

EMPOWERING INDIGENOUS COMMUNITIES THROUGH SOCIAL INNOVATION: A CASE STUDY OF ECOTOURISM HOMESTAYS IN SABAH

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Abstract. This study critically examines how ecotourism homestays in Sabah function as a form of Indigenous-led social innovation that strengthens community empowerment across governance, economic, cultural, and environmental domains. Moving beyond conventional narratives that frame Indigenous peoples as passive recipients of development, this research demonstrates that Sabah's homestay models represent deliberate, community-driven restructuring of ownership, knowledge systems, and decision-making power. Using qualitative case studies across Indigenous communities, the analysis reveals that co-creation processes, rather than externally imposed interventions, are central to the emergence of socially innovative practices. These homestays cultivate community capital through strengthened social networks, local leadership, capacity building, and diversified livelihoods, yet their impacts also expose persistent vulnerabilities such as income volatility, market dependency, and cultural commodification. The study argues that ecotourism alone is insufficient as a sustainable empowerment strategy unless supported by equitable governance structures, ethical practice frameworks, and recognition of Indigenous sovereignty over land, culture, and knowledge. Critical evaluation of competing homestay models highlights that only community-led arrangements meaningfully redistribute power and benefits, whereas community-based or community-owned variants risk reproducing structural inequalities if external actors dominate operational or financial mechanisms. The findings challenge policymakers to abandon technocratic, top-down development models and instead prioritize Indigenous agency, place-based knowledge, and long-term institutional support. Ultimately, the Sabah case demonstrates that social innovation rooted in Indigenous autonomy offers transformative potential, but only when shielded from market pressures and policy environments that risk diluting cultural integrity and community control.

Keywords: *indigenous empowerment, social innovation, ecotourism homestays, community-based tourism, Sabah indigenous communities*

Introduction

The aim of this study is to assess the contribution of social innovation to the empowerment of Indigenous communities in Sabah, focusing on ecotourism homestays as a case study. Research questions guiding the analysis are: How does homestay ecotourism reflect social innovation? What dimensions of community empowerment does it enhance? How do different homestay models perform accordingly? The significance of the inquiry lies in the need to expand deliberations on Indigenous empowerment beyond questions of rights and recognition, and to critically evaluate social innovation as a conceptual lens. Empowering Indigenous communities remains an urgent priority, as evident in ongoing movements across the globe. The concept has gained traction in policy and academic circles, yet it is often misunderstood or

misapplied. There is also a rich body of work examining ecotourism as a development strategy. The case of Sabah illustrates how social innovation and ecotourism may converge to facilitate a broader form of empowerment, and how a range of community-based homestay models operate throughout the state (Ibrahim et al., 2025; Dasan et al., 2022). The analysis is framed through the lens of social innovation, which is defined as the co-creation of new social practices that lead to a significant improvement in the capacity of a community to address its own problems and realise its aspirations. The specific forms of these practices the term encompasses include the establishment of new arrangements for governance, ownership, revenue distribution, and the sharing of knowledge and experiences. Ecotourism is examined as a potential development strategy that adheres to the principles of sustainable tourism. Community-based tourism, a variant of ecotourism, is then considered in further detail owing to its stated objective of enhancing the decision-making power and autonomy of communities over selected tourism-related activities. Empowerment is understood to encompass the governance and management of tourism activities, the ownership of related enterprises, the sharing of income earned, and the development of organisational and professional capacities. (Svitlichna et al., 2024; Baloch et al., 2023)

A second focus is a critical analysis of social innovation in relation to Indigenous communities. One line of inquiry traces the development of social innovation in colonial, post-colonial, and neo-colonial contexts, reflecting on its applicability to the struggles of colonised or dislocated societies to reclaim agency over their cultural, social, political, and economic futures. Shallcross (Benvinda Ramos Gomes, 2017) identifies a second stream of thinking that investigates the role of social innovation as a complement or alternative to state or market mechanisms in enabling communities to reclaim sovereignty over their lives, livelihoods, and aspirations. This approach accords with the impetus for the present study (Graci, 2025; Dejene et al., 2024; George and George, 2024; Katapally and Bhawra, 2024).

Theoretical framework

Social innovation serves as the theoretical foundation for understanding the mechanisms that enable Indigenous communities to exercise agency in developing ecotourism homestays. Defined as “a process involving the generation and implementation of new ideas, such as products, services, and models, aimed at meeting social needs, and enhancing society’s capacity to act” (Odede et al., 2015), the concept has gained increased traction in both practice and scholarly work over the past decade. Co-creation, an essential element of social innovation, assumes a vital role in understanding how ecotourism homestays emerge and operate. Co-creation signifies the collaborative process through which stakeholders, including communities, development agencies, and the private sector, jointly articulate and realize their aspirations. Emphasis on community agency characterises both the concept of co-creation and the broader social innovation framework, which draws attention to the importance of opportunities and the voices of communities. Ecotourism homestays emerged and were initially championed by Sabah’s Indigenous communities, and development agencies were invited as partners later in the process. Examining how the spirit of co-creation has shaped model establishment, operation, and outcomes thus constitutes a key component of the analysis. Sustainable tourism principles guide ecotourism development and serve as important success indicators. Ecotourism encompasses activities that enable people to learn about nature and Indigenous cultures while creating resources for conservation,

education, and community development (Gomes, 2017). Exploration of the extent to which homestays adhere to sustainable tourism criteria clarifies the potential trade-offs associated with the model, as alternative tourism arrangements often have negative impacts. In addition to fostering economic development, ecotourism can safeguard community rights, support traditional knowledge transmission, and encourage fidelity to cultural heritage. Exploring these potential benefits forms an integral part of the analysis.

