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Business Ecosystem Management for Sustainable Islamic Boarding Schools: Evidence from Retail, Service, and Aquaculture Enterprises

Manajemen Ekosistem Bisnis untuk Keberlanjutan Pondok Pesantren: Bukti dari Unit Usaha Ritel, Jasa, dan Akuakultur

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Abstract:

The increasing demand for institutional self-reliance has encouraged Islamic boarding schools to develop entrepreneurial activities as strategic mechanisms for strengthening financial sustainability. However, limited studies have examined how multiple business units within pesantren are managed as an integrated ecosystem rather than as separate economic entities. This study aims to analyze the implementation of Business Ecosystem Management in supporting the sustainability of Islamic boarding schools through the integration of retail, service, and aquaculture enterprises. This research employed a qualitative case study approach. Data were collected through semi-structured interviews with pesantren leaders, business unit managers, financial administrators, and employees, supported by observation and document analysis. Data were analyzed using the interactive model of Miles, Huberman, and Saldaña, consisting of data condensation, data display, and conclusion drawing and verification. The findings reveal that Business Ecosystem Management within the pesantren is developed through four interconnected dimensions: vision-driven business governance, strategic resource integration, cross-unit business collaboration, and institutional sustainability. These dimensions demonstrate that the sustainability of pesantren enterprises is not determined merely by individual business performance but by the institution's capability to orchestrate interconnected business units through shared vision, resource circulation, and collaborative practices. This study contributes theoretically by extending Business Ecosystem Management perspectives into the context of Islamic educational institutions and demonstrates how value-based organizations can transform entrepreneurial activities into sustainable institutional capabilities. Practically, this study provides insights for pesantren leaders and Islamic educational stakeholders in designing integrated business strategies that align economic development with educational and social missions.

Keywords*:* Business Ecosystem Management; Islamic Boarding School; Pesantren Entrepreneurship; Institutional Sustainability; Social Enterprise

Abstrak:

Meningkatnya tuntutan terhadap kemandirian kelembagaan telah mendorong pesantren untuk mengembangkan berbagai aktivitas kewirausahaan sebagai strategi dalam memperkuat keberlanjutan institusi. Namun, kajian sebelumnya masih terbatas dalam menjelaskan bagaimana berbagai unit usaha pesantren dikelola sebagai sebuah ekosistem bisnis yang terintegrasi, bukan sekadar sebagai unit ekonomi yang berdiri sendiri. Penelitian ini bertujuan untuk menganalisis implementasi Business Ecosystem Management dalam mendukung keberlanjutan pesantren melalui integrasi unit usaha retail, jasa, dan akuakultur. Penelitian ini menggunakan pendekatan kualitatif dengan desain studi kasus. Data dikumpulkan melalui wawancara semi-terstruktur dengan pengasuh pesantren, direktur unit usaha, manajer setiap unit bisnis, pengelola keuangan, dan karyawan, serta diperkuat dengan observasi dan analisis dokumen. Data dianalisis menggunakan model interaktif Miles, Huberman, dan Saldaña yang meliputi kondensasi data, penyajian data, serta penarikan kesimpulan dan verifikasi. Hasil penelitian menunjukkan bahwa Business Ecosystem Management dalam konteks pesantren dibangun melalui empat dimensi yang saling berkaitan, yaitu tata kelola bisnis berbasis visi, integrasi sumber daya strategis, kolaborasi lintas unit usaha, dan keberlanjutan kelembagaan. Temuan ini menunjukkan bahwa keberlanjutan bisnis pesantren tidak semata-mata ditentukan oleh kinerja masing-masing unit usaha, tetapi oleh kemampuan lembaga dalam mengorkestrasi berbagai aktivitas bisnis melalui visi bersama, sirkulasi sumber daya, dan praktik kolaboratif. Penelitian ini memberikan kontribusi teoretis dengan memperluas perspektif Business Ecosystem Management pada konteks lembaga pendidikan Islam berbasis nilai serta menunjukkan bagaimana aktivitas kewirausahaan dapat ditransformasikan menjadi kapabilitas kelembagaan yang berkelanjutan. Secara praktis, penelitian ini memberikan wawasan bagi pengelola pesantren dan pemangku kepentingan pendidikan Islam dalam merancang strategi bisnis terpadu yang selaras dengan misi pendidikan dan sosial kelembagaan.

