Leveraging Waqf and Endowment for Sustainable Pesantren Development in Sumatra: Evidence from Pondok Modern Cahaya Al-Qur'an (PMCA) and the Emerging Productive Pesantren Ecosystem in Dumai, Indonesia

Nurdiyanto Khusnia Hadi
Universiti Sains Islam Malaysia (USIM), Nilai, Negeri Sembilan, Malaysia
Email: 4242812@raudah.usim.edu.my

Abstract

Many pesantren in Indonesia remain financially dependent on tuition fees and charitable donations, which limits their capacity for long-term development. This study examines how waqf and endowment can be leveraged as strategic instruments for sustainable pesantren development in Sumatra. Using a qualitative descriptive design that combines library research with a case study, the study analyzes literature on waqf, endowment, sustainability, and Islamic social finance alongside the institutional records of Pondok Modern Cahaya Al-Qur'an (PMCA) in Dumai, Riau Province. The findings show that Indonesia's waqf potential remains largely underutilized: less than two percent of the estimated annual cash waqf potential has been mobilized. PMCA, established in 2020, has developed diversified productive units (a palm oil plantation, cattle and duck farming, VCO production, herbal products, a student canteen, and Umrah services) that generate approximately 53.9 percent of its annual revenue of Rp2 billion. PMCA also operates within an emerging productive pesantren cluster in Dumai together with Al-Harokah, Alam Qur'an, and Baitul Qur'an. Building on these findings, the study proposes a four-stage Sustainable Pesantren Waqf Framework and shows that productive waqf supports SDGs 4, 8, 9, and 17. Policy recommendations are offered for pesantren, waqf institutions, and government.

Keywords: Waqf; Endowment; Productive Waqf; Pesantren Sustainability; Islamic Education; Islamic Social Finance; Sumatra; Sustainable Development

Introduction

Background

Islamic boarding schools (pesantren) represent one of the oldest and most influential educational institutions in Indonesia. For centuries, pesantren have contributed significantly to religious education, character formation, social transformation, and community development. Beyond their educational function, pesantren serve as centers of Islamic values, cultural preservation, leadership development, and social empowerment.

Indonesia currently hosts more than 39,000 pesantren with millions of students distributed across the archipelago.[1] As the second-largest island in Indonesia, Sumatra possesses a substantial pesantren network that plays a crucial role in shaping Islamic education and socio-economic development. Provinces such as Aceh, North Sumatra, West Sumatra, Riau, South Sumatra, and Lampung have long traditions of Islamic scholarship and pesantren-based education.

[1] Ministry of Religious Affairs of the Republic of Indonesia, *Statistics of Pesantren in Indonesia 2024* (Jakarta: Ministry of Religious Affairs, 2024).

Despite their historical importance, many pesantren continue to face significant challenges related to institutional sustainability. Most pesantren rely heavily on tuition fees, community donations, and limited government assistance to finance their operations. Rising educational costs, infrastructure maintenance, technological transformation, teacher development, and increasing competition within the educational sector have placed considerable financial pressure on many Islamic educational institutions.

The challenge of sustainability has become increasingly important in the contemporary educational environment. Educational institutions are expected not only to provide quality learning experiences but also to maintain financial stability, organizational resilience, and long-term institutional growth. For many pesantren, dependence on unstable funding sources creates vulnerability and limits opportunities for expansion and innovation.

Historically, Islamic civilization addressed this challenge through the institution of waqf (Islamic endowment). Throughout Islamic history, waqf played a critical role in financing mosques, schools, universities, hospitals, libraries, and public infrastructure. Many prominent Islamic educational institutions, including Al-Azhar University in Egypt, were sustained for centuries through waqf-based financing mechanisms. Unlike conventional donations that are consumed immediately, waqf preserves the principal asset while continuously utilizing its benefits for public welfare.

In recent years, scholars and policymakers have increasingly emphasized the importance of productive waqf as a mechanism for sustainable development. Productive waqf refers to the utilization of endowed assets in income-generating activities such as agriculture, plantations, commercial property, manufacturing, and service industries. The resulting profits are then allocated to educational, social, and economic development programs.

Indonesia possesses enormous waqf potential. According to the Indonesian Waqf Board (BWI), the country has more than 440,000 waqf land locations and a cash waqf potential estimated at approximately Rp180 trillion annually.[2] However, only a small proportion of this potential has been successfully mobilized and managed productively. This gap indicates substantial opportunities for developing innovative waqf-based financing models that support educational institutions, including pesantren.

The island of Sumatra presents a particularly promising context for productive waqf development. The region possesses extensive agricultural resources, strong Islamic traditions, growing Muslim middle-class communities, and a large network of pesantren. These characteristics create favorable conditions for integrating waqf, entrepreneurship, and educational development.

This study focuses on the role of waqf and endowment in supporting sustainable pesantren development in Sumatra. Specifically, the research investigates how productive waqf can strengthen educational sustainability, economic empowerment, and technological innovation. To provide practical insights, the study presents a case study of Pondok Modern Cahaya Al-Qur'an (PMCA), a growing pesantren located in Dumai, Riau Province.

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[2] Badan Wakaf Indonesia, *Annual Report on Waqf Development in Indonesia* (Jakarta: Badan Wakaf Indonesia, 2024).