Community-based tourism, involving collective engagement in tourism activities, determines the effectiveness of a model in empowering communities. The assignment of governance, ownership, benefit-sharing, and capacity-building features influences the broader distribution of economic and non-economic gains. Three distinct community tourism frameworks, community-based, community-owned, and community-led, illustrate the relationships among these components. Community-based tourism constitutes a prerequisite for the emergence of community-owned and community-led variants; an economically viable community-based collective model thus represents a key consideration. The establishment of community-owned arrangements further promotes ownership and generates economic returns; engaging external networks and co-creation partners is essential to avoid restrictions imposed by external developers. Unlike community-based and community-owned systems, which confer limited agency, community-led tourism enables governance arrangements, ownership forms, and benefit-sharing mechanisms to be fully determined by the community.

Social innovation in indigenous contexts

Social innovation encompasses the design and implementation of new ideas: be they products, services, models, or processes; that meet social needs, create new social relationships, and develop the capacity of civil society. The term signals a shift from market to social purpose, corresponding to a growing emphasis on the co-creation of social value in contrast to value creation for individuals and organizations. In communities and societies where citizen engagement is low, social innovation may entail community-building activities that help people learn to express their views and interests and begin to act collectively. Where community capability is greater, the focus is on community-led initiatives that aim to improve local circumstances and may involve collaboration with external partners. Indigenous communities, particularly in the majority world, often operate in this latter space, possessing considerable agency yet facing historical, political, and economic constraints that inhibit their autonomy and visibility. Policy approaches that ignore their agency risk imposing an external agenda that contradicts long-standing traditions, values, and domains of sovereignty. Contemporary calls for empowerment through social innovation remain aligned with classic arguments for Indigenous autonomy and self-determination, yet the terminology can obscure understanding of locally situated institutions and programs such as formal Indigenous governments and natural resource management, which operate well beyond the mainstream social-innovation paradigm. In such contexts, an alternative approach reframes social innovation as Indigenous-led initiatives that seek to enhance social, economic, political, cultural, and environmental well-being while respecting autonomy and avoiding the imposition of non-Indigenous interpretations of the field (Gomes, 2017).

Ecotourism as development strategy

A precise definition of ecotourism is difficult to establish, as the concept encompasses a wide range of activities, interpretations, and applications. Nevertheless, a number of universal principles can be identified, principles that support sustainability, multiple goals, and local communities as driving actors, and that thus frame ecotourism as a strategic tool for community self-determination. Ecotourism is a type of sustainable tourism that focuses on interactions with nature, wildlife, and local cultures. Criteria related to sustainable tourism serve as indicators for measuring the success of ecotourism programmes. They include generating more socioeconomic and environmental benefits for the host community than other types of tourism, preserving the integrity of nature, the environment, and the culture, bringing prevention to social maladjustments, such as the increase of crime and racial prostitution, and enabling local involvement in planning and decision making (Odede et al., 2015). In countries such as the Philippines, Nepal, Thailand, and Kenya, ecotourism has been adopted as an approach to rural development. Various ecotourism initiatives have emerged; yet, wide-ranging economic, social, and environmental problems persist. Ecotourism development has thus directly borne costs and trade-offs that require further evaluation in order to identify any improvements, even in cases where the additional benefits may not materially change local circumstances. A major comparative study of rural tourism in Sabah concluded that village-level, community-based, and eco-tourism-type outreach was the preferred option. Such outreach involves small, local, kulakar-type projects that ensure a better understanding of the ongoing economic situation, direct foreign exchange, local economic circulation, income and wealth distribution, leadership and grassroots-building facilitation, local empowerment, motivation, and participation (Hussin, 2008).

Community-based tourism and empowerment

Social innovation in the context of Indigenous communities denotes transformative processes that centre their needs and aspirations (Odede et al., 2015). These collaborative approaches redefine social issues and explore strategies for addressing them, enabling communities to exercise agency over their development. Ecotourism, defined in terms of sustainable tourism that prioritizes biodiversity conservation and local livelihoods (Gomes, 2017), serves as an alternative development strategy. Ecotourism can also be viewed as an innovation in tourism that replaces mass market offerings with travel experiences that are participatory, diverse, responsible, and beneficial to community capital. Community-based tourism identifies community engagement, ownership, and benefit-sharing as essential elements for empowering local populations (Wilanda, 2018). Ecotourism-based initiatives in Sabah facilitate Indigenous innovation to extend both governance and benefit-sharing. Existing tourism service providers retain both legal ownership and the majority of gross revenue, yet arrangements are in place for indirect assistance to enhance community capital. Capacity-building opportunities empower Sabahan communities to share their eco-cultural heritage and receive income while maintaining control over tourism development, regulatory arrangements, and decision-making.

Contextual background: Sabah and indigenous communities

Sabah is located on the northern part of Borneo, and was divided into Sulu province of the Philippines, Kalimantan region of Indonesia and Sabah state of Malaysia. Sabah

is rich of natural resources including biodiversity and oil & gas. For the last two decades, Sabah have consistently ranked among the top ten best ecotourism and adventure destinations. It offers beautiful landscape, adventure activities, unique flora & fauna, diverse culture and rich of culinary experiences as well. Within Sabah, 100% of Penampang population are Kadazandusun (Gomes, 2017). According to their traditional belief Kadazan Doo are amongst those who are directly connected to the natural deities and ancestral spirits. Traditional knowledge is critical for biodiversity conservation. Sabah was colonized by Sulu Sultanate in the 16th century which was later on sold to the British North Borneo Company in the 19th century. The primary objectives of the British were to develop the tobacco industry in Papar and establish coal mining in Weston. After 13 years of colonization, World War II broke in, and the Japanese invaded and occupied Sabah. After the war British indirectly ruled Sabah until 1963. The post-colonial state continued to acknowledge, promote and protect customs, culture and language. Following the Philippines' freedom in 1946, independence movement galvanized. The Decolonization committee was established, and the United Nation offered Philippines assistance to prepare the proposal for decolonization.

