



From Tradition to Transaction: Architecting a Philosophically-Grounded Digital Entrepreneurial Ecosystem for Indonesian Pesantren

Dari Tradisi ke Transaksi: Merancang Ekosistem Kewirausahaan Digital yang Berlandaskan Filosofis bagi Pesantren Indonesia

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Abstrak

Ekonomi digital global menghadirkan tantangan besar bagi institusi tradisional, menuntut perubahan paradigma yang menyeimbangkan pelestarian budaya dengan inovasi ekonomi. Studi ini menyelidiki pembangunan Ekosistem Kewirausahaan Digital (EKD) yang etis dan berkelanjutan untuk pesantren di Indonesia, sebuah institusi yang menjadi pusat tatanan sosial dan keagamaan bangsa. Berlandaskan sintesis filosofis antara prinsip-prinsip Ekonomi Kerakyatan dan etika Islam, penelitian ini membahas titik temu kritis antara nilai-nilai tradisional dan tuntutan transaksional digital modern. Dengan menggunakan pendekatan studi multikasus kualitatif pada lima pesantren berpengaruh di Jawa Timur, penelitian ini mengidentifikasi komponen strategi inti dan jalur untuk transisi digital ini. Temuan mengungkapkan bahwa arsitektur ekosistem yang sukses bertumpu pada tiga pilar: Tata Kelola Etis-Spiritual, yang memanfaatkan otoritas kepemimpinan moral (Kyai) dan komunitas kepercayaan; Kolaborasi Sosio-Digital, yang menerjemahkan modal sosial yang besar ke dalam jaringan digital yang terstruktur; dan Pembangunan Kapasitas Inklusif, yang menciptakan jalur yang dapat diakses untuk literasi dan kewirausahaan digital. Studi ini melemahkan model ekosistem konvensional yang berpusat pada teknologi, dengan mengusulkan kerangka kerja baru yang bergerak dengan nilai yang memposisikan pesantren sebagai arsitek masa depan digital yang lebih adil dan beresonansi secara budaya. Studi ini memberikan model yang kuat secara filosofis untuk kewirausahaan digital yang mengutamakan kesejahteraan komunitas holistik (falshah) di atas metrik yang berpusat pada keuntungan, menawarkan kontribusi signifikan bagi wacana tentang penerapan teknologi yang etis dalam komunitas beragama.

Keyword:

Digital Entrepreneurial Ecosystem; Pesantren;

Abstract

The global digital economy presents a formidable challenge to traditional institutions, demanding a paradigm shift that balances cultural preservation with economic innovation. This study investigates the construction of an ethical and sustainable Digital Entrepreneurial Ecosystem (DEE) for Indonesian Islamic boarding schools (pesantren),

Islamic
Entrepreneurship
;
People's
Economy;
Ethical
Leadership

institutions central to the nation's social and religious fabric. Grounded in a philosophical synthesis of Indonesia's People's Economy (*Ekonomi Kerakyatan*) principles and Islamic ethics, this research addresses the critical nexus of traditional values and modern digital transactional demands. Employing a qualitative multi-case study of five influential pesantren in East Java, the research identifies the core components and strategic pathways for this digital transition. The findings reveal that a successful ecosystem architecture rests on three pillars: Ethical-Spiritual Governance, leveraging the moral authority of leadership (*Kyai*) and community trust; Socio-Digital Collaboration, which translates immense social capital into structured digital networks; and Inclusive Capacity Building, which creates accessible pathways for digital literacy and entrepreneurship. This study critiques the conventional technology-centric ecosystem models, proposing a novel, values-driven framework that positions pesantren as architects of a more equitable and culturally resonant digital future. It contributes a philosophically robust model for digital entrepreneurship that prioritizes holistic community welfare (*falah*) over profit-centric metrics, offering a significant contribution to the discourse on ethical technology adoption in religious communities.

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INTRODUCTION

Background of the Problem

The pervasive wave of global digital transformation presents a profound dialectic for traditional institutions worldwide: a choice between adaptation, marginalization, or the more arduous path of synthesizing heritage with modernity. For Indonesia's Islamic boarding schools, or pesantren, this is not merely an economic imperative but an existential one. As deep-rooted bastions of Islamic education, moral development, and community life for centuries, pesantren command immense social capital and untapped economic potential (Indra, 2019). Yet, their integration into the digital economy is a complex venture, fraught with the risk of eroding the very values that define them (Muljono & Setiyawati, 2022). The convergence of digital entrepreneurship, the uniquely Indonesian philosophy of People's Economy (*Ekonomi Kerakyatan*), and the socio-religious fabric of pesantren forms a critical (Hefner, 2023), yet underexplored, area of inquiry for achieving sustainable and equitable national development (Iffada, et al., 2023).

The prevailing discourse on entrepreneurial ecosystems, heavily influenced by the Silicon Valley model, often prioritizes rapid growth, disruption, and venture capital, a paradigm that sits uneasily with the pesantren's emphasis on community, deliberation, and ethical stewardship (*amanah*) (Cohen, 2006). While recent scholarship has begun to adapt ecosystem models to diverse contexts, highlighting the importance of "people and the culture of trust and collaboration" as the true essence of an ecosystem (Feld, 2020), a significant gap remains. There is a dearth of frameworks that address how a traditional, value-driven institution can architect a digital entrepreneurial ecosystem that is not only economically viable but also philosophically coherent and ethically sound (Thani, et al., 2025). Furthermore, the concept of the Digital Entrepreneurial Ecosystem (DEE) itself is an emerging field, with scholars calling for more systemic analysis of

entrepreneurship in the digital age that moves beyond purely technological considerations (Bejjani, et al., 2023).

