

Interpreting the alignment between linguistic and visual meanings in the linguistic landscape of the Toba caldera geosite

Dadang Sunendar^{1*}, Robert Sibarani², Eva Tuckyta Sari Sujatna³, Ifan Wicaksana Siregar⁴, Cepri Maulana⁵, and Defri Elias Simatupang⁶

¹*French Language Education Study Program, Faculty of Language and Literature Education, Universitas Pendidikan Indonesia, Bandung, Indonesia*

²*Doctoral Program in Natural Resources and Environmental Management, Universitas Sumatera Utara, Medan, Indonesia*

³*Linguistics Study Program, Faculty of Cultural Sciences, Universitas Padjadjaran, Sumedang, Indonesia*

⁴*Accounting Study Program, Faculty of Economics and Business, Universitas Jenderal Achmad Yani, Cimahi, Indonesia*

⁵*Economic Education Study Program, Faculty of Economics and Business, Universitas Pendidikan Indonesia, Bandung, Indonesia*

⁶*National Research and Innovation Agency (BRIN), Jakarta, Indonesia*

ABSTRACT

This study examines the linguistic landscape of the Toba Caldera Geosite in Indonesia, exploring how language and visual components in public signage work together to create meanings and reflect Indonesian language policies. This investigation addresses a critical gap in existing research by interpreting how language choices and visual elements contribute to a cohesive visitor experience in a multilingual setting. The Toba Caldera Geosite, a location of significant cultural and geological importance, serves as a compelling case study due to its diverse linguistic landscape and its efforts to balance national identity with the preservation of local culture. Employing a mixed-methods approach that incorporates virtual exploration, field investigation, and interviews, this research analyzed various types of signage, including informational signs, directional signs, and advertisements, from tourist destinations around the caldera. Findings reveal a balanced multilingual approach: Indonesian predominates for place names, Batak is prominently featured in culturally significant locations, and English is strategically used to attract international tourists. This approach aligns with Indonesia's commitment to promoting national identity, preserving local culture, and encouraging international tourism. This study highlights the role of signage in creating a rich, meaningful experience for diverse visitors, offering valuable insights into effective language policies and sustainable tourism development in multilingual contexts.

Keywords: Linguistic information; linguistic landscape; public signage; visual representation

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INTRODUCTION

The global tourism industry, a powerful engine of economic growth and intercultural exchange in the 21st century, thrives on facilitating meaningful connections between people, places, and cultures (Milano et al., 2019). It acts as a catalyst for

fostering understanding, preserving heritage, and promoting sustainable development. At its core, booming tourism hinges on effective communication, with language serving as a crucial bridge that connects diverse linguistic communities and shapes visitor experiences (Bilá & Vaňková,

*Corresponding Author
Email: dadangsunendar@upi.edu

2019). While English has undeniably emerged as the dominant lingua franca in international tourism, enabling communication across borders and facilitating access to information, many countries grapple with the challenge of balancing its widespread use with the imperative to promote their national languages and safeguard their unique cultural identities (Baker, 2017). This intricate dynamic between global and local linguistic forces is particularly salient in Indonesia, a nation renowned for its exceptional linguistic diversity and strong commitment to promoting its national language, Bahasa Indonesia.

Indonesia's language policy, enshrined in Law No. 24 of 2009 concerning the Flag, Language, and State Emblem and National Anthem, mandates the use of the Indonesian language in all official domains, including public spaces, education, government, and, importantly, tourist destinations. This legislation underscores the nation's commitment to linguistic unity and cultural identity, recognizing language as a powerful symbol of national pride and sovereignty. By promoting Bahasa Indonesia, the government aims to foster a sense of shared identity among its citizens, bridging cultural and linguistic divides and strengthening national cohesion. This policy also reflects a conscious effort to counter the historical dominance of colonial languages and assert Indonesia's linguistic independence.

Furthermore, the 2021 regulation issued by the Ministry of Education and Culture provides more specific guidance on language use. Clearly, it mandates the prioritization of the Indonesian language in public signage, informational content, and tourism-related promotional activities. This directive seeks to ensure that both Indonesian citizens and international visitors are exposed to and engage with the national language, fostering a sense of shared identity and promoting linguistic inclusivity within the tourism sector. By prioritizing the Indonesian language in tourist destinations, the government aims to create a welcoming and inclusive environment for all visitors while simultaneously reinforcing the importance of the national language in the public sphere (references needed). This approach acknowledges the pivotal role of language in shaping perceptions, conveying cultural values, and fostering a sense of place.

The Toba Caldera in North Sumatra, a site of exceptional natural beauty and rich cultural heritage, exemplifies the complexities of language use in Indonesian tourism. Designated as a "super-priority" tourist destination by the Indonesian government (Savitri, 2024), the Toba Caldera attracts a diverse range of visitors, including both domestic and international tourists. These visitors seek to experience its stunning landscapes, unique Batak culture, and fascinating geological history. Effectively communicating with this multilingual

audience, which includes speakers of Indonesian, regional languages, and various international languages, requires a nuanced understanding of the interplay between global and local languages (Baker, 2011). This ensures that information is accessible, engaging, and culturally sensitive. Consequently, careful consideration of the language choices employed in public signage, interpretive displays, and promotional materials is needed. This requires striking a balance between the need for clear communication and the goals of promoting the Indonesian Language and celebrating local cultural identity.