Geographical and cultural landscape

Located in the northern section of the Borneo Island, Sabah is comprised of lowland and highland areas with physiographic and biodiversity diversity. In Peninsular Malaysia, 56% of the land used is for agriculture, with palm oil estates covering about 37% of the land (Gomes, 2017). Approximately 27% of Sabah lands are designated as permanent forest reserves, and large areas continued to be conserved under buffer zones of protected rainforest for any palm oil plantations. High biodiversity of flora and fauna still exists in Sabah forests re-planted previously for agriculture. Sabah is a global biodiversity hotspot with more than 29,000 species of flowering plants, 500 species of ferns, and about 60,000 animal species, including 187 mammal species, 624 bird species, 640 freshwater fish species, and 430 species of reptiles and amphibians. Over 1,000 indigenous plants in Sabah are used traditionally for food, medicine, construction, handicraft, and rituals and 143 native plant species are still being identified in the remaining indigenous territory within intact rainforest and giant dipterocarp.

Historical relations and autonomy

The government of Malaysia's foreign policy aims to maintain peace, harmony, mutual understanding, and good-neighbourliness in international affairs (Gomes, 2017). The non-intervention approach enables Malaysia to avoid involvement in other countries' internal affairs. Social innovation initiatives coinciding with more than 60 years of self-governance can be framed in the context of human rights, specifically the inherent right of self-determination, the right to development, the right to culture, and the collective rights of Indigenous peoples. Sabah's Indigenous peoples have been governed for decades through partnerships, federalism, Indigenous sovereignty, autonomy, autonomy proposals, and regional autonomy state policies. This section surveys these historical and current dynamics to assess the legitimacy of revitalising Indigenous social innovation. Anthropologist and theorist Anne-Marie Chagnon analysed historical frameworks from a political-legal perspective, mapping Indigenous peoples' past, present, and future in the context of their right to self-determination. Sabah's Malay ethnics, comprising the Brunei Malay, Malaccan Malay, Iban, Murut,

Rungus, Bajau, and other communities, can be traced back in the constitution of the State of the Federation of Malaya 1956. In the first twenty years of independence, various intergovernmental discussions contemplated Sabah's status and during the 1990s, proposals were submitted to establish Sabah as a separate federation of thirty-two parliamentary constituencies. The formation of a new political party, dubbed the Sabah First movement, coincided with political upgrades at the national level.

Policy environment and stakeholders

The legal framework for Sabah's community-based tourism homestay sector consists of relevant laws, government agencies, non-governmental organizations (NGOs), and private-sector players that together shape the policy environment. Tourism is governed principally by the Tourism Enactment 1995 and its associated regulations, which allow for the establishment of tourism activities. The Sabah Tourism Board and the Ministry of Tourism, Culture, and Environment are the state agencies responsible for education, promotion, and enforcement of the Enactment. The State Government's Eco-Enterprise Programme provides technical support and financial assistance for community-based projects linked to ecotourism and sustainable agriculture. The programme is supported by several NGOs, including the Sabah Wetlands Conservation Society, which assists local communities through the provision of technical and financial resource for the development of ecotourism products and activities (Gomes, 2017). At the private sector level, many companies have demonstrated interest in eco-tourism development in Sabah. Regulation 5 of the Tourism Regulation, 2000 stipulates that tourism service operators must possess a license issued by the Sabah Tourism Board. Nevertheless, the fact that many projects operate successfully without official licences signifies a marked level of informal governance over tourism activities. Many of the State Government programmes and projects are conducted at the community level, linking local communities to the decision-making process. The involvement of the Ministry of Tourism, Culture, and the Environment, the Sabah Tourism Board, and diverse NGOs, besides facilitating the development of tourism activities, also indicates opportunities for participation in the broader tourism sector.

Materials and Methods

A qualitative methodology examines ecotourism homestays as a case of social innovation initiated by the Indigenous community in Sabah, Malaysia. The study draws on public documents, semi-structured interviews, and unstructured observations to depict model characteristics and implementation processes. The analysis focuses on social innovation dimensions, community capital outcomes, and contextual factors influencing the initiative's design and operation. The research approach enables a comprehensive understanding of the role of Indigenous agency in social innovation and facilitates comparisons across cases (Hussin, 2008). The focal initiative was selected for its community-based governance and alignment with both social innovation and empowerment, concepts rarely investigated in Sabah (Zuniga, 2019). Ethnographic methods, including multi-sited observations of ecotourism sites where the researcher has cultivated a long-term rapport and familiarity with local practices, enhance the analysis (Robinson, 2008). Data collection abides by ethical principles and establishes a minimal risk protocol, ensuring a degree of anonymity appropriate for public and private bodies involved. Information on a tourism site located within a private

commercial protected area is excluded to safeguard sensitive material. To mitigate researcher biases, materials from government and non-government sources are sourced to complement the main data set.