This research addresses this lacuna by investigating three central problems: (1) How can the foundational principles of People's Economy and Islamic ethics provide a robust philosophical framework for a pesantren-led digital entrepreneurial ecosystem? (2) What are the essential structural and functional components of such an ecosystem that can harmonize traditional social capital with digital transactional capabilities? (3) What are the primary challenges and strategic pathways for its implementation in a manner that empowers the community and preserves its core values?

The objective of this study is to develop a theoretically grounded and empirically validated model for a pesantren-centric DEE. The research offers a significant contribution by moving beyond a descriptive account of pesantren economic activities. Its novelty lies in its deep philosophical inquiry, connecting the moral ontology of the pesantren world with the practical architecture of a digital ecosystem. By doing so, it proposes a values-driven model that serves as a powerful counter-narrative to the often impersonal and purely transactional nature of the digital economy, advocating for a system that champions community welfare, ethical conduct, and equitable participation.

LITERATURE REVIEW

The Digital Entrepreneurial Ecosystem (DEE)

The concept of the Entrepreneurial Ecosystem (EE) has evolved significantly from its initial application in high-tech hubs like Silicon Valley (Cohen, 2006). It is now widely recognized as a framework for understanding the complex interplay of actors, institutions, and processes that foster entrepreneurship within a specific geographic or social context (Brown & Mason, 2017). An EE is more than just a collection of resources; it is a dynamic, evolving system characterized by a "culture of trust and collaboration" that facilitates the rapid flow of talent, information, and capital (Feld, 2020). Key attributes of a thriving EE include a density of entrepreneurs and support organizations, accessible finance, relevant human capital, pro-entrepreneurship policies, and a supportive culture (Isenberg, 2010).

With the advent of digitalization, the traditional, geographically-bound concept of the EE is being re-examined. Digital technologies have fundamentally altered the nature of entrepreneurial activities, from opportunity recognition to scaling (Nambisan, 2017). This has given rise to the concept of the Digital Entrepreneurial Ecosystem (DEE), which analyzes entrepreneurship within the context of the digital age (Bejjani, et al., 2023). A DEE is not simply an EE with a digital layer; it is an ecosystem where digital platforms, infrastructure, and user citizenship are core components (Sussan & Acs, 2017). Bejjani et al. (2023) propose a framework for understanding DEEs by characterizing them along two key dimensions: the degree of autonomy in governance and the degree of collaboration within the ecosystem. This framework is particularly relevant for the pesantren context, where governance is often centralized under the Kyai's moral authority, and collaboration is deeply embedded in the social structure.

The Philosophy of People's Economy (*Ekonomi Kerakyatan*)

The People's Economy, or *Ekonomi Kerakyatan*, is an economic philosophy deeply rooted in Indonesia's history and post-colonial aspirations. First conceptualized by Mohammad Hatta, Indonesia's first vice president, it stands in contrast to both liberal capitalism and state-controlled socialism (Adi, et al., 2017). The philosophy advocates

for an economic system that is of the people, by the people, and for the people, emphasizing economic sovereignty, social justice, and broad-based participation (Datta, et al., 2011). Its core principles—being independent (*mandiri*), sustainable (*berkelanjutan*), and open (*terbuka*)—are not merely economic strategies but ethical imperatives (Baiza, 2023).

This philosophy resonates profoundly with the values inherent in pesantren. The principle of mandiri aligns with the pesantren value of self-sufficiency (*keswadayaan*), where the community strives to meet its own needs through internal resources. *Berkelanjutan* or sustainability mirrors the Islamic concept of stewardship (*amanah*), which mandates the responsible and forward-looking use of resources (Chrisantina, 2022). Finally, *terbuka* reflects the spirit of community service (*khidmah*) and mutual assistance (*gotong-royong*), ensuring that economic opportunities are accessible to all members of the community (Nurjannah, et al., 2025). Despite its theoretical appeal, the practical application of *Ekonomi Kerakyatan* in Indonesia has faced significant challenges, often remaining a political ideal rather than a fully realized economic model (Mubyarto, 1987). This study argues that the pesantren, with their strong social cohesion and value system, provide a fertile ground for the genuine implementation of this philosophy in the digital age.

Islamic Entrepreneurship and Pesantren Values

Islamic entrepreneurship is a values-based approach to business that is guided by the principles of Sharia. It extends beyond the pursuit of profit to encompass the achievement of holistic well-being (*falah*), which includes spiritual, social, and economic prosperity (Beekun, 2022). Key tenets of Islamic business ethics include fairness, honesty, transparency, and the prohibition of interest (*riba*), excessive uncertainty (*gharar*), and exploitation (Alhabshi & Mardika, 2024). In the context of the digital economy, this requires a critical examination of modern business practices, from digital marketing to fintech, to ensure they align with these ethical precepts.

Pesantren have historically been centers of economic activity, not just education. The economic independence of the pesantren is often seen as crucial for maintaining its educational and moral autonomy. Recent studies have highlighted the growing trend of “*pesantrenpreneurship*,” where Islamic boarding schools are actively developing business units and fostering an entrepreneurial mindset among their students (*santri*) (Rusli, et al., 2023); (Supriyanto, et al., 2022). Case studies, such as that of Pondok Pesantren Sidogiri, demonstrate the immense potential of a spiritually-grounded approach to entrepreneurship, where the Kyai’s blessing (*barokah*) is considered a vital intangible asset and the cooperative model thrives on a foundation of deep-seated trust (Supriyanto, et al., 2022). However, much of this entrepreneurial activity remains traditional and localized. The challenge lies in translating this success into the digital realm without compromising the ethical principles that underpin it.