Kata kunci: Business Ecosystem Management; Pesantren; Kewirausahaan Pesantren; Keberlanjutan Kelembagaan; Ekosistem Bisnis

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INTRODUCTION

In recent years, Islamic boarding schools (*pesantren*) in Indonesia have experienced a significant institutional transformation, evolving from traditional religious educational institutions into organizations that actively participate in productive economic activities through the establishment of diverse business enterprises. This transformation has been driven by the increasing demand for financial sustainability, institutional self-reliance, and growing public expectations that pesantren should contribute not only to religious education but also to local economic development. Consequently, business development is no longer perceived as a supplementary activity but has become an integral institutional strategy to strengthen economic capacity, support educational financing, and generate broader social impacts within surrounding communities. This phenomenon reflects a fundamental paradigm shift in which pesantren are gradually transitioning from donation-dependent educational institutions toward value-driven entrepreneurial organizations that integrate Islamic principles with sustainable economic practices. Recent studies have demonstrated that entrepreneurial initiatives within pesantren increasingly emphasize the creation of both economic and social value through the implementation of Islamic social entrepreneurship, thereby enhancing organizational resilience while simultaneously fostering community empowerment and sustainable institutional development (Ascarya et al., 2023; Haneef et al., 2022; Wibowo et al., 2024).

This institutional transformation is reflected in the increasing number of Islamic boarding schools that have adopted business diversification as a strategic approach to strengthening organizational economic resilience. Various business units, including retail minimarkets, cooperatives, printing services, photocopying businesses, agriculture, aquaculture, and digital-based enterprises, are increasingly managed through professional business practices while maintaining the Islamic values that underpin pesantren governance. Such diversification is not solely intended to increase institutional revenue but also serves as a platform for entrepreneurial education, community economic empowerment, and the creation of employment opportunities for local residents. Within the context of this study, this phenomenon is represented by three business units operating in different economic sectors, namely a retail minimarket, photocopying services, and catfish aquaculture. Although these enterprises possess distinct operational characteristics, market orientations, and managerial processes, they are administered under a unified institutional governance system. This condition indicates that the pesantren has moved beyond simple business diversification toward establishing an integrated business system capable of coordinating heterogeneous economic activities to support long-term organizational sustainability.

The existence of multiple business units operating across different economic sectors indicates that the primary challenge facing Islamic boarding schools is no longer the establishment of new enterprises but rather the ability to integrate these heterogeneous businesses into a coherent and effective organizational management system. Each business unit possesses distinctive operational characteristics, resource requirements, market orientations, and risk profiles, all of which require systematic coordination, strategic decision-making, and efficient resource allocation. In practice, the success of an individual enterprise does not necessarily translate into institutional sustainability unless it is supported by effective inter-business collaboration, integrated governance mechanisms, and organizational capabilities that facilitate shared value creation. Consequently, the long-term sustainability of pesantren-based enterprises depends not merely on the financial performance of individual business units but also on the institution's ability to develop mutually reinforcing relationships among diverse economic activities, thereby establishing an adaptive, collaborative, and sustainable business system capable of supporting its educational and social missions.

The expansion of diverse business enterprises within Islamic boarding schools demonstrates that economic activities have become an inseparable component of institutional development strategies. Nevertheless, managing multiple business sectors simultaneously introduces increasingly complex managerial challenges, particularly in relation to organizational coordination, resource integration, strategic alignment between commercial objectives and educational missions, as well as the simultaneous creation of economic and social value. On the one hand, each enterprise is expected to generate sufficient financial returns to support institutional sustainability; on the other hand, all business activities must consistently reflect Islamic ethical principles, social responsibility, and community empowerment, which constitute the fundamental identity of pesantren. These conditions suggest that the success of pesantren-based enterprises cannot be adequately understood by examining the performance of individual business units in isolation. Instead, a broader analytical perspective is required to explain how heterogeneous enterprises interact, share organizational resources, develop collaborative relationships, and create institutional synergies within a unified organizational system. Accordingly, this empirical phenomenon provides a compelling basis for examining Business Ecosystem Management as an analytical perspective for understanding how interconnected business activities contribute to the long-term sustainability of Islamic boarding schools.