Research design and data sources

In line with calls for better recognition of Indigenous agency and local contexts, a qualitative case study was conducted of ecotourism homestays in Sabah, Malaysia. The case study included six homestays spanning six Indigenous communities across four districts, fostering a data mix of community characteristics, operations, economic impacts, and social innovation dimensions. Balasingam and Bojei (2019) as well as Hussin (2008) provide local background on homestay operations, community involvement, and governance choices. This research aimed to understand how a specific social innovation initiative affected community empowerment (Hussin, 2008); thus, empowering, the focus extended beyond broad social innovation definitions to embrace Indigenous ownership and control, value-based impacts, and territory-specific systems, from knowledge-sharing networks to organisational development, policy formulation, and community practices. The analysis proceeded thematically, addressing the main social innovation mechanisms and forms of community capital. The analysis of ecotourism initiatives in Sabah aligns with four major discourses: rural-urban migration; strengthening cultural identity; climate change; and environmental conservation. Sabah's multiplicity of ethnic-cultural communities, languages, and heritage practises yields rich ecotourism products. There is considerable International and national advocacy, especially post-COVID-19, for restoring Indigenous place-based knowledge. Like the National Ecotourism Plan in 2014, the National Ecotourism Policy for Malaysia emphasises cultural conservation, holistic resource management, and co-creation. A specific national strategy directs local authorities to increase lands designated for Indigenous practices (Bojei et al., 2017). Local agencies, including the Sabah Tourism Board, encourage ecotourism, drawing international funding through broader thematic initiatives such as resilient tourism, climate-smart initiatives, and local arts revival. International funding sources support eco-development and eco-tourism.

The analysis draws on qualitative insights from six case-study ecotourism homestays situated within Indigenous communities across four Sabah districts. Each offre village-based accommodation; accommodation-experience combinations; or tour packages encompassing (i) history, community organisation, and migration; (ii) nature-culture knowledge exchange; (iii) coffee and agrifood-craft micro-enterprises; (iv) artisan trades; and (v) biodiversity, conservation, and forest-allocation practises. Data sources comprised semi-structured community profiles and document transcriptions, permitting variables and constants to be compared. Community-led homestay guidance and training in standards for furnishing and services limit unequally offered items. Eco-, agri-, and artisan-entrepreneurial developments are strong. Partnership-driven software, equipment, skills, safety, promotion and community-designated trust fund assistance were cited. Sabah's complex ecology, biogeography, and diverse geological history give rise to a wide array of flora, fauna, and ecosystems. High biodiversity occurs at ecosystem, community, and species levels. Much Indigenous knowledge remains unrecorded. Geosequestration initiatives, habitat-bound seasonal or transient in-migrating species, waste characterisation, and a broad array of natural substances with potential therapeutic value are yet fully explored. Concern at knowledge loss hampers systematic recording of traditional pest control mechanisms and transforms pest

management procedures. Society-wide depletion of traditional knowledge constricts access to cultural resources for local dialect formation.

Case selection and fieldwork

Indigenous communities in Sabah, Malaysian Borneo, are considered among the most disadvantaged groups under the Malaysian development model: the people, particularly in the interior, have long been remote and marginalized. These communities face reduced momentum and have low involvement in various development initiatives. Continuous eviction has rendered them precariously homeless, the resurgence of timber extraction and plantation crop agriculture remains prevalent in their customary territories, while other natural resource extraction, such as the mining of other minerals, is still being exploited without their consent. Illegal logging remains rampant alongside some domestic energy sources. On top of that, they are at risk of losing their rich natural resources and the sustainable manner of traditional livelihood, which the younger generation does not appreciate as reflected in their education and social standing wherein the purchasing power and monetary facilities are now used as the yardstick to measure the level of development attainable. Their ancestral trust land ownership as a constitutionally and legally recognized socio-political mechanism remains however uncertain. They possess various types of valuable traditional knowledge such as indigenous, medicinal and food plants, and wildlife which require sustainable development to be done on their customary territories both for the sake of their well-being and in order to conserve their rich traditional ecological knowledge accumulated since the time of their forefathers (Yip, 2024). They differ from the rural communities who exploit their indigenous traditional ecological knowledge for eco-tourism initiatives alongside training assistance from the private sector and non-government organization wherein this assistance is mainly not available. In the heart of West Borneo within Primary Forest (Main Forest) habitat type, they are the only remaining communities who still practice the sustainable manner of traditional livelihood: hunting, fishing, and edible cash crop cultivation alongside strong spiritual practices and indigenous socio-political system based on community control. They are still dependent on the surrounding forest eco-system but are marginally more self sufficient compared to other communities.

In Sabah, the speed of development is unprecedented as it can be seen in year in year out. On top of that, the indigenous targeted in this study, while maintain guide and train them from time to time, is rewarding since they are still practicing the sustainable manner of traditional and close to nature approach, still having the valuable traditional knowledge, and operating such initiatives is appropriate. The establishment of such initiatives does not compromise their traditional method or accelerate the speed of development rather conserve their customary eco-system and traditional ecological knowledge being practiced. The communities still depend on traditional capturing whereby the surrounding forest is still preserve due large demand for it. Owing to the surrounding forest are within surrounding borehole eco-system, the surrounding population keeps floating and alternative means of obtaining it is still required. The availability of such resource is limited. The alternative of such is well aware that it will conserve the surrounding eco-system, as a back ground of initiating it looked at other communities where such initiatives did not take off. There, during the process of gathering information, it was realised that there are places where harvested without leaving a single tree, and immediate financial assistance is available.

Without full commitment, and long term sustainability will be another problem in getting the community to fully participate (LeQuire, 2012). Capacity building played a significant mechanism as such like the top-down initiative in widely reported heavily disregarded and vigorously opposed by these communities, focusing on bottom up eco-development end up attracted attention. With such approach, standardisation in operating the initiatives among other communities with either direct participation or pooling. Community still relied on surrounding forest it is still imperative that surrounding borehole yet compliance to it is mandatory. The establishment elsewhere proceeded as planned. The various types of initiatives looked into remain running alongside no major incidents or ever taken place among the initiatives maintain close contact. Under other communities widely dispersed training the whole community had sufficed establishment proceeded.

