasah digitalization.

Sources and documents are analyzed to determine internal strengths and weaknesses and improve the performance of the Madrasah. Interviews and documentation studies select strengths and weaknesses that match the facts. Internal elements are assessed to identify strengths and weaknesses that improve the function of digital madrasas.

1. Internal Factor Evaluation (IFE)

The paired comparison weighting approach calculates the weighted average of each component of strengths and weaknesses to map the position of Madrasah Ibtidaiyah in improving the performance of digital-based madrasas. The internal status of Madrasah Ibtidaiyah is assessed using the IFE matrix. Table 2 shows the IFE results.

Table 2. Internal Factor Evaluation (IFE)

Dominant Internal Factor	Criterion A	Criterion B	Criterion C	Total	Weight	Rank	Rank x Weight
The high commitment of the madrasah principal to improve quality through Data Analytics for Targeting	4	3	3	10	0.14	3.33	0.46
Complete digitalization of educator, staff, student, and parent data	4	4	4	12	0.17	4.0	0.67
Single platform for the entire digital ecosystem	3	2	2	7	0.1	2.33	0.23
Payment transactions via Gojek, Tokopedia, LinkAja, Banks, Indomart, Alfamart, etc.	3	1	1	5	0.07	1.67	0.12
Two-way communication between the institution and parents regarding digital data, finances, regulations, and tasks	4	3	3	10	0.14	3.33	0.46

Dominant Internal Factor	Criterion A	Criterion B	Criterion C	Total	Weight	Rank	Rank x Weight
Effective digital attendance system for students and teachers	4	3	3	10	0.14	3.33	0.46
Total (Strengths)				54	0.76		2.4
Dominant Internal Weakness	**Criterion A**	**Criterion B**	**Criterion C**	**Total**	**Weight**	**Rank**	**Rank x Weight**
Lack of IT-skilled human resources (parents/guardians)	3	2	2	7	0.1	2.33	0.23
Low motivation among operators to input data	3	2	2	7	0.1	2.33	0.23
Low motivation among parents to adopt cashless payments	2	1	1	4	0.06	1.33	0.07
Total				18	0.26		0.53

Based on the Internal Factor Evaluation (IFE) study in Table 2, the fundamental strength of Madrasah Ibtidaiyah in improving the performance of digital-based madrasas is the digitization of all data of educators, education staff, students, and parents/guardians with a weight of 0.17, a rating of 4, and a score of 0.67. The biggest weakness is that parents still need to be motivated to make non-cash donations, with a weight of 0.06, a rating of 1, and a score of 0.67.

Internal factors of Madrasah Ibtidaiyah can improve the performance of digital-based madrasas because the total weight value is 2.93 (>2.5). The strength of Madrasah Ibtidaiyah can overcome its weaknesses to improve the performance of digital-based madrasas. In addition, documentation sources and studies are used to identify external factors that can enhance the performance of digital madrasas. Interviews and documentation studies determine the variables of opportunity and difficulty. External factors are identified to improve the performance of digital madrasas.

2. External Factor Evaluation (EFE)

By calculating the weighted average of each important external component, Madrasah Ibtidaiyah can map its position in improving the performance of digital-based madrasas. Paired comparison weighting adds an element of opportunity and challenge to the external factor evaluation matrix. The external condition of Madrasah Ibtidaiyah was examined using the EFE matrix. Table 3 shows the EFE results.

Table 3. Evaluation of External Factors (EFE)

External Factor	Criterion A	Criterion B	Criterion C	Total	Weight	Rank	Rank x Weight
OPPORTUNITIES							
Accurate and accountable online financial data	4	1	1	6	0.10	2.00	0.20
Organized online administrative data collection	4	4	4	12	0.20	4.00	0.79
Opportunity to earn rewards/bonuses for proactive use of Data Analytics	3	2	2	7	0.11	2.33	0.27
Potential to win the National Best Digital Madrasah Innovation Award	3	2	2	7	0.11	2.33	0.27
Minimized risk of data loss	4	3	3	10	0.16	3.33	0.55
Total (Opportunities)				**42**	**0.68**		**2.07**
THREATS							
Increased workload for operators	2	2	2	6	0.10	2.00	0.20
Low parent motivation for timely payments (delays)	2	1	1	4	0.07	1.33	0.09
High competition in madrasah digitalization	3	3	3	9	0.15	3.00	0.44
Total (Threats)			19	0.32		0.73	

Based on the results of the External Factor Evaluation (EFE) study in Table 3, the best opportunity for Madrasah Ibtidaiyah to improve the performance of digital-based madrasas is a more organized online administrative data collection with a weight of 0.20, a rating of 4, and a score of 0.79. With a weight of 0.07, a rating of 1, and a score of 0.09, motivating parents to pay contributions online on time is the biggest issue. Madrasah Ibtidaiyah has a good opportunity to improve the performance of digital-based madrasas with a weighted score of 2.79 (>2.5). Madrasah Ibtidaiyah responds well to obstacles in enhancing the performance of digital-based madrasas.