Established in 2020, PMCA has developed several productive business units, including palm oil plantations, livestock farming, VCO production, herbal product sales, student canteen operations, and Umrah services. These initiatives demonstrate the potential of integrating waqf-based asset development with entrepreneurial activities to achieve long-term institutional sustainability. Furthermore, PMCA operates within an emerging ecosystem of productive pesantren in Dumai, alongside Al-Harokah, Alam Qur'an, and Baitul Qur'an Islamic boarding schools. The existence of these institutions suggests the development of a localized model of pesantren sustainability that deserves scholarly attention.

Research Problem

Although waqf has historically contributed to educational development throughout the Muslim world, its contemporary application within Indonesian pesantren remains relatively underdeveloped. Many pesantren continue to rely on traditional funding mechanisms and have yet to maximize the potential of productive waqf. Several key problems can be identified:

1) Many pesantren remain financially dependent on tuition fees and charitable donations.
2) Productive waqf assets are often underutilized or managed inefficiently.
3) Limited financial resources constrain educational quality, infrastructure development, and technological innovation.
4) There is a lack of practical models demonstrating how waqf can support sustainable pesantren development.
5) Research focusing specifically on productive waqf and pesantren sustainability in Sumatra remains limited.

These challenges highlight the need for a comprehensive framework that integrates waqf, entrepreneurship, and institutional sustainability.

Research Questions and Objectives

This study seeks to answer the following research questions:

1) How can waqf and endowment contribute to sustainable pesantren development in Sumatra?
2) What productive waqf models are suitable for supporting pesantren sustainability?
3) How does the PMCA case illustrate the practical application of productive waqf in Islamic educational institutions?
4) What strategies can be implemented to strengthen waqf-based sustainability among pesantren in Sumatra?

Accordingly, the objectives of this study are:

1) To examine the role of waqf and endowment in enhancing the sustainability of pesantren in Sumatra.
2) To analyze productive waqf models applicable to Islamic educational institutions.
3) To investigate the implementation of productive waqf through the case study of Pondok Modern Cahaya Al-Qur'an (PMCA).
4) To develop a sustainable waqf-based framework for pesantren development in Sumatra.
5) To provide policy recommendations for policymakers, waqf institutions, and pesantren administrators.

Significance and Novelty of the Study

This study contributes to academic literature and practical development in several ways.

a) **Academic significance.** The study enriches the literature on Islamic social finance by examining the relationship between waqf and educational sustainability; contributes to the growing body of research on productive waqf and its role in institutional development; and provides empirical evidence from Sumatra, a region that has received relatively limited attention in waqf-related studies.
b) **Practical significance.** For pesantren administrators, the findings offer practical strategies for improving financial sustainability through productive asset development. For waqf institutions, the study demonstrates opportunities for utilizing waqf as a catalyst for educational development. For policymakers, the research provides insights for strengthening policies related to Islamic social finance and educational sustainability.
c) **Social significance.** The study highlights the potential of waqf to improve access to quality education, create economic opportunities, and support community empowerment.

This research also offers several original contributions. First, it focuses specifically on sustainable pesantren development in Sumatra, a context that remains underrepresented in existing literature. Second, it integrates educational sustainability, economic empowerment, and technological innovation into a single waqf-based framework. Third, it presents an empirical case study of Pondok Modern Cahaya Al-Qur'an (PMCA), demonstrating how productive waqf can support institutional sustainability. Fourth, it introduces the concept of an emerging productive pesantren cluster in Dumai, consisting of PMCA, Al-Harokah, Alam Qur'an, and Baitul Qur'an.

Literature Review

Waqf Theory

Waqf is one of the most significant institutions in Islamic civilization and has historically played a central role in promoting social welfare, educational development, and economic prosperity. Linguistically, the term waqf originates from the Arabic word *waqafa*, which means “to stop,” “to hold,” or “to preserve.” In Islamic jurisprudence, waqf refers to the permanent dedication of an asset for charitable purposes, where the ownership of the asset is retained while its benefits are continuously distributed for public welfare.

According to Kahf, waqf is a unique economic institution because it allows wealth to remain productive while simultaneously serving social objectives.[3] Unlike conventional charitable donations that are consumed immediately, waqf preserves the principal asset and continuously generates benefits for future generations.

Historically, waqf contributed significantly to the advancement of Islamic civilization. During the Abbasid, Mamluk, and Ottoman periods, waqf financed educational institutions, hospitals, libraries, roads, water systems, and social welfare programs. Many prominent universities in the Muslim world, including Al-Azhar

[3] M. Kahf, “The Role of Waqf in Improving the Ummah Welfare” (2003).

University in Egypt, were sustained through waqf-based financing mechanisms for centuries.

Modern scholars have emphasized the relevance of waqf in contemporary economic development. Ahmed argues that waqf can serve as an effective instrument for poverty alleviation, educational financing, and sustainable development.[4] Through proper management, waqf assets can generate recurring income while supporting social and economic objectives.

The development of productive waqf has become increasingly important in recent decades. Productive waqf refers to the utilization of waqf assets in income-generating activities such as agriculture, plantations, commercial property, manufacturing, and service industries. Income generated from these activities is then allocated to educational institutions, healthcare services, and community development programs.

In the context of pesantren development, productive waqf offers a sustainable financing model capable of reducing institutional dependence on tuition fees and donations. Productive assets such as plantations, livestock farms, rental properties, and business enterprises can generate recurring income to support operational expenses, scholarships, infrastructure development, and technological innovation. Consequently, waqf theory provides a strong conceptual foundation for understanding how Islamic social finance can contribute to the long-term sustainability of pesantren in Sumatra.

