

# Santri-edupreneur: Empowerment of students of Al-ikhlas Islamic Boarding School Kubu Raya through quail waste management to realize a sustainable economy

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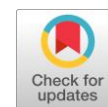
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## ABSTRACT

Al-Ikhlas Kubu Raya Islamic Boarding School faces challenges in managing quail farming enterprises, particularly in the areas of digital marketing, entrepreneurial skills, and waste management. The primary obstacles are the inability to utilize modern technology, as well as the limited ability of students and Ustadz in business management. This program aims to empower students and entrepreneurs by providing entrepreneurship training and internet marketing skills, as well as introducing biodigester technology for converting poultry waste into biogas. The methods of implementation consist of socialization, problem identification, entrepreneurship training, marketing through Shopee and TikTok, and support in the use of biodigesters. The entrepreneurial skills of students and Ustadz improved by 85%, while product marketing via digital channels enhanced sales by up to 80%. Islamic boarding schools have successfully implemented biodigester technology, converting waste into renewable energy with a 60% success rate. This program has effectively enhanced the economic autonomy of Islamic boarding schools by optimizing livestock enterprises and implementing technology-driven waste management, resulting in beneficial effects on both the economy and the environment.



## KEYWORDS

Biodigester  
Islamic Boarding School  
Santri-edupreneur  
Quail livestock



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## 1. Introduction

Preface Islamic boarding schools have a rich history of being educational institutions that significantly contribute to Indonesian youth's education and moral development. In addition to educating students in religious studies, Islamic residential schools have made significant contributions to the development of their communities, as they are the earliest Islamic academic institutions [1], [2]. Islamic boarding schools have developed to tackle several challenges, including education [3]–[5], economics [6], [7], and environmental sustainability [8]–[10]. Islamic boarding schools should emphasize religious education, skill acquisition, and economic empowerment in the context of the Industrial Revolution 4.0 and the forthcoming Industrial Revolution 5.0. This transformation is essential for equipping students with the skills necessary to thrive in a rapidly evolving world [11].

The Al-Ikhlas Al-Hafidziyah Islamic Boarding School in Kubu Raya, West Kalimantan, is one of the Islamic boarding schools that persistently confronts these issues. This Islamic boarding school, which has been operational for 45 years and is situated in the Kuala Mandor B District, has the potential to capitalize on its current assets, including agribusiness. Quail farming is one of the prominent enterprises established at Islamic boarding schools. Nonetheless, the enterprise encounters other challenges, especially in management, product marketing, and hazardous waste management [1]. This underscores the necessity for enhanced business management techniques in Islamic boarding schools, which possess the capacity for self-sufficiency and can positively impact the local economy [12]–[18].

Numerous examples demonstrate the beneficial effects of integrating economic and environmental initiatives into Islamic boarding schools. A training program in Tana Toraja enhanced the local

community's expertise in transforming animal dung into biogas and organic fertilizer, consequently augmenting energy autonomy and agricultural output [19]. A comparable initiative in East Lombok emphasizes the utilization of bovine excrement for biogas production, enabling the local populace to reduce dependence on LPG and firewood [20], while simultaneously generating additional income from the sale of compost and liquid fertilizer [20], [21]. A separate initiative established a biogas facility with a daily production capacity of three cubic meters of biogas, significantly enhancing local energy supply and reducing environmental pollution [22].

The main problem at Al-Ikhlas Islamic Boarding School is dealing with quail waste, which requires suitable equipment for long-term processing. Effective waste management is crucial for both economic and environmental considerations. When managed appropriately, biodigester technology can convert quail excrement into sustainable energy, generating biogas as an alternative energy source. This method addresses waste management issues while fostering environmental sustainability through renewable energy production [11], [12].

In response to these challenges, Al-Ikhlas Islamic Boarding School established the Santri-Edupreneur program. The program emphasizes the enhancement of entrepreneurial abilities, the improvement of quail livestock company management, and the introduction of waste management technologies, including biodigesters. This program aims to help students and teachers establish financially viable firms that promote environmental sustainability by utilizing clean energy sources.

## 2. Method

The method used in this Community Service Programme (PPM) consists of four main stages aimed at improving entrepreneurial skills and quail waste management at Pesantren Al-Ikhlas Kubu Raya. The first stage is socialization and problem identification, where the service team conducts in-depth interviews with pesantren caregivers to understand the existing problems, such as low entrepreneurial spirit of students, lack of business management, and suboptimal quail waste management. This stage is important to ensure that the solutions provided are relevant to the needs of the pesantren.

