

Geopark Impact on Tourism Sector and Local Community Development as Economic Growth Instrument

Alamsyah Agit^{*1}, Susilawati Muharram²

Hasanuddin University, Makassar, Indonesia

Islamic State University of Alauddin Makassar, Makassar, Indonesia

Email: alamsyahagit@gmail.com

Abstract

Development of geoparks has emerged as a pivotal strategy to achieve sustainable economic growth while preserving natural and cultural heritage. This study explores the economic impacts of geopark development, focusing on the tourism sector and its contribution to local community development. Geoparks, as areas that integrate geological, ecological, and cultural elements, provide unique opportunities for tourism-based economic activities. This paper analyzes how geopark initiatives have stimulated growth in tourism-related industries, including hospitality, Ecotourism, and educational tourism while promoting environmental conservation and education. Using the qualitative method and a literature review approach, this paper will explore the impact of tourism and local community development toward economic growth. Drawing on existing literature and case studies from global geopark networks, this research evaluates the direct and indirect economic benefits experienced by local communities. Key indicators such as employment generation, income levels, and infrastructure development are examined to understand the socioeconomic transformations driven by geopark development. Additionally, the study highlights the role of local governance and community participation in optimizing the economic potential of geoparks. Findings suggest that geoparks, when managed sustainably, not only boost local economies and enhance community resilience through education, capacity-building, and environmental stewardship. This study contributes to a deeper understanding of how geoparks can serve as models for sustainable development, balancing economic growth with ecological preservation and cultural heritage protection.

Keywords: Community, Economic, Development, Geopark, Tourism

A. INTRODUCTION

Geopark development is a powerful tool to promote sustainable tourism and rural economic development. As (Pérez-Calderón et.al, 2022) highlight, geoparks leverage unique geological features and cultural heritage to create sustainable geotourism, fostering economic and social benefits for rural communities. In Spain, for example, geoparks preserve geological heritage and stimulate tourism, creating job opportunities and enhancing infrastructure in underdeveloped areas. This sustainable approach improves the quality of life for local populations by attracting tourism revenue without compromising natural resources. Research by (Lee & Jayakumar, 2021) further emphasize the economic potential of geoparks, particularly in Asia. This comparative study of three Asian geoparks demonstrates that UNESCO Global Geopark (UGGP) status significantly

increases tourism and local economic activities. Geoparks in Japan, Korea, and Vietnam have successfully branded their unique geological landscapes and local products, enhancing the regions' appeal to tourists. Through initiatives such as geobranded products and activities, these geoparks enable local communities to participate actively in tourism, fostering a sense of pride and ownership. These findings affirm that geopark development promotes sustainable rural development by creating resilient local economies tied closely to conserving natural and cultural resources.

Geopark development has substantial relevance to economic growth, as demonstrated by (Duarte et.al, 2018) highlight that "Smart Specialization" in geotourism enables regions to leverage their unique geological resources and cultural assets, fostering economic resilience by creating niche markets. By promoting local entrepreneurship and job creation within geotourism, regions with geoparks, like the Atlantic Geoparks in Europe, have successfully enhanced local economic activity. This strategy links conservation efforts with economic objectives, creating a sustainable economic growth model that utilizes local resources for tourism in a way that preserves cultural and natural heritage. Meanwhile research by (Khasanah et.al, 2023) further explore this economic impact in the context of the Ciletuh-Palabuhanratu Geopark in Indonesia, emphasizing its role in advancing the United Nations Sustainable Development Goal (SDG) 8, which aims for decent work and economic growth. This study found that this geopark has driven local economic development by increasing employment opportunities and attracting investments in tourism infrastructure, such as accommodations, restaurants, and travel services. Through local businesses and tourism-driven initiatives, community participation has been crucial in ensuring that economic benefits are distributed locally, thus enhancing regional income and the community's standard of living. These findings suggest that geoparks can significantly stimulate regional economic growth by integrating geotourism with local economic development strategies.