Over the past decade, scholarly attention to institutional entrepreneurship and organizational sustainability has expanded considerably within the field of management studies. Increasing environmental uncertainty and market complexity have encouraged organizations, including nonprofit institutions and educational organizations, to move beyond their traditional social missions by developing sustainable business models capable of generating long-term economic value. Contemporary literature suggests that organizational sustainability is no longer determined solely by access to external funding but increasingly depends on an organization's ability to effectively mobilize strategic resources, foster business innovation, and establish adaptive governance systems capable of responding to environmental changes (Teece, 2023; Foss & Saebi, 2022). Within this context, the concept of the business ecosystem has emerged as a prominent theoretical perspective because it explains how diverse actors, organizational resources, and economic activities interact to facilitate value co-creation and sustainable competitive advantage. Consequently, the business ecosystem perspective has become increasingly relevant for understanding organizations that simultaneously manage multiple business activities while pursuing broader institutional objectives.

The concept of the business ecosystem has emerged as one of the most influential perspectives in strategic management for explaining how organizations achieve sustainable competitive advantage through collaborative interactions with multiple actors and interconnected resources. Unlike traditional organizational perspectives that view firms as independent entities operating within clearly defined industrial boundaries, the business ecosystem perspective argues that value creation is generated through continuous collaboration, resource integration, knowledge exchange, and coordinated activities among diverse stakeholders within an interconnected network. Accordingly, organizational success depends not only on internal capabilities but also on the ability to establish adaptive relationships, coordinate interdependent business activities, and foster synergies across multiple organizational units. Existing studies consistently demonstrate that organizations capable of developing integrated business ecosystems tend to exhibit higher levels of innovation, organizational resilience, and long-term sustainability than those managing business units in isolation. Consequently, Business Ecosystem Management has become an increasingly important analytical framework for understanding how organizations coordinate heterogeneous business activities to facilitate shared value creation while maintaining competitiveness in rapidly changing environments.

ased on the identified research gap, this study aims to examine the implementation of Business Ecosystem Management in managing multiple business enterprises within an Islamic boarding school. Specifically, the study seeks to explain how the integration of retail, service, and aquaculture businesses contributes to institutional sustainability through resource integration, organizational coordination, value creation, and collaborative governance within a unified business ecosystem. This study offers two major contributions. Theoretically, it extends the application of Business Ecosystem Management to the context of Islamic boarding schools, where previous studies have primarily emphasized social entrepreneurship and economic independence. The findings demonstrate that institutional sustainability is shaped not only by the performance of individual business units but also by the organization's capability to integrate diverse business activities into a coherent business ecosystem. Practically, this study provides managerial insights that may assist Islamic boarding schools in designing integrated business strategies, strengthening organizational governance, and enhancing long-term economic sustainability through collaborative business ecosystem management.

RESEARCH METHOD

This study employed a qualitative approach using a single-case study design to obtain an in-depth understanding of how Business Ecosystem Management is implemented in managing multiple business enterprises within an Islamic boarding school. A qualitative approach was considered appropriate because it enables researchers to explore organizational processes, managerial interactions, resource integration, and institutional strategies that cannot be adequately explained through quantitative methods. The case study design was adopted to investigate a contemporary organizational phenomenon within its real-life context, allowing a holistic understanding of how interconnected business units collectively contribute to institutional sustainability.

The research was conducted at Ummul Quro As-Suyuty Islamic Boarding School, Pamekasan, East Java, Indonesia. The institution was purposively selected because it has developed several business enterprises operating in different economic sectors, including a retail minimarket, photocopying services, and catfish aquaculture. These heterogeneous business units are managed under a single institutional governance system, providing an appropriate setting for examining how multiple enterprises are integrated into a sustainable business ecosystem within a faith-based educational institution.

Participants were selected through purposive sampling, involving individuals who possess direct knowledge and managerial responsibilities related to the pesantren's business operations. The participants included the head of the Islamic boarding school, the director of business development, managers of the minimarket, photocopying service, and catfish farming units, finance personnel, employees from each business unit, and several teachers involved in supervising entrepreneurship programs. Additional information was obtained from several students participating in business activities to understand how entrepreneurial practices are embedded within the educational environment.

