



# Geosite Branding in Indonesia: An Initial Study

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## ABSTRACT

Geosites are essential for geoparks and signify that geoparks serve as destinations for tourism. Originating from conservation efforts, geosites must also involve benefits for local communities. This research aims to explore the formation of geosite branding as part of sustainable tourism efforts, with data collected from Geopark Sawahlunto and Geopark Silokek-Sijunjung in West Sumatra as case studies. Qualitative data analysis was conducted by applying destination branding concepts and geological conservation, which are fundamental for the existence of geosites. The findings reveal that the geosite branding process should prioritize conservation, education, and community welfare, which are part of the Three Pillars of Geopark Development in Indonesia. These pillars are crucial and should engage the audience, making them feel committed to the cause. By utilizing digital media such as social media and interactive applications, geoparks aim to introduce their unique geosites and raise awareness of the importance of environmental preservation. Despite challenges in integrating geosites, biosites, and culturesites, collaboration among government, geopark managers, and local communities can make geosite branding an effective tool for supporting sustainable tourism development, enhancing local welfare, and preserving the environment. Steps taken in branding strategies based on Media Richness are expected to strengthen the identity of geoparks and ensure optimal benefits for future generations.

## Keywords

geosite; geosite branding; geopark; destination branding; media richness;

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## INTRODUCTION

Indonesia has a diverse geological wealth, ranging from active volcanoes and unique geological formations to cultural heritage spread in various regions. This makes Indonesia a potential location for geopark development that focuses on tourism, conservation, and education. A number of geoparks, such as Gunung Sewu Geopark and Raja Ampat Geopark, have been recognized as United Nations Educational, Scientific and Cultural Organization (UNESCO) Global Geoparks, demonstrating Indonesia's commitment to promoting the geopark concept as a sustainable development strategy. However, many geoparks in Indonesia face challenges in integrating conservation and local economic empowerment. These challenges include a lack of understanding about the importance of geosite preservation, a lack of resources for infrastructure development, and a lack of appropriate branding strategies to attract domestic and international tourists.

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West Sumatra is one of Indonesia's provinces with extraordinary natural and cultural diversity. From mountains and lakes to exotic beaches, West Sumatra offers a variety of attractive destinations for tourists. In addition to its natural beauty, the province is also rich in Minangkabau cultural heritage that includes tradition, art, culinary, and distinctive architecture. In the midst of this potential, Sawahlunto Geopark and Silokek-Sijunjung Geopark are present as areas that offer geological beauty and profound historical and cultural values. Sawahlunto Geopark, for example, has traces of coal mining history that are silent witnesses to industrial development during the colonial period. Meanwhile, Silokek-Sijunjung Geopark has geological uniqueness that can attract scientific tourism. However, until now, these two geoparks have not been fully utilized as leading tourist destinations that can improve the image of West Sumatra tourism as a whole.

In the global competition among tourist destinations, destination branding strategy plays an essential role in creating a strong and attractive image in the eyes of tourists. Effective destination branding can increase a destination's competitiveness by highlighting its uniqueness and distinctiveness (Escobar-Farfán et al., 2024; Wijaya et al., 2024).

In West Sumatra, destination branding is needed to introduce its natural and cultural wealth, which is not widely known by tourists, especially those from abroad. With strong branding, West Sumatra can position itself as a tourist destination that offers natural beauty and authentic cultural experiences. In addition, the right branding strategy can also help increase the involvement of local communities in the tourism industry, create new business opportunities, and encourage the development of infrastructure that supports tourism activities.

With solid branding, West Sumatra can strengthen its image as an attractive, quality, and sustainable tourist destination (Dinas Pariwisata Ekonomi Kreatif Sumatera Barat [Dinparekraf Sumbar], 2020). Developing West Sumatra's destination branding strategy requires an in-depth understanding of the region's characteristics and uniqueness. Strategic steps in branding can include promotion through various media channels, developing attractive tour packages, improving the quality of tourism services and infrastructure, and developing local creative industries. By building a strong branding, West Sumatra can increase its competitiveness in the tourism industry, attract more tourists, and contribute to economic development and the welfare of local communities (Elda et al., 2024).

Geopark is one of the main strategies to develop destination branding in West Sumatra. For example, Sawahlunto Geopark and Silokek-Sijunjung Geopark have unique and historical values that can be the foundation for developing geosite branding. A geosite is a location that has essential geological value and is an integral part of a geopark. The geosite functions as a tourist attraction and an educational tool on geological heritage preservation that has economic value for the surrounding community.

Sawahlunto Geopark is known for its unique and varied geological formations, such as Batu Runciang, an outcrop of Permian-age limestone. This unique geology attracts visitors with an interest in geology and natural beauty. Sawahlunto, once a coal mining town during the Dutch colonial era, still has a legacy of mining history visible through various historical sites such as the Sawahlunto Railway Museum and old mining pits that are now tourist attractions. In addition to geological formations, Sawahlunto Geopark also features a rich culture and local wisdom, including the Silungkang Songket weaving tradition and the traditional musical instrument *Talempong Batuang*. The culture of the local people is an integral part of the geopark's appeal, apart from the captivating natural scenery of green hills surrounding it. This natural beauty provides an additional attraction for tourists who want to enjoy the fresh and soothing natural atmosphere.

