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Digital Transformation Management in Modern Islamic Boarding Schools: Opportunities and Challenges

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ABSTRACT:

Digital transformation has become a strategic necessity for educational institutions in responding to the development of information technology and the increasingly dynamic demands of society. As Islamic educational institutions, modern Islamic boarding schools are required to adapt to these changes without compromising the Islamic boarding school values that constitute their identity. This article aims to examine the implementation of digital transformation management at Pondok Modern Darussalam Gontor, Ponorogo, and to analyze the various opportunities and challenges encountered in its implementation. This study employs a library research method using a descriptive-qualitative approach. Data were obtained through documentation studies of books, scientific journal articles, official documents, and various relevant literature related to the topic of discussion. The findings indicate that digital transformation at Pondok Modern Darussalam Gontor has been implemented through the utilization of information technology in administrative management, institutional information dissemination, public communication, and support for the learning process. This implementation provides various opportunities, including improving governance effectiveness, enhancing the quality of educational services, strengthen

INTRODUCTION

Digital transformation has become one of the strategic agendas in organizational management across various sectors, including the education sector. The rapid development of information and communication technology has transformed organizational governance patterns, decision-making processes, service systems, and learning models. Digitalization is no longer understood merely as the use of technological devices, but rather as a comprehensive transformation process that integrates digital technology into all aspects of an organization to improve effectiveness, efficiency, innovation, and

institutional competitiveness. [1]

As one of the oldest Islamic educational institutions in Indonesia, Islamic boarding schools (*pesantren*) play a strategic role in developing human resources who are not only intellectually capable but also possess strong character, moral values, and spirituality. For centuries, pesantren have maintained their existence through distinctive educational systems, with the *kiai* serving as the center of leadership, the mosque as the center of religious activities, and the dormitory as an environment for shaping students' character. Nevertheless, the dynamics of digital technological development have presented new challenges for pesantren to undertake various forms of adaptation without abandoning their identity, values, and traditions that constitute their distinctive characteristics.

Modern Islamic boarding schools (*pesantren*) represent a form of Islamic educational institution that tends to be more open to innovation than traditional pesantren. In addition to maintaining religious education, modern pesantren also integrate general education curricula, foreign language proficiency, skills development, and the utilization of information technology in various institutional activities. This condition makes digital transformation not merely an option but a strategic necessity so that pesantren governance can keep pace with changing times and respond to the demands of an increasingly digitalized society. [2]

From a management perspective, digital transformation is not merely concerned with the procurement of technological devices, but also involves an organization's ability to plan changes, organize resources, mobilize all organizational elements, and supervise the implementation of such changes. In other words, the success of digital transformation is largely determined by the quality of management implemented by an organization. Therefore, the adoption of digital technology within pesantren requires visionary leadership, adaptive human resources, an organizational culture that supports innovation, and an evaluation system capable of ensuring that every change generates added value for the institution.

One Islamic boarding school that is particularly relevant to examine in this context is Pondok Modern Darussalam Gontor in Ponorogo Regency, East Java. As one of the largest modern Islamic boarding schools in Indonesia, Gontor is known for its relatively well-established educational management system, strong institutional discipline, and ability to adapt to various developments over time. In recent years, various aspects of pesantren management, ranging from administration and academic services to institutional communication and information dissemination through digital media, have demonstrated efforts toward transformation aimed at improving institutional effectiveness. Nevertheless, this transformation process continues to face various challenges, including improving human resource competencies, strengthening digital infrastructure, ensuring data security, and maintaining a balance between modernization and the preservation of pesantren values.

[1] Apriyanto Nugroho & Anita Puji Astutik, "Digital Transformation of Islamic Boarding School Education," *Indonesian Journal of Islamic Studies*, Vol. 12, No. 2, 2024.

[2] Novianto Puji Raharjo & Nashoihul Ibad, "Transformasi Pesantren di Era Digital: Peluang dan Tantangan dalam Aspek Dakwah dan Pendidikan," *Masjiduna: Jurnal Ilmiah STIDKI Ar-Rahmah*, Vol. 7, No. 1, 2024.