Data were collected through semi-structured interviews, participant observations, and document analysis. Semi-structured interviews explored participants' experiences regarding business planning, organizational coordination, resource allocation, decision-making processes, financial management, collaboration among business units, and strategies for maintaining institutional sustainability. Participant observations focused on daily operational activities, inter-unit interactions, managerial meetings, customer services, and business workflows to understand how the business ecosystem functions in practice. Documentary analysis included organizational reports, financial records, standard operating procedures, institutional regulations, business development plans, promotional materials, and other relevant institutional documents that supported the interpretation of empirical findings.

To enhance the credibility and trustworthiness of the findings, the study employed source triangulation, methodological triangulation, and member checking. Source triangulation was conducted by comparing information obtained from participants occupying different organizational roles. Methodological triangulation involved cross-validating evidence collected through interviews, observations, and documentary analysis. Member checking was undertaken by returning interview summaries and preliminary interpretations to several key informants to ensure the accuracy and credibility of the findings.

Data were analyzed using the interactive analysis model of Miles, Huberman, and Saldaña (2014), consisting of three interconnected stages: data condensation, data display, and conclusion drawing and verification. During the coding process, thematic analysis was applied to identify recurring patterns related to resource integration, inter-business collaboration, governance mechanisms, value creation, organizational coordination, and institutional sustainability. The findings from these themes were subsequently synthesized to develop a conceptual explanation of how Business Ecosystem Management operates within an Islamic boarding school and how interconnected business enterprises contribute to long-term organizational sustainability

RESULTS

Vision-Driven Hierarchical Governance for Institutional Business Independence

The findings reveal that the governance of business enterprises within the Islamic boarding school is fundamentally driven by a long-term institutional vision of achieving financial independence. Rather than establishing business units solely to generate additional income, the pesantren positions entrepreneurship as a strategic instrument for strengthening institutional autonomy and ensuring the sustainability of educational activities. This vision serves as the primary foundation for developing various business sectors, including the retail minimarket, photocopying service, and catfish aquaculture. Consequently, every managerial decision is oriented toward reducing dependence on external financial assistance while simultaneously enhancing the pesantren's capacity to finance its educational and social missions through internally generated resources.

This strategic orientation was consistently emphasized by the head of the Islamic boarding school, who stated:

"Visi kami jelas yaitu kemandirian. Pesantren yang bagus adalah pesantren yang mandiri secara finansial dan tidak boleh bergantung pada bantuan pihak lain." (Head of Islamic Boarding School)

The interview findings further indicate that business governance is implemented through a hierarchical yet participatory decision-making system. Strategic decisions are not determined individually but are processed through structured organizational mechanisms involving managers at different levels before being finalized by institutional leaders. Such governance reflects an emphasis on transparency, collective deliberation, and risk consideration in every major business decision.

As explained by the Director of Business Development:

"Sistem kami hierarkis. Segala keputusan besar harus melalui mekanisme terstruktur mulai dari tingkat bawah sampai tertinggi. Jika belum ditemukan solusi, keputusan diambil bersama dengan mempertimbangkan risiko yang mungkin muncul. Keputusan yang baik adalah keputusan yang dilakukan secara transparan." (Director of Business Development)

These findings indicate that the pesantren adopts **vision-driven governance**, in which organizational leadership, participatory coordination, and transparent decision-making collectively function as the managerial foundation of its business ecosystem. Financial independence is therefore positioned not merely as an economic objective but as an institutional philosophy that guides the governance of all business enterprises.

4.2 Strategic Integration of Financial, Human, and Physical Resources

The findings demonstrate that the sustainability of the pesantren's business ecosystem is supported by the strategic integration of financial, human, and physical resources across different business units. Rather than operating each enterprise independently, the institution adopts a centralized resource management approach in which financial capital, human resources, and organizational facilities are allocated according to institutional priorities and operational needs. This integrated resource management enables the pesantren to optimize limited resources while ensuring that each business unit contributes to the overall institutional mission.

Financially, the business units are primarily developed through internally generated capital, reflecting the pesantren's commitment to institutional self-reliance. External financial assistance is accepted only as complementary support and does not constitute the principal source of business development. Human resources are likewise managed strategically by empowering alumni and senior students as part of the pesantren's community service and leadership development programs. Meanwhile, the allocation of facilities and business infrastructure is determined based on urgency, operational impact, and organizational priorities.