Endowment Theory

The concept of endowment refers to the establishment of a permanent fund or asset whose returns are used to support specific institutional or social objectives. Although commonly associated with universities and charitable organizations in Western societies, endowment systems share many similarities with Islamic waqf institutions.

According to Cizakca, endowments and waqf are both mechanisms designed to ensure long-term institutional sustainability through the preservation of capital and utilization of investment returns.[5] The primary difference lies in their legal and religious foundations, although their economic functions are largely comparable.

Many world-class universities possess large endowment funds that contribute significantly to their operational sustainability. Institutions such as Harvard University, Yale University, and Oxford University maintain endowment portfolios worth billions of dollars. The returns generated from these investments finance scholarships, research activities, faculty development, infrastructure, and innovation programs. The success of university endowment systems demonstrates the importance of long-term asset management in sustaining educational institutions. Educational organizations that possess substantial endowment assets are generally less dependent on tuition fees and government support.

In Islamic education, the endowment concept can be integrated with waqf management. Alumni contributions, philanthropic donations, corporate social responsibility funds, and cash waqf initiatives can collectively form an educational

[4] H. Ahmed, *Role of Waqf in Sustainable Economic Development and Poverty Alleviation* (Jeddah: Islamic Research and Training Institute, 2015).
[5] M. Cizakca, *Islamic Capitalism and Finance: Origins, Evolution and the Future* (Cheltenham: Edward Elgar Publishing, 2011).

endowment fund. Such a fund can provide sustainable financial support for pesantren development. For pesantren in Sumatra, endowment theory offers valuable insights into how institutions can transition from donor-dependent organizations to self-sustaining educational ecosystems. The integration of waqf and endowment principles enables pesantren to develop long-term financial strategies that support educational excellence and institutional resilience.

Sustainability Theory

Sustainability has emerged as one of the most important concepts in contemporary development discourse. The concept gained global recognition through the Brundtland Report, which defined sustainable development as development that meets present needs without compromising the ability of future generations to meet their own needs.[6] Although sustainability is often associated with environmental issues, the concept has expanded to include economic, social, institutional, and technological dimensions.

According to sustainability theory, organizations can only survive and thrive when they possess sufficient resources, adaptive capacity, and long-term strategic planning. Educational institutions are no exception. For pesantren, sustainability involves several interconnected dimensions:

a) **Financial sustainability**: the ability of an institution to maintain stable revenue streams that support operational activities without excessive dependence on uncertain external funding.
b) **Educational sustainability**: maintaining educational quality through teacher development, curriculum improvement, infrastructure enhancement, and student support services.
c) **Social sustainability**: strengthening relationships with stakeholders, including students, parents, alumni, local communities, and philanthropic organizations.
d) **Technological sustainability**: the ability of educational institutions to adopt digital technologies, innovation systems, and modern learning tools.

In this study, sustainability serves as the primary framework for evaluating how waqf and endowment contribute to the long-term development of pesantren. Productive waqf is viewed as a mechanism that supports financial sustainability, which subsequently strengthens educational, social, and technological sustainability.

Islamic Social Finance Theory

Islamic Social Finance (ISF) refers to financial instruments and institutions designed to promote social welfare, economic justice, and equitable wealth distribution according to Islamic principles. According to Obaidullah, Islamic social finance consists of several key instruments, namely zakat, waqf, sadaqah, qard hasan, and Islamic endowment funds.[7] These instruments collectively contribute to poverty reduction, educational development, healthcare provision, and community empowerment.

Unlike conventional financial systems that prioritize profit maximization, Islamic social finance emphasizes social impact and human well-being. The objective

[6] World Commission on Environment and Development, *Our Common Future* (Oxford: Oxford University Press, 1987).
[7] M. Obaidullah, *Islamic Social Finance Report* (Jeddah: Islamic Research and Training Institute, 2019).

is not merely economic growth but also social justice and equitable development. Recent studies have highlighted the role of Islamic social finance in achieving the Sustainable Development Goals (SDGs). Waqf, in particular, has been recognized as a strategic instrument capable of supporting SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure), and SDG 17 (Partnerships for the Goals). In the context of pesantren development, Islamic social finance provides a comprehensive framework for mobilizing resources and supporting sustainable educational ecosystems.

Previous Studies

A growing body of literature has examined the relationship between waqf, education, and sustainable development. Ahmed argues that productive waqf can significantly contribute to poverty alleviation and educational financing by generating recurring income streams that support social programs.[8] Cizakca highlights the historical role of waqf institutions in financing educational and social services throughout Islamic civilization, demonstrating that waqf served as one of the most successful non-state welfare systems in history.[9]

Rusydiana et al. conducted a bibliometric analysis of waqf-related educational research and found increasing scholarly interest in the use of waqf for educational sustainability; however, most studies focus on higher education institutions rather than pesantren.[10] Huda examined the sustainability of Islamic educational institutions through waqf management and concluded that professional governance and productive asset development are essential for long-term institutional success.[11] Noor and Abdullah investigated cash waqf and sustainable development and found that cash waqf possesses considerable potential to support educational and socio-economic development programs.[12] Qurrata et al. analyzed the concept of sustainable waqf and emphasized the importance of integrating sustainability principles into waqf governance systems.[13]

While these studies provide valuable insights, they generally focus on national or international contexts and rarely examine pesantren development in Sumatra.

