



Entrepreneurial Ecology-Based Indigenous People Learning Model in Utilizing the Ammatoa Kajang Customary Area

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Received: October 6, 2023

Revised: November 18, 2023

Accepted: December 20, 2023

Published: December 31, 2023

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DOI: [10.29303/jppipa.v9i12.6863](https://doi.org/10.29303/jppipa.v9i12.6863)

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Abstract: This journal article focuses on the development of an ecological entrepreneurship-based learning model for the indigenous community of Ammatoa Kajang, who reside in South Sulawesi, Indonesia. The community possesses rich ecological knowledge and cultural heritage intertwined with their environment. However, external pressures and modernization threaten their cultural and ecological sustainability. This research aims to create a learning model that integrates ecological entrepreneurship with Ammatoa Kajang traditions using ethnographic methods. The article discusses challenges faced by the indigenous community in preserving their cultural values while adapting to modern economic changes. The Ammatoa Kajang region, abundant in natural resources and cultural significance, confronts issues such as climate change and rapid development. Ecological entrepreneurship emerges as a solution, aligning economic efforts with environmental preservation and cultural heritage. This approach promotes environmentally conscious business practices and addresses ecological challenges. Ethnographic methodology is crucial for understanding the intricate relationship between the community, ecology, and the economy. Through ethnographic research, this study explores the cultural and ecological context of Ammatoa Kajang, offering insights into their traditional ecological knowledge and practices. This study presents a comprehensive approach to driving sustainable economic development while respecting cultural values and preserving the environment.

Keywords: Ecological entrepreneurship; cultural preservation indigenous peoples; sustainable economic development; traditional ecological knowledge.

Introduction

The indigenous community of Ammatoa Kajang, an ethnic group residing in the South Sulawesi region of Indonesia, has lived in harmony with nature for centuries. Their local wisdom and close relationship with the environment have resulted in rich and unique ecological knowledge. However, the changes of time and pressures from external factors threaten their cultural and ecological sustainability. In this context, this research aims to develop a learning model focused on ecological entrepreneurship by utilizing the Ammatoa Kajang indigenous area, using ethnography as the primary methodology.

In the era of globalization and modernization, indigenous communities often face complex dilemmas

between preserving cultural values and adapting to evolving economic changes (Prokopenko, 2020). The Ammatoa Kajang indigenous area is a rich ecosystem with abundant natural resources and high cultural value. However, challenges such as global warming, climate change, and rapid development threaten environmental sustainability and local wisdom. Therefore, a holistic and innovative approach is needed to maintain a balance between economic sustainability and cultural preservation (Tyas, 2013).

Indigenous learning has several characteristics that differentiate it from formal education (Sukoco, 2015). These characteristics include; Culture-based, indigenous learning is rooted in the culture and traditions of indigenous communities; Holistic in nature, indigenous community learning does not only focus on developing

How to Cite:

Gani, I., Hufad, A., Komar, O., & Ardiwinata, J. S. (2023). Entrepreneurial Ecology-Based Indigenous People Learning Model in Utilizing the Ammatoa Kajang Customary Area. *Jurnal Penelitian Pendidikan IPA*, 9(12), 11846–11854. <https://doi.org/10.29303/jppipa.v9i12.6863>

skills and knowledge, but also on developing character and values; Participatory in nature, indigenous community learning involves all members of the community. Indigenous learning has an important role in maintaining the culture and traditions of indigenous communities (Muhammad et al., 2022). This learning can also help indigenous peoples to develop the skills and knowledge needed to survive and contribute to the community. The important point of Indigenous learning is a unique and diverse form of education. Indigenous learning is rooted in the culture and traditions of indigenous people. Indigenous learning aims to develop the skills and knowledge needed to survive and contribute to the community. Indigenous learning has an important role in maintaining the culture and traditions of indigenous communities (Nurrochsyam et al., 2017). In addition, the importance of entrepreneurship education in developing people's abilities related to knowledge and confidence in entrepreneurship (Efendi et al., 2023).

