

## Competitive Advantage Management of Madrasah In the Artificial Intelligence Era

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**ABSTRACT.** Madrasah Aliyah Negeri (MAN) 3 Jombang is one of the high-performing and competitive madrasahs, having been awarded the Research and Skills Madrasah, with a large number of students from pesantren Bahrul Ulum Tambakberas Jombang. This study aims to describe how it plans, implements, and evaluates its competitive advantages. The study uses a descriptive qualitative approach. Data were collected through interviews, observations, and documentation. The data obtained were analysed using thematic analysis. Triangulation and member check are used to enhance trustworthiness. The findings show that MAN 3 Jombang initiated competitive advantage planning through brainstorming, becoming a character-based madrasah, a healthy madrasah, and an Adiwiyata madrasah. This planning involved establishing key strategies, internalising Islamic values, holding work meetings, and setting goals based on the vision, mission, objectives, and strategy. The implementation was carried out by forming working groups, centres for excellence and innovation, extracurricular activities, digitalising services, offering excellent classes and programs, tahfidz, hybrid curriculum, habituation, providing role models, domestic and international partnerships, establishing internal quality assurance, and madrasah culture. Evaluation conducted through academic supervision, Madrasah Self-Evaluation, performance assessment, and product evaluation. This study provides a practical contribution to Islamic education management, especially in madrasahs and pesantrens, by applying competitive advantage management grounded in Islamic values to improve quality, achievement, performance, and image branding. This study offers a valuable practical contribution to Islamic education management, particularly for madrasahs within pesantren, by emphasising the implementation of competitive advantage management grounded in Islamic values to enhance quality, performance, achievements, and image branding.

**Keywords:** *Competitive advantage, Madrasah Aliyah Negeri, Bahrul Ulum, Pesantren. Evaluation.*

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### INTRODUCTION

Competitive advantage is a key factor in an organization's success in competing with other organizations or companies. Porter had already introduced the concept of competitive strategy and proposed strategies for achieving a competitive advantage (Porter, 1980). He then provided a more comprehensive description of competitive advantage, stating that competitive advantage is the core

of a company's performance in a competitive situation (Porter, 1985). According to Porter, competitive advantage essentially arises from the value that a company can create for its consumers, where that value must be greater than the costs incurred in the process of making it (Porter, 1985). Meanwhile, David defines competitive advantage as everything that a company can do better than its competitors (David & David, 2017). Fredrik Nilsson and Birger Rapp confirm Porter's opinion in their book, which explains that many researchers discuss the close relationship between strategy, structure, and performance in organizations (Nilsson & Rapp, 2005). Competitive advantage can also be applied to educational institutions, such as madrasahs. The process involves how to make madrasahs excel with minimal costs, create differentiation, and set the proper focus. Porter emphasizes that competitive advantage fundamentally develops from the ability to create value for consumers, who, in the context of madrasahs, are stakeholders (Blegur et al., 2024; Daulay et al., 2024; Jauhari et al., 2025; Msamba et al., 2023). This value must exceed the costs incurred to make it, organizations sometimes need to restructure their organizations to focus more on achieving their goals. Therefore, madrasahs need to mapping their knowledge of their competitive advantages and implement efficient knowledge management by combining human capital, communication, technology, and innovation, which will ultimately result in high organizational growth, continuous improvement, competitive advantage, and sustainability (García-Cediel et al., 2023). Madrasahs must thoroughly understand their core competencies because these are the abilities that are at the center of all value creation activities (Arisqa & Anas, 2025; Isnaeni et al., 2025). Distinctive competence of madrasahs is an ability or resource that is difficult to replicate and valuable to the company in helping it surpass its competitors (Mooney, 2007).

Indonesia has two ministries overseeing education: the Ministry of Education and Culture and the Ministry of Religious Affairs. Madrasah is one of the forms of Islamic educational institutions established by the Ministry of Religious Affairs. In the 2024/2025 academic year, second semester, there were 86,343 educational institutions under the Ministry of Religious Affairs (both public and private), with a total of 10,464,634 students, 878,484 educators, and 55,703 support staff. This study focuses on senior high school madrasahs because their students are at an age where they need to be prepared academically and non-academically. Specifically, there are 9,831 senior high school madrasahs with 1,581,476 students and 162,744 educators throughout Indonesia. Among the many madrasahs, there are 700 research-oriented madrasahs and 346 vocational madrasahs.

To achieve competitive excellence, madrasahs are also enhancing their innovation capabilities, as this directly contributes to marketing and competitive advantage (Alghamdi & Agag, 2024). The aim is to respond quickly, effectively, and efficiently to changes that occur. Other contributing factors include (Cai et al., 2024), education boards and management accountability (Nkundabanyanga et al., 2018), personal discipline, and parental expectations for students, which are closely related to individual competitiveness (Krskova et al., 2024). Other researchers have also revealed that cultural dimensions and strategies used also influence competitive advantage (Poulova et al., 2024). Location and political situation can also influence competitive advantage (Zangl et al., 2025).

MAN 3 Jombang is a type of research-based Islamic senior high school, as well as a vocational senior high school. Several studies have been conducted at MAN 3 Jombang, including those related to the implementation of religious culture to shape student character (Nafilah et al., 2025), multicultural-based character education (Huda & Aini, 2022), character education to counter radicalism (Prabowo & Nisa, 2022), electronic modules as interactive learning media (Prihatiningtyas & Tijanuddarori, 2021), training in scientific writing for students (Ami et al., 2021), the application of Sevima Edlink virtual classrooms with a realistic approach (Khotimah & Nafi'ah, 2024), religious culture and religious moderation (Ashoumi & Rahmawati, 2023), the role of school principals in building madrasahs (Putri & Sirojudin, 2022), strategies to increase dhuha prayer among students (Hidayat & Bahrodin, 2023), and improving the quality of mathematics learning

based on faith and piety (Tholib, 2022). However, no research has been conducted on competitive advantage management.