Sawahlunto Geopark often holds local events and festivals such as Randai Festival and SISCA (Sawahlunto International Songket Carnival). These events preserve local culture and attract tourists from various regions. The existence of historical buildings with Dutch colonial architecture adds to this geopark's historical and aesthetic value. In addition, Sawahlunto has biodiversity with a variety of protected local flora and fauna, adding to the attraction for nature lovers and researchers (Dinparekraf Sumbar, 2020).

Geosite branding is an effort to identify, promote, and strengthen the positive image of a geosite in the eyes of local communities and tourists. Geosite branding aims to increase awareness of the geosite's natural and cultural richness and attract more tourists who support local economic

growth. Various stakeholders, including local governments, conservation organizations, local tourism operators, and geologists, are involved in the geosite branding process. The geosite branding strategy should consider the uniqueness and distinctiveness of each geosite and consider the sustainability of environmental and cultural management (Elda et al., 2024).

Geosite is one of the key elements in a geopark, which serves as a symbol of geopark existence and as a tourist destination that supports conservation and benefits the surrounding community. In recent years, geoparks in Indonesia have experienced rapid development, but challenges in integrating conservation efforts with tourism development are still significant. As part of the concept of sustainable tourism, the development of geosite branding is crucial to ensure a balance between nature conservation, education, and the welfare of local communities. In many countries, geosite branding has become an essential part of conservation efforts and sustainable tourism development (Mihardja et al., 2023). Through effective branding, geosites can become attractive destinations for tourists seeking authentic and memorable experiences. Therefore, the development of geosite branding is a strategic step to increase the economic and social value of the region while still paying attention to environmental and cultural preservation, which is a valuable asset for future generations (Mihardja et al., 2023).

Geosite branding is also relevant in economic development and regional development. Geosite branding strategies can contribute to the well-being of local communities and economic growth by creating a positive perception of a location. In addition, the geosite branding model can also be an essential tool in environmental and cultural heritage preservation by raising awareness of the importance of maintaining a region's natural and cultural resources. Developing a geosite branding model involves collaboration between various stakeholders, including local government, tourism actors, industry, academia, and local communities. An effective branding strategy should consider the destination's unique characteristics (Mihardja et al., 2023).

The primary function of destination branding is to increase a destination's attractiveness through effective branding. With strong branding, a tourism destination can highlight its uniqueness, distinctiveness, and competitive advantage, helping it become more attractive to potential tourists looking for authentic and memorable experiences (Mihardja et al., 2019).

Increasing tourist visits through effective branding can positively impact the local economy. A positive image of a tourism destination can also attract investors and developers to invest in the region, which in turn can generate economic growth through tourism infrastructure development, tourism industry development, and new job creation. In addition, destination branding can also be used to highlight natural beauty and cultural richness and promote sustainability and environmental preservation. By enhancing local identity and pride, destination branding can strengthen local people's sense of identity and pride in their region (Mihardja et al., 2023).

Although West Sumatra has tremendous geosite potential, the development of geosite branding in the region still faces some significant challenges. One of them is the lack of understanding and awareness of the community and stakeholders about the importance of branding as a tool to improve the image and attract tourists. In addition, there is a lack of adequate resources and infrastructure to support the development of effective branding. The involvement of local communities in the branding process is also still minimal, so the messages and narratives conveyed often do not optimally reflect geological and cultural wealth.

However, the main challenge in geopark development and geosite branding is how to create a balance between conservation, education, and geosite utilization for community welfare (Migoń & Pijet-Migoń, 2017). The geosite branding process must be built by considering the three main pillars of geoparks, namely geosite, biosite, and culturesite. These three elements must be integrated in order to form a complete geopark identity and attract tourists. In this context, an effective branding strategy is essential to increase visibility and attract tourists. Successful branding depends not only on visual promotion but also on the ability of the media to convey messages clearly and attractively.

In this context, the Media Richness Theory (Daft & Lengel, 1986) is relevant as it emphasizes the importance of selecting the right media to convey complex information that requires deep understanding. In the context of geosite branding, the use of rich media such as video, direct interaction, and digital visualization can increase audience engagement and understanding of the value and importance of the geosite. Thus, an effective geosite branding strategy should utilize the

right media to convey messages of conservation, education, and economic benefits to communities and tourists.

This research explores and analyzes Sawahlunto's geosite branding strategy using the Media Richness theory approach to understand how different media affect the effectiveness of branding and information dissemination. This research focuses on how geosite branding can be developed while maintaining aspects of conservation, education, and local community welfare. Thus, this research is expected to significantly contribute to developing sustainable tourism in West Sumatra.

## METHOD

This research uses a qualitative analysis research approach with a case study research design (Yin, 2014). A case study is a method used to study a particular subject, document, or event in depth. According to Yin, case studies are suitable for use when research focuses on “how” or “why” questions, especially if the researcher has little control over the events being studied and when the phenomenon under study is part of real life in the present. This approach was chosen because it aims to explore and understand the geosite branding strategy in two geoparks in West Sumatra, namely Sawahlunto Geopark and Silokek-Sijunjung Geopark. Case studies allow researchers to identify and analyze the branding strategies used in geosite management and their impact on geological conservation and the welfare of local communities in the two geoparks.

The location of this research is Sawahlunto Geopark and Silokek-Sijunjung Geopark located in West Sumatra Province, Indonesia. These two geoparks were chosen because they have unique geological characteristics and significant branding development potential. Sawahlunto Geopark is known for its coal mining history and geological formations, such as the Batu Runciang limestone outcrop. Meanwhile, Silokek-Sijunjung Geopark has natural beauty in the form of hills and rivers with unique rock formations and strong cultural values. These two locations offer different perspectives in implementing geosite branding strategies to provide comprehensive insights.