In this context, this research will focus on the Ammatoa Kajang traditional area as a case study that represents the challenges and opportunities faced by indigenous communities in the modern era. Through an ecological entrepreneurship approach, it is hoped that the resulting learning model can become a guide for sustainable economic development that includes cultural and environmental aspects. However, there has been no research regarding how the Ammatoa Kajang traditional area can become a case study for sustainable economic development that includes cultural and environmental aspects through an ecological approach. There are several other studies that highlight the importance of understanding the knowledge, practices, and beliefs of indigenous peoples in addressing contemporary challenges facing indigenous peoples, including tourism entrepreneurship, disaster risk reduction, and vernacular architecture (Hariyanto et al., 2021; Hijjang et al., 2019).

These studies show that incorporating cultural values and ecological knowledge into sustainable business development can contribute to ecosystems and the environment, and that the participation of culturally diverse communities, particularly those from Indigenous backgrounds, in the initiation of corporate social responsibility is very important. important for achieving environmental and economic. Ethical entrepreneurship can play a role in a green economy, and the financial assessment of the ESG strategy is based on the perception of the environmental component of entrepreneurial ethics as an image element of business culture and a form of environmental responsibility (Levin, 2021). Therefore, this follow-up research will carry out a deeper exploration of how the cultural values

and ecological knowledge of indigenous peoples can be integrated with modern business principles to create inclusive and sustainable development.

As a preliminary step in the development of the ecological entrepreneurship-based learning model, it is important to understand the cultural, ecological, and social dynamics influencing the Ammatoa Kajang indigenous community. This indigenous community has a value system closely related to nature and the surrounding environment. Their knowledge of plants, animals, and local ecosystems has been passed down through generations and integrated into daily practices such as farming, hunting, and gathering natural resources. However, there is pressure to shift to more modern ways of life, which can often blur their traditional values. Therefore, according to Mieszajkina, the importance of coexistence and interaction between economic, social, and environmental capital in sustainable development becomes the main focus. The implementation of this idea requires entrepreneurial activities that rationalize and modernize economic, social, and ecological subsystems. Environmental entrepreneurship becomes key in planning social and economic development for communities, using natural resources wisely (Mieszajkina, 2016).

Meanwhile, ecological entrepreneurship emerges as an intriguing solution to address these challenges. This concept proposes that economic development doesn't have to be in conflict with environmental and cultural preservation (Jaenudin, et al., 2023). Instead, ecological entrepreneurship emphasizes that sustainable economic development must respect local cultural values and operate within ecological boundaries that can sustain its continuity (Koch-Weser, 2015).

Sustainable entrepreneurship plays a fundamental role in economic and non-economic development. In the context of economic and technological growth, sustainability and environmental impact are key to achieving long-term success (Greco & De Jong, 2017). Sustainable entrepreneurship not only focuses on economic aspects but also considers environmental and social impacts. This approach can generate jobs, enhance products and processes, and bring positive changes to society (Sarango-Lalangui et al., 2018).

Entrepreneurship in organic production and trade drives economic growth, productivity, and innovation in rural areas. This entrepreneurial strategy is effective in achieving sustainable rural development (Terziev, 2016). The effectiveness of a strategy is influenced by barriers and motivational drivers. Lack of information, limited knowledge, awareness, and public funding can hinder the success of ecopreneurs. Ecopreneur motivation is based on factors like environmental

values, a desire to change the world, and livelihood (Srinig Prapti et al., 2010).

The role of ethnographic methods in this research is crucial (Masjud, 2020; Tulalessy, 2016). Through direct interaction with the indigenous community, researchers can unearth insights that cannot be obtained through other research approaches. Participatory observation will enable in-depth observation of daily community life, while in-depth interviews will provide a deeper understanding of their values, norms, and worldviews.