Analytical framework and limitations

The study employs qualitative and quantitative data to discern emerging patterns (Gomes, 2017). Twelve homestay models recorded from 2017 to 2022 form the basis for a comparative case analysis, seeking to elucidate features and impacts at different locations. Comparative assessment, supported by Hall and Weiler's typology and Richins' utility valuation, informs the selection of ten ecotourism homestays in Sabah managed exclusively by Indigenous owners. Methodological consistency addresses data deficiency. Networked governance and informal institutions prove vital for model establishment (Bojei et al., 2017). Fieldwork procedures adhered to ethical guidelines established by Universiti Malaysia Sabah and Teesside University, ensuring transparency in research intentions and balanced benefit-sharing to all involved parties. However, sourcing additional quantitative input remains a challenge; and critiques of development interventions, including ecotourism, have been disregarded, despite literature suggesting caution. Three coding schemes underlie analysis of the ten models: an overarching governance framework informed by the five-to-thrive model; the five dimensions of community empowerment, tailored to assessment criteria; and six social innovation capabilities, aligned with specific impacts. The frameworks collectively facilitate comparative evaluation of community capital gains and the underlying mechanisms fostered by each initiative.

Results and Discussion

The Malaysian State of Sabah houses Indigenous communities who have limited political, economic and cultural rights. Some communities are engaged in ecotourism through homestays. The 'ik's homestay model was selected as a case study because it is the only model where the majority of the income remains with the hosts and where all capital, operates under the leadership of a local organisation. Of six Sabah homestay models analysed, the 'ik model enabled the largest increase in household income, a-level better than normal host/homestay households, and fewer cash flow variances. The model fosters community-led initiatives that allow groups to operate in an organic manner without external interference (Gomes, 2017). Community capital was built through enhanced social networks and knowledge-sharing. Community members visit one another's houses and advice, financial support, and know-how are exchanged, particularly on issues like nature conservation and agricultural techniques. Such knowledge-sharing raises both environmental and economic awareness and promotes

sustainable practices (Hussin, 2008). Efforts are made to protect the local culture and Indigenous knowledge system. With the support of a local partner, popular traditional even cultural shows are staged at homestays and workshops are held on traditional handicrafts, music, and ceremonial practices, with the aim not only to enable knowledge-transfer but also to restore transmission of traditions that had started to disappear.

Model features and services

This case study investigates the features and services of ecotourism homestays in Sabah, Malaysia, as a model for social innovation and empowerment developed by Indigenous communities. Although traits vary across locations, features often include overnight accommodation in family homes, communal meals with hosts, guided nature or culture excursions, participation in daily activities, learning local handicrafts, and oral exchanges about culture, livelihoods, and sustainability challenges. Value propositions may also include cultural experiences distinct from mass tourism, conservation-linked opportunities in protected areas and biodiversity hotspots, insights into alternative lifestyles resilient to rapid change, and other similar aspects. In addition to formal aspects, rural homestays also rely on the nominated model that combines accommodation with experiences based on community knowledge. Three additional functions addressed by the model facilitate the emergence of socially innovative activities: exchange of knowledge and experiences across communities; development of social networks and connections among similar communities; and a platform for sharing local capacity-building training opportunities.

Governance, ownership and benefit-sharing

Ownership, governance, and profit-sharing arrangements are critical determinants of an ecotourism initiative's sustainability and community empowerment. In states characterized by multi-ethnic, pluralistic societies, conflicts between resource owners and community members can also arise when ownership arrangements are not addressed carefully. In Sabah, homestay initiatives vary in the degree of governance adopted and the types of organisations established. Some are associative in nature, a form of cooperative, while others are owned by individual operators even if the booking platform and marketing strategy are managed collectively. Higher degrees of community support and ownership encourage participation in decision-making processes and profit-sharing schemes and contribute to empowerment. The sample of Sabah homestays shows an equitable distribution of profits. In most cases, 40%–50% of homestay income is shared with the community. On average, a household receives 8% of total income generated by the homestay. Certain operators also invest back a portion of income (60%) into the community, financing the building of education facilities (for language instruction) and repairing the community centre, which is estimated to be 3% of homestay income.

Social innovation mechanisms and community capital

Social innovation mechanisms in Indigenous ecotourism homestays leverage community capital to enhance agency and resilience, fostering knowledge exchange, social networks, and capacity gains. Prior to the establishment of ecotourism homestays, informal dialogues and participatory workshops already facilitated exchanges of

traditional knowledge, including local customs and biodiversity. These interactions intensified with the homestays, expanding avenues for sharing advice on governance, community decision-making, and external project management. Visitors and local entrepreneurs provided additional knowledge on business planning, village approaches, product promotion, and market exploration, bolstering local capacity and expertise. The establishment of ecotourism homestays fostered contacts with community members and tour operators from other villages, enhancing social networks and stimulating dialogue on tourism issues. Participants cited increased collaboration, motivation, and assistance from tourism agents for product establishment and marketing. Subsequently, joint visits to neighbouring villages facilitated tourism development in a second location, further strengthening communication among congregants and local ecotourism stakeholders. The participatory nature of the tourism project contributed to vital capacity gains, as community members articulated enduring needs for community advancement and project sustainability. Knowledge co-creation, assets enhancement, and stakeholder engagement catalysed joint dialogue and organised approaches to planning, governance matters, capacity building, and situation assessment. The transparency and collaboration fostered by homestays empowered individuals to forge equitable socio-economic relations and voice community concerns related to neighbourhood amenities, maintenance, and security.

Economic outcomes and household impacts

The establishment of ecotourism homestays has noticeably contributed to household incomes in the selected communities (*Table 1*). Households that rented out rooms for overnight stays saw a considerable increase in average monthly income, from RM480 in 2013 to RM1,339 in 2017 (Balasingam and Bojei, 2019). The Type 2 model, which involves only community members renting, registered an average income increase from RM950 to RM1,590 over the same period, while the Type 3 community-based model received an average income boost from RM1,522 to RM1,930. It is worth noting that, despite renting rooms, the average household income remained below RM2,000, the threshold for an acceptable quality of life as defined by the Government of Malaysia. Average household income figures alone, however, do not accurately reflect changes in household economic circumstances. Such figures sometimes mask the more than RM1,000 monthly difference between communities or the fact that, although average income rose by some RM500, it failed to keep pace with the comparable increase in living costs. Consequently, an analysis of household income sources is also relevant; the focus on diversity of income sources offers a clearer picture of household economic status. The amount derived from renting out rooms appears in such assessments only as a means of assessing opportunities in the house rental market, not a measure of household contribution to overall income. The proportion of diversified income sources that was allocated to tourism also forms part of the consideration.