The Linguistic Landscape (LL) framework provides a valuable lens through which to examine these intricate dynamics. LL research, an interdisciplinary field drawing from sociolinguistics, applied linguistics, and semiotics, investigates the use of written language in public spaces to understand the social, cultural, and political meanings conveyed through signage, advertisements, and other forms of public display (Ben-Rafael et al., 2006; Shohamy & Gorter, 2008). By analyzing the presence, placement, and prominence of different languages in the public sphere, LL studies offer insights into language attitudes, power dynamics, and identity negotiations within a given community (Yuan, 2019). In the context of tourism, LL research can illuminate how language choices in signage and informational displays shape visitor experiences, contribute to placemaking, and reflect broader language policies and cultural values (Schedel, 2018).

Since its inception in the late 1970s, the concept of LL has undergone significant evolution. Landry and Bourhis (1997) define it as the visibility and salience of languages on public and commercial signs, reflecting a region's sociolinguistic composition. This highlights the informative function of LL, offering insights into the relative status and vitality of different language groups. However, scholars like Dailey et al. (2005) broadened the scope to include diverse linguistic elements, such as advertising and even overheard conversations, acknowledging the multifaceted ways language manifests in public spaces.

Landry and Bourhis (1997) identify two primary functions of LL: informative and symbolic. The informative function conveys information about linguistic diversity and the prominence of different languages. The symbolic function highlights how the presence or absence of languages reflects and reinforces power relations. This is particularly relevant to language dominance, as the visibility of certain languages can contribute to their perceived prestige and influence. For instance, the dominance of English in LL globally reflects its economic and cultural power (O'Regan, 2021).

LL studies provide valuable insights into the complex relationship between a society's language,

public spaces, and sociocultural dynamics. This makes LL an increasingly relevant and vital field of research in the era of globalization and urbanization, which continues to intensify. By analyzing linguistic signs, researchers can gain a deeper understanding of language hierarchies, the dominance of certain groups, efforts to preserve cultural identity, and the influence of linguistic signs on people's perceptions and behaviors (Gorter & Cenoz, 2017; Guarín, 2024; Napu, 2024; Rosendal & Amini Ngabonziza, 2022).

However, language descriptions in visual representations of landscapes often do not fully reflect the actual reality of the landscape due to factors such as subjectivity, personal interpretation, inherent limitations of language, selectivity, emphasis, idealization, and temporal changes in the landscape itself (Evagorou et al., 2015; Gyurkovich & Pieczara, 2021; Karolak, 2020). While language can describe and aid in understanding landscapes, it cannot entirely replace the direct experience of complex and dynamic landscapes (Soica & Metro-Roland, 2022). Language descriptions are subjective representations influenced by the author's cultural background, experiences, and objectives, potentially leading them to emphasize, omit, or distort certain aspects of the landscape (Sunendar et al., 2021; Youpika et al., 2024). Therefore, it is crucial to acknowledge the limitations of language descriptions and consider the context and perspectives that underpin them. With the rise of digital communication, virtual linguistic landscapes (VLL) have emerged as an extension of LL, encompassing online platforms like websites and social media. This review examines how LL and VLL research contribute to our understanding of language dominance and power dynamics in multilingual societies, spanning both physical and digital realms (Ivković & Lotherington, 2009).

Several theoretical frameworks inform LL and VLL research. First, Scollon and Wong Scollon (2003) examine how language and signs create meaning based on their spatial and temporal context, emphasizing the importance of placement and context in understanding their significance. Second, Kress and van Leeuwen (2010) offer a framework for analyzing visual communication, considering the interplay of visual elements in conveying meaning. Their "grammar of visual design" helps understand how the arrangement, size, and style of linguistic elements contribute to social hierarchies and power relations.

These frameworks, informed by social semiotics, can be applied to VLL to interpret the meanings of linguistic and visual elements in online environments. Beyond identifying the presence and prominence of languages, semantic analysis delves into the meaning conveyed by linguistic elements. This involves examining the specific words, phrases, and discourses used in signs,

advertisements, and online content and how they contribute to the construction of social realities. Incorporating semantic analysis into LL and VLL research can provide a deeper understanding of language attitudes, identity construction, ideological framing, and power relations. By combining semantic analysis with other approaches, researchers can gain a more nuanced understanding of the complex interplay between language, space, and power in multilingual societies.