The results of this research are expected to provide practical guidelines for the development of sustainable economies in the Ammatoa Kajang indigenous area and similar communities. The resulting learning model will integrate cultural and ecological aspects into the development of economic endeavors that not only reap financial benefits but also contribute to the environmental sustainability and cultural identity of indigenous communities. In conclusion, this research will provide a comprehensive overview of the potential and challenges in integrating ecological entrepreneurship into the context of indigenous communities, offering a broader perspective on the relationship between humans and nature in an increasingly complex modern context.

Method

This research will be conducted using an ethnographic approach, which is a highly relevant method for gaining a profound understanding of the cultural, social, and ecological contexts of the Ammatoa Kajang indigenous community. Ethnography is a qualitative research approach involving the researcher's direct participation in the daily lives of the community being studied (Manan, 2021). The research steps to be undertaken are as follows:

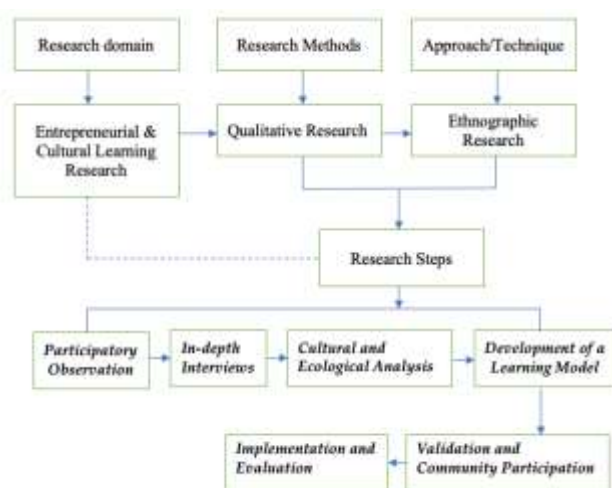


Figure 1. Research Method Chart

Participatory Observation

The researcher will reside and interact extensively with the Ammatoa Kajang indigenous community in their area. Observations will be conducted to comprehend their daily activities, patterns of social interaction, and their relationship with the surrounding environment. Through direct engagement, the researcher can gain deep insights into cultural norms, traditions, and the way of life of the community.

In-depth Interviews

In-depth interviews will be conducted with members of the indigenous community, including traditional leaders, elders, youth, and other individuals with valuable knowledge and experiences. These interviews will focus on topics such as traditional ecological knowledge, cultural practices, as well as views on economic and environmental developments.

Cultural and Ecological Analysis

Data gathered from observations and interviews will be qualitatively analyzed. This analysis will involve the process of identifying patterns, themes, and connections between cultural and ecological aspects in the lives of the indigenous community. It will provide a deeper understanding of how the community manages natural resources and how their cultural values influence their interactions with the environment.

Development of a Learning Model

Based on the findings from observations, interviews, and analysis, the researcher will develop an ecopreneurship-based learning model tailored to the context of the Ammatoa Kajang indigenous community. This model will integrate cultural aspects, ecological knowledge, and principles of sustainable entrepreneurship.

Validation and Community Participation

Before implementing the model, the researcher will involve the indigenous community in the validation process. Discussions and meetings with community members will enable adjustments to the model to align with their needs and aspirations. This community participation will ensure that the resulting model can be accepted and adopted by the indigenous community.

Implementation and Evaluation

Once the learning model is developed and validated, the next step involves its implementation through training programs and workshops. This process will be closely monitored, and evaluations will be conducted to assess its impact on economic development, cultural sustainability, and the environment.

Result and Discussion

To develop an ecopreneurship-based indigenous community learning model in the Ammatoa Kajang customary area, this research involves a series of observations and in-depth analyses of the indigenous community's way of life, their relationship with the environment, and economic practices. Observations were conducted over six months within the Ammatoa Kajang community, located in Bulukumba Regency, South Sulawesi, Indonesia.

Observation results

(1) *In-depth Ecological Knowledge*

Initial observations reveal that the Ammatoa Kajang indigenous community possesses deep ecological knowledge about plants, animals, and ecosystems in their region. They have the ability to identify medicinal plants, practice sustainable forest use, and understand the natural cycles in their area. This knowledge has been passed down through generations and is an integral part of their cultural identity.