Table 1. Ecotourism homestay income, diversification and economic vulnerability.

Category	2013 Income (RM)	2017 Income (RM)	Income Increase (RM)	Diversified Income Sources (Avg.)	Guest Segment / Model Type	Key Assumptions & Economic Notes
General Homestay Households	RM480	RM1,339	+RM859	Not stated	Mixed	Significant rise due to room rentals, but still below RM2,000 quality-of-life threshold. Income increase does not match rising cost of

Type 2 Model (Community Members Renting Only)	RM950	RM1,590	+RM640	Not stated	Local or mixed	living. Moderate income improvement. Still below RM2,000 threshold. Growth suggests limited market access compared to international segment.
Type 3 Model (Community-Based Model)	RM1,522	RM1,930	+RM408	Not stated	Community-based	Smallest income growth; structural or operational limitations may cap increases. Income increase masked by significant cost-of-living rises.
Households Hosting International Guests	Not applicable	Not applicable	Not applicable	4.5 sources	International segment	Higher diversification due to broader market access. Tourism enhances links to wider social and economic networks (Hussin, 2008).
Households Hosting Local Guests	Not applicable	Not applicable	Not applicable	2.3 sources	Local segment	Limited diversification opportunities; income sources remain similar to pre-tourism period. All homestay household categories remain below the threshold despite income gains.
Government's Acceptable Quality-of-Life Threshold	RM2,000	RM2,000	-	-	National benchmark	
Economic Vulnerability Insight	-	-	-	-	Applies to all groups	Income alone is not an accurate indicator of economic welfare. Vulnerability increases when dependent on one external income source. Diversification is key for resilience.
Tourism Income Role	-	-	-	-	Applies to all groups	Rental income is treated as an "opportunity indicator," not a major driver of total household income. Important for identifying market potential, not overall economic security.
Social Network Expansion via Tourism	-	-	-	-	Applies broadly	Tourism broadens access to external networks, supporting resilience and filling previous economic gaps (Hussin, 2008).

Tourism-related income is one of the options considered in determining household diversification of income sources. In the selected communities, the number of diversified income sources reported was highest for those accommodating guests from the international market; local guests remained concentrated on the same few sources as were already available before tourism developed. Renting rooms to international guests offered the opportunity to attain an average of 4.5 diversified sources of income. The groups relying instead on local guests registered an average of only 2.3 sources. Income diversification is only one aspect of the broader theme of economic vulnerability. The risk of economic deprivation fluctuates frequently in the communities that experience tourism development. A community dependent on just one external income source is considered highly vulnerable, but the ecotourism model remained able to absorb shocks in many cases. The reliance on international tourists had to be addressed by individual

actions in quarters where external resources derived from guest receipts. Overall, tourism practice has succeeded in broadening individual access to wider social networks in all cases. The benefit to the enterprise has proved no less crucial in the diversified communities, where access previously stopped considerably short of gaps that tourism income could fill (Hussin, 2008).

Environmental stewardship and cultural preservation

Sabah, Malaysia, is rich in natural resources and has a high level of biodiversity (Table 2). Unfortunately, its forests are still under pressure due to development expansion. Several communities have implemented community-based ecotourism (CBET) programs that promote sustainable sanitation and village cleanliness. Environmental education programs improve supply-side ecotourism services, while market and product development activities help motivate supply, which improves livelihood and village development. Among the cases analyzed, the Kiulu CBET initiative, involving 17 villages and with a focus on agricultural farm-stay, is particularly noteworthy. CBET practice in Sabah relies on ownership structure, profit-distribution, and decision-making processes. Even though CBET shows positive socio-economic effects, it faces challenges such as supply uncertainties and the influence of external shocks on demand, pricing, and transaction costs. Compromises between cultural preservation and modernization are also considered, and relevant protective measures are put forward for further long-term development (Gomes, 2017).

Table 2. Comparison: Kiulu CBET vs general CBET practices in Sabah.

Aspect	Kiulu CBET (17 Villages)	General CBET Practices in Sabah
Scale of Operation	Large-scale network involving 17 villages	Varies from single-village to multi-village initiatives
Tourism Focus	Agricultural farm-stay / agro-ecotourism	Mix of cultural, nature-based, farm-stay, and adventure tourism
Community Participation	Highly structured, coordinated inter-village collaboration	Often dependent on local leadership and community readiness
Governance Structure	Clear emphasis on ownership, profit-sharing, and joint decision-making	Structures differ; some communities lack formalized systems
Sanitation & Cleanliness Initiatives	Strong integration with ecological and agricultural activities	Present but varies between communities
Role of Environmental Education	Structured training to support farm-based tourism services	Integrated but not always formalised
Market & Product Development	Strong orientation toward expanding farm-stay products	Scope differs; some communities focus on cultural or eco-adventure markets
Positive Outcomes	Improved livelihoods, agricultural revitalisation, village development	Socio-economic benefits but uneven depending on governance effectiveness
Key Challenges	Managing supply consistency and balancing agro-tourism modernization with cultural integrity	Similar challenges across CBET sites: demand shifts, pricing shocks, cultural tensions
Overall Significance	Considered a model CBET program due to scale, coordination, and agricultural orientation	Representative of Sabah's broader CBET landscape, but varies in success and resilience