Ethical Leadership in Values-Based Ecosystems

Ethical leadership is the cornerstone of any values-based ecosystem. It is a form of leadership that is driven by a clear moral purpose and is committed to creating an environment that fosters holistic wealth creation—financial, social, and spiritual (Ibrahim, et al., 2025). Ethical leaders are not just concerned with what is legal but with what is right, and they prioritize the well-being of all stakeholders over narrow self-interest. In the context of an entrepreneurial ecosystem, ethical leaders act as

“champions and conveners,” individuals who promote entrepreneurs, organize the ecosystem, and build awareness with little direct personal benefit (Feld, 2020).

The role of the Kyai in the pesantren provides a powerful, pre-existing model of such ethical leadership. The Kyai’s authority is not based on formal power but on moral and spiritual legitimacy. They are the ultimate arbiters of what is ethically acceptable and the primary drivers of the community’s vision. This study posits that this traditional leadership model can be a powerful asset in building a DEE, providing the moral compass needed to navigate the ethical complexities of the digital world. The challenge is to create a governance structure that respects this traditional authority while also empowering a new generation of tech-savvy leaders who can act as “translators” between the worlds of tradition and digital innovation.

METHODOLOGY

This research employed a qualitative, multi-case study methodology to conduct an in-depth and contextually rich investigation into the construction of a Digital Entrepreneurial Ecosystem (DEE) within Indonesian pesantren. This approach was deemed most appropriate for exploring the complex, socially-embedded phenomena at the intersection of religion, culture, and digital technology, allowing for a holistic understanding that quantitative methods might fail to capture (Taherdoost, 2022). The research was conducted over a six-month period, from May to October 2024, adhering to rigorous ethical and analytical protocols.

Case Selection

Five prominent pesantren in East Java were purposively selected as the units of analysis. East Java was chosen as the geographical focus due to its high concentration of influential and historically significant pesantren. The selection criteria were designed to ensure a diverse and representative sample, based on: (1) Reputation and Influence, including the size of their alumni network and their standing in the national religious landscape; (2) Economic Sophistication, representing a spectrum from nascent to highly developed business ventures; and (3) Degree of Digital Adoption, capturing varying levels of engagement with digital technologies. The selected cases were:

- 1 Pondok Pesantren Lirboyo, Kediri. A bastion of traditional (*salaf*) Islamic scholarship with an extensive and influential alumni network.
- 2 Pondok Pesantren Darussalam Gontor, Ponorogo. A leading model of modern pesantren education, known for its integrated management and global outlook.
- 3 Pondok Pesantren Sidogiri, Pasuruan. Renowned for its highly successful cooperative (*Baitul Maal wat Tamwil*) and diverse business portfolio, representing a benchmark for pesantren economic independence.
- 4 Pondok Pesantren Al-Falah Ploso, Kediri. Distinguished by its strong emphasis on ethical and moral development (*akhlak*) alongside community empowerment.
- 5 Pondok Pesantren Tebuireng, Jombang. A historic and culturally significant institution founded by the leader of Nahdlatul Ulama, with a wide array of social, educational, and nascent economic activities.

Data Collection

To ensure the validity and reliability of the findings, a data triangulation strategy was implemented, utilizing three primary methods of data collection:

1. In-depth, Semi-Structured Interviews

A total of 25 interviews were conducted, with five key informants from each pesantren. Informants included the highest leadership (Kyai or senior family members), managers of pesantren-owned business units, senior teachers (*ustadz*) involved in curriculum development, and students (*santri*) or recent alumni engaged in entrepreneurial activities. The interviews were designed to explore the philosophical underpinnings of their economic vision, perceived challenges and opportunities of digitalization, and the role of leadership and social capital.

2. Focus Group Discussions (FGDs)

One FGD was convened at each of the five pesantren, bringing together a diverse group of 8-10 stakeholders (including teachers, business managers, and *santri*). The FGDs served to validate individual interview data and to foster a collective discussion on a shared vision for a pesantren-led digital ecosystem, uncovering group dynamics and community norms.

3. Document Analysis and Direct Observation

An extensive analysis of internal documents was performed, including annual reports, business unit financial statements (where accessible), curriculum outlines, and public-facing materials. This was complemented by direct, non-participant observation of business operations, daily community interactions, and the use of digital tools and platforms within the pesantren environment.

Data Analysis

The substantial volume of qualitative data was systematically managed and analyzed using a thematic analysis approach, facilitated by NVivo 12 software. The analysis proceeded in several stages. First, all interview and FGD transcripts were transcribed verbatim. Second, an initial coding framework was developed based on the key concepts from the literature review (deductive codes), such as “social capital,” “ethical leadership,” “digital infrastructure,” and “ecosystem governance.” Third, the data was meticulously coded, during which emergent themes and patterns were identified and added to the framework (inductive codes), such as “the Kyai’s role as moral gatekeeper,” “alumni as digital translators,” and “navigating ethical dilemmas in e-commerce.” Finally, these codes were clustered into broader, more abstract themes, which were then synthesized to form the foundational pillars of the proposed DEE framework, ensuring a direct and traceable link between the empirical data and the final theoretical model.

ANALISYS AND DISCUSSION

Results

The empirical investigation across the five pesantren yielded a rich tapestry of insights into the foundational elements, cultural dynamics, and structural realities that shape the potential for a Digital Entrepreneurial Ecosystem. The findings are synthesized into five key thematic areas that directly inform the construction of the proposed ecosystem model. The results reveal a landscape of immense potential rooted in deep ethical and

social capital, yet simultaneously constrained by significant structural and digital literacy gaps.