Significant economic potential of geopark development can be achieve by focusing on local economic improvement and resource utilization. Research by (Sagala et.al, 2018) noting that its geopark has spurred local business growth and job creation, especially in hospitality, local crafts, and tourism services. This development has provided substantial income for nearby communities, and local businesses have capitalized on the geotourism appeal to attract visitors, enhancing both direct and indirect economic benefits. This growth in tourism and associated businesses has translated into enhanced community welfare, a key metric of geopark success. Similarly (Rachaju et.al, 2023) illustrate the economic contributions of the Ciletuh-Palabuhanratu Geopark in Indonesia, emphasizing the role of effective tourism policies in supporting sustainable community-based economic development. The study reveals that well-implemented tourism strategies can mobilize local resources and labor, fostering economic resilience and independence in rural areas. By aligning policy initiatives with conservation and community empowerment goals, Ciletuh-Palabuhanratu Geopark has increased employment and facilitated local hospitality and tour services entrepreneurship. Both studies demonstrate that, with strategic management, geoparks can be powerful drivers of regional economic growth, leveraging natural heritage to stimulate sustainable, community-centered economic activities.

Geoparks contribute to economic diversification by creating various income-generating activities beyond conventional tourism, such as guided tours, educational programs, and conservation-focused projects. Research by (Ristiawan et.al, 2023) highlight how Indonesian geoparks, particularly the Gunungsewu and Ciletuh geoparks, leverage unique geological and cultural resources to draw visitors interested in learning about local heritage and biodiversity. This

geotourism approach enables local communities to offer more than recreational activities, including specialized tours and environmental workshops that appeal to niche markets. By combining tourism with conservation, geoparks cultivate new revenue sources while promoting environmental awareness. Similarly, (Sultonov & Atakulova, 2020) emphasize that geotourism in Uzbekistan's geoparks has driven local economic development without exploiting non-renewable resources. Through initiatives like educational tours and ecotourism, these geoparks foster sustainable practices and provide local populations employment opportunities in guiding, management, and conservation education. This shift from extractive industries to geotourism enables communities to develop unique, sustainable services that contribute to economic growth while protecting the natural environment.

Research by (Varriale et.al, 2022) discuss the concept of "Diffused Geoparks" and how it fosters sustainable development through community participation in geotourism. For example, in Italy, Japan, and Tunisia, these geoparks create opportunities for residents to engage in tourism services, crafts, and conservation education, strengthening the community's economic resilience and cultural identity. This approach encourages community pride and involvement, as local stakeholders play a central role in the geopark's management and growth. Meanwhile (Butolo, 2022) describes how the Gorontalo Geopark in Indonesia integrates local communities by supporting Micro, Small, and Medium Enterprises (MSMEs) that produce products like handicrafts, local foods, and traditional fashion. These geoproducts boost the local economy and preserve and promote regional culture and biodiversity. Butolo highlights the importance of strategies that empower residents to participate actively, increasing their income and enhancing community welfare. Through these efforts, geoparks become centers of inclusive economic growth, where community involvement is prioritized to ensure that economic gains from tourism flow directly to local people, fostering cultural preservation and sustainable development.

Further, (Marescotti et.al, 2022) highlight how geopark initiatives can improve quality of life, promote environmental stewardship, and drive inclusive growth in rural or underdeveloped areas. Italy's Beigua Geopark, where local community involvement in tourism and conservation has enhanced local economies and fostered a sense of pride and responsibility toward the environment. By involving communities in educational and geotourism activities, the geopark provides an avenue for economic growth while maintaining ecological balance, ultimately improving residents' quality of life through sustainable local development. Similar research by (Insani et.al, 2023) discuss the Batur Geopark in Bali, Indonesia, where community empowerment has been central to its success. Through the Penta Helix model—which integrates government, business, community, academia, and media—Batur Geopark effectively mobilizes local resources for tourism and conservation. This approach creates local job opportunities, supports small businesses, and increases environmental awareness, thus fostering inclusive growth. Both studies suggest that engaging communities in tourism and conservation geoparks can enhance local well-being and ensure environmental stewardship becomes a shared community priority, leading to sustainable regional development.