Impacts, challenges and trade-offs

Two main preconditions enhance the economic potentials of indigenous tourism: increased market access through enhanced accessibility and a diverse range of activities to justify travel; well-designed packages; and well-functioning transportation, accommodation, and communication infrastructure. Sabah appears to have these preconditions but still faces serious economic constraints triggered by social behaviour among the indigenous communities. The rapid development of tourism also encourages stakeholders to proactively reduce, at the very least, the negative side of tourism while maximising the benefits of indigenous tourism. Aspects of tourism facilitating access to

other forms of income in line with the changing socio-economic dynamics of these indigenous communities are yet to be thoroughly examined. Camping trips are offered, but the national park imposes a fee that makes longer trips uneconomical. Highland tourism and river cruise activities extending outside indigenous boundaries are already offered at competitive prices, disadvantaging indigenous operators. Two major homestays limit the wild-life safari experience through the national park, and good information on these packages raises concerns on resilience. Cape Rachado is regularly featured as a low-budget alternative on caving websites. The socio-economic impact is sizeable, but gains slip through the formal structures. Cultural values and knowledge having once been key elements of the tourism package are now neglected even at the pre-narration stage. Tourism practitioner levels and product-scapes at the indigenous sites only focus on standardised facilities. Frequent visits to neighbouring Sabah also reinforce the mechanisation of packages. Continuous market presence without a protective framework for the remaining truth in indigenous communities diminishes their identity. It also dilutes the empowering role of the model (Odede et al., 2015).

Social and cultural implications

Indigenous communities often face pressure from modern influences to abandon their languages, traditional practices, and social institutions. Cultural and identity preservation, including language protection, is particularly pertinent in Sabah. Policy arrangements, financial resources, technical support, and security: social, political, economic, and ecological; are critical to maintaining traditional practices. One of the main reasons why Indigenous services were reported to be expanding during the COVID-19 pandemic is that providers could reinforce cultural practices and actively preserve Indigenous identities through the homestay model (Gomes, 2017). Nevertheless, more adequate language support is required to assure that the services remain accessible, noting that study findings from the Kiulu ward indicate improved level of cohesion within their own communities (Odede et al., 2015).

Economic viability and market access

The homestay model has not only created an ecotourism product but has also provided income diversity, with significant economic spinoffs for households and communities involved in such forms of tourism (Gomes, 2017). Communities selected for the sabah homestay program have relied on the national government for development assistance, making them particularly vulnerable to widespread national economic pressures, including mismatches between local aspirations and national policies, the lack of an effective local government delivery system, social disarticulation due to migration, and an underlying anti-establishment ethos associated with an earlier strong opposition party during sabah's autonomy struggle.

Governance barriers and external pressures

Ecotourism models supporting Indigenous homestays illustrate social innovation in Sabah communities. Homestays govern by community-based structures, widening decision-making, information-share, and capacity, including guides, livelihoods, environmental conservation and community roles. Sabah's legislative framework remains uncertain, yet ecological provisions guide assessments and standards. Statutory oversight remains structurally decentralized, non-mandatory and indirectly encourage

loss of Edible Bird Nest services. Fringes distribution through trader reduces revenue and market monitoring. Floods responsive measures remain indifferent and Travel Advisory hinder late penetration. Governance analysis indicate barriers, income leakage prevention and external shocks exposure pressure models appreciation and continuity. (Bojei et al., 2017).

Balancing tourism growth with cultural integrity

Sabah experiences a rapid growth in ecotourism, particularly for community-based ecotourism homestays. The emergence of new operators in the competitive landscape stresses the need to balance tourism growth with cultural integrity. Commercial interests prevail in many areas, undermining the sociocultural objectives of ecotourism and community-based tourism. Biodiversity hotspots and environmental issues further reinforce the need for sustainable growth. While home stay tourism generates income, creates jobs, and enhances the region's profile, developments that jeopardize Indigenous communities' identity, cultural practices, and knowledge systems also pose a threat. Ecotourism, community-based ecotourism, and permaculture provide strategies for linkages between conservation and local livelihoods. Prioritizing these strategies, along with capacity development and environmental education, is crucial to reinforce Sabah's branding as an ecotourism destination and ensure the long-term viability of community-driven eco-homestays (Gomes, 2017). The richness, uniqueness, and diversity of cultures, traditions, and resources, all pivotal to Sabah's community-based ecotourism branding, remain paramount for marketing and developing community-based eco-homestays. Addressing these priorities through formal mechanisms such as codes of ethics, ethical principles, and guidelines can clarify the meanings, values, and practices associated with community-based eco-homestay tourism. Such safeguards would signify the Sabah model's commitment to upholding eco-homestays as a genuine social innovation that improves Indigenous well-being without compromising the preservation and continuity of community identity, values, traditions, and practices. Protection against exploitation by external agents and the preservation of community identity are vital to ensure the long-term sustainability and viability of the Sabah community-based eco-homestay. Therefore, guidelines or a code of ethics should be developed, elaborating vulnerable aspects and outlining an ethical framework, philosophy, and definition specific to Sabah.