3. Madrasah IbtidaiyahRole in Improving Performance

Through internal and external environmental factors, Madrasah Ibtidaiyah improves its performance. The IFE matrix (Table 2) maps the internal environmental factors. The EFE matrix (Table 3) maps external environmental factors.

Internal and external factors are weighted and ranked to calculate the weighted average score. Table 4 shows the position of the ability of internal factors and the use of external factors of Madrasah Ibtidaiyah to improve performance (Internal and External Matrix). This step checks the scores in the internal and external matrix quadrants to determine the improvement in Madrasah Ibtidaiyah's performance.

The IFE and EFE matrices provide internal scores, respectively score of 2.93 and total external score of 2.79. The overall internal and external factor score is integrated into the Internal and External Matrix to determine Madrasah Ibtidaiyah's performance improvement. Based on Table 4, Madrasah Ibtidaiyah is in quadrant V (Hold and Maintain Performance). These internal and external factors are suspected to be able to provide an overview of Madrasah Ibtidaiyah being in quadrant V, based on Freddy Rangkuti's SWOT analysis, namely maximizing strengths and opportunities and minimizing weaknesses and threats [31]. Meanwhile, according to Wheelen & Hunger, the analysis of the environment is grouped into a) the social environment, b) the task environment, and c) the internal environment.

What are the strengths of madrasas, and what weaknesses are inherent? Thus, we can see the opportunities open to madrassas and ultimately discover the threats, disturbances, obstacles, and challenges faced by madrassas. Therefore, Hanan argues that the need to implement strategic management to strengthen internal and external systems is a dynamic process that occurs continuously in an organization because madrasas face internal and external environmental dynamics [32].

Implementing intensive strategies through market penetration and product development can be implemented to optimize the improvement of the Madrasah's performance quality. This strategy can be taken to improve the quality of madrasah performance. Madrasah Ibtidaiyah can penetrate the market more proactively by utilizing data analytics to target and carry out Madrasah Ibtidaiyah's performance based on digital data. Product development (madrasah administration and madrasah finance) can increase the professionalism of education personnel in digital-based madrasah performance.

Table 4. IE Matrix (Internal–External)
(The Position of Madrasah Ibtidaiyah in Improving Institutional Performance Quality)

Total Weighted IFE Score	Strong (3.0 – 4.0)	Average (2.0 – 2.99)	Weak (1.0 – 1.99)
High (EFE 3.0 – 4.0)	I	II	III
Medium (EFE 2.0 – 2.99)	IV	**Current Position: V**	VI
Low (EFE 1.0 – 1.99)	VII	VIII	IX

4. Digital-Based Strategy to Improve the Performance Quality of Madrasah Ibtidaiyah

Table 5 shows how a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis can help improve the performance of madrasas. Experts, education staff, students, and parents are invited to consult when developing new digital madrasah performance techniques.

Table 5. SWOT Analysis for Determining Alternative Strategies

Opportunities (O1, O2, O3, O4)	Threats (T1, T2, T3)	Opportunities (O1, O2, O3, O4)
Strengths	**SO Strategy**	**Strengths**
Enhance data analytics to target and support digitalization performance in Islamic elementary schools.	ST Strategy	Enhance Data Analytics for Targeting to support digitalization performance in Islamic elementary schools.

In addition, we consider the research results shown in Table 4, which indicates that Madrasah Ibtidaiyah is in the fifth quadrant (Hold and Sustain) with an active strategy based on market penetration and product development. Based on the results of the research shown in Table 5, the following are some alternative methods that can be done: (a) expanding the use of Port in the digitization performance of Madrasah Ibtidaiyah, (b) utilizing the Digital Madrasah Innovation Award program to motivate academic staff in digitizing madrasas, (c) motivating/reaching education staff and parents to digitize using the Application of Data Analytics for Targeting, and (d) developing the professionalism of education personnel with the commitment of the principal in digitizing madrasah performance.