Research Gap and Conceptual Position

Despite the growing literature on waqf and educational sustainability, several important gaps remain:

a) **Geographical gap.** Most existing studies focus on Java, Malaysia, Turkey, and Middle Eastern countries. Research specifically examining productive waqf and pesantren sustainability in Sumatra remains limited.
b) **Institutional gap.** Previous studies frequently analyze universities, waqf institutions, and Islamic financial organizations. Relatively few studies

[8] Ahmed, *Role of Waqf*.
[9] Cizakca, *Islamic Capitalism and Finance*.
[10] A. S. Rusydiana, L. Marlina, and A. Devi, "Waqf on Education: A Bibliometric Review Based on Scopus Database" (2021).
[11] N. Huda, "Sustainability of Islamic Educational Institutions through Waqf Management," *Journal of Islamic Monetary Economics and Finance* 7, no. 3 (2021): 455–74.
[12] A. H. M. Noor and N. Abdullah, "Cash Waqf and Sustainable Development," *ISRA International Journal of Islamic Finance* 13, no. 1 (2021): 45–63.
[13] V. A. Qurrata et al., "Waqf Sustainability or Sustainable Waqf?," *Millah: Journal of Religious Studies* 23, no. 1 (2024): 1–28.

investigate pesantren as educational institutions that combine religious education, entrepreneurship, and community development.

c) **Practical gap.** Many studies discuss theoretical concepts of waqf without providing practical institutional models. There remains a need for empirical case studies demonstrating how productive waqf can be implemented successfully.
d) **Integration gap.** Existing research often examines educational sustainability, economic development, and technological innovation separately. Few studies integrate these dimensions into a single analytical framework.

This study seeks to address these gaps by focusing on sustainable pesantren development in Sumatra through the lens of waqf and endowment. The research introduces Pondok Modern Cahaya Al-Qur'an (PMCA) as a practical case study of productive waqf implementation. Established in 2020 in Dumai, Riau Province, PMCA has developed multiple productive business units, including palm oil plantations, livestock farming, VCO production, herbal product sales, student cooperative activities, and Umrah services. Furthermore, PMCA operates within an emerging productive pesantren ecosystem that includes Al-Harokah, Alam Qur'an, and Baitul Qur'an Islamic boarding schools. This ecosystem provides a unique context for examining how waqf-based entrepreneurship can support educational sustainability.

By integrating waqf theory, endowment theory, sustainability theory, and Islamic social finance theory, this study proposes a comprehensive framework for sustainable pesantren development in Sumatra. The framework emphasizes productive asset management, institutional resilience, educational quality, economic empowerment, and technological innovation as interconnected dimensions of sustainable development.

Method

Research Design and Approach

This study employs a qualitative research design using a combination of library research and case study approaches. The qualitative approach was selected because the research seeks to explore and understand the strategic role of waqf and endowment in supporting the sustainability of pesantren institutions, particularly within the socio-economic context of Sumatra. Qualitative research is appropriate when the objective is to examine social phenomena, institutional practices, and contextual realities that cannot be adequately explained through quantitative measurements alone.

The research combines theoretical exploration and empirical observation. The theoretical component draws upon existing literature on waqf, endowment, sustainability, and Islamic social finance, while the empirical component focuses on Pondok Modern Cahaya Al-Qur'an (PMCA) as a representative case of productive waqf implementation in Sumatra. This research is exploratory and descriptive in nature: it seeks not only to describe existing practices but also to develop a conceptual framework for sustainable pesantren development through waqf and endowment mechanisms.

The study adopts a qualitative descriptive approach. According to Creswell, qualitative research enables researchers to investigate complex social phenomena within their natural settings and to interpret meanings derived from participants,

institutions, and documented evidence.[14] The approach was selected because the study focuses on understanding (1) the role of waqf and endowment in supporting pesantren sustainability; (2) the implementation of productive waqf practices within Islamic educational institutions; (3) the opportunities and challenges of developing sustainable pesantren ecosystems in Sumatra; and (4) the practical experiences of PMCA as a case study of waqf-based institutional development.

Research Site and Case Selection

The empirical component of this study focuses on Pondok Modern Cahaya Al-Qur'an (PMCA), located in Bukit Nenas, Bukit Kapur District, Dumai City, Riau Province, Indonesia. PMCA was selected as the primary case study for several reasons:

1) PMCA represents a relatively young pesantren established in 2020, allowing the researcher to observe sustainability strategies during the early stages of institutional development.
2) PMCA possesses approximately five hectares of waqf land, providing a foundation for productive waqf development.
3) PMCA has developed multiple productive business units, including palm oil plantations (3.5 hectares), cattle farming, duck farming, Virgin Coconut Oil (VCO) production, herbal product sales, student canteen operations, and Umrah travel services.
4) PMCA operates within a broader ecosystem of productive pesantren in Dumai, alongside Al-Harokah, Alam Qur'an, and Baitul Qur'an Islamic boarding schools, which provides a unique context for understanding how waqf-based entrepreneurship contributes to educational sustainability.

Data Sources

This study utilizes both secondary and primary data sources. Secondary data were obtained from Scopus-indexed journal articles; Web of Science (WoS) publications; books on waqf, Islamic economics, and educational sustainability; reports published by the Indonesian Waqf Board (BWI); statistics issued by the Ministry of Religious Affairs of Indonesia; publications of the Islamic Development Bank (IsDB); reports from the World Bank and the United Nations Development Programme (UNDP); conference proceedings on Islamic social finance and educational development; and government statistics concerning pesantren development in Indonesia and Sumatra. The literature review primarily focused on publications published between 2020 and 2026 to ensure the relevance and currency of the data.