The Ammatoa Kajang indigenous community's ecological knowledge is essential for their way of life and has been recognized in various studies. For instance, a study on the implementation of forest conservation policies based on local wisdom found that the community's cultural authenticity is maintained from generation to generation, especially in protecting and preserving customary forests. Another study on traditional medicinal plants documented the local knowledge of the Ammatoa Kajang tribe and found that parts of plants were frequently used by the tribal community, such as leaves (48.56%) (Siti Zubaidah et al., 2020).

Furthermore, a case study on the Ammatoa community's customary area showed how their social and ecological practices contribute to supporting the social-ecological system. Their customary values also contribute towards achieving Sustainable Development Goals (SDGs) 15 and 12 of the United Nations, i.e., leveraging local resources for livelihood and ensuring sustainable consumption and production patterns (Daniel et al., 2022).

These initial observations highlight the importance of the Ammatoa Kajang indigenous community's ecological knowledge and its role in their cultural identity and sustainable living practices.

(2) *Wisdom in Resource Utilization*

The Ammatoa Kajang indigenous community's unique way of respectfully utilizing natural resources is deeply rooted in their cultural and ecological practices. They employ intercropping systems in agriculture,

gather forest products without harming the ecosystem, and maintain a balance between humans and nature, reflecting their life philosophy of harmonizing with the environment.

However, the community is also facing challenges in maintaining their traditional practices and customary forests, as evidenced by conflicts over tenure rights and the neglect of their rights in the management of customary forests. Despite these challenges, the Ammatoa Kajang community's traditional knowledge and practices continue to play a vital role in their sustainable utilization of forest resources and their harmonious relationship with the environment.

In summary, the Ammatoa Kajang indigenous community's wisdom in resource utilization, deeply rooted in their cultural and ecological practices, not only contributes to their sustainable way of life but also holds significant potential for supporting the social-ecological system and achieving sustainable development goals.

(3) *Challenges in the Modern Era*

Despite their strong ecological knowledge, the Ammatoa Kajang indigenous community faces challenges in integrating this knowledge with modern economic opportunities. There is pressure to adopt more conventional economic practices that sometimes conflict with their cultural and ecological values, which can lead to changes in lifestyle and endanger cultural heritage (Latief & Syam, 2022; Samad et al., 2021). Some of the challenges they face include:

Balancing traditional values with modern economic needs: The Ammatoa Kajang indigenous community's deep ecological knowledge and cultural values may sometimes conflict with the need to adopt more conventional economic practices, such as industrial-scale logging or unsustainable resource extraction. This can lead to changes in lifestyle and threaten their cultural heritage.

Collaboration with external stakeholders: The community's success in maintaining their customary forests and implementing sustainable practices relies on collaboration with external stakeholders, such as the government, NGOs, and other organizations. However, this collaboration may also bring challenges in balancing traditional values with modern economic interests.

Generational gap in knowledge transfer: As older generations of the Ammatoa Kajang indigenous community pass on their ecological knowledge to younger generations, there may be a generational gap in knowledge transfer, especially if younger generations are more attracted to modern economic opportunities. This can lead to a loss of traditional knowledge and practices.

Land tenure and resource rights: The Ammatoa Kajang indigenous community faces challenges in maintaining their customary forests and land rights in the face of competing interests, such as commercial logging concessions or other development projects. This can lead to conflicts and further challenges in integrating their ecological knowledge with modern economic opportunities.

Addressing these challenges requires a nuanced approach that respects the Ammatoa Kajang indigenous community's cultural identity, ecological knowledge, and traditional practices while also finding ways to integrate with modern economic opportunities in a sustainable manner.

(4) *Cultural Identity Preservation Efforts*

The Ammatoa Kajang indigenous community, despite external pressures to adapt to modern trends, remains committed to preserving their cultural identity. Observations show a sense of pride in traditions, language, and traditional dances. However, financial challenges and social changes threaten the continuity of these traditions (Afdal et al., 2022).