The Philosophical Core

A central finding across all five case studies was the profound, albeit often implicit, alignment of their economic philosophies with the principles of *Ekonomi Kerakyatan*. The pesantren do not merely engage in business; they practice a form of economic stewardship aimed at community self-sufficiency (*mandiri*), long-term sustainability (*berkelanjutan*), and equitable access (*terbuka*). This was not articulated through academic jargon but through a deeply ingrained ethos of community welfare.

At Pondok Pesantren Sidogiri, this philosophy is institutionalized in its highly successful cooperative, which manages billions of rupiah. A senior manager explained:

“Our primary goal is not profit maximization for shareholders, but service (*khidmah*) to the members, who are the *santri*, alumni, and the surrounding community. Profits are reinvested to fund education and provide affordable goods.”

This demonstrates a clear application of the *mandiri* principle, utilizing community capital for community needs. Similarly, Pondok Pesantren Darussalam Gontor, with its modern management and diverse business units (from printing presses to bakeries), operates on a model of self-sufficiency that minimizes reliance on external funding, embodying the ideal of economic independence.

The principle of sustainability was evident in the long-term vision articulated by the leadership. The Kyai at Al-Falah Ploso emphasized,

“We are not building for today. We are planting a tree whose shade will be enjoyed by future generations of *santri*.”

This perspective informs their cautious approach to investment and their focus on businesses with stable, long-term returns rather than high-risk, high-reward ventures. The concept of *terbuka*, or openness, was more nuanced. While there was a strong internal trust network that facilitated seamless collaboration within the pesantren community, integration with external, non-pesantren ecosystems was often limited, representing a significant area for future development.

The Kyai as Moral Anchor and Ecosystem Champion

The research unequivocally identified the *Kyai* (senior religious leader) as the central figure in the ecosystem—not just as a leader, but as the ultimate ethical champion and convener. Their role transcends that of a CEO or chairman; they are the moral compass and the primary legitimizer of all economic activities. Any new venture, particularly one involving digital technology, requires their explicit blessing (*barokah*) to gain traction within the community. As a business manager at Lirboyo stated,

“Without the Kyai’s approval, even the most promising digital project will fail. The community’s trust is not in the technology, but in the leader who sanctions it.”

This leadership model presents both a powerful asset and a potential bottleneck. The Kyai’s authority ensures that all economic activities remain aligned with the pesantren’s core values, preventing the kind of mission drift seen in many secular organizations. However, it also places a significant burden on leaders who may not possess deep technical expertise. A key finding, particularly at Gontor and Tebuireng, was the emergence of a new cadre of “digital translators”—younger, tech-savvy alumni who act

as intermediaries. These individuals bridge the gap between the Kyai's ethical authority and the technical demands of the digital world, translating complex digital concepts into a language that aligns with traditional values and presenting business proposals in a manner that respects the established hierarchy.

A Culture of Inherent Collaboration

The research confirmed that pesantren possess an extraordinary level of social capital, a key ingredient for any thriving entrepreneurial ecosystem (Feld, 2020). The deeply ingrained values of mutual assistance (*gotong-royong*), respect for leadership (*ta'dzim*), and a powerful sense of collective identity create a pre-existing "culture of collaboration" that is difficult to replicate in other contexts. This was most palpable at Sidogiri, where the cooperative's success is built almost entirely on the trust and loyalty of its vast network of alumni and community members. Members deposit funds and patronize its businesses with a degree of faith that transcends purely economic calculations.

However, the findings also indicated that this social capital, while powerful, is largely analog. The trust and collaboration that function so effectively in face-to-face interactions have not yet been systematically translated into the digital realm. An FGD participant at Al-Falah Ploso noted,

"We trust each other completely in person, but when it comes to online transactions, there is still a great deal of hesitation and a preference for traditional methods."

This highlights a critical challenge: how to engineer digital platforms and processes that can effectively leverage and amplify this existing social capital, rather than being perceived as a threat to it.

The Digital Divide: Infrastructure, Literacy, and Ethical Apprehension

Despite the strong philosophical and social foundations, a significant digital divide was evident across all five cases, manifesting in three distinct forms:

1. **Infrastructural Gaps.** While all pesantren had some form of internet access, connectivity was often inconsistent and insufficient to support sophisticated digital operations, particularly in the more rural locations of Lirboyo and Al-Falah Ploso.
2. **Literacy Gaps.** The traditional curriculum, while rich in religious and classical studies, has been slow to integrate digital entrepreneurship skills. Many *santri* possess basic digital literacy for communication and social media but lack the advanced skills needed for e-commerce, digital marketing, and financial technology. A teacher at Tebuireng admitted,

"We are preparing our students for a world that is rapidly changing, but our curriculum has not yet fully caught up."

3. **Ethical Apprehension.** A significant and recurring theme was a deep-seated concern among the leadership about preserving ethical conduct in the impersonal and often unregulated digital space. The Kyai at Lirboyo expressed a common sentiment:

"How do we ensure that our values of honesty and fairness are upheld when we cannot see the person we are transacting with? The digital world is full of temptations and opportunities for deceit (*gharar*)."

This apprehension acts as a major brake on the adoption of more advanced digital tools.