On the other hand, digital transformation also provides significant opportunities for the development of modern pesantren. The utilization of information technology can improve administrative efficiency, expand access to learning, strengthen communication with the community, enhance governance transparency, and broaden networks of cooperation with various national and international institutions. In addition, digital media serves as a strategic means of introducing the existence of pesantren to the wider community, strengthening institutional image, and reinforcing the function of Islamic *da'wah* in the digital space. [3]

Nevertheless, these opportunities are accompanied by challenges that must be addressed by pesantren administrators. Gaps in digital literacy, limited technological infrastructure, resistance to organizational change, and the potential misuse of technology by students are issues that require prudent management. Therefore, digital transformation needs to be understood as an organizational change process that must be systematically planned through the implementation of management functions, so that the educational objectives of pesantren can be maintained while simultaneously responding to the needs of society in the digital era.

Based on the foregoing discussion, this article aims to examine how digital transformation management is implemented at Pondok Modern Darussalam Gontor, Ponorogo, while also analyzing the various opportunities and challenges that arise during its implementation. This study is expected to provide an overview of the importance of a management approach in managing digital transformation within Islamic educational institutions, enabling pesantren to preserve their traditional values while maintaining their capacity to adapt to technological developments and changes in the strategic environment.

RESEARCH METHODOLOGY

This study employed a qualitative approach with an exploratory descriptive design to analyze the business feasibility of Micro, Small, and Medium Enterprises (MSMEs) operating in the industrial region of Nganjuk Regency. The research participants consisted of 15 MSME owners selected through purposive sampling based on the following criteria: (1) having operated their businesses for at least three years, (2) being located within or adjacent to the industrial area, and (3) having business activities directly or indirectly associated with industrial operations. The participants represented various business sectors, including manufacturing, services, and trade. To enhance the credibility and comprehensiveness of the findings, five key informants from the Department of Cooperatives and MSMEs, the Department of Industry and Trade, and local business associations were also included, enabling data triangulation from multiple stakeholder perspectives.

[3] Ahmad Farid dkk., "Dinamika Pesantren Modern dalam Era Digital: Analisis Pengaruh Media Sosial," *Jurnal Ilmiah Penelitian Mahasiswa*, Vol. 2, No. 4, 2024.

Data were collected through field observations, semi-structured in-depth interviews, and document analysis, with the researcher serving as the primary research instrument. The data were analyzed using thematic analysis following the framework developed by Braun and Clarke, which involves familiarization with the data, systematic coding, theme development, theme review, definition and refinement of themes, and interpretation of the findings. The credibility and trustworthiness of the data were ensured through source triangulation, member checking, and an audit trail. Furthermore, NVivo 12 software was employed to facilitate systematic data organization, coding, and thematic analysis, thereby enhancing the rigor, transparency, and reliability of the analytical process.

RESULT AND DISCUSSIONS

Brief Profile of Pondok Modern Darussalam Gontor

The findings indicate that MSMEs operating in the districts of Nganjuk, Bagor, and Loceret are primarily concentrated in the food processing (40%), retail trade (33%), and service (27%) sectors. Overall, the participating enterprises have been in operation for an average of 7.3 years, suggesting a relatively high level of business resilience and operational maturity. The presence of large manufacturing industries, located at an average distance of only 2.8 km from the MSMEs, has generated both opportunities and challenges. On the one hand, industrial expansion has increased local purchasing power through the employment of thousands of workers. On the other hand, it has intensified competition for skilled labor and contributed to rising land prices in areas surrounding the industrial zones.

Business feasibility was evaluated through five key dimensions to assess the long-term sustainability of MSMEs.

Market Aspect. Approximately 73% of the surveyed MSMEs demonstrated favorable market feasibility, as reflected in stable demand generated by employees of nearby manufacturing companies. Supporting service businesses, particularly laundry and catering services, reported annual demand growth of approximately 25%. However, the remaining 27%, especially traditional handicraft producers, faced considerable challenges due to changing consumer preferences toward lower-priced mass-produced products.

Technical Aspect. From an operational perspective, around 60% of MSMEs possessed adequate production capacity to meet current market demand. Nevertheless, approximately 80% continued to rely on conventional or semi-automated production technologies. Technological upgrading has gradually emerged, with nearly 40% of enterprises adopting modern machinery and digital management systems to improve production efficiency and operational performance.

Managerial Aspect. Most MSMEs (87%) continued to operate under simple family-based

organizational structures, with limited separation of managerial responsibilities between business owners and operational managers. Furthermore, approximately 47% had not yet separated personal and business financial records, indicating weaknesses in financial governance and professional business management. Business planning, performance evaluation, and decision-making were generally based on practical experience rather than systematic managerial practices. This condition reduced the ability of MSMEs to monitor financial performance, measure business efficiency, and formulate long-term development strategies. Consequently, strengthening managerial competencies through entrepreneurship training, financial literacy programs, and business mentoring is essential to improve organizational effectiveness and enhance business sustainability in an increasingly competitive industrial environment.