Business schools in Europe and the United States have different approaches to creating competitive advantage (Antunes & Thomas, 2007). Business schools in the United States dominate globally, while those in Europe adopt reflective, integrative, and action-based learning approaches, which provide a unique advantage. This confirms that the success of an institution in competition is not only determined by market dominance but also by differentiation in learning methods and approaches. In the context of higher education, factors that attract new students to choose a business school are greatly influenced by symbolic capital known as “Business School Capital.” This refers to a combination of attributes that determine the competitiveness of educational institutions in attracting prospective students (Ashiru et al., 2022). In other words, reputation, academic facilities, and excellence in research are key elements in maintaining and enhancing institutional competitiveness. This view is further reinforced by González-Díaz and Palacios-Huerta, who report that in competitive environments, cognitive performance is greatly influenced by psychological factors, especially in high-pressure situations (González-Díaz & Palacios-Huerta, 2016). These findings suggest that competition is not solely determined by academic excellence, but also by non-cognitive factors that contribute to an individual’s success in a competitive environment. Research on competitive excellence in madrasahs is relatively limited compared to other fields, especially in research madrasahs, which are a relatively new typology within the Ministry of Religious Affairs and require further development.

Based on a literature review, competitive advantage can be developed by building team solidarity, promoting social involvement, strengthening character development, and encouraging both academic and non-academic achievement (Puspitasari et al., 2024). Previous research also informs that a culture of academic excellence (Negoro et al., 2023), product/service differentiation with knowledge management (Raditya, 2023), and organizational capabilities and innovation also influence competitive advantage (Wirawan, 2022). Additionally, it can be achieved by maximizing intangible internal resources, including human capital, structural capital, and relational capital (Kholik & Laeli, 2020), as well as strategic planning through management information systems (Wibowo et al., 2019).

## **METHOD**

This study uses a qualitative approach because it aimed to produce descriptive data. Therefore, the type of research used is qualitative (Taylor & Bogdan, 1992; Taylor et al., 2015), with case study design in MAN 3 Jombang located at Jl. Merpati Tambakberas, Tambak Rejo Village, Jombang District, Jombang Regency, East Java Province. This study was conducted at MAN 3 Jombang for several reasons. *First*, has implemented competitive advantage management. *Second*, obtaining the title of research madrasah and skills madrasah. *Third*, MAN 3 is a madrasah that has several academic and non-academic achievements. Among its achievements are: 1st and 3rd Place in the Idzaatul Akhbar (Arabic News Reading) Category at GAZA XII (Gebyar Apresiasi Khazanah Araby) 2024, 2nd Place Nationally in the English Language Olympiad at Tarbiyah Fantastic Moment 2024, and National Robotics Championship 2024: 2nd Place in the Soccer IoT 500g Competition, 3rd Place in the Soccer IoT 500g Competition, 3rd Place in the Sumo 1 Kg Competition, and 3rd Place in the Soccer 1 Kg Competition. 1st Place in the Quran Recitation Competition (MSQ) at UIN Malik and UM 2024, 1st Place in the Youth Quran Recitation Competition at MTQ XXXI 2024, 1st Place in the Indonesian Robot Tournament Cup of the Speaker of the People’s Consultative Assembly (MPR-RI) 2024, and many more achievements not mentioned. First Place in the National Quran Recitation Competition (MTQ) at UNHASY 2024, Ninth Madrasah Creative Camp (MCC) in Selorejo Malang (First Place in Graphic Design for Women, Second Place in Stick Drums for Women, First Honorable Mention in Business Plan for Women, and First Honorable Mention in Graphic Design for Men) 2024. 3rd Place in PHYSCO

II (National Physics Competition) 2022 at Nahdlatul Ulama University, Blitar. Third, it has a unique characteristic as it is located within the Bahrul Ulum Tambakberas Islamic Boarding School in Jombang, with 90% of its students being Pesantren Bahrul Ulum students. To obtain a descriptive insight regarding competitive advantage management, the research question is how the planning, implementation, and evaluation of competitive advantage are carried out at MAN 3 Jombang.

The objective is to gain a descriptive understanding of the planning, implementation, and evaluation of competitive advantage. Authorization for conducting the study was granted by the Institute for Research and Community Service at IAIN Pontianak, the Ministry of Religious Affairs Office of Jombang Regency, and MAN 3 Jombang. The research was carried out over a period of seven months. Data collection uses interviews, observation and document. The number of informants is 6 people, namely the head of the madrasah because he is the key informant and the most authoritative in providing explanations and has been the head of the madrasah for more than 4 years so that he understands the focus of the research well. The deputy head of the curriculum section is used as an informant because of his position in regulating students' academics as well as materials and curriculum, the head of the achievement center is chosen because he is responsible for the achievements obtained, while alumni are selected who have worked to obtain competitive advantage data. Interviews conducted with the MAN 3 principal, administrative head, vice-principal of curriculum, and the head of the Center for Excellence and Innovation at MAN 3 Jombang.

Meanwhile, the analyzed documents included strategic plans, curricula, principals' work programs, madrasah self-evaluations, websites, and quality assurance documents. Observations were made of activities in classrooms, mosques, Islamic centers, the learning process, and the principal's activities. The data analysis of this study uses thematic analysis in order to identify, analyze and report patterns/themes based on the data collected and emphasizes the importance of compatibility between the theoretical framework and what is the purpose of the research (Braun & Clarke, 2006). This thematic analysis stage uses familiarizing with data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and producing the report. To enhance trustworthiness, this study used triangulation, member check and trail audit (Lincoln & Guba, 1985; Miles, 1994).

## **RESULT AND DISCUSSION**

### **Result**

This study found that the planning of competitive advantage management at MAN 3 Jombang began with brainstorming with dominant stakeholders, internalizing pesantren values, and becoming an adiwiyata madrasah a character-based madrasah and a healthy madrasah. This process involved establishing key strategies as guidelines and holding regular work meetings to ensure effective implementation. Brainstorming was used to gather aspirations from the Bahrul Ulum Islamic boarding school, alums, parents, committees, teachers, education practitioners, and education experts. The values that students must internalize are responsibility, humility, and the values of Ahlussunnah Wal Jama'ah. The achievement of objectives must align with the madrasah's vision, mission, goals, and strategies.