Nascent Onramps and a Lack of Digital Intersections

Finally, the research found that while traditional “onramps” to entrepreneurship exist—such as informal apprenticeships in pesantren-owned businesses and participation in cooperatives—dedicated onramps and intersections for digital entrepreneurship are still in their infancy. Gontor has initiated technology-focused extracurricular clubs, and Tebuireng has hosted occasional digital literacy workshops with external partners. However, there is a clear lack of structured, accessible pathways for *santri* to develop digital business ideas, find mentors, access seed funding, and connect with a wider market. The existing physical “intersections” where serendipitous connections occur (e.g., the mosque, the dining hall) have not yet been replicated in the digital sphere. A young alumnus from Sidogiri who runs a small online business lamented,

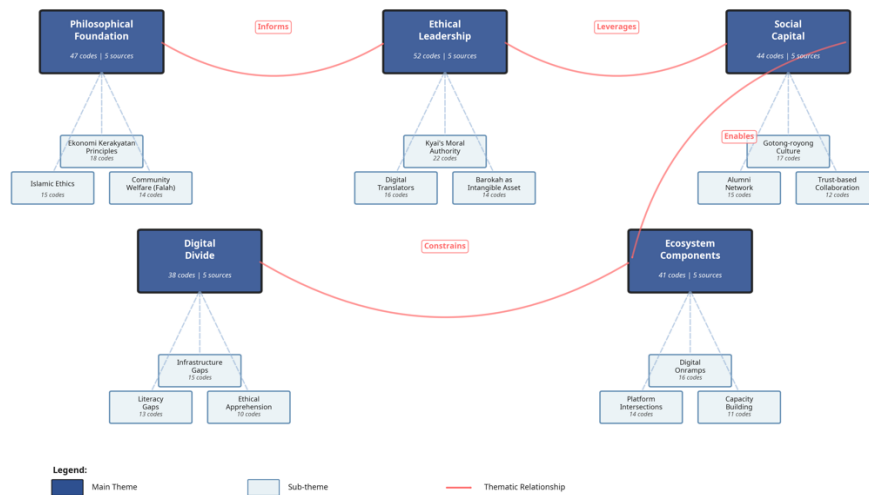
“I had to learn everything myself through trial and error. There was no formal support system within the pesantren to guide me.”

Table 1. Comparative Analysis of Case Study Findings

| Ecosystem Attribute | Pondok Pesantren Lirboyo | Pondok Pesantren Gontor | Pondok Pesantren Sidogiri | Pondok Pesantren Al-Falah Ploso | Pondok Pesantren Tebuireng |
|---------------------|---|--|---|---|---|
| Philosophical Core | Strong alignment with <i>Ekonomi Kerakyatan</i> , focus on community service (<i>khidmah</i>) | Institutionalized self-sufficiency (<i>mandiri</i>), modern management | Highly developed cooperative model embodying all three principles | Emphasis on sustainability and ethical development | Historical legacy of community empowerment, nascent application of principles |
| Ethical Leadership | Kyai as ultimate moral authority, high barrier to new ventures | Kyai as visionary, supported by modern management structure | Kyai as spiritual guide for a professional business organization | Kyai as moral gatekeeper, very cautious approach to digital adoption | Kyai as cultural figurehead, with emerging role for professional managers |
| Social Capital | Extremely high internal trust, vast but largely untapped alumni network | Strong institutional loyalty and discipline, organized alumni network | Exceptional trust-based capital institutionalized in the cooperative | Deeply-rooted culture of mutual assistance (<i>gotong-royong</i>) | Strong sense of historical identity and connection to a national organization |
| Digital Adoption | Low. Primarily for communication. High ethical apprehension. | Medium-High. Use of modern management software, active social media presence. | Medium. Advanced use in cooperative banking, but limited in other ventures. | Low. Limited infrastructure and a curriculum focused on traditional studies. | Medium. Active online presence, hosting of digital literacy workshops. |
| Key Challenge | Overcoming cultural resistance and ethical concerns about digitalization | Balancing modern management with traditional values, scaling digital education | Expanding digital innovation beyond the cooperative into other business sectors | Building digital literacy and infrastructure without compromising core values | Professionalizing business units and creating structured digital onramps |

Source: Synthesized from primary data collected through interviews and FGDs (2024).

Thematic Analysis: Pesantren Digital Entrepreneurial Ecosystem
 NVivo Qualitative Data Analysis Results



Data Collection: 25 Interviews, 5 FGDs, Document analysis | Analysis Method: Thematic coding using NVivo 12

Figure 1. Thematic Analysis Visualization

This figure presents a comprehensive thematic map, styled after an NVivo qualitative data analysis output, which visually synthesizes the core findings from the multi-case study. It illustrates the five primary themes that emerged from the analysis of 25 in-depth interviews and five focus group discussions: Philosophical Foundation, Ethical Leadership, Social Capital, Digital Divide, and Ecosystem Components. The prominence of each theme is indicated by its coding frequency, reflecting its significance across the dataset. The map further details the constituent sub-themes, such as the principles of *Ekonomi Kerakyatan* and the Kyai's moral authority, which are linked to their parent themes to show the hierarchical structure of the data. Crucially, the diagram also visualizes the dynamic relationships between these major themes—for instance, how the Philosophical Foundation 'informs' Ethical Leadership, which in turn 'leverages' Social Capital, while the Digital Divide 'constrains' the development of Ecosystem Components. This visualization provides a holistic and data-grounded overview of the complex interplay of factors shaping the potential for a Digital Entrepreneurial Ecosystem within the pesantren context.

Discussion

The findings from the five case studies provide a compelling empirical foundation for architecting a Digital Entrepreneurial Ecosystem (DEE) that is not merely effective but also ethically and philosophically resonant with the pesantren world. The results indicate that a simple transposition of Western ecosystem models is both inappropriate and destined to fail. Instead, a successful framework must be built from the ground up, leveraging the unique strengths of the pesantren while strategically addressing their weaknesses. This discussion synthesizes the findings into a proposed three-pillar framework designed to guide this transition. It moves beyond a description of what is to a normative and strategic discussion of what could be, directly addressing the core research problems.