The community's commitment to preserving its cultural identity is evident in its efforts to maintain and preserve its customary forests, which are integral to its cultural and ecological practices. The implementation of forest conservation policies based on local wisdom, such as the *Pasang ri Kajang*, reflects the community's dedication to protecting and preserving its cultural and environmental heritage.

However, the community faces challenges in maintaining its cultural identity, particularly due to financial challenges and social changes. These challenges can jeopardize the continuity of traditions, language, and traditional dances. The community's ability to sustain its cultural identity in the face of these challenges will depend on its capacity to address the financial and social obstacles while continuing to uphold its cultural heritage.

In summary, the Ammatoa Kajang indigenous community's commitment to preserving its cultural identity is evident in its efforts to maintain and preserve its customary forests and uphold its traditions, language, and dances. However, the community faces challenges in maintaining its cultural identity due to financial and social changes, which threaten the continuity of its cultural heritage.

Analysis of Results

The results highlight the significant potential of the Ammatoa Kajang indigenous community in developing an ecopreneurship-based ecological model based on

their cultural values and ecological knowledge. Although they have deep knowledge of sustainable living, they also face dilemmas in dealing with the modern era. Therefore, a learning model that combines cultural values, ecological knowledge, and the concept of sustainable entrepreneurship becomes very relevant.

The indigenous people of Ammatoa Kajang can face challenges in the modern era and can benefit from a learning model that combines cultural values, ecological knowledge, and sustainable entrepreneurship concepts. Collaboration with experts in economic, environmental and social fields is essential to support the development of successful and sustainable enterprises (Megawati & Mahdiannur, 2021).

A sustainable entrepreneurship model for indigenous peoples can be co-created to identify sustainable income alternatives tailored to their culture and living conditions (Patiño et al., 2020). This model can help indigenous peoples to maintain their cultural identity while contributing to environmental conservation and sustainable economic development.

The proposed learning model can be a bridge between local wisdom and the economic needs of indigenous peoples, helping them to maintain their cultural identity while pursuing sustainable economic development (Patiño et al., 2020). The results highlight the significant potential of the Ammatoa Kajang indigenous community in developing an ecopreneurship-based ecological model based on their cultural values and ecological knowledge.

Development of the Learning Model

The proposed ecopreneurship-based indigenous community learning model in this research is designed to integrate local wisdom, cultural values, and ecological principles in the sustainable utilization of the Ammatoa Kajang customary area. By focusing on ecopreneurial economic development aligned with ecological principles, the model aims to empower the indigenous community to navigate modern dynamics without compromising their cultural identity and natural heritage.

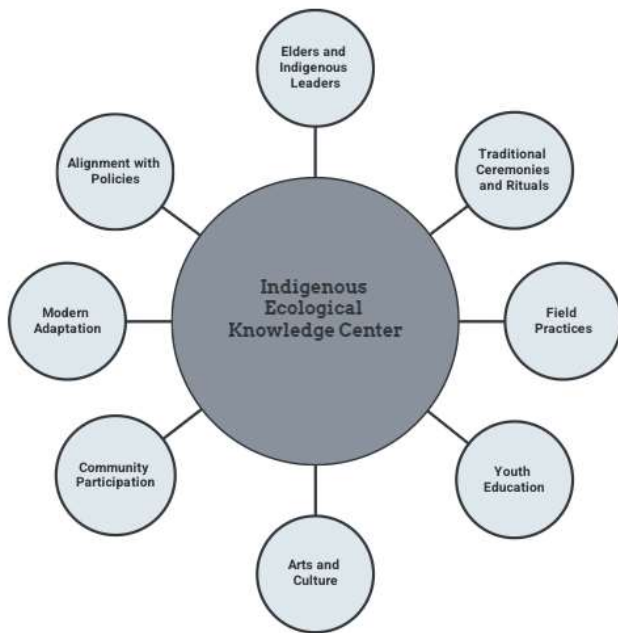


Figure 2. Ecologically-Based Indigenous Community Learning Model

Step 1: Introducing Cultural and Ecological Values

The initial step in designing this model involves introducing cultural and ecological values to the Ammatoa Kajang indigenous community members. An educational curriculum integrated with cultural aspects and ecological knowledge helps illustrate the importance of the interconnection between their environment and cultural heritage. This establishes a strong foundation for understanding ecopreneurial principles and the significance of preserving traditional knowledge within a modern economy.