Purpose of this article is to explore the economic impacts of geopark development, focusing specifically on the tourism sector and its contribution to local community development. By examining how geoparks generate income through sustainable tourism, this research aims to shed light on how such initiatives create diverse economic opportunities, support small businesses, and increase employment within local communities. Through an in-depth analysis of case studies and empirical data, this article seeks to illustrate how geoparks serve as conservation and educational hubs and as catalysts for regional economic growth. Ultimately, this research will highlight the

potential of geopark-driven tourism as a sustainable strategy for boosting local economies, fostering inclusive development, and enhancing the quality of life for communities in rural and underdeveloped regions.

B. RESEARCH METHOD

This research was conducted using a qualitative method with a literature review approach, this method uses research and empirical data as the primary data source to collect relevant information to build arguments against the phenomena, gaps, and results in this study. This method allows for a comprehensive comparison between locations and identifies research that has the most potential implications for the problems raised in this study. The data collection process was carried out by applying several parameters to the materials to be used, namely (1) The articles used are research articles and review articles; (2) Articles used are only through peer-review; (3) Articles used were published in the last 10 years; and (4) Articles used discuss geoparks and geotourism. Data analysis was carried out by applying the deductive thinking method chosen because of its capability to group data relevantly and in line with the objectives of this study; in addition, by applying this analysis method, researchers can also provide several potential implications that are relevant to the results of this study.

C. FINDINGS AND DISCUSSION

Geopark development has shown to be an effective strategy for fostering sustainable local economic growth. By enhancing job opportunities, promoting tourism, and improving infrastructure, geoparks provide substantial benefits to surrounding communities. They create a unique space where cultural heritage, conservation, and tourism intersect, enabling local economies to thrive without compromising natural resources. Through community-centered initiatives, geoparks support long-term resilience and economic independence in rural and underdeveloped areas. This approach uplifts local living standards and ensures that the environment and cultural identity are preserved for future generations.

Table 1. Geopark Development Effectiveness Based on Empirical Evidence

Researcher	Research Result	Research Implication
Lestari & Indrayati (2022)	Institutional support and alternative financing are crucial for sustainable geopark management, including geoproduct and geoservice innovations.	Highlight the need for strong institutional frameworks to ensure sustainable funding and operations, benefiting local economies through tourism and services.
Dias et.al (2023)	Integration of geoparks with protected areas in Portugal enhances conservation and attracts tourists interested in eco-tourism.	Improved territorial planning in geoparks can boost eco-tourism and provide sustainable economic growth for local communities.
Perez-Calderon et.al (2022)	In Spain, geoparks support rural development by enhancing tourism, creating jobs, and improving infrastructure, directly benefiting local residents.	Emphasizes geoparks' role in rural revitalization by creating job opportunities and improving infrastructure to uplift local living standards.
Dousin et.al (2024)	Geopark development in Malaysian Borneo positively impacts community	Promotes community support and economic growth through local

Researcher	Research Result	Research Implication
	well-being by offering employment and income opportunities.	participation, suggesting that inclusive geopark models benefit both residents and visitors.
Ozgeris & Karahan (2020)	Turkish geoparks with diverse geosites foster sustainable tourism, generating income and jobs while preserving cultural heritage.	Geoparks create sustainable economic models by promoting geotourism that attracts high-value tourists and creates local employment without depleting resources.
Stoffelen (2019)	Emphasizes the need for community involvement in geoparks to realize socio-economic benefits, as communities are central to sustainable development goals.	Community-centered geoparks are more effective, as local engagement supports long-term economic sustainability and resilience.
Skibinski et.al (2021)	Geoparks in SE Poland provide a basis for geotourism development, but infrastructure needs further expansion to maximize economic benefits.	Highlights the importance of infrastructure improvements to support sustainable tourism and stimulate local economic activities.
Ferreira & Valdati (2023)	Geoparks contribute to sustainable development through education, geoconservation, and geotourism, creating social and economic benefits.	Reinforces the value of geoparks as tools for sustainable development, linking geotourism with community upliftment and educational engagement.