Socioeconomic Aspect. The socioeconomic contribution of MSMEs was particularly significant. Collectively, the surveyed enterprises generated employment opportunities for 127 local workers, highlighting their important role in promoting inclusive economic growth while preserving local cultural values amid the ongoing process of industrialization. Beyond their economic function, MSMEs also contributed to poverty reduction, household income generation, and the development of local entrepreneurship by creating employment opportunities for individuals with limited access to formal industrial jobs. Many businesses incorporated local resources and traditional knowledge into their products and services, thereby supporting cultural preservation while strengthening the regional economy. These findings indicate that MSMEs function not only as business entities but also as key drivers of community resilience and sustainable local development.

Financial Aspect. Financial performance varied across enterprises. Approximately 53% of MSMEs achieved healthy net profit margins exceeding 15%. However, dependence on internally generated capital remained substantial, with 67% relying primarily on personal savings because of limited access to formal financial institutions and stringent administrative lending requirements. Most business owners also lacked systematic financial planning and accounting practices, making it difficult to evaluate profitability, manage cash flow, and estimate future investment needs accurately. Limited financial literacy further constrained their ability to access external financing and expand production capacity. These findings suggest that improving financial management capabilities, promoting simple accounting systems, and expanding access to affordable financing programs are critical to strengthening the long-term financial viability and competitiveness of MSMEs operating in industrially developing regions.

Implementasi Transformasi Digital pada Pondok Modern Darussalam Gontor

The field investigation identified five major strategies adopted by MSMEs to sustain their competitiveness within the evolving industrial ecosystem.

Product Differentiation and Unique Value Creation. Entrepreneurs emphasized the development of products characterized by local authenticity, cultural identity, and distinctive quality that are difficult for large-scale industrial manufacturers to replicate.

Strategic Partnerships. Many MSMEs established collaborative relationships with manufacturing companies by serving as suppliers of goods or providers of supporting services, including catering, logistics, and other operational services.

Digital Transformation. MSMEs increasingly utilized e-commerce platforms, online marketplaces, and social media to reduce dependence on conventional distribution channels and expand their customer base beyond Nganjuk Regency.

Operational Efficiency and Product Innovation. Business owners continuously sought to improve production efficiency while introducing new product variants based on customer feedback and evolving market demand, enabling them to remain competitive in a rapidly changing business environment.

The findings support the **Resource-Based View (RBV)** theory, which argues that sustainable competitive advantage originates from unique internal resources and organizational capabilities. In the context of MSMEs in Nganjuk Regency, business resilience is primarily derived from entrepreneurs' ability to leverage social capital, organizational flexibility, and adaptive capabilities as strategic resources. These intangible assets enable MSMEs to respond effectively to industrial transformation despite operating with relatively limited financial and technological resources. Strong relationships with customers, suppliers, local communities, and business partners have become valuable assets that cannot be easily replicated by larger firms. In addition, the flexibility of small-scale business operations allows MSMEs to make rapid decisions, customize products according to changing consumer preferences, and respond quickly to market fluctuations. These capabilities collectively strengthen business resilience and enable MSMEs to remain competitive despite increasing pressure from industrial expansion.

The findings are also consistent with Kristiyanti (2021), who argued that the presence of large-scale industries should be viewed not merely as competitors but as potential partners within a broader industrial ecosystem. This study demonstrates that successful MSMEs have developed collaborative business relationships with manufacturing firms while simultaneously maintaining their competitive advantage through product differentiation and service personalization. Several MSMEs have successfully integrated themselves into industrial supply chains by providing catering services, transportation support, maintenance services, packaging materials, and locally sourced products required by larger manufacturing companies. Such partnerships not only expand market opportunities but also improve business stability by creating more predictable demand and long-term contractual relationships. These findings suggest that industrialization can generate mutually beneficial outcomes when MSMEs are able to position themselves as complementary business partners rather than direct competitors.