The implementation is carried out by: a) forming working groups such as the UKS, bee, pond, greenhouse, aloe vera, biogas, canteen, cleanliness, compost, garbage, mushroom, and herb groups. b) establishing a Center for Achievement and Innovation responsible for student participation in competitions such as the National Science Olympiad (OSN) and the National Science and Mathematics Competition (KSM), Youth Scientific Paper (KIR), Innovation and Technology, c) Extracurricular activities such as sports, martial arts, voice, acting, painting, crafts, national defense, and language development, d) Digitalization; academic system, E-Report, e) Excellent classes for boys and girls, f) Excellent programs such as Language and Literature Month, Social Science Week, and Religious Services Month, g) Hybrid curriculum using government curriculum, Islamic

boarding school curriculum, and local content, h) Outsourcing by collaborating with university lecturers and practitioners, i) Habits such as seven-minute lectures, constructive punishment, midday prayer, duha prayer, greetings, smiles, and handshakes, j) Role modeling in disciplines, k) Memorization of the Quran, l) Partnerships with foreign countries, domestic institutions, and industries, and m) Quality assurance. Competitive excellence evaluation is conducted through: a) supervision, especially academic supervision, b) Madrasah Self-Evaluation, which includes teacher self-development, learning process, discipline, compliance, learning materials, and budgeting plan, c) performance assessment of teachers and educational staff, and d) product assessment for products.

## **Planning**

Planning is a key function in management; the better the planning, the better the results. To gain competitive and comparative advantages during this planning stage, the principals involve all dominant stakeholders to jointly consider the advancement of the madrasah.

As stated by the principal, as follows:

“We began by inviting the board of trustees of the Pesantren Bahrul Ulum Islamic institution, the committee, education experts, education practitioners, alumni, parents, and the teachers’ council. We are thinking outside the box by creating a center for excellence that includes five coordinators: an OSN coordinator, a KSM coordinator, an Olympiad coordinator, a coordinator for youth scientific works, and a coordinator for innovation and technology. We also instill a culture of discipline and responsibility. We invite speakers from universities such as UIN Malang.” (Sutrisno, 2025).

After receiving suggestions and recommendations from various stakeholders and gathering their aspirations, the principal of MAN 3 Jombang concluded that to become an outstanding madrasah with competitive advantages, it must have centers of excellence, innovation, and skills. During the planning stage, also set a focus on madrasah achievement. Additionally, it aims to become a healthy madrasah, a character-building madrasah, and an Adiwiyata madrasah. After all objectives were formulated in collaboration with stakeholders, a working meeting was held to determine the programs to be implemented. Vision, mission, goals, and strategies serve as the primary foundation for the madrasah’s programs and activities. MAN 3 Jombang also aims to build a culture for all teachers and students, as this culture is crucial in supporting a healthy madrasah, an Adiwiyata madrasah, and a character-building madrasah.

As stated by the principal, the development of this culture is also supported by the vice-principal in his statement:

“We emphasize discipline, religious values, and the values of Ahlussunnah Wal Jama’ah. The culture we internalize is one of discipline, punctuality, and the 3S (smile, greet, and shake hands) upon arrival and departure. Previously, there were three, but because we want to make the selection process more rigorous, we now only have two: an elite class for boys and an elite class for girls.” (Anam, 2025).

MAN 3 Jombang places great emphasis on the internalization of Ahlussunnah Wal Jama’ah values, as per Nahdlatul Ulama principles, ensuring that graduates are continuously monitored and evaluated throughout their studies. Ahlussunnah values are internalized and integrated into the school’s shared cultural values alongside other religious values.

## **Implementation**

To achieve competitive and comparative advantages, MAN 3 Jombang also focuses on enhancing the capacity of its teachers and students. This focus is evident in the madrasah’s

activities, which aim to guide teachers and students towards achieving academic success. The principal of MAN 3 recognizes that to create an outstanding and high-achieving madrasah, the capabilities of its teachers must also be improved. For students, in addition to providing special classes and programs, they are also trained to live and serve in the community directly.

The principal's statement.

"After the teachers were guided by lecturers from Malang State University and UIN Malang from several other campuses, we also invited a kyai to guide our teachers. As for our students, we hold recitations in the community and utilize our alumni. The teachers guide the children and select those who are interested in the fields above. Some are interested in robotics, KIR (Youth Scientific Work), English, and others. That is where the results begin to show. The first achievement was when the school principal became the national champion in Chemistry at the national level in Bengkulu. We became a research madrasah because we won the KIR (Youth Scientific Work) competition in several places, including one organized by the Ministry of Religion through MyRest (Madrasah Young Research Supercamp). After that, we were designated as a research madrasah. Umar branded the madrasah during his time at KSKK. When participating in national-level competitions, such as the National Science Olympiad (OSN), we bring in national tutors from Jakarta or Bandung and arrange accommodations for them." (Sutrisno, 2025).

The implementation of competitive advantages at MAN 3 Jombang is carried out through several methods. To realize the vision of becoming an outstanding madrasah, MAN 3 established the Center for Excellence and Innovation (PPI), which includes several coordinators in various fields.

As stated by the principal, as follows:

"We are thinking outside the box by creating a center of excellence that includes five coordinators: an OSN coordinator, a KSM coordinator, an Olympics coordinator, a coordinator for youth scientific work, and a coordinator for innovation and technology. This is what makes it a learning center and a robotics center" (Sutrisno, 2025).

The head of the Center for Excellence and Innovation also confirmed as follows:

"At the achievement and innovation center, there are several coordinators who handle specific fields. Although there is no OSN or KSM yet, we continue to guide so that they will be better prepared in the future. The coordinators mentor the students. In case of urgent matters, I immediately report to the head of the madrasah to ask for guidance." (Endang, 2025).