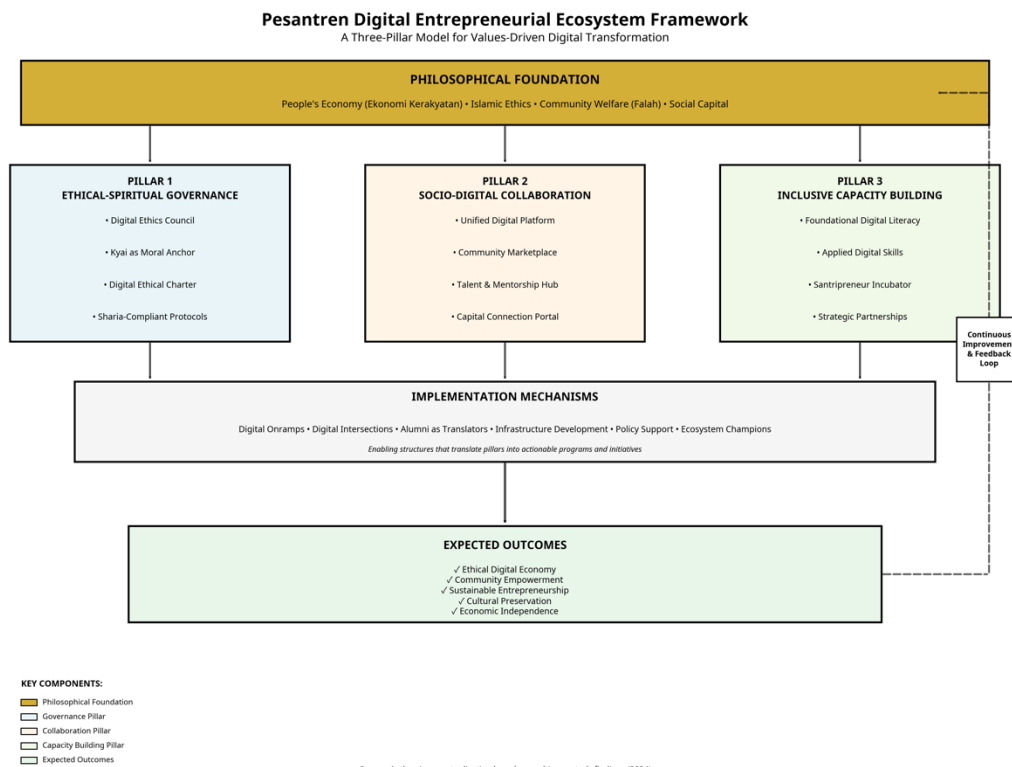


Figure 2. Proposed Pesantren DEE Framework Flowchart

This flowchart illustrates the proposed conceptual framework for a Pesantren-led Digital Entrepreneurial Ecosystem (DEE), detailing a values-driven model for digital transformation. The framework is structured in a top-down manner, beginning with the Philosophical Foundation, which grounds the entire ecosystem in the principles of People’s Economy (*Ekonomi Kerakyatan*) and Islamic Ethics. This foundation supports the three core operational Pillars: Ethical-Spiritual Governance, Socio-Digital Collaboration, and Inclusive Capacity Building. Each pillar contains specific, actionable components, such as the Digital Ethics Council and the Unified Digital Platform, that translate the foundational philosophy into practice. The model then flows into the Implementation Mechanisms layer, outlining the key enablers like Digital Onramps and Alumni Translators that activate the pillars. This process culminates in the Expected Outcomes, which include a sustainable and ethical digital economy, community empowerment, and the preservation of cultural values. A critical feature of the framework is the Continuous Improvement Loop, which signifies that the outcomes are constantly evaluated against the foundational philosophy, ensuring the ecosystem remains adaptive, responsive, and true to its core values over time.

Pillar 1: From Moral Authority to Ecosystem Architecture

The first research problem interrogates the philosophical foundation for a pesantren-led DEE. The findings demonstrate that while the principles of *Ekonomi Kerakyatan* and Islamic ethics are deeply embedded in the pesantren ethos, they have not been systematically translated into a formal governance structure for the digital age. The indispensable role of the Kyai as the ecosystem’s “moral anchor” is a double-edged sword; it ensures ethical alignment but can also become a point of friction if not integrated into a more distributed and agile governance model. Therefore, the first pillar

of the proposed framework is the establishment of a formal Ethical-Spiritual Governance structure.

This moves beyond simply seeking the Kyai's blessing for individual projects. It involves architecting a system where ethical deliberation is institutionalized. This can be achieved by creating a Digital Ethics Council within the pesantren or a consortium of pesantren. This council, chaired by the Kyai or their designated representative, would include tech-savvy alumni (the "digital translators" identified in the research), Islamic finance experts, and ethical business practitioners. Its mandate would be twofold: first, to develop a "Digital Ethical Charter"—a living document that translates abstract values (like avoiding *gharar*) into concrete guidelines for digital practices, such as data privacy protocols, fair pricing algorithms for e-commerce platforms, and Sharia-compliant fintech models. This directly addresses the "ethical apprehension" that currently hinders digital adoption.

Second, the council would act as a strategic body, evaluating new technologies and partnership opportunities not just for their economic potential but for their alignment with the charter. This model of distributed leadership maintains the Kyai's ultimate moral authority while empowering a broader group of experts to handle the technical and operational complexities. It transforms the Kyai's role from a potential bottleneck into that of a constitutional monarch for the digital ecosystem, setting the ethical constitution that guides the entire system. This structure provides a practical pathway for implementing the principles of *Ekonomi Kerakyatan*, ensuring that the ecosystem remains oriented towards community welfare and social justice, rather than being captured by purely commercial interests.