Primary data were obtained from institutional records and internal reports of PMCA. The collected data include the institutional profile, number of students, number of teachers and staff, waqf asset ownership, productive business units, financial performance, revenue and expenditure structure, alumni data, and asset valuation. These data were utilized to analyze the sustainability prospects of PMCA and to construct a practical model for waqf-based pesantren development.

Data Collection Techniques

The study employs three primary data collection techniques:

a) **Document analysis**, conducted using institutional records, annual reports, policy documents, government publications, and academic literature.

[14] J. W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 5th ed. (Thousand Oaks, CA: Sage Publications, 2018).

According to Bowen, document analysis provides a systematic procedure for reviewing and evaluating both printed and electronic documents, enabling researchers to identify patterns, themes, and relationships relevant to the research objectives.[15]

b) **Literature review**, conducted to establish the theoretical foundation of the study. The review focused on waqf theory, endowment theory, sustainability theory, Islamic social finance theory, productive waqf management, and educational sustainability, and also facilitated the identification of research gaps and the development of the conceptual framework.
c) **Institutional data review**, in which institutional data obtained from PMCA were analyzed to understand the practical implementation of productive waqf, with particular attention to asset ownership, business development, financial sustainability, educational development, and institutional growth.

Data Analysis Techniques

The study applies qualitative content analysis as the primary analytical method. Content analysis allows researchers to systematically examine textual and documentary evidence in order to identify themes, patterns, and relationships. The analysis was conducted through four stages:

1) **Data reduction**: relevant information related to waqf, endowment, sustainability, and pesantren development was selected and organized according to the research objectives.
2) **Data categorization**: the collected data were grouped into four major themes, namely waqf asset mobilization, productive investment management, institutional sustainability, and educational and socio-economic impact.
3) **Pattern identification**: the relationships among themes were examined to identify best practices, opportunities, challenges, and success factors associated with productive waqf implementation.
4) **Framework development**: the findings from literature and the PMCA case study were synthesized into a Sustainable Pesantren Waqf Framework for Sumatra.

The analysis was guided by a four-dimensional analytical framework. The first dimension, waqf asset mobilization, examines the sources and mechanisms of waqf and endowment collection, including land waqf, cash waqf, alumni endowment, corporate waqf, and philanthropic contributions. The second dimension, productive investment, evaluates how waqf assets are transformed into productive investments through agriculture, plantations, livestock farming, manufacturing activities, and service-based enterprises. The third dimension, sustainability outcomes, assesses the impact of productive waqf on financial sustainability, educational sustainability, and organizational resilience. The fourth dimension, development impact, evaluates broader impacts on educational quality, economic empowerment, technological innovation, and community welfare. The interaction among these dimensions forms the conceptual basis for sustainable pesantren development through waqf and endowment mechanisms.

[15] G. A. Bowen, "Document Analysis as a Qualitative Research Method," *Qualitative Research Journal* 9, no. 2 (2009): 27–40.

Trustworthiness and Ethical Considerations

To enhance the credibility and reliability of the findings, this study employs source triangulation by comparing information obtained from academic literature, government reports, international institutional publications, and PMCA institutional records. The use of multiple data sources reduces the risk of bias and strengthens the validity of the findings. Furthermore, peer-reviewed journal articles and official statistics were prioritized to ensure academic rigor.

This study utilizes institutional data provided by Pondok Modern Cahaya Al-Qur'an (PMCA) for academic purposes. The data are presented in aggregate form and are used solely to analyze institutional sustainability and productive waqf practices. The researcher maintains objectivity and transparency throughout the research process and ensures that all cited sources are properly acknowledged.

Result

Pesantren Development in Sumatra

Sumatra has long been recognized as one of the most important centers of Islamic education in Indonesia. Historically, Islamic learning flourished through traditional religious institutions that later evolved into modern pesantren. Today, thousands of pesantren operate across the island, serving as centers of education, religious guidance, character development, and community empowerment.

Based on data from the Ministry of Religious Affairs, Sumatra hosts thousands of pesantren distributed across ten provinces, as presented in Table 1.[16] The largest concentrations are found in Lampung, Aceh, and North Sumatra. These institutions collectively educate hundreds of thousands of students and contribute significantly to local socio-economic development.

Table 1. Number of Pesantren in Sumatra (2024)

Province	Number of Pesantren
Lampung	1,297
Aceh	1,250
North Sumatra	1,050
South Sumatra	500
West Sumatra	420
Riau	380
Jambi	210
Bengkulu	140
Riau Islands	131
Bangka Belitung	92

Source: Ministry of Religious Affairs of the Republic of Indonesia (2024).

The large number of pesantren indicates that Sumatra possesses significant potential for developing waqf-based educational financing systems. However, despite their strategic role, many pesantren continue to depend on tuition fees and charitable donations as their primary sources of income. This dependency creates financial vulnerability and often limits institutional expansion. Consequently, alternative financing mechanisms are required to ensure long-term sustainability. One promising

[16] Ministry of Religious Affairs, *Statistics of Pesantren*.

solution is productive waqf, which enables pesantren to generate recurring income through business activities while maintaining their educational mission.