The madrasah appoints coordinators who are specifically responsible for identifying and nurturing students' talents and interests, guiding them to participate in competitions and championships. The madrasah also continuously strives to improve teachers' capabilities by conducting training and mentoring programs. The madrasah has also established working groups, including the School Health, Toga, Pond, Bee, Greenhouse, Aloe Vera, Biogas, Compost, Waste, Mushroom, Herbal, Bird, and Cleanliness. These working groups are also utilized to meet the criteria for becoming a healthy, character-building, and environmentally friendly madrasah. The implementation of competitive excellence is also carried out through digitalization using a specialized application designed to enhance learning. This application also provides E-Report and academic system services for stakeholders, particularly parents. Additionally, the implementation of excellence is carried out by opening specialized classes, creating specialized programs such as Exact Fun Day (EFD), Language and Literature Month (BBS), Social Science Week (SSW), and Religious Service Month (BBA), using a hybrid curriculum (combining pesantren, government, and local curricula), employing external experts/outsourcing, and j) instilling values through greetings, smiles, and handshakes, performing Dhuha prayers in congregation, performing Zuhur prayers in

congregation, implementing constructive sanctions, and setting a good example. The principals work program document on the central policies of the principal on page 21, section a), also mentions daily activities such as greeting teachers upon arrival/entering the school gate, reciting daily prayers, the Beautiful Names of Allah, and reciting the Quran, performing Dhuha prayer, and congregational Zuhur prayer at the school mosque.

The enforcement of a culture of discipline is carried out by setting a good example, providing constructive rewards and sanctions for students who violate discipline, and emphasizing the importance of responsibility for both teachers and students. MAN 3 Jombang also leverages its competitive advantages through the Tahfidz program, partnerships with universities and international institutions, and the utilization of outsourcing services from education practitioners and experts, particularly when participating in the National Science Olympiad (OSN) and the National Mathematics Competition (KSM).

The head of administration states:

“We welcome students at the entrance when they arrive, and students practice the 3S (Smile, Greeting, and Handshake). Before graduation, we require students to memorize the Tahlil and Surah Yasin. We also instill the Ahlussunnah Wal Jama’ah creed to ensure that alumni are not exposed to radical ideologies” (Fauziyah, 2025).

MAN 3 Jombang also has extracurricular programs, including: a) sports: badminton, volleyball, basketball, futsal, table tennis, b) arts: choir, music, calligraphy, chess, theater, c) languages: English, Arabic, Japanese, and other fields such as Paskibraka, Red Cross Youth, KKR, Environmental Ambassadors, Youth Scientific Works, Fashion Design, Culinary Arts, and Journalism. To ensure that programs and activities are carried out as expected, MAN 3 has also formed an internal quality assurance team.

## **Evaluation**

To evaluate competitive advantage, MAN 3 Jombang employs several methods, including performance assessment and behavioral assessment. These assessments are conducted online using an application. In terms of learning, the principal is assisted by the vice principal of curriculum, who also helps evaluate the teachers. The methods used include direct observation and the use of documents such as academic supervision reports, assisted by the deputy head of the curriculum department. MAN 3 also uses the Madrasah Self-Evaluation (*Evaluasi Diri Madrasah/EDM*) document as further evaluation material. Regarding the products developed from the skills, conducts evaluations by examining indicators to determine whether the products are marketable and can be sold in the community. One of the flagship programs that has earned MAN 3 the title of “Skills Madrasah” is the skills program implemented. These madrasahs also utilize CCTV in each classroom to support monitoring and maintaining discipline during teaching and learning activities. The performance and behavior of employees and staff are also evaluated using performance and behavior evaluations.

The principal’s statement:

“We evaluate by observing directly. I often walk around to see the classrooms and observe the work of the employees. We also use CCTV to monitor, with cameras recording all activities in all rooms and outside. We also use attendance machines and online attendance. I make a note of it and bring it up for discussion in meetings. We also use performance and behavior evaluations for staff, , school self-evaluation that includes teacher development, learning, discipline, how we meet standards, materials, and funding. We evaluate products by examining community response..” (Sutrisno, 2025).

In practice, Islamic values can effectively underpin the management of competitive advantage, as demonstrated by MAN 3 Jombang. Similarly, innovation through the establishment of a special unit, the Center for Achievement and Innovation, as well as collaboration with vendors

to develop academic service applications, has demonstrated that Islamic values contribute to the management of competitive advantage. To simplify the description of the research findings, a diagram is presented in Figure 1, outlining the planning, implementation, and evaluation of competitive advantage management, as well as the practical contributions of this research.