The qualitative data analysis model of Miles and Huberman (1992) is the data analysis technique used in this research. To facilitate the researcher's ability to draw conclusions, this data analysis strategy requires data collection procedures using the following methods:

1. The researcher conducted in-depth interviews as follows:

a. Chairman of Sawahlunto Geopark Youth Forum

The first informant chosen in this study, Fetra Ramadona, usually called Robet, serves as Chairman of the Sawahlunto Geopark Youth Forum, an Indonesian Geotourism guide with 2021 Certification, PGWI Ranah Minang. Sawahlunto Geopark management body, Deputy daily chairman of the Sawahlunto Geopark Information Center.

b. Head of Geopark Acceleration Team, Ministry of Tourism

The second informant chosen in this research, Mr. Dr. Ir. Yunus Kusumahbrata, M.Sc., is usually called Yunus. Serves as the Board of Experts of the Indonesian Geopark National Committee, the Board of Experts of the International Geopark Indonesia, advisor to the Pongkor National Geopark, front expert of the Ciletuh Pelabuhan Ratu Geopark, Geopark Committee verification assessor team, Global Geopark Network (GGN) assessor. The researcher made direct observations in the field to observe the condition of the geosite, supporting infrastructure, and ongoing tourism activities.

2. Researchers collected and analyzed related documents such as geopark management reports, marketing strategies, promotional materials, and local government policies related to tourism development and conservation. This analysis aims to understand the branding framework that has been implemented and evaluate its suitability with effective geosite branding principles.

3. A literature study was conducted to gather information on the concept of geosite branding, Media Richness theory, and destination branding practices in other geoparks both in Indonesia and abroad. The literature reviewed included scientific journals, books, research reports, and other secondary sources relevant to the research topic.

## FINDINGS AND DISCUSSION

### Geopark

Geoparks are areas that have important geological heritage and are managed through the concepts of conservation, education, and sustainable development (UNESCO, 2024). The existence of geosites as part of a geopark not only functions as an object of preservation but also as a tourist destination that can provide economic benefits to the surrounding community (Farsani et al., 2011).

Geoparks mainly aim to preserve geoheritage and its important values, such as archaeological, ecological, historical, and cultural. Therefore, a geopark is a geographical area that serves as a place to protect and care for the world's wealth, be it geological, biological, or cultural diversity. Aside from being a conservation area, geoparks also serve as an educational center and a place to improve the local community's economy through geotourism activities.

In Indonesia, geopark development has become one of the main strategies in sustainable tourism development, with several geoparks, such as Gunung Sewu Geopark, Ciletuh Geopark, and Batur Geopark that have received international recognition (Komite Nasional Geopark Indonesia, 2019).

### Geosite

Geosite, as the fundamental unit of geopark, should be managed holistically by integrating geological, biological, and cultural aspects (Hose, 2012). The term geological site or geological heritage site, abbreviated as geosite, which is commonly used in the geopark concept synonymous with geological heritage, is a point of geological/biological/cultural interest in the geopark area with specific characteristics, both individual and multi-object (combined) and an integral part of an evolutionary story of the formation of an area (Presidential Regulation of the Republic of Indonesia No. 9 of 2019).

Geosite can be interpreted as a collection of points with clear boundaries, which become tourist objects and attractions for visitors and are regulated by local or national regulations, and their existence must be preserved (Samodra, 2016). Geosite is also a landscape area with its characteristics and uniqueness, formed and influenced by specific natural processes (Ilieş & Josan, 2008). Geosite can be identified as a place for the development of earth science and a tourist attraction because geosite is closely related to geotourism in a location. Geopark is an area that has various geological sites (geosite) that are important in terms of science, rarity, beauty, and education. This area's introduction focuses on geological aspects and includes archaeological, ecological, historical, and cultural elements.

According to Regulation No. 31 of 2021 by the Ministry of Energy and Mineral Resources on geological heritage (Kementerian Energi dan Sumber Daya Mineral RI, 2021), the establishment of geological heritage has several objectives, among them:

1. Protect and preserve the crucial values of geological heritage that have been identified as evidence of geological history that has occurred or is occurring.
2. It should be made an object for research, development, and education in the field of earth science, as well as open opportunities to be utilized as an object of geotourism or tourism.

The following is a list of geosites owned by Sawahlunto Geopark and Silokek-Sijunjung Geopark:

**Table 1** Sawahlunto Geosite

No	Geosite Name	Significance / Formation
1	Ngalau Janjian Menempati	layered limestone metasedimentary rocks (wackestone), shale inserts, and slab-shale clastic limestone bedding units.
2	Sesar Minor Brani	Brani formation rocks that are cut by minor faults
3	Bukit Inyik Suntiung	Massif limestone is associated with Permian Andesite, Sandstone Layer, and Tuff, forming a hilly morphology of the fault line structure.
4	Ngalau Lakuak	Sedimentary rocks consist of layers of clastic limestone (wackestone) and igneous rocks of basalt and andesite.