Waqf Potential in Indonesia

Indonesia possesses one of the largest waqf potentials in the world. The Indonesian Waqf Board (BWI) estimates that annual cash waqf potential reaches approximately Rp180 trillion. In addition, Indonesia has more than 440,000 registered waqf land locations covering over 57,000 hectares (Table 2).[17]

Table 2. Waqf Potential in Indonesia

Indicator	Value
Annual Cash Waqf Potential	Rp180 Trillion
Cash Waqf Collected (2024)	Rp2.23 Trillion
Registered Waqf Land Locations	440,500+
Waqf Land Area	57,200+ Ha

Source: Badan Wakaf Indonesia (2024).

The findings reveal a substantial gap between potential and realization. Less than two percent of the estimated cash waqf potential has been successfully mobilized. This situation presents a significant opportunity for educational institutions such as pesantren. If even a small portion of Indonesia's waqf potential were directed toward educational development, substantial improvements could be achieved in infrastructure, scholarships, teacher development, and technological innovation. The challenge lies not in the availability of resources but rather in governance, management capacity, transparency, and public awareness.

PMCA Case Study: Institutional Profile and Infrastructure

Pondok Modern Cahaya Al-Qur'an (PMCA) is an Islamic boarding school established in 2020 and located in Bukit Nenas, Bukit Kapur District, Dumai City, Riau Province. PMCA implements the Kulliyatul Mu'allimin Al-Islamiyah (KMI) system, which is equivalent to MTs and MA levels. The institution seeks to integrate Islamic education, character development, entrepreneurship, and productive waqf management. Its institutional profile is summarized in Table 3.

[17] Badan Wakaf Indonesia, *Annual Report*.

Table 3. PMCA Institutional Profile

Indicator	Value
Year Established	2020
Educational System	KMI (Muadalah)
Total Students	87
Male Students	47
Female Students	40
Teachers and Staff	31
Alumni	300
Waqf Land	5 Ha
Annual Revenue	Rp2 Billion
Annual Expenditure	Rp1.9 Billion
Current Waqf Land Value	Rp1 Billion
Building Value	Rp2.5 Billion
Total Asset Value	Rp3.5 Billion

Source: PMCA institutional records.

The data demonstrate that PMCA remains a relatively young institution. Nevertheless, it has established a solid foundation for sustainable development through waqf assets and entrepreneurial initiatives. PMCA also possesses several educational facilities that support teaching and learning activities (Table 4).

Table 4. PMCA Educational Facilities

Facility	Area
Mosque (Under Construction)	400 m^2
Male Dormitory	450 m^2
Female Dormitory	360 m^2
Classrooms	360 m^2

Source: PMCA institutional records.

The construction of the mosque and educational facilities reflects PMCA's commitment to developing a comprehensive learning environment.

Financial Sustainability Analysis

Financial sustainability is one of the most important dimensions of institutional resilience. The financial data indicate that PMCA generated approximately Rp2 billion in annual revenue while recording annual expenditures of Rp1.9 billion. The composition of this revenue is presented in Table 5.

Table 5. PMCA Revenue Structure

Revenue Source	Amount	Percentage
Tuition Fees (SPP)	Rp672 Million	33.6%
Donations	Rp250 Million	12.5%
Business Units	Rp1.078 Billion	53.9%
Total Revenue	Rp2 Billion	100%

Source: PMCA institutional records.

One of the most significant findings is that more than half of PMCA's annual revenue originates from productive business activities. This finding suggests that

PMCA has begun transitioning from a donation-dependent institution toward an entrepreneurial pesantren model. As shown in Table 6, PMCA recorded an annual surplus of Rp100 million.

Table 6. PMCA Financial Performance

Indicator	Amount
Revenue	Rp2 Billion
Expenditure	Rp1.9 Billion
Annual Surplus	Rp100 Million

Source: PMCA institutional records.

Although the annual surplus remains relatively modest, the positive financial balance indicates that productive business activities contribute significantly to institutional sustainability.

Productive Waqf Model

PMCA demonstrates how productive waqf can be integrated into educational development. Its existing productive business units are listed in Table 7.

Table 7. PMCA Existing Productive Business Units

Business Unit	Status
Palm Oil Plantation (3.5 Ha)	Developing
Cattle Farming (5 Heads)	Active
Duck Farming (200 Ducks)	Active
Student Canteen	Active
VCO Production	Active
Herbal Product Sales	Active
Umrah Services	Active

Source: PMCA institutional records.

The diversification of business activities reduces financial risk and creates multiple income streams. The palm oil plantation is particularly significant because it represents a long-term productive waqf asset. Although some plantations are still immature and have not yet reached full productivity, they possess considerable future revenue potential. The integration of agricultural activities, livestock farming, manufacturing, and service industries demonstrates a practical implementation of productive waqf principles.

Dumai Productive Pesantren Cluster

The PMCA case should not be viewed in isolation. Field observations indicate the emergence of a productive pesantren ecosystem in Dumai consisting of Pondok Modern Cahaya Al-Qur'an (PMCA), Al-Harokah Islamic Boarding School, Alam Qur'an Islamic Boarding School, and Baitul Qur'an Islamic Boarding School. These institutions share a common objective of strengthening financial sustainability through entrepreneurial activities and productive asset development. The emergence of this cluster suggests that productive waqf is gradually becoming an important strategy for pesantren development in Dumai.

Collaboration among these institutions may create opportunities for joint business ventures, shared training programs, waqf fundraising initiatives, knowledge

exchange, and educational innovation. Consequently, the Dumai experience may serve as a regional model for sustainable pesantren development in Sumatra.