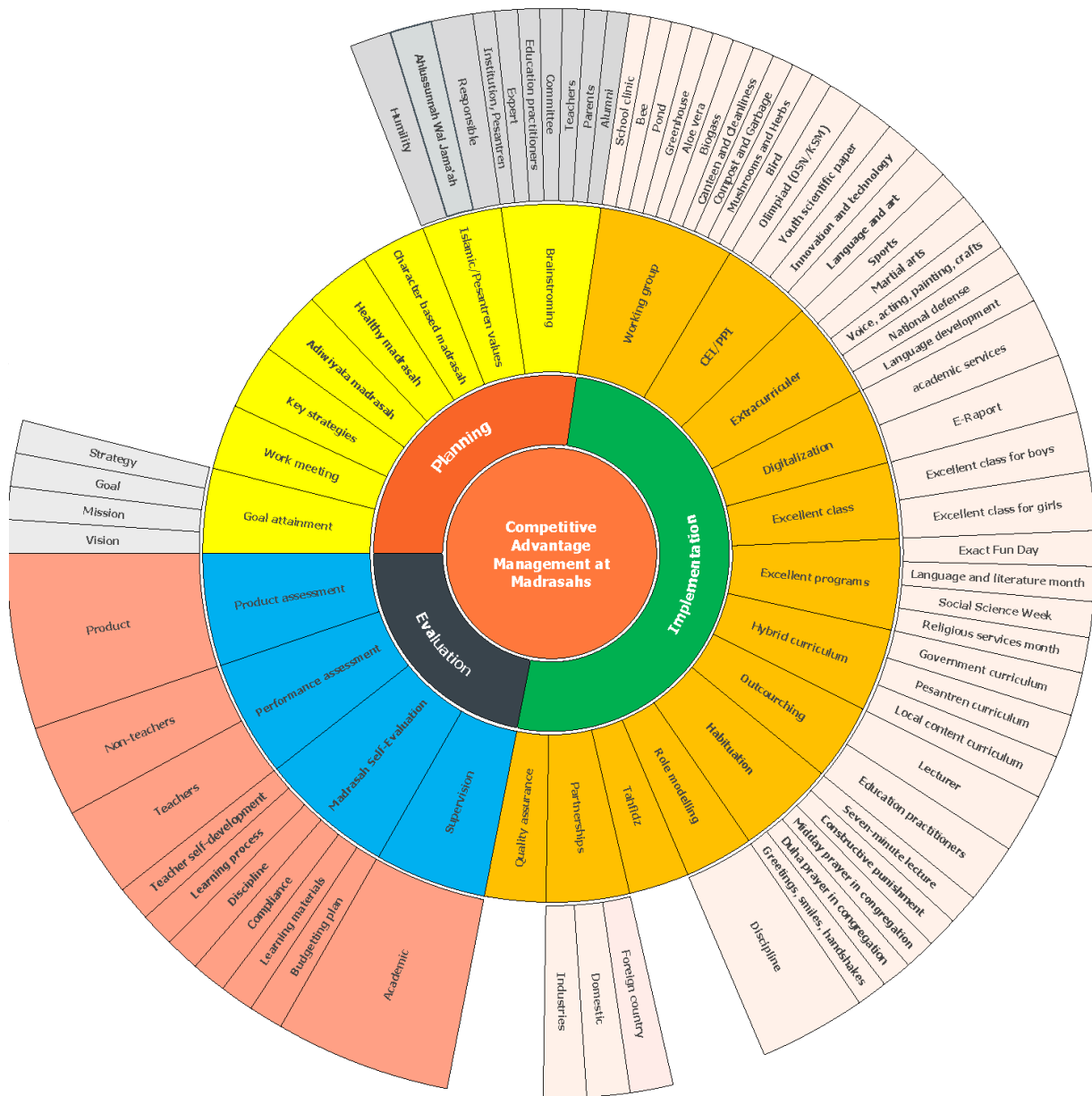


Figure 1. MAN 3 Jombang Competitive Advantage Management In the artificial intelligence era

## Discussion

This section examines the findings in the context of Porter's generic competitive strategies, which include cost leadership, differentiation, and focus strategies. The subsequent analysis is structured according to the categorization of differentiation within the educational domain. This categorization draws upon the study by Eikeland and Ohna who identify four distinct models: differentiation as individualization, differentiation as group adaptation, differentiation as diverse classroom adaptation, and differentiation at the system level (Eikeland & Ohna, 2022).

### **planning by competitive advantage**

Planning is the first and a key function in management, as it determines the objectives, strategies, implementation, and evaluation. In this function, it is also necessary to analyze what has been done, its strengths and weaknesses, so that it can be used as experience, as intended by Allah SWT in QS. Al-Hasyr [59]: 18, which states that humans should learn from their past experiences to improve themselves in the future. MAN 3 Jombang recognizes that Islamic values, achievement, innovation, service, and skills education can be leveraged to enhance competitive advantage. Therefore, planning and implementation are directed toward strengthening these advantages. In addition to maintaining program continuity, attention is also paid to recommendations from the Self-Evaluation of the Madrasah (Evaluasi Diri Madrasah/EDM), which serves as a valuable reference for improvement.

At this stage, brainstorming is required, involving dominant stakeholders such as the Bahrul Ulum Tambakberas Islamic Boarding School Institution, the committee, teachers, education experts, education practitioners, and alumni. All stakeholders are invited to jointly formulate and achieve the madrasah's goals (goal attainment) through the vision, mission, objectives, and strategies that have been established. After that, all units participate in a working meeting to discuss and plan programs based on the tasks assigned to each unit and the input gathered during brainstorming sessions with stakeholders. Madrasah that draws inspiration and aspirations from dominant stakeholders will enhance its competence and adaptability to advances in artificial intelligence (Fania Mutiara et al., 2022). At this stage of competitive advantage planning, it is also necessary to clarify the focus of the madrasah so that it can become the brand image of the madrasah. Focusing on achievement and service is the right choice to increase public trust in the madrasah. Previous research shows a strong correlation between planning and superior performance (O'Regan & Ghobadian, 2005).

Theoretically, Porter (1990) categorizes generic strategies into cost leadership, differentiation, and focus strategies. Within the cost leadership dimension, institutions competitive planning aimed to minimize operational expenses as much as possible. The integration of e-learning technologies and digitalized services can significantly reduce costs while simultaneously enabling stakeholders to access information efficiently. This reflects effective and efficient madrasah governance based on artificial intelligence, which represents a system-type differentiation strategy. At the planning stage, the madrasah incorporates pesantren (Islamic boarding school) values as a foundational element, since approximately 90% of its students originate from Pondok Pesantren Bahrul Ulum Tambakberas Jombang. These values serve as a distinctive feature that can be adapted into classroom learning. The vision, mission, and objectives of the madrasah—as well as its programs and activities—are collaboratively formulated with stakeholders, highlighting the institution's unique strengths and characteristics. In the differentiation dimension, the madrasah emphasizes uniqueness through products or services, quality, innovation, service delivery, and stakeholder loyalty. Selecting excellence and achievement-based programs serves as an appropriate strategy, as it enhances the madrasah's brand image. Consequently, the institution can differentiate itself further by offering specialized superior programs and elite classes. Additionally, the commitment to becoming a healthy and environmentally friendly (*adiwiyata*) madrasah, supported by well-formulated strategic initiatives, can function as a central focus of institutional strategy. Moreover, mapping students' potential, talents, and interests is essential to facilitate individual development. Hence, the madrasah should prioritize strategies that focus on nurturing individual student potential. In terms of the focus strategy, the madrasah provides education grounded in noble and moral values (AL-Momani, 2024; Mufrihah et al., 2025; Santoso et al., 2025). At this stage, individual attention is crucial, as moral and ethical development ultimately remains the responsibility of each student.