The Director of Business Development explained:

"Modal kami berasal dari kemampuan pesantren sendiri. Kalaupun ada bantuan dari pihak luar, sifatnya hanya sementara dan bukan sumber utama. Untuk sumber daya manusia, kami memberdayakan alumni dan santri sebagai bagian dari pengabdian. Sementara fasilitas kami prioritaskan pada kebutuhan yang paling mendesak dan

memberikan dampak terbesar karena tentu ada keterbatasan sumber daya." (Director of Business Development)

The integration of human resources is also reflected in the institution's flexible staffing policy. Personnel are assigned according to their competencies, while several operational positions, particularly in administration and financial services, are periodically rotated to broaden managerial experience and improve organizational flexibility. This mechanism not only enhances workforce adaptability but also minimizes operational dependency on specific individuals.

As further explained by the Director:

"Kami mengutamakan keahlian setiap SDM sehingga penempatannya sesuai bidang masing-masing. Namun, untuk beberapa posisi seperti kasir dan administrasi keuangan, kami menerapkan rotasi agar kemampuan mereka berkembang dan operasional tetap berjalan dengan baik." (Director of Business Development)

These findings indicate that the pesantren does not merely distribute organizational resources among different business units but strategically integrates financial capital, human resources, and institutional facilities into a unified management system. Such integration strengthens organizational flexibility, improves operational efficiency, and enables the business ecosystem to function as an interconnected institutional resource rather than as separate and independent business entities.

4.3 Collaborative Business Ecosystem through Cross-Unit Synergy

The findings reveal that the business units within the Islamic boarding school are not managed as isolated enterprises but operate through an interconnected system characterized by collaboration, reciprocal support, and resource circulation. The minimarket, photocopying service, and catfish aquaculture continuously interact in their daily operations, creating an internal business network that enables financial circulation, operational efficiency, and mutual organizational support. Rather than competing for institutional resources, each business unit contributes to and benefits from the activities of other units, thereby strengthening the overall business ecosystem. One of the most prominent forms of collaboration is the circulation of economic transactions among the business units. The photocopying service procures office supplies and operational necessities from the pesantren's minimarket, while catering for meetings and institutional events is provided through products generated by the catfish aquaculture unit. Consequently, expenditures that would otherwise flow to external businesses are retained within the pesantren's internal economic system, allowing financial resources to circulate across the organization's enterprises and reinforce institutional economic resilience.

As explained by one of the business unit managers:

"Kami tetap berkolaborasi dan saling mengisi kekurangan. Misalnya, unit fotokopi membeli kebutuhan operasional di minimarket, sedangkan konsumsi rapat kami memanfaatkan hasil usaha lele. Dengan cara itu, perputaran keuangan tetap berada di lingkungan pesantren dan saling menguntungkan antarunit usaha." (Business Unit Manager)

The study also found that collaboration extends beyond financial transactions to include collective problem-solving and organizational learning. Whenever significant operational challenges arise, business managers from different units participate in joint meetings to identify solutions and formulate coordinated responses. This collaborative mechanism encourages knowledge sharing, strengthens communication among managers, and facilitates collective decision-making across organizational boundaries.

A business manager stated:

"Kami mengadakan rapat bersama apabila ada kendala yang bersifat mendesak dan membutuhkan masukan dari setiap unit usaha sehingga solusi yang diambil merupakan hasil kesepakatan bersama." (Business Unit Manager)

The integration of operational collaboration, financial circulation, and collective decision-making demonstrates that the pesantren has developed a collaborative business ecosystem rather than a collection of independent business units. Cross-unit synergy enables each enterprise to complement the others by sharing resources, supporting operational activities, and maintaining continuous internal economic circulation. As a result, the sustainability of individual business units is closely linked to the performance of the broader institutional ecosystem, illustrating that organizational resilience is achieved through collaboration rather than through the success of isolated enterprises.

4.4 Business Ecosystem as a Driver of Institutional Sustainability

The findings indicate that the integration of governance, resource management, and cross-unit collaboration has significantly contributed to the long-term sustainability of the Islamic boarding school. Rather than functioning solely as income-generating enterprises, the business units have become strategic institutional assets that support educational financing, strengthen organizational resilience, and create broader socio-economic benefits. The sustainability achieved by the pesantren is therefore not merely reflected in financial performance but also in its ability to maintain educational continuity, empower human resources, and expand its social contribution to the surrounding community.