5. Increasing Port Utilization in the Digitalization Performance of Madrasah Ibtidaiyah

As seen in Table 2, the fundamental strength of Madrasah Ibtidaiyah in improving the performance of digital madrasas is the digitization of all educator data, education personnel data, student data, and parent data with a weight of 0.17 rating 4 and a score of 0.67. Digitization using the Application of Data Analytics for Targeting is welcomed as a digitalization. Digitalization offers ease of administration and managerial finance. Data Analytics for Targeting can help digitize Madrasah

Ibtidaiyah, starting with properly aligning data with EMIS, such as educator data, education staff data, student data, and parents/guardians. Thus, digitalization has a positive impact: a non-monotonous system, a more effective, practical, and efficient filing system, better and easier publication to parents/guardians, and saving paper (Sonia, 2020). In addition, a card is available for students to report their attendance (digital attendance list uses QR Codes in the verification process to avoid fraud).

Digital presence can also be evidence of the presence of students and teachers in learning activities [28]. There is also a Digital Tuition Payment Feature. Financial Knowledge is a crucial component of sound finance. There is a need to increase financial knowledge so individuals can positively manage finances [34]. Next, there is an announcement feature. The integrated application makes communicating between educational institutions, parents/guardians, and students easier. With the support of the principal, the digitization of madrassas can run effectively.

6. Utilizing the Digital Madrasah Innovation Award Program to Motivate Education Personnel in Madrasah Digitalization

Based on the IFE analysis, as stated in Table 2, the weakness of Madrasah Ibtidaiyah in improving performance is the need for motivation from digitalization for education staff and parents/guardians. To overcome this, Madrasah Ibtidaiyah must take advantage of the Digital Madrasah Innovation Award. Therefore, education staff will be motivated to improve the quality of madrasah performance to win the North Sumatra Digital Madrasah Innovation Program. This program began with socialization through webinars, training, continuous online and offline mentoring, Digital Madrasah campaigns, madrasah digitization surveys to map the conditions of madrasah digitalization, and visits to madrasas. It closed with the presentation of the North Sumatra Digital Madrasah Innovation Award. At the peak of the Best Digital Madrasah Innovation Award in North Sumatra, four award categories will be selected for use as an assessment. The categories include the best digital madrasah managers, the Ministry of Religion of the City/Municipality Office, and Digital Madrasah at each level (RA, MI, MTs, MA). Thus, Madrasah Ibtidaiyah will be more enthusiastic about digitizing madrasas.

The high use of Data Analytics for Madrasah Targeting can also be used for various opportunities. The opportunity to get rewards/bonuses from using Data Analytics for Targeting, such as Digital Student Cards, digital attendance tools, and so on, can also motivate all stakeholders. In addition, getting financial data managed online with student applications for parents/guardians of students is very helpful in online payments through Gojek, Tokopedia LinkAja, Banks, Indomart, Alfamart, and so on. In addition, parents/guardians can get promos or discounts on education fees. Therefore, in making transactions to pay education fees, Madrasah Ibtidaiyah and parents/guardians will be more efficient than cash payments.

7. Motivating/Reaching Education Personnel and Parents/Guardians to Digitize Using Portals

Based on the results of the IFE analysis presented in Table 2, the strength of madrasah ibtidaiyah is the high commitment of madrasah heads to improve the quality of madrasah performance by utilizing PortDi. This factor has a weight of 0.14, has a rating of 3, and has a score of 0.46. The leadership instructs employees on how to carry out their duties properly to achieve the institution's goals [30]. Therefore, madrasah heads must motivate parents/guardians by promoting digitalization using PortDi. Digitalization is indeed considered burdensome by some education personnel who are digitalization delegates because they do not realize the importance of digitalization today. Without the digitalization of education, such as innovative administration, madrasas will slowly but surely be left behind [36].

The delegates objected to the digitization task given to them because it only added new tasks or workloads for educators and education personnel [32]; so in this aspect, the Madrasah transformed its vision by providing explanations and opening up discussion spaces so that all delegates were aware of carrying out the digitization task without negative thoughts from an early age in implementing digital attendance with innovations in the use of digital student cards that were assessed too tight. However, as time passes, they realize that with the digitization of attendance, they will prioritize justice and discipline more. This Digital Student Card is integral to the application of data analytics for performance enhancement in Madrasah Ibtidaiyah. It facilitates real-time monitoring of attendance for students, teachers, and educational staff. Additionally, the system allows parents or guardians to receive direct notifications if a student is absent, provided the application is installed on their device. The implementation of this digital card significantly increases the efficiency and accuracy of administrative processes, particularly in attendance recording. Moreover, the application serves as a two-way communication medium between the Madrasah and students' families, enabling seamless dissemination of information related to school policies, events, and student responsibilities.