The use of Artificial intelligence in the field of education is a program application in education that is used to facilitate teaching, learning and decision-making (Hwang et al., 2020) these three are implemented by MAN 3 Jombang through the application "Si Mantap" which stands for integrated madrasah information system. In this application, the paradigm of Artificial intelligence as supported and empowered is used (Ouyang & Jiao, 2021). One of the focus strategies used is individualization, where the use of Artificial intelligence is very appropriate because it has key advantages for individual learning such as access to 24/7 modes, virtual training, adaptation of content tailored to students' personal needs, real-time, improvements in the educational and mental processes (Tapalova & Zhiyenbayeva, 2022)

## **Implementation**

The implementation of a competitive advantage is a concrete action taken to achieve excellence as previously planned. One of the advantages of MAN 3 Jombang is that the majority of its students are santri (students from Islamic boarding schools), with a total of 2,536 students. With this large number, quality can be selected from the available quantity, thereby increasing the likelihood of becoming an outstanding madrasah. The majority of educators and educational staff also come from the pesantren, making it easier to mobilize them to achieve the madrasah's vision and mission. Therefore, the human resources possessed by MAN 3 are one of the competitive advantages it holds. A madrasah with the aspiration to become an Adiwiyata madrasah, a character-building madrasah, and a healthy madrasah can begin by dividing tasks into specific working groups whose primary functions are to prepare and raise awareness among all madrasah members about environmental cleanliness and health, as well as character development. Becoming an Adiwiyata madrasah can be used as one of the strategies to improve environmental awareness (Yunita et al., 2022), strengthen character (Anggraini et al., 2022; Kartini et al., 2024), and foster environmental awareness. Human resources are also continuously improved through teacher training and spiritual development, as these can enhance competitive advantages and achieve outstanding achievements (Fitriah et al., 2024). The human resources of madrasahs, including educators, educational staff, and students, are also a source of excellence if managed effectively (Berisha Qehaja & Kutlovci, 2015; Ordóñez de Pablos et al., 2008; Schuler & MacMillan, 2006). Teachers are one of the key factors of madrasah excellence that require serious attention from madrasah principals. Teacher training is one of the sources of sustainable competitive advantage (Burden & Proctor, 2000).

One of the innovations implemented by MAN 3 is the establishment of a special unit called the Center for Achievement and Innovation, which is structurally responsible directly to the head of the madrasah, not under the deputy head of the madrasah. This unit is responsible for the achievements of both students and teachers. The Center for Excellence and Innovation oversees coordinators who specialize in specific fields in line with the center's objectives, such as the coordinator for the National Science Olympiad (OSN), Youth Scientific Works (KIR), Innovation and Technology, and Language and Arts. This unit is responsible for both academic and non-academic achievements. In addition, to focus on achievements, it is handled by appropriate coordinators in collaboration with a team (Sahayu et al., 2022; Widiana et al., 2023). Competitive advantages can also be built by forming a solid work team (Fitriah et al., 2024), as exemplified by the Center for Achievement and Innovation Unit, along with its coordinators.

Extracurricular activities are available in all madrasahs, but at MAN 3, due to the large number of students, they can be utilized as a unique advantage. Non-academic achievements are selected based on the best performers in each extracurricular activity, which include sports, martial arts, vocal arts, drama, painting, crafts, national defense, and language development. The competitive advantage of MAN 3 Jombang is also achieved through digitization, utilizing Academic system and E-Report, as well as E-Office, to enhance services and foster trust among parents in collaboration with vendors to develop applications. Porter explains that the use of technology can be a competitive advantage (E. Porter, 1985); therefore, the use of digital technology at MAN 3 aligns with the concept of excellence. In terms of academics, the existence of excellent classes and

programs can also be used to improve student achievement. Since almost all students come from Islamic boarding schools, a hybrid curriculum consisting of the government curriculum, Islamic boarding school curriculum, and local content is also employed. When needed, MAN 3 Jombang also conducts outsourcing to improve students' abilities, especially when facing OSN and KSM. Habituation is an activity aimed at fostering habits through programs such as group Dhuha prayers, group Zuhur prayers, religious talks, and the 3S program (smiling, greeting, shaking hands) can also be used to internalize religious character and discipline among students ([Fahyuni & Mistiningsih, 2020](#); [Santosa et al., 2022](#)). Religious culture is also revealed by other researchers who show its implementation through habit formation, reading the Quran, congregational prayer, and extracurricular activities ([Nafilah et al., 2025](#)). Finally, there is exemplary behavior, where the head of the madrasah sets an example by arriving earliest and leaving latest. MAN 3 Jombang focuses on academic achievement and educational services. The exemplary behavior and good performance of the school principal and teachers will impact the quality of graduates ([Maulidin et al., 2024](#)). The implementation of excellence is also carried out through the Tahfidz program, which can be used as a school advantage, as done by MAN 2 Pasuruan ([Mubarokah, 2019](#)), MAN 2 Malang. The Tahfidz program for senior high schools is indeed one of the programs that can enhance excellence, both in terms of competitive and comparative advantages.

Partnerships, both national and international, if managed well, can be a source of excellence for madrasahs. An example of a best practice is the partnership used by MAN 2 Mataram, West Nusa Tenggara, with a mutually beneficial cooperation pattern, specific objectives, and the ability to take advantage of each other's strengths and sustainability ([Al Idrus, 2017](#)). One way to implement a competitive advantage is through the formation of a madrasah culture. Previous research shows that madrasah culture influences teacher performance ([Darmawan, 2019](#)), teacher work motivation, and student achievement ([Pratomo & Kuswati, 2022](#)). One way to cultivate a madrasah culture is through the formation of habits, discipline, and a sense of responsibility. Habit formation is key in shaping character ([Sukma, 2020](#)). The pesantren atmosphere and the fact that 90% of the students are santri are internal strengths that are well recognized by MAN 3 and are truly directed towards its competitive advantage.

Focusing on core business is one of the dimensions of competitive advantage as presented by Porter. The existence of a Center for Excellence and Innovation, as well as digital education services, constitutes both competitive and comparative advantages for the madrasah. In addition, improving competence and emphasizing human resources in the form of teachers or educational staff is essential because human resources are the most critical resources that an organization has in terms of competitive advantage ([Agustian et al., 2023](#); [Alfawaire & Atan, 2021](#); [Ordóñez de Pablos & Lytras, 2008](#)).