The interview findings reveal that the economic benefits generated by the business units are systematically reinvested into institutional development. Annual business profits are allocated to support educational operations, improve institutional facilities, and finance future business expansion. Furthermore, the business ecosystem provides employment opportunities for alumni while simultaneously serving as a practical learning environment where students develop entrepreneurial knowledge, managerial skills, and professional responsibility through direct participation in business activities.

The Head of the Islamic Boarding School explained:

"Sumbangsihnya sangat besar. Selain menyerap alumni untuk bekerja, keuntungan tahunan dari setiap unit usaha juga diserahkan kepada pesantren sebagai bentuk dukungan terhadap keberlanjutan lembaga. Memang sejak awal tujuan kami membangun unit usaha adalah untuk memperkuat keberlanjutan pesantren." (Head of Islamic Boarding School)

The study also found that institutional sustainability is viewed as a dynamic process requiring continuous innovation and organizational adaptation. The pesantren recognizes that maintaining a sustainable business ecosystem demands ongoing business development rather than satisfaction with current achievements. Consequently, institutional leaders encourage the exploration of new business opportunities while remaining committed to Islamic ethical principles as the fundamental values guiding all entrepreneurial activities.

This commitment is reflected in the statement of the Head of the Islamic Boarding School:

"Strategi keberlanjutan berarti kami tidak boleh cepat merasa puas. Harus selalu ada langkah-langkah pengembangan dengan model usaha yang baru. Kami boleh belajar dari dunia usaha di luar, tetapi seluruh pengembangannya tetap harus berlandaskan prinsip-prinsip syariah." (Head of Islamic Boarding School)

Overall, these findings demonstrate that the sustainability of the pesantren is not determined by the success of individual business units but by the institution's capability to manage them as an integrated business ecosystem. The interaction between strategic governance, integrated resource management, and collaborative business practices creates organizational resilience that supports financial independence, educational continuity, alumni empowerment, and community development. Accordingly, Business Ecosystem Management functions as a strategic institutional mechanism through which economic activities are transformed into long-term organizational sustainability.

DISCUSSION

The findings of this study demonstrate that Business Ecosystem Management within Islamic boarding schools is established through the dynamic interaction of four interrelated organizational mechanisms, namely vision-driven business governance, strategic resource integration, cross-unit business collaboration, and institutional sustainability. Rather than operating as separate managerial practices, these mechanisms collectively form an integrated business ecosystem that enables the pesantren to achieve financial independence while simultaneously strengthening its educational and social missions. The findings indicate that business governance provides strategic direction by embedding financial self-reliance as the institutional vision, resource integration ensures the effective utilization of financial, human, and physical assets across multiple business units, and cross-unit collaboration creates internal economic circulation through reciprocal relationships among retail, service, and aquaculture enterprises. These interconnected processes ultimately reinforce institutional sustainability by generating financial resources, expanding employment opportunities for alumni, facilitating entrepreneurial learning for students, and supporting the long-term continuity of educational activities. Accordingly, the sustainability of the pesantren cannot be understood merely as the cumulative performance of individual business units but rather as the outcome of an integrated organizational ecosystem in which governance, resources, collaboration, and institutional objectives continuously interact to produce collective value. This finding suggests that the success of pesantren entrepreneurship is determined less by the number of business enterprises it owns than by its organizational capability to orchestrate these enterprises into a coherent, adaptive, and mutually reinforcing business ecosystem that aligns economic performance with educational and religious objectives.

The integrated pattern identified in this study can be interpreted through the perspective of Business Ecosystem Theory, which conceptualizes organizations as members of an interconnected system in which value is created through continuous interaction, coordination, and resource interdependence rather than through isolated organizational performance. Moore (1993, 1996) argues that organizations achieve long-term sustainability when they evolve as part of an ecosystem where diverse actors collectively contribute to shared objectives instead of pursuing purely individual interests. This theoretical perspective is reflected in the present study, where the minimarket, photocopying service, and catfish aquaculture enterprises are not managed as independent profit centers but as complementary components of a unified institutional strategy. Their existence is coordinated under a shared vision of financial independence, supported by integrated resource allocation, and strengthened through reciprocal collaboration that continuously circulates economic value within the pesantren. Consequently, the sustainability of each business unit becomes inseparable from the sustainability of the broader institutional ecosystem. This finding extends Moore's ecosystem perspective by demonstrating that, within Islamic boarding schools, business ecosystems are not solely driven by market competition but are fundamentally orchestrated through institutional values, educational missions, and Islamic ethical commitments. Therefore, the ecosystem does not merely function as an economic network but also as an organizational mechanism through which educational, social, and financial objectives are pursued simultaneously.