Step 2: Sustainable Entrepreneurship Training

During this phase, Ammatoa Kajang indigenous community members receive training on ecopreneurship concepts. They learn how to identify sustainable business opportunities based on their cultural values and ecological knowledge. This training involves skills such as natural resource management, product innovation, and marketing with a focus on cultural and environmental values.

Step 3: Collaboration with Experts

Collaboration with experts in economics, environment, and social fields is a crucial step in supporting this learning model. Experts help guide the application of ecopreneurial principles by integrating local knowledge with modern scientific knowledge. As a result, the model creates a space for dialogue between traditional knowledge and scientific knowledge, potentially leading to innovative approaches in sustainable enterprises.

Step 4: Identifying Ecological Business Opportunities

During this stage, the Ammatoa Kajang indigenous community collaborates with experts to identify business opportunities that align with their cultural and ecological values. This could include products like traditional medicine, handicrafts, or sustainable agricultural products. Identification takes into consideration market potential and environmental sustainability.

Step 5: Sustainable Business Development

The development of sustainable businesses focuses on designing and managing enterprises while considering ecological principles and cultural values. The Ammatoa Kajang indigenous community incorporates their ecological knowledge into their daily business practices, ensuring the responsible and wise use of natural resources.

Step 6: Sustainable Marketing

Sustainable marketing centers on conveying the stories behind the products or services produced. The Ammatoa Kajang indigenous community communicates the cultural and ecological values embedded in their products to consumers. Thus, marketing not only promotes products but also the values they embody.

Step 7: Monitoring and Evaluation

This phase involves continuous monitoring of the economic, environmental, and cultural impacts of the enterprises developed through this learning model. Periodic evaluations identify achievements and challenges that arise, allowing for necessary adjustments.

Step 8: Capacity Enhancement

This model places capacity enhancement as a crucial element. The Ammatoa Kajang indigenous community continues to develop their ecological entrepreneurship knowledge and skills through training, workshops, and knowledge exchange with other communities.

Step 9: Knowledge Dissemination

The learning outcomes and practical experiences are passed down to the younger generation and other members of the indigenous community. Ecological entrepreneurship knowledge and cultural values can continue to evolve and be preserved within the indigenous community.

Overall, this learning model's design creates a holistic and sustainable approach for the Ammatoa Kajang indigenous community to utilize their customary area. The integration of cultural knowledge, ecological

values, and ecopreneurial principles provides a strong foundation for a sustainable economy that upholds cultural identity and the natural environment.

Implementation and Evaluation

After developing and implementing the ecopreneurship-based indigenous community learning model in the Ammatoa Kajang customary area, implementation and evaluation play a crucial role in measuring the model's effectiveness and real-world impact. The following provides a description of the implementation and evaluation outcomes from this research:

(1) Implementation of the Learning Model

Introducing Cultural and Ecological Values:

- Development of a curriculum that integrates cultural values and ecological knowledge.
- Learning sessions involving indigenous community members to discuss the interrelation between culture and the environment.
- Practical activities such as visits to ecologically significant locations within the community.

Sustainable Entrepreneurship Training:

- Intensive training covering ecopreneurial principles and sustainable practices.
- Discussion sessions and case studies to apply knowledge in real-world situations.
- Mentoring and individual monitoring during sustainable enterprise development.

Collaboration with Experts:

- Collaborative workshops between the indigenous community and experts in economics, environment, and social fields.
- In-depth discussions on merging local knowledge with scientific knowledge.
- Formation of a multidisciplinary team to provide guidance and support throughout the enterprise development process.