5	Batu Runciang	Silungkang Formation limestone undergoes a karstification process and has an excess phenomenon. The phenomenon appears in the form of a pinnacle that rises to the surface.
6	Andesit - Basalt Silungkang (Aie Tajun Batingkek)	The complex of 3 waterfalls in Andesite - basalt rocks exposed on waterfall walls and river cliffs
7	Stratigrafi Sawah Tambang	The overlapping lenses of conglomerate and sandstone indicate areas of braided stream sedimentation in an alluvial environment.
8	Alam Rantih	The limestone of the Tuhur Formation is crushed/brecciated along conglomerate-sandstone ridges. The overlapping lenses of conglomerate and sandstone indicate areas of braided stream sedimentation in an alluvial environment.
9	Air Terjun Landu	The main rock constituent is part of the Ombilin Formation of the Cikarang Member, which consists of sedimentary rocks, such as quartz and mica sandstones with arkose inserts. These rocks are Lower Miocene-aged.
10	Air Terjun Lurah Loba	The main rock constituent is part of the Ombilin Formation of the Cikarang Member, which consists of sedimentary rocks, including quartz and mica sandstones with arkose inserts. The rock layers in this area are clearly visible, as are rocks of the early Miocene age.
11	Air Terjun Tinongan	Ombilin Formation The Cikarang Member is a sedimentary rock composed of quartz sandstone and mica with arkose inserts. The rock layers in this area are clearly visible, as are rocks of the early Miocene age.
12	Interfingering Talawi Mudik	Interfingering of the Brani Formation and the Sangkarewang Formation.
13	Fossil Gurami	This paleontological evidence indicates that the sedimentation process of the Sangkarewang Formation occurred in a freshwater environment.
14	Sangkarewang	The Sangkarewang Formation is well exposed along the Sangkarewang River. Its continuous stratigraphic sequence extends 1.5 km and consists of thick shale layers, sandstone inserts, and conglomerate lenses deposited in a lacustrine environment.
15	Bukit Savana	It is a landscape view of undulating hills covered by rocks of the Sangkarewang and Tuhur Formations.
16	Lubang Tambang Soero	The Sawahlunto Formation has coal seams up to 18 M thick.
17	Puncak Polan	This peak falls into the tapered-peaked hills morphology located east of the city.
18	Puncak Cemara	This peak is included in the Ombilin Formation, which is composed of quartz and mica sandstones with arkose inserts and coal. The rocks that make up this hill are Early Miocene, less than 28 million years ago.

**Table 2** Geosite in Silokek-Sijunjung

No	Geosite Name	Significance / Formation
1	Konglomerat Brani Ngalau Bataaik Geosite	The Brani Formation's outcrop consists of conglomerate layers of quartzite, igneous rocks, and yellowish-white quartz sandstones.
2	Air Terjun Lubuk Pandakian	The limestone metamorphosed into marble due to repeated exposure to structures. Calcite veins can be observed in the outcrop and are still found in boulders near the waterfall.
3	Air Terjun Granit Bukit Kajai	Reddish granitic rock is medium-coarse-grained, phaneritic, strong, rigid, and massive. Minerals consist of quartz, K-feldspar, biotite, and muscovite. There are folds on the sides of the waterfall that are almost upright.
4	Komplek Intrusi Mambuik	The entire hill is granitoid. There is a Taya River that crosses the seven-tiered waterfall. Dominant granite: reddish-colored, coarse-grained mega crystalline, faneritic, composed of quartz, K-feldspar and biotite Other facies: darker in color, medium-grained, more abundant biotite
5	Granit Sangkiamo	Triassic granite outcrop in Batang Kuantan stream just below the suspension bridge. Rocks: reddish granite, medium-large grain size, and composed of quartz, K-feldspar, and biotite
6	Mata Air Panas Batu Gamping	The hot water emanating through the crystalline limestone is light ash in color and has a temperature of $\pm 60^{\circ}\text{C}$ .

7	Ngalau Batugamping Loguang	Cave resulting from the dissolution of Perm crystalline limestone Light gray crystalline carbonate rock, strong, hard, and massive. Forming caves resulting from the dissolution of carbonate rocks with various ornaments In the form of a hill with a height of > 20 m
8	Air Terjun Timbulun	Diorite/fault breccia outcrops. Waterfall (2 levels) at Kulampi River. At the lower level, water flow is visible in the fractured granitoid that forms the breccia.
9	Danau Biru Kuningan	Diorite/fault breccia outcrops. Waterfall (2 levels) at Kulampi River. At the lower level, water flow is visible in the fractured granitoid that forms the breccia.
10	Air Terjun Timbulun Tujuh	Reddish granite outcrop with waterfall The existence of a waterfall that flows up to seven levels
11	Sialang Batu Lubuk Tarok	Outcrops of Ombilin Formation quartz sandstone bedrock Brownish white quartz sandstone $\pm$ 1 m thick from river level
12	Komplek Karst Silokek	Chalk Hill with outcrops of perm-aged crystalline limestone
13	Front Bukik Kupitan	Outcrops of sandstone of the Lower Ombilin Formation, in the form of two hills divided by a highway and a river.
14	Gua Inyik Umpuah	Cave formation in sandstone. Not far from the cave is a seasonal waterfall ( $\pm$ 9m high) in the sandstone. There is also a sandstone cliff $\pm$ 4 m high. The sandstone cliff appears to have an exposed structure. Sandstone of the lower member of the ombilin formation

### Geosite Branding

Branding is the process of creating a strong image and identity for a product or location. In the context of geosites, branding aims to highlight the uniqueness and historical value of the location to attract tourists' interest. An effective branding strategy involves visual, narrative, and interactive elements that can enhance the appeal and recognition of a destination (Sianturi et al., 2023). A strong brand identity also helps to differentiate the Sawahlunto Geosite from other tourist destinations.