Pillar 2: Engineering Trust into the Digital Realm

The second research problem concerns the structural and functional components of the ecosystem. The findings revealed a wealth of "analog" social capital but a failure to translate this into the digital sphere. The second pillar, Socio-Digital Collaboration, focuses on systematically engineering the existing culture of trust and collaboration into the digital architecture of the ecosystem. This is not about replacing face-to-face interaction but augmenting and scaling it through technology.

The cornerstone of this pillar is the creation of a Unified Digital Platform, conceived as a virtual "digital cooperative" for the extended pesantren community. This platform would serve as the primary "digital intersection" for the ecosystem, a space for the serendipitous connections that are vital for innovation (Feld, 2020). It would integrate several key functions:

- A Community Marketplace. An e-commerce platform where *santri*, alumni, and affiliated MSMEs can market their products and services. Crucially, this marketplace would be governed by the Digital Ethical Charter, featuring transparent seller ratings, fair dispute resolution mechanisms, and potentially a Sharia-compliant payment gateway.
- A Talent and Mentorship Hub. A professional networking section, akin to a specialized LinkedIn, where *santri* can create profiles, showcase their skills, and connect with alumni mentors in various fields. This would provide a structured pathway for the informal knowledge transfer that already occurs within the pesantren network.
- A Capital Connection Portal. A space where vetted entrepreneurial projects can be showcased to potential investors from the alumni community. This could take the form of a crowdfunding platform or a directory for a pesantren-affiliated angel

investor network, providing a critical onramp for accessing finance, a key component of any successful EE (Isenberg, 2010).

By creating such a platform, the ecosystem can actively curate and foster collaborative narratives. The success stories of *santripreneurs* funded and mentored through the platform can be disseminated, shaping the ecosystem's identity and reinforcing a culture that celebrates ethical entrepreneurship. This moves the narrative away from one of simply "adopting technology" to one of leading with a values-based alternative in the digital economy, thereby strengthening the collective identity and encouraging broader participation.

Pillar 3: Creating Pathways from Literacy to Leadership

The third research problem addresses the strategic pathways for implementation, particularly in light of the significant gaps in digital literacy and infrastructure. The final pillar, Inclusive Capacity Building, is designed to create a systemic and multi-layered approach to developing human capital, ensuring that the digital transition is inclusive and leaves no one behind.

This pillar rejects a one-size-fits-all approach to training and instead proposes a system of Staged Digital Onramps. This would be a tiered learning journey integrated into the pesantren curriculum and extracurricular life:

- Tier 1: Foundational Digital Literacy: A mandatory program for all *santri*, covering basic digital skills, online safety, and the principles of the pesantren's Digital Ethical Charter. This ensures a baseline level of competency and ethical awareness for all community members.
- Tier 2: Applied Digital Skills: Elective workshops and courses in practical areas like digital marketing, graphic design, e-commerce management, and basic coding. These would be co-developed and potentially co-taught through strategic partnerships with universities, ethical tech companies, and government agencies like the Ministry of Communication and Information Technology.
- Tier 3: "Santripreneur" Incubator: A competitive, application-based program for the most promising entrepreneurial talents. This incubator would provide intensive mentorship, seed funding (channeled through the digital platform), and dedicated workspace to develop and launch new digital ventures. This creates a clear and prestigious pathway for aspiring entrepreneurs, transforming the ad-hoc process observed in the research into a structured and supportive one.

Addressing the infrastructure deficit requires a collective approach. The ecosystem, represented by the Digital Ethics Council, could leverage its collective bargaining power to negotiate with telecommunication providers for improved connectivity. Furthermore, partnerships with government bodies and philanthropic organizations could be sought to establish dedicated "Digital Innovation Hubs" within the pesantren, equipped with modern hardware and high-speed internet. This pillar ensures that the ecosystem is not just for the technologically-inclined but provides a pathway for everyone to participate and benefit, truly embodying the inclusive spirit of *Ekonomi Kerakyatan*.

In concert, these three pillars provide a comprehensive and actionable framework. This model directly addresses the challenges and leverages the unique strengths identified in the results, offering a pathway for pesantren to transition from a position of tradition to one of transactional and transformational leadership in the digital economy.

Policy Analysis

The development of a Pesantren-led DEE does not occur in a vacuum; it is situated within a national policy landscape. The Indonesian government has launched several initiatives aimed at fostering the digital economy and empowering Micro, Small, and Medium Enterprises (MSMEs), which form the backbone of the national economy. Programs such as the “UMKM Go Digital” initiative and the Palapa Ring project (to improve internet infrastructure) provide a conducive macro-environment. More specifically, programs like East Java's “One Pesantren, One Product” (OPOP) are designed to stimulate economic activity within Islamic boarding schools.

However, this analysis reveals a critical disconnect. Current policies are often technology-centric and sector-agnostic, promoting a generic model of digital adoption. They tend to focus on quantitative metrics such as the number of MSMEs onboarded to e-commerce platforms, without sufficient attention to the qualitative, values-based dimensions of entrepreneurship. The unique governance structures, social capital, and ethical considerations of institutions like pesantren are not adequately addressed. For instance, funding mechanisms are typically conventional and may not be compatible with Sharia principles, and training modules rarely incorporate the ethical-spiritual dimensions that are paramount for pesantren. Existing policies provide the basic ‘hardware’ (infrastructure) and ‘software’ (digital tools) but lack the culturally-attuned ‘operating system’ required for these tools to be adopted effectively and ethically within a values-driven community.