The second stage is planning and preparation. At this stage, the service team compiled training materials that included entrepreneurial skills, livestock business management, digital marketing, and waste management using biodigester technology. Coordination is carried out with the pesantren to prepare a schedule for the implementation of the training and ensure the readiness of the resources needed. After that, the program entered the third stage, namely training and workshops, where students and ustad were given practical skills training. This training includes quail business management, product marketing through digital platforms such as Shopee and TikTok, and processing quail waste into biogas using portable biodigester technology.

The fourth stage is continuous mentoring and evaluation. The service team not only provides one-time training, but also provides continuous assistance to ensure that students and ustad can apply the skills they have learned. This mentoring is carried out through periodic monitoring to evaluate the progress of skill application in the field and identify challenges that may arise during implementation. This evaluation allows the team to assess the extent to which the program has achieved the set targets, both in terms of entrepreneurship and waste management.

## 3. Results and Discussion

The execution of the Santri-Edupreneur program at the Al-Ikhlas Islamic Boarding School in Kubu Raya demonstrated notable outcomes in enhancing the competencies of students and ustad in entrepreneurship, livestock business management, and quail waste management. The primary issues identified are a lack of entrepreneurial spirit among students and inadequate marketing and waste management practices in quail farming enterprises. Following participation in a series of trainings encompassing business management, the utilization of digital platforms like Shopee and TikTok for marketing, and the implementation of biodigester technology, the proficiency of students and ustad in business management has markedly enhanced. The entrepreneurial abilities of students improved by 85%, and digital product marketing enhanced the students' revenue with a sales increase of up to 80%. Presentation of material about Santri-Edupreneur show in Fig. 1.



Fig. 1. Presentation of material about Santri-Edupreneur

The use of portable biogas technology has a significant impact on quail waste management. Islamic boarding schools now convert waste, once solely an environmental issue, into biogas, a renewable energy source. The deployment of this technology has attained a success rate of approximately 60%, diminishing the reliance of Islamic boarding schools on fossil fuels like LPG gas. This idea enables Islamic boarding schools to address waste issues while simultaneously deriving economic advantages from alternative energy utilization. The use of portable biogas technology has a significant impact on quail waste management. Islamic boarding schools now convert waste, once solely an environmental concern, into biogas, serving as a renewable energy source. The deployment of this technology has attained a success rate of approximately 60%, diminishing the reliance of Islamic boarding schools on fossil fuels like LPG gas. This idea enables Islamic boarding schools to address waste issues while simultaneously deriving economic advantages from alternative energy utilization. Presenter's presentation on the importance of management in quail farming show in Fig. 2.



Fig. 2. Presenter's presentation on the importance of management in quail farming

In addition, improving the skills of students and ustad in digital marketing and business management also plays an important role in building the economic independence of Islamic boarding schools. The use of digital platforms allows quail products to be reached by a wider market, and this creates new opportunities for Islamic boarding schools to expand their businesses. The success of this program is in line with previous research which states that business digitalization among students can encourage local economic growth and build a stronger entrepreneurial spirit [11]. This program makes a significant contribution to the economic independence of Islamic boarding schools through the empowerment of



students and ustad, as well as the application of innovative technology that is environmentally friendly. The speaker discusses the use of portable biodigester technology show in Fig. 3.



Fig. 3. The speaker discusses the use of portable biodigester technology

#### 4. Conclusion

The Community Service Program (CSP) of Students-Edupreneurs at the Al-Ikhlâs Islamic Boarding School in Kubu Raya has succeeded in achieving its main goal, which is to improve the entrepreneurial skills of students and ustad, as well as utilizing biodigester technology to manage quail waste into renewable energy. The program has shown a positive impact with an 85% increase in entrepreneurial skills, as well as success in digital product marketing that increases sales by up to 80%. The application of portable biodigester technology has also achieved a success rate of 60%, providing sustainable solutions in waste management and providing alternative energy for Islamic boarding schools.

This CSP enables peasants to capitalize on the economic potential of livestock farming, therefore enhancing economic independence and mitigating environmental consequences. This initiative aligns with CSP's objective to empower the community, specifically students and ustad, by equipping them with skills that enhance the economic viability of Islamic boarding schools. This initiative has effectively achieved economically independent and ecologically sustainable Islamic boarding schools through management training, internet marketing, and waste treatment technologies, in alignment with established objectives.

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#### Declarations

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