In the focus strategy dimension, individualization among students can be fostered through programs such as excellence classes, tahfidz programs, habituation practices, and role modeling. These initiatives aim to support individual student development while enhancing their religiosity. The specific strengths and potentials of students should be identified early; once recognized, these students can be placed in specialized classes or excellence programs that nurture their talents. Meanwhile, the differentiation strategy may be implemented through a hybrid curriculum, digitalized services, achievement and innovation centers, and institutional collaborations that contribute to a more flexible, adaptive, and modern educational environment ([Sahayu et al., 2026](#)). In terms of system adaptation, madrasahs can apply differentiation by emphasizing cost efficiency, innovation, and artificial intelligence-based advantages, particularly through the development of academic information systems. Implementation may involve strategies such as outsourcing, internal and external quality assurance mechanisms, and strategic partnerships.

## Evaluation

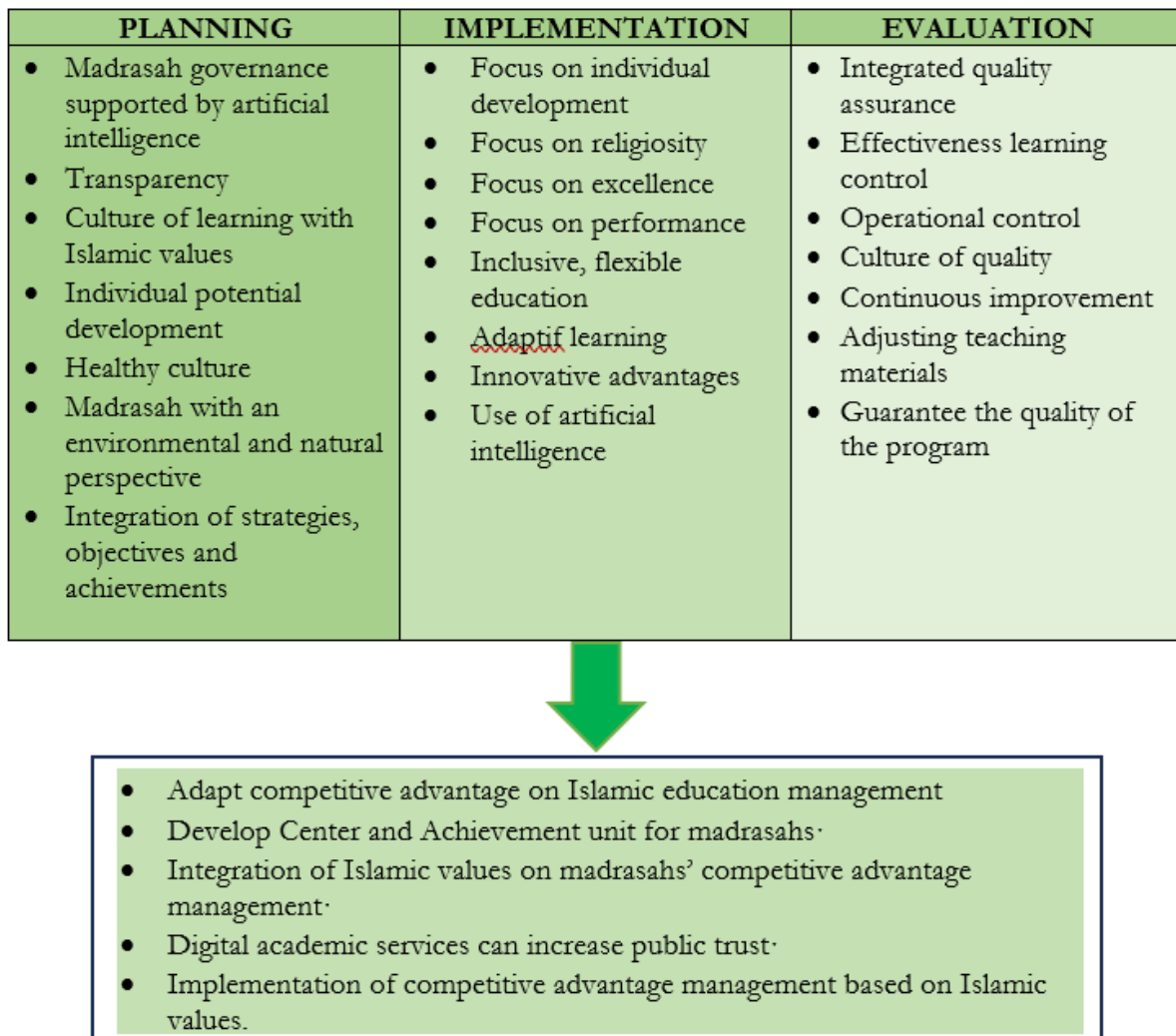
To ensure the achievement of objectives, an evaluation is necessary to compare the planning and the results of the implementation that has been carried out. Evaluation of competitive advantage can be done in several ways, including academic supervision. This activity is designed to enhance teachers' professional development. Research shows that academic supervision can influence teacher professionalism (Bahri, 2014; Istianah, 2019), teacher motivation (Hardono et al., 2017), education quality and teacher performance (Sunaedi & Rudji, 2023; Susanti et al., 2022). Academic supervision can be used to continuously improve teachers' capabilities in carrying out their duties, which will have an impact on the quality and achievement of students (Fauzi, 2023). Additionally, performance appraisals are conducted for educators and educational staff. Meanwhile, the products of skills are evaluated using product sales data, whether they are in demand by the community or not. Evaluations are also conducted by a quality assurance team formed and appointed by the madrasah, along with self-evaluations focused on five aspects: teacher development, preparation, implementation, learning process, learning materials, and fulfillment of standards. Performance assessments are also used for educators and educational staff. The aspects evaluated are assigned to their respective units. These five focuses are the core of high-achieving learning. By focusing on these five aspects, madrasahs can effectively manage key factors related to learning. MAN 3 Jombang is aware that the sources of competitive advantage that can be maximized are the values upheld in Islamic boarding schools, academic and vocational achievements, and services. Sources of competitive advantage and the ability to maintain that advantage are very important (Lev, 2017). Madrasahs that already have an advantage need to maintain and continuously improve that advantage. In addition, integrating available resources with quality assurance is an important step in gaining a competitive advantage (Laframboise & Reyes, 2008). MAN 3 has successfully practiced this by integrating resources with internal quality assurance, and the quality assurance department has even provided written recommendations based on evaluations in the Madrasah Self-Evaluation (*Evaluasi Diri Madrasah/EDM*). Social responsibility and good relationships with customers/stakeholders will influence the excellence of the madrasah, as research has proven the significant influence of social responsibility and relationships on competitive advantage. In maintaining these relationships, MAN 3 integrates them into the planning, implementation, and evaluation of excellence.