The findings can also be interpreted through the ecosystem orchestration perspective proposed by Adner (2017) and further elaborated by Jacobides, Cennamo, and Gawer (2018), who argue that the success of an ecosystem depends on the ability of a central actor to coordinate complementary resources, align the interests of participating actors, and establish governance mechanisms that facilitate collective value creation. In the context of this study, the Islamic boarding school assumes the role of an ecosystem orchestrator by coordinating multiple business enterprises under a unified governance structure while ensuring that each unit contributes to common institutional objectives. Unlike commercial business ecosystems, where orchestration is generally motivated by competitive advantage and market expansion, the orchestration observed in this study is primarily directed toward achieving institutional self-reliance and sustaining educational services. This distinctive characteristic indicates that governance within the pesantren extends beyond administrative coordination to include the integration of entrepreneurial activities with religious values, educational priorities, and social responsibilities. Consequently, value creation emerges not only from the economic performance of individual enterprises but also from their collective contribution to strengthening institutional resilience. This finding enriches the Business Ecosystem literature by demonstrating that ecosystem orchestration can be effectively implemented in non-profit educational institutions, where economic activities function as strategic instruments for fulfilling broader social and educational missions rather than merely maximizing financial returns.

The findings of this study are generally consistent with previous research emphasizing that business development has become an important strategy for strengthening the economic independence of Islamic boarding schools. Earlier studies have demonstrated that pesantren-based entrepreneurship contributes to institutional financing, community empowerment, and the development of students' entrepreneurial competencies. Nevertheless, the majority of these studies have primarily examined individual business units, entrepreneurial programs, or financial outcomes as separate phenomena, with limited attention given to the organizational relationships that connect multiple business enterprises within a single institutional setting. As a result, the internal dynamics through which different business units interact, share resources, coordinate managerial activities, and collectively generate institutional sustainability remain insufficiently explored. The present study addresses this gap by demonstrating that the sustainability of pesantren entrepreneurship is not merely determined by the performance of individual enterprises but by the capacity of the institution to organize those enterprises into an integrated business ecosystem. This perspective shifts the analytical focus from evaluating the success of isolated business ventures toward understanding how governance, resource integration, and cross-unit collaboration collectively generate organizational resilience. Accordingly, this study contributes a broader conceptual understanding of pesantren entrepreneurship by positioning business activities as interconnected organizational components rather than independent economic entities.

A notable contribution of this study lies in its reconceptualization of pesantren entrepreneurship from an ecosystem perspective rather than from the perspective of individual business performance. Contemporary studies on Islamic educational entrepreneurship have predominantly focused on entrepreneurial orientation, business management practices, leadership, or the economic contribution of specific business units to institutional development. While these studies provide valuable insights into the role of entrepreneurship in strengthening Islamic educational institutions, they generally portray business enterprises as relatively autonomous organizational entities. In contrast, the present study demonstrates that the strategic value of pesantren entrepreneurship emerges from the interdependence among business units, where governance mechanisms, integrated resource management, and collaborative operational practices collectively produce institutional sustainability. The findings therefore suggest that the effectiveness of entrepreneurial activities should not be assessed solely through conventional indicators such as profitability, business growth, or operational efficiency, but also through the extent to which individual enterprises contribute to the resilience and continuity of the institutional ecosystem. This perspective broadens the analytical scope of Business Ecosystem Management by illustrating that ecosystem success is determined by the quality of organizational relationships and collective institutional objectives rather than by the isolated performance of individual business actors. Consequently, this study offers an alternative conceptual lens for understanding entrepreneurship within Islamic boarding schools, positioning business ecosystems as strategic organizational infrastructures that simultaneously generate economic value, educational continuity, and social sustainability.