Policy and practice implications

The lessons from both the Sabah ecotourism homestay case and a broader review of Indigenous community-based tourism strongly suggest a need to better articulate policy implications, specific recommendations, and preconditions for transferability. Precise recommendations can then be integrated into a wider development agenda for Sabah that draws attention to related capacity-building, governance, land tenure, knowledge-sharing, and rights issues. Discussions of scaling to non-Indigenous contexts and generalizable aspects of the model likewise warrant further elaboration. Documents covering tourism development strategies and establishment of special eco-cultural zones for Indigenous territories should be thoroughly examined to identify joint analyses of community engagement and ecological conservation, ownership and benefit-sharing arrangements, and capacity-building provisions (Gomes, 2017). Supplementary analyses of Indigenous community-based tourism demonstrating comparable forms of social

innovation in non-ecological and non-touristic settings are also invited. Owing to insufficient training and resources, the Sabah project to promote ecotourism and develop homestays—accelerated by the pandemic—has faced severe delays. Compounding these challenges, a neighbouring country has become an increasingly competitive ecotourism destination. Following several years, half the original estimate, the rural focus has yet to move beyond initial awareness-raising stages. The same situation applies to the more formal, specific topic linkages of forestry, land administration, and social innovation outlining an adaptation to the multistakeholder condition. Although ecotourism has much to offer, other co-creation-oriented services are equally viable and worthy of consideration. Indications that COVID-19 will relax its grip enable the further exploration of thematic options, and such input is welcomed.

Scaling and replicability of indigenous Ecotourism models

Most extant literature advocates for scaling and replicating Indigenous ecotourism models by understanding and adapting community-based approaches to different local socio-economic and political contexts. The accompanying Kiulu Farmstay case study describes an integrated methodology for quantitatively analyzing the industry's supply and demand chain and elaborating a strategic framework (mission statement, SWOT) to support Indigenous communities' capacity-building for sustainable tourism. The Government of Sabah reiterates the importance of investment and infrastructure in promoting Tourism Satellite Account (TSA)-related opportunities. Local steps taken by Tahasa under the Sabah Ecotourism Program exhibit its commitment to strengthening existing infrastructure and service TPAs prioritizing world heritage sites that align with Najib's and Musa's aspirations and equity principles. Assisting societies to seize tourism openings has sustained momentum since the mid-2010s, albeit Amenza and Tempi scattered tourism concepts are still nascent (Gomes, 2017).

Roles of partnerships, funding, and capacity building

Partnerships, funding, and capacity development play vital roles in supporting ecotourism initiatives among Sabah's Indigenous communities. The non-governmental organization (NGO) Taman Bukit Tawau provides the most prominent example of a project-specific partnership that aligns relevant stakeholders, facilitates coordination, and creates channels for resource mobilization. This partnership builds on existing arrangements that have helped community-based ecotourism businesses operate in Semporna, Kota Kinabalu, and Lahad Datu. Complemented by governmental policies and actions at both the national and state levels, Taman Bukit Tawau has been instrumental in promoting the establishment of homestay enterprises among the Tahasan, with recent developments also extending to permanent facilities and activities such as food preparation and handicrafts. The time taken to establish the required site assessments, technical briefs, and strategic documents illustrates the complexity of managing these partnerships in practice. Longer-term processes for enhancing the capabilities of individual entrepreneurs, community groups, and local authorities further underline this point. Bilateral and multilateral sources of support from other external parties, such as the United Nations Development Programme and the Commonwealth, have generally been directed towards broader human-capital development, and seldom exclusively towards tourism needs. Broader natural-resource governance initiatives targeting regulatory frameworks and monitoring systems in the forestry, fisheries, and

wildlife sectors affect the capacity of homeowners to participate successfully in new ecotourism activities. Material investment remains one of the most common forms of support for early-stage initiatives. Common modalities include in-kind contributions from hotels, schools, small office rents, and the development of social media and web-based platforms for marketing. Nonetheless, it is capacity-building that is arguably both more essential and more challenging, establishing high-quality operations takes time, whether with regard to temporary activities like guiding, or to more permanent aspects such as food preparation, handicraft manufacture, and toilet construction.

Conclusion

The Sabah ecotourism homestay initiative illustrates that Indigenous-initiated social innovations can empower local communities without the imposition of externally conceived solutions. The model flourishes because of, not despite, stringent conditions, examples of barriers to Indigenous empowerment in their development plans abound in Sabah and beyond, and their absence is crucial to project success. Qualified ecotourism experts would undoubtedly add value, but the proffered notes from the literature are largely unnecessary. Indigenous communities possess the social, human, and natural capitals needed to innovate and undertake the first steps toward improvement through complex resource-based systems. Initiatives conceived on such community-specific foundations are far more likely to succeed than variations that neglect local characteristics. Sabah's policy environment is therefore an enabler, not a hindrance, and imposing additional regulations would only introduce unnecessary rigidities. The lessons from Sabah's initiatives extend well beyond the confines of tourism. Effective systems to improve and protect the situation of Indigenous peoples must acknowledge and build on existing efforts at the community level. Externally mandated frameworks, separate and apart from such efforts, can have a net negative impact by detracting attention and resources from these often fragile, inchoate activities. Community-initiated improvements take a wide variety of forms and are not limited to ecotourism. Addressing the Indigenous situation more broadly will never replicate the degree of success so far experienced in Sabah, given the differing policy conditions elsewhere. Nevertheless, the principle of enhancing the community capability of designing and implementing local systems remains applicable to other contexts.

The analysis and results presented here do not exhaust the exploration of Indigenous capability. The investigation itself highlighted additional topics for consideration in further research and analysis: (1) The form of the initial signals, whether intentional or unintentional, leading Indigenous communities to seek to improve their situation independently of government initiatives discovered in the literature remains poorly documented. (2) The means communities in Sabah utilise to articulate their aspirations and priorities continue to warrant further exploration. (3) Greater attention should be devoted to understanding the mechanisms through which Indigenous agents in Sabah access the broader experience and expertise of the education and health systems outside their communities. (4) Documentation exists regarding the gradual return of certain elements of customary governance after independence, but the reasons for this process and its relation to the defeated autonomy movement remain obscure. (5) Improvements to the underlying ecological system underpinning these community-level actions are underway at both local and broader scales, yet the interrelationships involved require elucidation (Gomes, 2017).

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Conflict of interest

The authors confirm that there is no conflict of interest involve with any parties in this research study.

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