Geosite branding is a strategic process to create, promote, and manage the image of a geosite so that it is widely recognized and appreciated by tourists and the local community (Carrión-Mero et. al., 2021). This branding process involves identifying the unique values of the geosite, such as its geological uniqueness, history, and inherent culture, as well as developing a consistent visual identity and narrative (Pasquaré Mariotto, et. al., 2023) In the context of geoparks in Indonesia, geosite branding becomes very important for building a strong and appealing image, which can increase tourist visits and support environmental preservation (Irwandi, et al., 2024).

The characteristics of geosite branding based on the 4A concept (Attractions, Accessibility, Amenities, and Ancillary services) in the context of the Silokek-Sijunjung Geopark (Ranah Minang Silokek) and the Sawahlunto Geopark, as a summary based on the results of interviews during field studies, June 2024.

**Table 3** The Comparison between Geopark Sawahlunto and Silokek-Sijunjung

Aspect	Geopark Silokek-Sijunjung	Geopark Sawahlunto
<b>Attractions</b>	<ul style="list-style-type: none"> <li>The natural scenery of limestone cliffs, caves, prehistoric fossils, and the Batang Kuantan River</li> <li>Ecotourism: white-water rafting, trekking</li> <li>Minangkabau culture with traditional houses and a strong cultural heritage.</li> </ul>	<ul style="list-style-type: none"> <li>The history of the coal mining industry</li> <li>Tourism to the Coal Mining Museum, Ombilin Tourism Park, mining tunnels</li> <li>UNESCO World Heritage Sites Colonial architecture</li> </ul>
<b>Accessibility</b>	<ul style="list-style-type: none"> <li>Land access from major cities such as Padang and Bukittinggi</li> <li>Development of roads for easier access</li> <li>Organized tourist routes</li> </ul>	<ul style="list-style-type: none"> <li>Land access from Padang and other cities</li> <li>Tourist train from Padang Panjang</li> <li>The road access to the main tourist sites is good.</li> </ul>
<b>Amenities</b>	<ul style="list-style-type: none"> <li>Homestay and simple accommodations</li> <li>Local cuisine such as rendang and dendeng</li> <li>Public toilets, information centers, trekking facilities</li> </ul>	<ul style="list-style-type: none"> <li>Hotels and accommodations from homestays to star-rated hotels</li> <li>Traditional Minangkabau cuisine at local restaurants</li> </ul>

		<ul style="list-style-type: none"> <li>• Information center, parking area, museum, monument</li> </ul>
<b>Ancillary Services</b>	<ul style="list-style-type: none"> <li>• Local guide for geological and cultural history</li> <li>• Motorcycle taxi services, public transportation, vehicle rentals</li> <li>• Health services and security posts</li> </ul>	<ul style="list-style-type: none"> <li>• Historical mining tour guide</li> <li>• Tourist train, bus, city transport</li> <li>• Health services and security in mining areas</li> </ul>

### Media Richness Theory

Media Richness Theory focuses on the ability of media to convey complex and rich information. According to this theory, richer media, such as video, audiovisual content, and face-to-face interactions, are more effective in delivering messages that require deep understanding and feedback. Rich media can enhance audience engagement and understanding compared to less rich media, such as text or static images, also It is known that media matters and media richness play a role in naturalness on purchase intentions ( Chidiac and Bowden, 2023).) This theory is relevant in the context of destination branding, where effective and engaging information delivery is crucial.

Media Richness Theory was developed by Daft and Lengel (1986) to explain the effectiveness of various types of communication media in conveying complex information clearly and directly. This theory assumes that the selection of the appropriate media is crucial for reducing the uncertainty and ambiguity of messages within an organization. Media is considered "rich" if it can provide quick feedback, use various cues (such as facial expressions and vocal intonation), support language variation, and allow for message personalization. The richness of this media is fundamental in reducing ambiguity and uncertainty in communication.

Basically, the more complex the message you want to convey, the richer the media needed. For example, face-to-face communication is the richest medium because it allows for various non-verbal cues, immediate feedback, and personal message adjustments. This makes face-to-face interaction effective for complex discussions or situations that require direct clarification. On the other hand, media such as email or memos, referred to as "lean media," are suitable for conveying simpler and more direct information, as they are less capable of conveying emotional nuances or non-verbal cues. Digital media, such as video conferencing, although not as rich as face-to-face communication, still provides a significant wealth of information compared to email or text messages because it allows for real-time interaction and visual communication. This theory focuses on two primary conditions determining the need for rich media: uncertainty and equivocality. Uncertainty occurs when there is a lack of necessary information to make a decision, while equivocality arises when a message has multiple meanings or interpretations. In this situation, richer media is needed to ensure the message is well understood and reduce misunderstandings.

Media Richness Theory (MRT) uses four main criteria to determine media richness, namely:

1. **Speed of Feedback.** The ability of the media to provide immediate feedback. Media that allows for real-time interaction, such as face-to-face conversations or phone calls, is considered richer compared to written media like email.
2. **Availability of Multiple Cues.** The ability of media to convey information through various cues, including visual, auditory, and gestural signals. For example, a video call that allows the recipient to see facial expressions and body movements.
3. **Language Variety.** The ability of media to use various language varieties, including words, numbers, and images. Media that can use various symbols and representations is considered richer. The ability to personalize the message allows for a medium that can convey emotions or a richer
4. **Personality compared to more formal and rigid media.**

Practically, MRT helps to choose the right media for communication in various contexts, whether in organizational settings, education, or digital interactions. Rich media can enhance communication effectiveness by minimizing ambiguity and conveying complex information clearly. By choosing the appropriate media, we can ensure that the message is received and understood as intended, especially in situations that require clarification and deep understanding.