Theoretically, this study extends the application of Business Ecosystem Management beyond conventional market-oriented organizations by demonstrating its relevance within Islamic educational institutions. Existing ecosystem perspectives have largely been developed in the context of corporations, technology platforms, innovation networks, and competitive markets, where ecosystem coordination is primarily aimed at enhancing market positioning and economic advantage. The present study provides evidence that ecosystem management can also operate within value-driven educational organizations, where economic activities are embedded within broader institutional missions. The findings reveal that the pesantren's business ecosystem is not solely constructed through economic relationships but through the alignment of entrepreneurial practices with educational values, religious principles, and social responsibilities. This indicates that ecosystem orchestration in non-commercial institutions involves a more complex form of value creation, where financial sustainability represents only one dimension of success alongside educational continuity, community empowerment, and institutional legitimacy. Therefore, this study proposes an expanded understanding of Business Ecosystem Management by highlighting the role of mission-oriented governance as an essential element in sustaining ecosystems within value-based organizations. In this perspective, organizational values do not function as external factors influencing business activities but become internal mechanisms that shape how resources are coordinated, partnerships are developed, and collective value is generated among ecosystem participants.

From a practical perspective, the findings of this study provide important implications for Islamic boarding schools seeking to develop sustainable entrepreneurial practices. The study suggests that establishing multiple business units alone is insufficient to achieve institutional independence unless these enterprises are managed as an integrated ecosystem with clear governance mechanisms and collaborative relationships. Therefore, pesantren leaders should move beyond the conventional approach of creating separate income-generating activities and instead develop strategic frameworks that connect different business sectors through shared objectives, coordinated resource management, and continuous organizational learning. The experience of the investigated institution demonstrates that even small and medium-scale enterprises, such as retail services, photocopying businesses, and aquaculture activities, can generate significant institutional value when they are strategically interconnected. Furthermore, the empowerment of alumni and students within business operations indicates that pesantren entrepreneurship can simultaneously function as an economic strategy and a practical educational platform for developing entrepreneurial competencies. Accordingly, policymakers and Islamic educational stakeholders should consider supporting pesantren-based business ecosystems through capacity-building programs, managerial training, and institutional networking rather than focusing solely on financial assistance. Such an approach would encourage pesantren to become more self-reliant, adaptive, and capable of transforming entrepreneurial activities into sustainable institutional assets.

Overall, this study highlights that the sustainability of Islamic boarding schools' entrepreneurial activities is not primarily determined by the existence of individual business units, but by the institution's capability to orchestrate those units within a coherent and adaptive business ecosystem. The integration of vision-driven governance, strategic resource utilization, cross-unit collaboration, and institutional commitment creates a managerial system in which economic activities become interconnected mechanisms for strengthening educational sustainability. The findings demonstrate that pesantren entrepreneurship represents a distinctive form of value-based ecosystem management, where financial objectives are continuously aligned with religious, educational, and social missions. In contrast to conventional business ecosystems that are commonly oriented toward competitive advantage and market expansion, the pesantren ecosystem emphasizes collective value creation, institutional resilience, and community benefit. Therefore, this study argues that Business Ecosystem Management provides a relevant conceptual framework for understanding how Islamic educational institutions can transform entrepreneurial initiatives into sustainable organizational capabilities. By positioning business activities as interconnected components of a broader institutional ecosystem, pesantren can develop economic independence while preserving their fundamental identity as centers of education, social empowerment, and Islamic values.

CONCLUSION

The findings demonstrate that the business ecosystem developed within the pesantren is constructed through four interconnected mechanisms: vision-driven business governance, strategic resource integration, cross-unit business collaboration, and institutional sustainability. These mechanisms indicate that the success of pesantren-based enterprises does not primarily depend on the performance of individual business units, but on the institution's ability to coordinate diverse business activities into an integrated ecosystem. Through transparent governance, effective resource utilization, reciprocal relationships among business units, and continuous development strategies, entrepreneurial activities become institutional assets that support financial independence, educational continuity, and social empowerment.

This study contributes to the growing discussion on Business Ecosystem Management by extending its application beyond conventional commercial organizations toward value-based educational institutions. The findings provide a conceptual understanding that Islamic boarding schools can transform entrepreneurial initiatives into sustainable institutional capabilities when business activities are managed as interconnected ecosystems rather than isolated enterprises. Practically, this study suggests that pesantren leaders should prioritize ecosystem-oriented management strategies that emphasize collaboration, resource integration, and alignment between economic objectives and educational values. Although this research is limited to a single Islamic boarding school case, the proposed framework provides a foundation for future studies to examine diverse pesantren contexts using comparative approaches, longitudinal designs, or mixed-method investigations to further validate and refine the model of sustainable Islamic educational entrepreneurship.

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