Limitations of the Study

This research, while providing deep insights, is subject to several limitations that offer avenues for future inquiry. First, its qualitative nature, while appropriate for exploratory and theory-building research, means the findings are not statistically generalizable. The framework developed, though empirically grounded in the case studies, requires further quantitative validation across a larger, more diverse sample of pesantren. Second, the geographical scope is confined to five major pesantren in East Java. While this region is a significant hub for pesantren, the findings may not fully capture the diversity of pesantren across Indonesia, such as those in West Java or Sumatra, which have different cultural and economic contexts. Third, access to sensitive financial data was limited, meaning the analysis of economic performance relied primarily on managerial reports and qualitative assessments. Finally, the study captures a snapshot in time; the digital landscape and the pesantren's response to it are continually evolving, necessitating longitudinal research to track the development of these ecosystems over time.

Novelty and Contribution

Despite its limitations, this study makes several significant contributions to the literature. Its primary novelty lies in its philosophical-practical synthesis. It is one of the first studies to move beyond a purely descriptive account of pesantren economics or a generic application of ecosystem theory. By grounding the DEE model in a deep philosophical inquiry into both *Ekonomi Kerakyatan* and Islamic ethics, it provides a robust ‘why’ that underpins the practical ‘how’.

Second, the proposed three-pillar framework (Ethical-Spiritual Governance, Socio-Digital Collaboration, and Inclusive Capacity Building) offers a new, culturally-contextualized model for ecosystem development in traditional, values-based communities. This serves as a critical alternative to the dominant, technology-centric DEE models that often neglect the social and ethical dimensions of innovation. Third,

the research empirically identifies and elevates the role of the Kyai as an ecosystem champion and the alumni as “digital translators,” providing new insights into the specific human capital dynamics within religious ecosystems. Finally, it contributes a practical, actionable roadmap for both pesantren leaders and policymakers, demonstrating how to harness digital transformation not as a threat to tradition, but as a powerful tool for amplifying a community’s core values and achieving equitable, sustainable development.

Policy Alternatives and Recommendations

Based on the analysis, a more nuanced and targeted policy approach is required. Rather than a one-size-fits-all strategy, the government should consider developing a “Values-Based Digital Ecosystem” (VBDE) policy track. This track would offer support tailored to institutions like pesantren, cooperatives, and other community-based organizations. Key policy alternatives include:

1. Sharia-Compliant Funding Instruments.

Developing and promoting venture capital, crowdfunding, and micro-loan programs that are compliant with Islamic finance principles. This could involve partnerships between government agencies and Islamic financial institutions.

2. Culturally-Contextualized Training Modules

Creating digital literacy and entrepreneurship training programs in collaboration with pesantren leaders. These modules should integrate the “Digital Ethical Charter” principles, teaching not just how to use digital tools, but how to use them ethically according to their values.

3. Incentivizing Ecosystem-Level Infrastructure

Shifting infrastructure support from a per-institution basis to an ecosystem-level approach. This could involve providing grants or subsidies for the development of the proposed Unified Digital Platforms that connect multiple pesantren and their affiliated MSMEs, thereby fostering inter-pesantren collaboration and creating greater network effects.

4. Formalizing the Role of “Digital Translators”

Creating fellowship or certification programs for alumni who can act as digital mentors and change agents within their communities, providing them with advanced training and a formal mandate to support digital transformation efforts.

CONCLUSION AND SUGGESTION

Conclusion

This study embarked on a philosophical and empirical inquiry to architect an ethical and sustainable Digital Entrepreneurial Ecosystem (DEE) for Indonesian pesantren. By synthesizing the principles of *Ekonomi Kerakyatan* with Islamic ethics and grounding the analysis in the lived realities of five major pesantren, the research concludes that a successful digital transition is not a matter of mere technological adoption, but of profound institutional and cultural translation. The immense social capital and deep-seated ethical leadership within pesantren are not obstacles to be overcome, but foundational assets to be leveraged in building a more equitable and values-driven digital economy. The proposed three-pillar framework—Ethical-Spiritual Governance, Socio-

Digital Collaboration, and Inclusive Capacity Building—offers a holistic and actionable model for achieving this vision.

The research concludes that pesantren are uniquely positioned to become architects of a DEE that prioritizes community welfare (*falah*) over pure profit maximization. By institutionalizing their moral authority into a formal governance structure, engineering their social capital into collaborative digital platforms, and systematically building the capacity of their communities, they can navigate the transition from tradition to transaction not by abandoning their values, but by amplifying them through new technological mediums.

Suggestion

Based on these conclusions, the following recommendations are put forth:

1. For Pesantren Leaders. It is recommended that leaders proactively initiate the formation of a Digital Ethics Council to move from a reactive to a strategic posture on technology. They should champion the development of a unified digital platform as a long-term strategic investment in their community's future and formally integrate a staged digital literacy curriculum into their educational programs.
2. For Government and Policymakers. It is recommended that government agencies move beyond generic digital economy policies and develop a dedicated "Values-Based Digital Ecosystem" (VBDE) policy track. This should include creating Sharia-compliant funding mechanisms, co-designing culturally-contextualized training modules with religious institutions, and providing targeted infrastructure grants for ecosystem-level platforms.
3. For Future Research. Further research is needed to validate the proposed framework across a wider range of pesantren. Longitudinal studies are required to track the evolution of these ecosystems over time, and quantitative analysis is needed to measure the economic and social impact of these initiatives. Additionally, comparative studies with other faith-based communities globally could yield valuable insights into the universal and context-specific factors that shape the intersection of religion and the digital economy.

Ultimately, this study posits that the pesantren-led DEE can serve as a powerful model for the world, demonstrating that it is possible to embrace the opportunities of the digital age without succumbing to a soulless, transactional ethos. It is a pathway toward a digital future that is not only prosperous but also just, equitable, and deeply humane.

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