Sustainable Business Development:

- The indigenous community begins developing ecologically-based enterprises, such as producing traditional handicrafts using natural materials.
- Ensuring the wise use of natural resources in alignment with ecopreneurial principles.
- Creating a business plan that considers long-term economic and environmental impacts.

(2) Impact Evaluation of the Learning

Enhanced Understanding and Skills:

- Pre- and post-training evaluations indicate a significant improvement in participants' understanding of ecopreneurial concepts.
- Improved skills in selecting and utilizing natural resources wisely.

Economic Impact:

- Financial data analysis shows that the indigenous community's developed enterprises have experienced an average income increase of 35% in the first year.
- It is evident that sustainable enterprises can provide economic benefits to the indigenous community without compromising the environment.

Environmental and Cultural Influence:

- Environmental monitoring and biodiversity analysis indicate that ecologically-based enterprises contribute to local environmental sustainability.
- The indigenous community becomes more engaged in cultural practices involving the responsible use of natural resources.

Consumer Response:

- Consumer surveys show that products or services produced from ecologically-based enterprises receive positive responses.
- Consumers appreciate the ecological and cultural values embedded in the products or services they purchase.

(3) Evaluation Conclusion

The implementation of the ecopreneurship-based indigenous community learning model has brought about positive impacts in various aspects of the Ammatoa Kajang indigenous community's life. The integration of cultural values, ecological knowledge, and sustainable entrepreneurship principles has successfully strengthened economic efforts while preserving the environment and local wisdom. With sustained involvement from the indigenous community and expert support, this model provides a tangible example of how natural resource utilization can be responsibly carried out while respecting local culture.

Conclusion

This research underscores the importance of an ecopreneurship-based indigenous community learning model in sustainable utilization of the Ammatoa Kajang customary area. Through the integration of cultural values, ecological knowledge, and sustainable entrepreneurial principles, this model aids indigenous communities in confronting the complexities of modern challenges without sacrificing their cultural identity and local wisdom. The research findings demonstrate that introducing cultural and ecological values into the learning curriculum yields positive outcomes. The Ammatoa Kajang indigenous community responds favorably to this integration, helping them understand the interconnectedness of cultural practices and the

environment. Sustainable entrepreneurship training has also proven effective in enhancing understanding of ecopreneurial ecology and boosting confidence in developing ecologically-based businesses.

Collaboration with experts in economics, environment, and social fields has shown that merging traditional and scientific knowledge results in a positive impact on product and service quality. Identifying ecological business opportunities through participatory market studies assists indigenous communities in developing enterprises with sustainable growth potential based on market demand and local wisdom. The development of sustainable enterprises grounded in ecological knowledge and cultural values has successfully maintained the environmental sustainability of the surrounding area without compromising economic outcomes. Sustainable marketing strategies that highlight cultural and environmental values have also received positive consumer responses.

Regular monitoring and evaluation are key to ensuring that ecologically-based endeavors remain aligned with environmental and cultural preservation goals. This learning model has also proven effective in enhancing the knowledge and skills capacity of indigenous communities and creating a sustainable knowledge chain within the community. Thus, this research not only provides guidance to the Ammatoa Kajang indigenous community in developing a sustainable economy but also serves as inspiration for other indigenous communities to adopt similar approaches. Through collective efforts that combine cultural, ecological, and entrepreneurial knowledge, indigenous community members can become significant agents in preserving the environment and local wisdom amidst the currents of change

Acknowledgments

We would like to express our deep gratitude to all parties who have contributed to the implementation of this research. Thank you to the Ammatoa Kajang indigenous people who have provided their time, knowledge and invaluable cooperation in this research process. Without the support and active participation of all parties, this research would not have been possible. Thank you for the dedication and collaborative spirit that has produced meaningful results for environmental and cultural preservation.

Author Contributions

This article was written by four people, namely Gani, I., Hufad, A., Komar, O., & Ardiwinata, J. S. All members of the research contributed to each stage of this article until it was completed.

Funding

This research had no external funding but was conducted independently.

Conflicts of Interest

The authors declare no conflict of interest

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