Cost leadership in evaluating competitive advantage is implemented through quality assurance, learning effectiveness control, and operational supervision, which can be categorized as *system-level differentiation*. Similarly, the practice of *madrasah* self-evaluation serves as a distinguishing factor from other *madrasahs*, particularly in aspects of organizational culture, quality enhancement, value internalization, and contextually relevant learning materials (Abdullah et al., 2025; Aina & Devianty, 2025; Suryaman et al., 2024). Ensuring program quality and excellence, alongside an emphasis on individual development within *madrasahs*, constitutes a strategic focus in achieving competitive advantage. Differentiation in this context can be understood as *individualization*, implying that *madrasahs* should prioritize the cultivation of students' individual talents and interests (Kustati et al., 2024; Setiawan et al., 2025).

Based on the discussion, Islamic values, such as Amanah, are manifested in the values of responsibility, humility, ihsan, and istiqomah (consistency), which are internalized in the management of madrasah excellence. One form of Amanah/responsibility of the madrasah is to provide parents with timely information through an information system regarding the development of their students. The positive effect of this is increased trust from parents in the madrasah. In terms of achievement, the existence of a center for achievement and innovation serves as a spearhead for accomplishments at the regional, national, and international levels. The presence of this special unit is a manifestation of the value of ihsan, which is to strive for excellence in the academic world, ultimately having a positive impact on the image of the madrasah both within the community and in the eyes of the government. The value of ihsan is a command to do good, as Allah SWT has commanded us to do good, as mentioned in QS. An-Nisa' [4]: 36. In another verse,

it is explained that if we do good, we will also receive good in return, QS. Ar-Rahman [55]: 60, and in another verse, it is emphasized that those who do good will receive the reward for their good deeds, even if it is as small as a speck of dust, as mentioned in QS. Al-Zalzalah [99]: 7-8. This means that a madrasah that creates the best programs and provides good services will also receive good rewards in the form of blessings, achievements, public trust, and increased stakeholder satisfaction. Good services, the establishment of centers of excellence and innovation, working groups, and flagship programs, as well as the digitization of programs and activities, make it easier for parents to obtain information about their children's progress. This program is the realization of ihsan in madrasah management in the era of artificial intelligence. Another verse also explains that doing good is doing good for oneself (QS. Al-Isra' [17]), meaning that if a madrasah provides the best programs and services, it is doing the best for its development.

In addition, other madrasahs can adopt the competitive excellence management used by MAN 3 Jombang, by adjusting the program according to their conditions and circumstances. In this way, other madrasahs can become excellent and high-achieving madrasahs that ultimately earn the trust of the community. Based on the discussion above, the management of competitive advantage carried out by MAN 3 can be concluded as shown in the following figure 2;



**Figure 2.** Practical contribution of research findings of competitive advantage management on madrasah in the artificial intelligence era

## CONCLUSION

The planning of MAN 3 Jombang's competitive advantages was carried out through brainstorming with stakeholders to gather aspirations and goals. The madrasah also aims to become a character-building madrasah, a healthy madrasah, and an Adiwiyata madrasah. During the planning stage, key strategies were established to refine and prepare the madrasah's competitive advantages as thoroughly as possible. This planning stage was also integrated with the achievement of objectives based on the madrasah's vision, mission, goals, and strategies. Islamic values internalization encompasses responsibility, humility, and adherence to the *ahlussunnah wal jama'ah*. The implementation of competitive advantages at MAN 3 Jombang is carried out by forming work groups to prepare for becoming an Adiwiyata madrasah, healthy madrasah, and a character-building madrasah. Additionally, the school innovates by establishing a Center for Excellence and Innovation (Pusat Prestasi dan Inovasi/PPI), which is led by several coordinators with specific tasks. The implementation of excellence is also carried out through strengthening extracurricular activities, digitalization, opening elite classes and programs, a *tahfidz* program, using a hybrid curriculum (government, pesantren, and local curriculum), conducting habit formation, providing role models, domestic and international partnerships, establishing internal quality assurance, and fostering a madrasah culture. Excellence evaluation is conducted through academic supervision to continuously improve teachers' competencies. Additionally, evaluations are carried out on teachers' professional development, the learning process (including preparation, implementation, and learning activities), learning materials, discipline among both teachers and students, and compliance with national standards. For products produced through skill development programs, evaluations are conducted based on sales data.

This study contributes to the competitive advantage theory by incorporating Islamic/pesantren value-based management within the context of educational institutions. Islamic values can be integrated and even strengthen the basic foundation of excellence, especially because of the values instilled by madrasah's based pesantren which are Islamic educational institutions in Indonesia. The practical implications of this study suggest that madrasah leaders can adopt a value-driven management model supported by digital systems to enhance madrasahs performance develop center and achievement unit, , quality and advantages. As well as internalizing Islamic values into the management of excellence, because precisely with this value it turns out that the competitive advantage of madrasahs is getting stronger and has its own uniqueness.

The limitation of this study is focus on one madrasah only, which restricts the generalizability of the findings to other madrasahs, except those with similar contextual characteristics.. Future research could extend this study by conducting comparative analyses across madrasahs with comparable management structures to identify both similarities and differences, or by exploring the dimensions and aspects identified in this research using mixed-methods

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