The Media Richness Theory (Daft & Lengel, 1986) emphasizes the importance of selecting the appropriate media for conveying complex information that requires deep understanding. We hope

that rich media, such as videos, virtual tours, and interactive media, are more effective in conveying geosite branding messages that encompass conservation narratives, education, and community well-being. The appropriate use of media can help enhance the audience's understanding of the value and importance of geosites and create greater engagement. (Mihardja et al., 2023).

## Discussion

This discussion explores how geosite branding strategies can be implemented to enhance geosite recognition, bring economic benefits to local communities, and support conservation efforts. The main focus of this research is how the correct branding narrative can elevate geological value as a primary attraction and how that branding can be designed to support community welfare without neglecting the importance of environmental preservation. In addition, this discussion will highlight the importance of synergy between the government, geopark managers, and the community in creating a sustainable branding strategy. Geosites are the main elements in forming a geopark and serve as the foundation for the identity of a geopark area. Geosites, biosites, and culturesites are the three main pillars defining a geopark's identity (Sianturi et al., 2023). These three elements must be fully integrated into the branding strategy in order to create a strong and holistic image of the geopark. Suppose a geopark is to be widely recognized and provide benefits to the local community. In that case, a branding strategy is needed to promote geological uniqueness and integrate ecological and cultural aspects. In this context, geosite branding plays a key role in communicating the values of conservation, education, and community well-being.

The geosites of the Sawahlunto Geopark have been recognized as a significant attraction that highlights geological values, such as Permian limestone formations and historical coal mining remnants. However, this geosite branding has yet to convey a comprehensive narrative about the geological processes that shaped the area. For instance, information about sedimentation processes and geological changes that occurred in the past is not well known to tourists, meaning the educational potential that can be derived from this geosite has not been fully utilized. This educational potential is significant for enhancing visitors' understanding of the scientific value of geosites while providing a more memorable tourism experience.

Meanwhile, the Silokek-Sijunjung Geopark offers beautiful views of karst hills and clear river flows, but the geological information presented on-site and in promotional materials is very limited. The lack of a narrative explaining the biosite, which includes flora and fauna around the geosite, also needs to be addressed in the branding of the geopark. In the Silokek-Sijunjung Geopark, many species of endemic plants and wildlife are an essential part of the local ecosystem. However, this biosite aspect is still underrepresented in the branding narrative. Tourists who visit tend to focus on the beauty of nature without understanding the vital role of ecosystems in maintaining environmental balance. The use of rich media showcasing biodiversity and the role of ecosystems in supporting the sustainability of geosites will help enhance tourists' understanding and interest in this biosite aspect.

Cultural sites encompassing cultural values and history are also essential components that must be integrated into geosite branding. In the Sawahlunto Geopark, the history of mining and the local community's culture has become part of the branding narrative. However, efforts to delve deeper into the relationship between geosites and the development of local culture remain limited. For example, the traditions and social life of the Sawahlunto community during the peak of the coal mining era could be highlighted as part of the story that integrates with the geosite narrative. This adds historical value and strengthens cultural identity as part of the tourism experience.

The strong traditions and customs of the Minangkabau people, such as the way the local community preserves and respects nature, highlight the Silokek-Sijunjung cultural site. However, this narrative has not yet been systematically integrated into the branding strategy. Combining geological stories and local culture can provide a deeper and more authentic travel experience.

Integrating the three pillars of the geopark in branding strategies to face various challenges. First, the lack of understanding among the community and stakeholders about the importance of biosites and culturesites. Many still believe that promoting a geopark is sufficient by focusing solely on geological aspects. As a result, the potential of local ecosystems and culture is often overlooked. In addition, the lack of interpretive facilities such as information centers and educational boards at the geosite makes it difficult for tourists to obtain complete information about these three elements.

Secondly, human resources and infrastructure limitations also pose challenges in developing a holistic branding strategy. In several geosites, adequate educational facilities are not yet available to communicate the values of conservation, education, and well-being at the geopark's core. Most local communities are only involved as service providers in tourism without understanding their strategic role in supporting the sustainability of the geopark. Thirdly, the lack of collaboration between local governments, geopark managers, and the community also poses a significant obstacle. There is still no structured communication forum to formulate a joint branding strategy, so the efforts are often uncoordinated and inconsistent. Better synergy is needed to create a strong brand that can effectively communicate the values of the three pillars of the geopark to tourists.

Educational and training programs that actively involve the local community are necessary to address this challenge. Their involvement is not only as tourism actors but also as ambassadors of conservation and education, which can strengthen the image of the geopark as a sustainable community-based tourist destination. A comprehensive and collaborative branding strategy will ensure that every geopark element— geosites, biosites, or culturesites—can provide optimal benefits for visitors and the surrounding community.

Geosite branding aims to raise public awareness about preserving geosites as natural heritage and positively impacting the local economy. Research in the Sawahlunto Geopark shows that branding campaigns highlighting the transformation of former mining lands into green areas effectively raise conservation awareness and increase tourist visits, creating job opportunities for tour guides and homestay managers. In Silokek-Sijunjung, the tree planting program integrated with geosite branding has drawn attention to the importance of preserving karst vegetation and river water quality and encouraging the growth of micro-enterprises such as culinary and handicrafts. The success of geosite branding heavily relies on the synergy between conservation programs and community empowerment through collaboration among the government, geopark managers, and the community to ensure positive impacts on the environment and the community's well-being.