The introduction of this digital system contributes to strengthening institutional transparency, fostering parental involvement in student affairs, and promoting a culture of accountability within the school environment. In the broader context, the system aligns with national efforts to accelerate digital transformation in primary Islamic education, offering a scalable model that can be adopted by other institutions seeking to

modernize their administrative and communication systems.

8. Developing the Professionalism of Education Personnel with the Commitment of the Head of Madrasah to the Vision of Digitizing Madrasah Performance

Based on the IFE analysis as seen in Table 2, the weakness of Madrasah Ibtidaiyah in improving performance is that the motivation of parents to make non-cash payments is still low, with a weight of 0.06, a rating of 1, and a score of 0.07. The motivation of education staff to digitize input data is still low, with a weight of 0.10, a rating of 2, and a score of 0.23. To overcome this, Madrasah Ibtidaiyah must improve the professionalism of the education staff. Handayani & Rasyid said that a leadership model and style, especially a leader who can build his people's commitment, will result in optimal performance.

The vision of digitization of madrasah ibtidaiyah was born from the creativity of the leaders' minds, which is a reflection of professionalism and experience as well as the elaboration of thoughts with other education personnel in the form of the idea of digitalization to be realized together even though the Madrasah is located in a border area. The primary benchmark of digital madrassas is the implementation quickly, across hierarchical, cooperative, and innovative [35]. The principal must understand the goals of the Madrasah and have a clear picture of the objectives of the Madrasah that are realized within the specified period. Thus, the vision of digitizing administration and finance emerged, and there was even a desire to develop a model for digitizing the publication of madrasah activities with a digital announcement feature through student applications.

The futuristic thinking attitude played by visionary school principals certainly does not only focus on the current position of the Madrasah but also envisions its future potential. Education staff designed a model for the development of digitization of all activities in madrasas, which is believed to elevate and promote the institution's identity through the internet as an interactive medium, distinct from conventional methods. This inadvertently becomes a vehicle for promoting Madrasah programs and replicating administrative processes, allowing them to be widely accessed as part of institutional accountability. Therefore, the vision—initially conceptualized by school principals—was communicated to education staff (operators) and treasurers. In this context, the principal assigns digitization tasks according to staff competencies: Madrasah operators manage the digitization of data for educators, education personnel, students, and parents/guardians in alignment with EMIS data, while the treasurer digitizes financial records [36].

Visionary principals must align their vision with organizational goals and coordinate the roles of each organizational unit. Accordingly, they ensure that the digitization of school programs does not disrupt the academic and non-academic achievements of the institution, nor interfere with data requests from the Education Office. Instead, digitization serves to integrate and streamline the performance of all academic personnel at Madrasah Ibtidaiyah, as contemporary demands require fast, accurate, and accessible services.

The findings of this study contribute to highlighting the critical role of visionary leadership in driving digital transformation in Islamic primary schools. The digitization strategy implemented not only improves administrative efficiency and transparency but also fosters a culture of innovation and responsiveness. This model may serve as a practical reference for other Madrasah seeking to implement effective and sustainable digital transformation aligned with national education priorities.

CONCLUSION

The results of the internal and external factor evaluation (IFE and EFE) analyses reveal that the internal capabilities of the three observed madrasahs are relatively strong, enabling them to address internal weaknesses effectively in the pursuit of improving digital-based performance. The IFE matrix shows that internal strength scores dominate, particularly in aspects such as leadership readiness, availability of digital infrastructure, and staff competence. Meanwhile, the EFE matrix indicates that the external environment offers significant opportunities, especially through government policy support, growing community expectations for digital services, and collaborative training programs with external stakeholders. Among the institutions studied, Madrasah Ibtidaiyah demonstrated the highest scores in both internal (total weighted score: 3.15) and external (total weighted score: 3.35) assessments, indicating a very strong strategic position in terms of both capability and responsiveness to environmental changes.

These findings place Madrasah Ibtidaiyah in the "growth" quadrant of the IE Matrix, suggesting an aggressive strategy is suitable. Consequently, strategic alternatives such as market penetration and product development are proposed through SWOT analysis to enhance digital-based performance. Market penetration strategies may include expanding the use of data analytics to monitor and target performance improvements in academic and administrative areas. Meanwhile, product development strategies involve innovating digital-based administrative systems and financial management tools to enhance efficiency and improve the professionalism of education personnel. These strategic directions align with the madrasah's high internal capability and responsiveness to external opportunities, reinforcing its role as a model for digital transformation in Islamic education institutions.

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