Summary of Findings

The findings reveal that:

1) Sumatra possesses a large and growing pesantren ecosystem.
2) Indonesia has enormous but underutilized waqf potential.
3) PMCA demonstrates the practical implementation of productive waqf.
4) More than half of PMCA's revenue originates from business activities.
5) Productive waqf contributes to educational sustainability, economic empowerment, and innovation.
6) The emerging productive pesantren cluster in Dumai provides a promising model for replication.
7) Waqf-based sustainability aligns closely with the Sustainable Development Goals (SDGs).

Discussion

Waqf, Sustainability, and the SDGs

The findings indicate that productive waqf contributes to sustainable development in multiple dimensions. With regard to SDG 4 (Quality Education), the income generated from productive waqf supports educational activities, scholarships, teacher development, and infrastructure improvement. Through sustainable financing, pesantren can improve educational quality without increasing financial burdens on students and parents.

With regard to SDG 8 (Decent Work and Economic Growth), PMCA's business units create employment opportunities for teachers, staff, alumni, and local communities. Entrepreneurship programs also equip students with practical business skills that enhance future employability. With regard to SDG 9 (Industry, Innovation, and Infrastructure), productive waqf encourages investment in infrastructure development, technology adoption, and innovation; the development of VCO production, herbal processing, and service-based enterprises demonstrates the potential for innovation within pesantren ecosystems.

With regard to SDG 17 (Partnerships for the Goals), successful waqf development requires collaboration among multiple stakeholders, including pesantren, alumni, government agencies, waqf institutions, corporate partners, and philanthropic organizations. Such partnerships are essential for mobilizing resources and scaling successful models.

Proposed Sustainable Pesantren Waqf Framework

Based on the findings, this study proposes a four-stage framework for sustainable pesantren development:

1) **Waqf and endowment mobilization**: land waqf, cash waqf, alumni endowment, and corporate waqf.
2) **Productive asset development**: agriculture, plantations, livestock, manufacturing, and service industries.
3) **Revenue generation**: educational financing, scholarships, teacher development, and infrastructure investment.

4) **Sustainable outcomes**: financial sustainability, educational excellence, economic empowerment, and technological innovation.

This framework demonstrates how waqf and endowment can function as strategic instruments for transforming pesantren into sustainable educational ecosystems.

Policy Implications

The findings of this study have important implications for policymakers, waqf institutions, educational administrators, and philanthropic organizations:

1) **Strengthening waqf governance.** Professional governance is essential for maximizing the impact of waqf assets. Policymakers and waqf institutions should establish transparent governance systems, regular financial reporting mechanisms, and accountability frameworks that increase public trust and encourage greater participation in waqf programs.
2) **Promoting productive waqf development.** Government agencies and Islamic financial institutions should encourage the transformation of traditional waqf assets into productive investments. Agricultural projects, plantations, livestock enterprises, commercial properties, and service industries can generate recurring revenues that support educational sustainability.
3) **Establishing pesantren endowment funds.** Pesantren should develop structured endowment programs that involve alumni, philanthropic organizations, corporate partners, and local communities. Alumni endowment funds can become a significant source of long-term institutional financing.
4) **Encouraging entrepreneurship in pesantren.** The integration of entrepreneurship and productive asset development should become a strategic component of pesantren education. Entrepreneurial activities not only generate revenue but also provide practical learning opportunities for students.
5) **Strengthening collaboration.** Partnerships among pesantren, universities, waqf institutions, government agencies, and private-sector organizations should be expanded to facilitate knowledge exchange, capacity building, and resource mobilization.
6) **Supporting digital transformation.** A portion of waqf revenues should be allocated to technological development, including digital learning platforms, educational technology infrastructure, and innovation programs that enhance institutional competitiveness.

Recommendations

Based on the findings of this study, several recommendations are proposed. Pesantren should develop comprehensive waqf and endowment strategies, diversify productive business units, strengthen financial management systems, expand alumni engagement programs, and invest in digital transformation and innovation. Waqf institutions should improve waqf literacy campaigns, facilitate cash waqf collection mechanisms, provide technical assistance for productive waqf development, and support capacity-building programs for nazhir and pesantren managers. The government should strengthen regulatory support for productive waqf, provide incentives for waqf-based educational development, facilitate collaboration between pesantren and Islamic financial institutions, and integrate waqf development into national educational and economic policies.

Limitations and Future Research

Several limitations should be acknowledged. First, the study focuses primarily on a single-case study of Pondok Modern Cahaya Al-Qur'an (PMCA), which may limit the generalizability of the findings to other pesantren contexts. Second, financial projections presented in the study are based on scenario analysis rather than audited future outcomes. Third, the research relies primarily on qualitative methods and does not employ quantitative impact measurement techniques. Fourth, some institutional data were obtained from internal records and may require further verification through longitudinal studies. Despite these limitations, the study provides valuable insights into the practical implementation of productive waqf for educational sustainability.

Future studies may expand upon this research in several ways: conducting comparative studies involving multiple pesantren across Sumatra and other regions of Indonesia; employing quantitative methods to measure the economic and educational impacts of productive waqf; examining the relationship between waqf governance and institutional performance; investigating the role of digital waqf platforms in enhancing fundraising and asset management; exploring the integration of waqf, zakat, and Islamic microfinance in supporting sustainable educational ecosystems; and analyzing the long-term financial performance of productive waqf investments within pesantren institutions. Such studies would contribute to a deeper understanding of the role of Islamic social finance in supporting sustainable development.