Sources: Empirical Research (2024)

Geopark development brings various benefits to local communities by supporting economic growth and preserving natural heritage. The success of sustainable geopark management relies heavily on institutional support and alternative financing. These resources enable innovative geopark products and services that stimulate local economies, creating sustainable revenue streams from tourism and related services (Lestari & Indrayati, 2022). Research by (Dias et.al, 2023) highlighted how the integration of geoparks with protected areas in Portugal enhances conservation efforts while attracting eco-tourists. This dual focus on preservation and tourism helps geoparks act as a catalyst for sustainable local development by providing an economic boost without compromising natural resources. Meanwhile, in Spain (Perez-Calderon et.al, 2022) demonstrated that geoparks significantly contribute to rural development. By boosting tourism, creating employment opportunities, and enhancing infrastructure, these geoparks improve the quality of life for residents, showcasing how such initiatives can rejuvenate rural areas and strengthen local economies.

Geopark positive impact on community well-being is also evident in Malaysia's Kinabalu UNESCO Global Geopark. Research by (Dousin et.al, 2024) illustrated that the geopark provides local job opportunities and income generation, thereby increasing community support and economic resilience. This model of inclusive development highlights the potential for geoparks to enhance socio-economic stability for local populations. Further, (Ozgeris & Karahan, 2020) illustrated how Turkish geoparks create sustainable tourism models that respect cultural heritage while supporting local economies. By attracting high-value eco-tourists, these geoparks foster a type of

tourism that brings income and job opportunities without depleting natural resources, offering a viable economic alternative for rural communities. The role of community involvement in geopark success is emphasized by (Stoffelen, 2019), who argued that for geoparks to be effective in supporting sustainable development, they must be community-centered. This approach ensures that local residents are directly engaged, helping to build resilience and economic sustainability from within the community.

Tourism potential of geoparks in SE Poland is high, yet improvements in infrastructure are needed to maximize their economic benefits. They noted that enhancing accommodation and transport facilities would further boost tourism, leading to increased economic activity and development opportunities for local communities (Skibinski et.al, 2021). Research by (Ferreira & Vadalti, 2023) underscored the multifaceted role of geoparks in sustainable development. They pointed out that through geotourism, education, and conservation, geoparks generate socio-economic benefits, fostering community empowerment and environmental stewardship, which are essential components of sustainable regional growth. As a conclusion, these studies demonstrate that geoparks offer a holistic approach to sustainable development, combining conservation with economic growth to uplift local communities and secure long-term environmental and cultural preservation.

Table 2. Geopark Development Effect on Local Communities

Researcher	Research Result	Research Implications
Rosyidie et.al (2018)	Geoparks, like Batur in Indonesia, boost tourism, providing local employment and income opportunities.	Highlights the economic advantage of geoparks in creating tourism-related jobs, increasing the financial stability of local communities.
Herrera-Franco et.al (2020)	The Santa Elena Geopark in Ecuador promotes geotourism, raising awareness and pride in local geological heritage.	Reinforces the role of geoparks in fostering a sense of pride and environmental consciousness, contributing to social cohesion and identity.
Quiroz-Fabra et.al (2022)	Education and conservation strategies within geoparks support sustainable development by engaging the local population.	Emphasizes the importance of educational programs within geoparks to develop sustainable practices and enhance environmental awareness among locals.
Ozgeris & Karahan (2020)	Turkish geoparks generate employment and income through geotourism, particularly attracting high-income tourists.	Demonstrates the economic benefits of attracting high-spending tourists, which directly increases local business revenue and job availability.
Herrera-Franco et.al (2021)	Geoparks contribute to local development by integrating education, tourism, and conservation efforts to benefit the community.	Highlights the multifunctional role of geoparks in supporting economic development, educational outreach, and conservation efforts to build resilient local economies.
Ibrahim et.al (2021)	In Langkawi, local awareness of geopark benefits is moderate, but engagement between community	Indicates the need for stronger community involvement and awareness programs to maximize the benefits of

Researcher	Research Result	Research Implications
	and authorities is needed for improvement.	geoparks and ensure locals feel connected to the project.
Halim & Ishak (2017)	Community engagement in geoparks enhances conservation efforts and encourages sustainable tourism practices in the Asia Pacific region.	Reinforces that engaging locals in conservation fosters a greater sense of stewardship and encourages tourism practices that are sustainable and community-focused.
Sapoetra et.al (2019)	Community participation varies by geopark status, with higher engagement levels in UNESCO Global Geoparks.	Suggests that geopark status and management quality significantly affect local involvement, with well-managed geoparks achieving more sustainable and beneficial outcomes for locals.
Popa et.al (2016)	Geosites in Romanian rural geoparks provide socio-economic opportunities for locals, enhancing tourism potential and identity.	Highlights that geopark geosites can act as local economic assets, stimulating social dynamics and reinforcing cultural identity, particularly in underprivileged areas.