### Media Usage

An effective branding strategy requires media that can convey information comprehensively and engagingly. The Media Richness Theory (Daft & Lengel, 1986) explains that richer media, such as video, interactive applications, and virtual tours, convey complex information more effectively than less rich media, such as text or static images. In the context of geosite branding, rich media can help convey a more vibrant and interactive narrative about geosites, biosites, and culturesites to the audience.

The documentary video produced by Geopark Sawahlunto presents a narrative about the history of coal mining and the geological processes that shaped the area, successfully attracting tourists to gain a deeper understanding of the value of this geosite. The virtual tour also allows tourists to explore the geosite from a distance, providing a strong visual representation of its geological uniqueness and history.

"Currently, the Sawahlunto Geopark promotes tourism through social media, specifically Instagram, and its official website." We will update every activity on our Instagram social media and website, including the activities of students visiting the Sawahlunto geopark. "With an official post on the website, the wider community will know what the geopark is all about." (Interview with Robet, 11 Juni 2024, Sawahlunto).

Meanwhile, at the Silokek-Sijunjung Geopark, the use of rich media is still limited to a few short videos. The videos focused more on nature's beauty without providing in-depth information about geological processes or the ecological value of the geosite. As a result, the information tourists receive is less comprehensive and fails to explain the importance of preserving the geosite. In fact, with more optimal use of rich media, the narrative about the interaction between the geosite and biosite in Silokek could be conveyed more effectively, for example, through videos that explain how rock formations influence river flow and the presence of endemic species. Although the use of rich media in the Sawahlunto and Silokek-Sijunjung Geoparks has begun, a more systematic strategy is still required to maximize its impact.

The Belitong Global Geopark uses Augmented Reality (AR) technology to attract tourists. With AR, visitors can directly see additional information, 3D images, and the site's history through

smartphones. This makes a visit to Bukit Peramun more engaging and interactive. This technology also helps Bukit Peramun to be recognized as a modern tourist destination that stands out from others, making it suitable for travelers who enjoy unique and technology-based experiences.

The Ljen Geopark Geological Information Center (PIGGI - *Pusat Informasi Geologi Geopark Ljen*) serves as a center for information and education about geology at Ljen Global Geopark. Here, visitors can learn about geosites, biosites, and cultural sites engagingly through digital media such as interactive maps, short videos in a mini theater, and microscopes to observe tiny organisms called foraminifera. Visitors can also enjoy immersive videos that explain the wealth of archaeology, tectonic history, the Ljen caldera, acid lakes, and blue fire, guided by interpreters ready to provide explanations. This place offers comprehensive geological education for students, the general public, tourists, and researchers about the geological wealth in the Ljen Geopark area.

At the Merangin Global Geopark, branding strategies are implemented through the National Geopark Information Center. This center showcases exhibitions on unique rocks and the local culture of Merangin. Educational programs and events, such as geotourism festivals, help promote Merangin as a unique tourist destination. Promotion is also carried out through social media and engaging visual content to encourage more people to visit and understand the importance of protecting the environment.

### **Recommendations for Geosite Branding Development Optimization of Digital Content**

Digital technology is crucial for conveying information about geosites, biosites, and culturesites comprehensively and engagingly. The development of virtual tours allows travelers to "visit" geosites digitally before making a physical visit. These virtual tours should include in-depth narratives about geological processes, biodiversity, and the cultural history related to each geosite. An interactive mobile application must also be prepared to provide more information about geosites and biosites, equipped with augmented reality (AR) features that visualize geological processes or cultural artifacts directly through the user's device. This application can also provide information about tourist activities, such as hiking routes, observation areas, and locations of public facilities, which can enhance the experience for travelers. By using this technology, tourists can explore geosites from anywhere.

The production of video content also needs to be improved. A documentary video highlighting the uniqueness of geosites and the geological processes occurring in the area can provide deep insights into the importance of preservation. This video could be uploaded to platforms like YouTube or Geopark's website or shown at the Geopark information center. In addition, short educational videos that demonstrate the role of the community in preserving geosites can also help raise public awareness. For example, videos about rehabilitating former mining land in Sawahlunto or preserving river ecosystems in Silokek can inspire tourists to support conservation efforts.

Interactive content such as quizzes about geology or local flora and fauna and conservation campaigns inviting followers to participate will enhance audience engagement. For example, the #VisitSawahlunto campaign that invites tourists to share their experiences while visiting the geosite in Sawahlunto can encourage more people to visit.

Influencers or content creators can help expand the reach of branding messages to a broader audience. Collaborating with them could produce engaging content, such as travel vlogs that explore geosites in a relaxed yet educational manner. Installing digital information panels at geosite locations can also enhance tourists' understanding of the geosite through interactive content featuring short videos, graphics, or simulations of geological processes. This panel can also be equipped with a QR code feature that links to further digital content, such as videos or articles that provide more in-depth explanations.

To reach an international audience, providing digital content in several languages, such as English, Japanese, and Mandarin, is necessary. This content can include video subtitles, mobile application descriptions, and geopark website information. Multilingual guides will also enhance the quality of tourism services on the ground, helping foreign tourists better understand the value of geosites, biosites, and culturesites.