Conclusion

This study examined the role of waqf and endowment in supporting sustainable pesantren development in Sumatra through the integration of Islamic education, economic empowerment, and technological innovation. Drawing upon the theories of waqf, endowment, sustainability, and Islamic social finance, the research explored how productive waqf can serve as a long-term financing mechanism for Islamic educational institutions.

The findings demonstrate that Sumatra possesses substantial opportunities for developing sustainable pesantren ecosystems due to its strong Islamic traditions, extensive agricultural resources, growing Muslim middle class, and large network of Islamic boarding schools. At the same time, Indonesia's enormous waqf potential remains significantly underutilized, creating opportunities for educational institutions to mobilize productive assets and establish sustainable financing mechanisms.

The case study of Pondok Modern Cahaya Al-Qur'an (PMCA) illustrates the practical implementation of productive waqf within a modern pesantren context. Despite being established only in 2020, PMCA has successfully developed multiple productive business units, including palm oil plantations, livestock farming, VCO production, herbal product marketing, student canteen operations, and Umrah services. These activities have enabled the institution to diversify its revenue sources and reduce dependence on tuition fees and charitable donations.

One of the most significant findings of this study is that approximately 53.9 percent of PMCA's annual revenue originates from productive economic activities. This indicates that PMCA is gradually transitioning toward a self-sustaining educational model where productive assets contribute directly to institutional financing. Such a model aligns with the historical role of waqf in supporting educational institutions throughout Islamic civilization.

The study also identifies the emergence of a productive pesantren ecosystem in Dumai, consisting of PMCA, Al-Harokah, Alam Qur'an, and Baitul Qur'an Islamic boarding schools. This emerging cluster demonstrates that productive waqf is no longer merely a theoretical concept but is increasingly becoming a practical strategy for educational sustainability. Furthermore, productive waqf contributes to the achievement of several Sustainable Development Goals, particularly SDG 4, SDG 8, SDG 9, and SDG 17, by enabling educational institutions to improve educational quality, strengthen economic resilience, encourage innovation, and expand collaborative partnerships.

Based on these findings, the study concludes that waqf and endowment represent powerful instruments for transforming pesantren from donation-dependent institutions into sustainable educational ecosystems capable of generating long-term educational, economic, and social impacts. The historical experience of Islamic civilization demonstrates that waqf and endowment can provide sustainable solutions to educational financing challenges. By revitalizing these institutions through professional governance, productive investment, and strategic partnerships, contemporary pesantren can become financially independent, socially impactful, and technologically adaptive. The experience of PMCA and the emerging productive pesantren ecosystem in Dumai suggests that the future of pesantren sustainability may lie in the successful integration of Islamic philanthropy, entrepreneurship, and innovation.

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Bibliography

Ahmed, H. *Role of Waqf in Sustainable Economic Development and Poverty Alleviation*. Jeddah: Islamic Research and Training Institute, 2015.

Aldeen, K. N., I. S. Ratih, and S. Herianingrum. "40-Year Bibliometric Analysis of Waqf." *Journal of Islamic Monetary Economics and Finance* 7, Special Issue (2021): 181–200.

Badan Wakaf Indonesia. *Annual Report on Waqf Development in Indonesia*. Jakarta: Badan Wakaf Indonesia, 2024.

Bowen, G. A. "Document Analysis as a Qualitative Research Method." *Qualitative Research Journal* 9, no. 2 (2009): 27–40.

Chapra, M. U. *Islam and the Economic Challenge*. Leicester: The Islamic Foundation, 2019.

Cizakca, M. *Islamic Capitalism and Finance: Origins, Evolution and the Future*. Cheltenham: Edward Elgar Publishing, 2011.

Creswell, J. W. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 5th ed. Thousand Oaks, CA: Sage Publications, 2018.

Fauzia, A. *Faith and the State: A History of Islamic Philanthropy in Indonesia*. Leiden: Brill, 2019.

Haneef, M. A., and A. Pramanik. "Developing Waqf Models for Education in the 21st Century." 2020.

Huda, N. "Sustainability of Islamic Educational Institutions through Waqf Management." *Journal of Islamic Monetary Economics and Finance* 7, no. 3 (2021): 455–74.

Kahf, M. "The Role of Waqf in Improving the Ummah Welfare." 2003.

Ministry of Religious Affairs of the Republic of Indonesia. *Statistics of Pesantren in Indonesia 2024*. Jakarta: Ministry of Religious Affairs, 2024.

Mohsin, M. I. A. *Financing through Cash-Waqf*. Kuala Lumpur: International Islamic University Malaysia Press, 2013.

Noor, A. H. M., and N. Abdullah. "Cash Waqf and Sustainable Development." *ISRA International Journal of Islamic Finance* 13, no. 1 (2021): 45–63.

Obaidullah, M. *Islamic Social Finance Report*. Jeddah: Islamic Research and Training Institute, 2019.

Qurrata, V. A., et al. "Waqf Sustainability or Sustainable Waqf?" *Millah: Journal of Religious Studies* 23, no. 1 (2024): 1–28.

Rusydiana, A. S., L. Marlina, and A. Devi. "Waqf on Education: A Bibliometric Review Based on Scopus Database." 2021.

United Nations Development Programme. *Green Waqf Framework: Islamic Social Finance for Sustainable Development*. 2024.

World Bank, ISRA, and INCEIF. *Maximizing Social Impact through Waqf Solutions*. 2023.

World Commission on Environment and Development. *Our Common Future*. Oxford: Oxford University Press, 1987.