Sources: Empirical Research (2024)

Geoparks provide significant economic benefits to local communities by creating employment opportunities and enhancing income through tourism. Research by (Rosyidie et.al, 2018) emphasize that geoparks, like Batur in Indonesia, boost tourism and generate local jobs, contributing to financial stability for nearby residents. Similarly, (Ozgeris & Karahan, 2020) highlight that Turkish geoparks, by attracting high-income tourists, create direct economic benefits for local businesses, which boosts job availability and supports economic growth within the region. Geopark initiatives also play a vital role in fostering community pride and environmental awareness. For instance, the Santa Elena Geopark in Ecuador, studied by (Herrera-Franco et.al, 2020), promotes geotourism that not only raises local awareness of geological heritage but also strengthens community identity and cohesion through shared pride in the region's natural assets. Furthermore, (Quiroz-Fabra et.al, 2022) found that education and conservation strategies within geoparks engage locals, instilling sustainable practices and a deeper appreciation for the environment.

Education and engagement are central to maximizing the community benefits of geoparks. According to (Ibrahim et.al, 2021), Langkawi's geopark requires better community engagement to enhance awareness and improve locals' connection to the project, indicating that strong relationships between authorities and residents can boost local involvement and benefits. Study by (Halim & Ishak, 2017) support this by highlighting that community participation in conservation efforts across Asia Pacific geoparks fosters a sense of stewardship and support sustainable tourism practices that benefit the local economy while preserving natural resources. Quality geopark management and elevated status also affect the level of community engagement and benefits. Research by (Sapoetra et.al, 2019) found that communities in UNESCO Global Geoparks exhibit higher participation rates compared to locally managed geoparks, suggesting that international recognition can attract more active involvement from locals. Lastly, (Popa et.al, 2016) note that rural Romanian geoparks provide socio-economic opportunities and help reinforce cultural identity, demonstrating that geoparks can be powerful tools for sustainable regional development

in economically disadvantaged areas. In summary, it can be said that geoparks foster sustainable local development through economic support, education, and community engagement, ultimately enhancing the quality of life for residents in geopark regions.

D. CONCLUSION

Geopark development is a potent mechanism for fostering sustainable economic growth and enhancing local community resilience. This study highlights how parks generate multiple socio-economic benefits for local populations by creating employment, fostering local business opportunities, and building infrastructure. Integrating conservation, education, and tourism within geopark initiatives enhances community pride and environmental stewardship, promoting a harmonious relationship between people and their natural heritage. By providing unique tourism experiences tied to geological and cultural assets, geoparks attract visitors and encourage the preservation of natural landscapes, supporting long-term economic stability in rural and underdeveloped areas. The implications of this research underscore the importance of community engagement, sustainable tourism, and infrastructure development in maximizing the benefits of geopark development. First, active community involvement is essential for the success of geopark initiatives, as it fosters a sense of ownership and ensures that economic benefits directly reach local populations. Strengthening partnerships between authorities and residents, alongside programs that raise local awareness, can enhance these benefits and lead to greater economic independence, especially in rural areas where traditional job opportunities may be limited.

Sustainable tourism, as practiced within geoparks, provides a model that balances economic growth with environmental protection. By integrating educational initiatives focused on conservation, geoparks can instill a culture of environmental stewardship within local communities. This approach ensures that while preserving the natural environment for future generations, the region still gains substantial economic returns through eco-conscious tourism activities. Finally, investment in infrastructure, such as improved transport, accommodation facilities, and geotourism attractions, is crucial for realizing the full economic potential of geoparks. Enhanced infrastructure attracts more tourists, expands revenue streams, and supports local businesses by improving accessibility and the visitor experience. Together, these implications highlight how geoparks can serve as powerful engines for sustainable development, delivering immediate economic advantages while safeguarding cultural and ecological heritage for the future.

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