In addition, it is crucial to ensure the accessibility of that digital content. Mobile applications and virtual tours must be user-friendly and accessible to various age groups and educational backgrounds. Using digital technology to monitor and evaluate the impact of branding is crucial for

understanding the effectiveness of the strategies implemented. For example, analyzing website visit data, social media interactions, and mobile app usage can provide insights into how the audience responds to the content presented. The results of this evaluation must be used to improve and adjust the branding strategy to make it more effective and targeted.

### **Synergy Among Stakeholders**

Developing geosite branding requires synergy between the government, geopark managers, the community, and the private sector. Local governments, geopark managers, and community representatives should establish a collaborative forum that regularly holds meetings to formulate branding strategies, educational programs, and joint promotions. This forum can serve as a platform for exchanging ideas, formulating policies, and identifying needs and challenges in the development of geosite branding.

"The brand launch is expected to introduce and strengthen the identity of Geopark Sawahlunto, as well as to increase awareness and participation from both the community and tourists in the development of the area through the introduction of visual identity in various media, such as social media, websites, souvenirs, and even typical Sawahlunto gifts. All of this is also closely related to the role of the local government, as their support is very influential." (Interview with Yunus, 05 Juli 2024, Jakarta).

Each party has a specific role in this forum. Local governments can provide policy and funding support, geopark managers can implement branding and education programs, and the community can provide tourism services and promote local culture. Developing community-based training and education programs is also essential for enhancing the community's capacity to support geopark branding. This training can include tour guide training, developing creative products based on geosites, and using digital media to promote geoparks.

"Currently, several publications and media are used to promote Sawahlunto geopark tourism to the public, besides social media and websites. These publications also include journals created by students and assisted by the Sawahlunto city tourism office in media usage and promotion on the radio." (Interview with Robet, 11 Juni 2024, Sawahlunto).

The private sector can also play an essential role in providing supporting facilities such as information centers, mobile application development, or environmentally friendly accommodations. Collaboration between geopark managers and the private sector can be carried out through a public-private partnership scheme to support the development of infrastructure and facilities that enhance tourism and educational activities.

Policies that support the integration of branding with conservation programs and community empowerment are needed to strengthen this synergy. Local governments and geopark managers must ensure that a strong conservation program involving the community supports every branding and tourism promotion activity. Thus, geosite branding can serve as an effective tool to support sustainable tourism development that benefits both the environment and the community.

With these recommendations, geosite branding in the Sawahlunto and Silokek-Sijunjung Geopark can be developed more optimally, supporting sustainable tourism goals, enhancing community welfare, and preserving environmental sustainability. Rich media and stakeholder synergy will be the key to creating a strong and appealing geopark identity.

Overall, geosite branding in the Sawahlunto and Silokek-Sijunjung Geopark still faces various challenges in integrating the three main pillars of the geopark: geosite, biosite, and culturesite. Nevertheless, the efforts that have been made show great potential in creating a strong and holistic geopark image. Implementing a media richness-based branding strategy offers a solution for conveying complex information about geological, ecological, and cultural values to the audience more effectively. Rich media, such as virtual tours, educational videos, and interactive applications, can enhance tourists' understanding and interest in geosites while promoting conservation awareness and local community participation.

Through this research, better branding strategies can be developed and implemented in various geoparks in Indonesia so that the potential of geological tourism can be optimally utilized to support sustainable development. The concrete steps proposed in this discussion, such as the development of Media Richness-based digital content and the enhancement of local community capacity, can serve

as guidelines to strengthen the identity of the geopark and ensure that each geosite becomes a valuable asset for future generations.

## CONCLUSION

Geosite branding in the Sawahlunto Geopark and Silokek-Sijunjung Geopark is carried out through various strategies, including digital media, educational activities, and collaboration with the local community. In the Sawahlunto Geopark, branding is carried out by utilizing social media, an official website, and the creation of virtual tours to introduce the history of coal mining and the geological uniqueness of the area. Documentary videos and interactive applications also help convey more in-depth and engaging information about this geosite. On the other hand, the Silokek-Sijunjung Geopark promotes the importance of environmental preservation through tree-planting campaigns integrated with educational programs. Geosite branding can also be carried out with various strategies to attract the attention of tourists, such as the use of Augmented Reality (AR) technology, educational museums, interactive maps, geotourism festivals, and digital promotions to entice more people to visit.

This geosite branding strategy has a positive impact on the local community. In Sawahlunto, the increase in tourist visits has opened up new job opportunities for tour guides, homestay managers, and local craft producers. Meanwhile, in Silokek-Sijunjung, promoting geosites focused on environmental preservation and ecosystems encourages the growth of micro-enterprises such as culinary and handicrafts. In addition, this branding raises public awareness of the importance of preserving geological and environmental heritage while strengthening the local community's identity and pride.

The synergy between the government, geopark managers, the community, and the private sector is the key to successfully developing effective branding. This collaboration is necessary to formulate a comprehensive and sustainable branding strategy that increases tourist visits and supports the local community's well-being. With a collaborative approach, geosite branding can become a powerful tool for promoting sustainable tourism that aligns with conservation efforts and community empowerment.

With this approach, geosite branding can introduce the uniqueness of local geology and culture, increase tourist visits, and provide economic and educational benefits for the local community. Integrating a strong branding strategy with conservation and community empowerment programs is crucial to balancing conservation, education, and economic welfare. Thus, a geopark can be a tourist destination and a center for education and conservation, providing tangible benefits for the community and the environment.

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