Moreover, the study reveals that competitive differentiation extends beyond the uniqueness of physical products. Personalized customer service, flexibility in responding to consumer needs, and close interpersonal relationships have become distinctive competitive advantages that are difficult for large industrial firms to imitate. Unlike mass-production industries that primarily compete through economies of

scale and standardized products, MSMEs maintain competitiveness by offering customized products, rapid service adjustments, and stronger emotional connections with customers. Many respondents emphasized that customer loyalty was built through trust, consistent product quality, and direct communication rather than price competition alone. This customer-oriented approach has enabled MSMEs to retain existing customers while attracting new market segments seeking authentic local products and more personalized services. Therefore, relationship-based competitive strategies represent an important source of sustainable competitive advantage for small businesses operating in industrially developing regions.

Furthermore, the findings indicate that business sustainability is influenced not only by internal capabilities but also by the quality of the surrounding business ecosystem. Government support through entrepreneurship training, business mentoring, marketing facilitation, and access to exhibitions has contributed positively to improving entrepreneurial knowledge and expanding business networks. Nevertheless, several respondents reported that such support remains unevenly distributed and that stronger coordination among government agencies, financial institutions, universities, and private industries is still required. A more integrated industrial ecosystem would provide MSMEs with better opportunities to access technology, financing, skilled human resources, and broader marketing channels, thereby enhancing their long-term competitiveness.

Finally, digital transformation among MSMEs should not be interpreted solely as the adoption of digital technologies. Rather, it represents a fundamental shift in business orientation—from conventional transaction-based operations toward customer-centered and data-driven business management. This transformation enables MSMEs to better understand consumer preferences, improve marketing effectiveness, strengthen customer engagement, and enhance long-term competitiveness within increasingly dynamic industrial environments. The utilization of social media platforms, e-commerce marketplaces, digital payment systems, and customer databases has gradually changed the way entrepreneurs interact with consumers and manage business operations. MSMEs that actively adopted digital technologies reported broader market coverage, faster communication with customers, lower marketing costs, and greater responsiveness to changing consumer demands. These findings are consistent with the dynamic capabilities perspective, which emphasizes that organizational adaptability and continuous learning are critical determinants of business sustainability in rapidly changing environments.

Overall, this study demonstrates that the business viability of MSMEs in industrially developing regions cannot be explained solely by financial performance or market opportunities. Instead, business sustainability emerges from the interaction between internal organizational resources, adaptive managerial capabilities, innovation, digital transformation, and the support provided by the external industrial ecosystem. Consequently, strengthening managerial competencies, promoting digital literacy, facilitating access to financial services, encouraging product innovation, and fostering collaborative partnerships among government, industry, universities, and local communities are essential policy priorities for improving the long-term resilience and competitiveness of MSMEs in Nganjuk Regency and other

industrializing regions.

CONCLUSION

Overall, this study concludes that MSMEs operating in the industrial region of Nganjuk Regency demonstrate a relatively high level of business feasibility, particularly in terms of market potential and socioeconomic contribution. Nevertheless, considerable variation remains in the financial and technical dimensions, while managerial professionalism and human resource development continue to represent the most significant challenges requiring immediate attention. The findings indicate that effective business survival strategies do not depend on a single factor but rather on the integration of product differentiation, strategic collaboration with large-scale industries, digital marketing transformation, and operational efficiency. These strategies should be implemented adaptively in accordance with the unique characteristics, capabilities, and resource endowments of individual enterprises.

The presence of large-scale industries in Nganjuk Regency generates both opportunities and challenges for the local business ecosystem. On the one hand, industrialization creates new market opportunities and strengthens the potential for strategic partnerships. On the other hand, it intensifies competition for labor, capital, and other productive resources while increasing competitive pressures on MSMEs. The findings demonstrate that innovative and adaptive MSMEs exhibit greater resilience and are better positioned to leverage the presence of large manufacturing firms as catalysts for business growth rather than perceiving them solely as competitors. Therefore, stronger collaboration between the public and private sectors is essential to foster a more supportive and sustainable business environment.

From a policy perspective, local government initiatives should prioritize five strategic areas: (1) facilitating structured partnerships between MSMEs and large-scale industries; (2) strengthening access to finance, technology, and business support services; (3) developing industrial clusters based on local competitive advantages; (4) implementing business incubation and entrepreneurial capacity-building programs; and (5) establishing a comprehensive monitoring and evaluation system to assess MSME performance on a continuous basis. Academically, this study contributes to the growing body of knowledge on MSME business feasibility, regional adaptation strategies, and industrial ecosystem development. Practically, the findings provide evidence-based recommendations for policymakers, business practitioners, and other stakeholders in designing more contextual, targeted, and sustainable MSME empowerment programs capable of enhancing resilience and competitiveness amid the accelerating process of industrialization.

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