Studies on Linguistic Landscape (LL) in various tourist destinations have been conducted worldwide. These include research by Hazaee et al. (2024) on the tourist destinations of High Cities in Abha, Saudi Arabia, revealing the dominance of monolingual (Arabic or English) and bilingual (Arabic and English) signs (Hazaee et al., 2024). Other examples encompass the study of static and non-static signs at tourist sites in Ireland (Moriarty, 2014), public signs in Indonesia (Da Silva et al., 2021), commercial signs in Thailand (Prasert & Zilli, 2019), and tourist destinations in Spain (Bruyèl-Olmedo & Juan-Garau, 2009). However, LL research often focuses primarily on the textual elements of the linguistic landscape, sometimes overlooking the crucial interplay between language and visual elements in creating meanings. To fully understand how tourist destinations communicate with diverse audiences, it is essential to consider the semiotic relationships between linguistic information and visual representations. This involves analyzing how language and images work together to create specific meanings, evoke emotions, and shape visitor perceptions.

This study examined the linguistic landscape of the Toba Caldera Geosite and interpreted the potential meanings created and communicated through signs and symbols. By analyzing the interplay of language and visual elements in public signage, this research aims to uncover the meaning-making strategies employed to represent this unique destination and how these strategies reflect Indonesian language policies and the goals of promoting both national identity and international tourism. Specifically, this study seeks to answer the following research questions:

1. How do the linguistic and visual elements on the public signage of the Toba Caldera Geosite construct meanings about the destination for tourists?
2. What meaning-making strategies are employed in the signage to represent the Toba Caldera Geosite as a tourist destination?

METHOD

This study interprets the LL in the Toba Caldera region through a mixed approach that combines virtual exploration, field investigation, and

interviews (Mackey & Bryfonski, 2018). The study began with a virtual exploration using Google Street View and Google Maps to carefully document the diversity of public signage in the caldera's main tourist areas. Google Street View is a valuable tool for collecting signage data, as it has a high level of specificity (96%) in identifying visual signs (Thomson & Wilson, 2017). This digital exploration covers various types of signage, ranging from directional signs and information boards to representational place names and eye-catching commercial displays. However, to truly understand this linguistic texture, the research did not stop at virtual data and continued with direct field visits.

In line with the methodological guidelines of Shohamy and Gorter (2008), the data collection procedure was designed in several systematic stages to capture the semiotic and linguistic complexity of the landscape in the Toba Caldera. The first stage involved compiling a complete inventory of all visible signage, both through virtual exploration and field observation. The inventory was created using grid-based mapping techniques, in which the main tourist routes, such as Parapat, Tomok, Simanindo, Tele, Holbung, and several other geosites, were divided into small segments. Each segment was observed using Street View, and all signs that appeared on the screen were captured via screenshots, which were saved along with metadata such as the date of access, GPS coordinates, image angle, and other contextual notes. This technique follows Gorter's (2017) recommendation regarding the importance of accurate documentation in LL research.

During the field observation stage, the same segments were physically traversed to photograph all signage using a consistent framing protocol. In line with the views of Shohamy and Gorter (2008), signs must be understood in the context of their social and material space; therefore, each photo also includes environmental elements such as surrounding architecture, vegetation, or public space layout. For each sign, additional descriptive data was recorded, including the material (wood, metal, acrylic), physical condition, estimated size, installation height, visibility orientation (for pedestrians or vehicles), and level of visual dominance. Both virtual and field photographs were given unique alphanumeric codes to facilitate comparison and analysis.

The second stage involves grouping signage based on Gorter and Shohamy's categorization. Signs are divided into:

1. Top-down signs, which are signs produced by the government or official institutions (e.g., geosite boards, museum plaques, cultural heritage markers, village boards);
2. Bottom-up signs, which are signs produced by private actors such as restaurants, shops,

hotels, cafes, commercial advertisements, and cultural decorations;

3. Hybrid signs, which are signs created through collaboration between communities and institutions, are often found in tourist villages and cultural sites.

Each sign was also classified based on linguistic elements, noting the primary and secondary languages (Indonesian, Batak, English, or a mixture). The analysis includes language preferences (order of appearance), visibility (font size and position), and language function (informative, regulatory, commercial, or symbolic). The third stage examined visual semiotic resources, including color, typography, cultural symbols such as Batak *gorga* (the traditional art of woodcarving and painting from North Sumatra), icons, logos, and layout composition. Spatial placement, whether at eye level, elevated, mounted on buildings, or placed at vantage points, is noted to understand power relations and audiences (Shohamy & Gorter, 2008).

In parallel, semi-structured interviews were conducted with tourism business owners, village managers, tourists, and signage makers. These interviews explored the reasons for language choice, perceptions of the Batak script, the purpose of using English, and interpretations of official government signs. Interview transcripts were analyzed using thematic analysis. The process included open coding to find initial categories, axial coding to connect categories between actors, and selective coding to formulate major themes related to identity, authority, and commercial practices.

The final stage was comparative triangulation, combining visual findings, field notes, and interviews to identify points of convergence and differences in interpretation. For example, although local residents emphasized the importance of Batak culture, visually, the dominance of English appeared stronger in commercial spaces. Such comparisons strengthened the validity of the interpretation and produced a comprehensive understanding of how the LL of the Toba Caldera was formed and interpreted.

FINDINGS AND DISCUSSION

This study found that the linguistic and visual landscape in Toba Caldera forms an integrated semiotic system that affirms local identity, national authority, and global connectivity. The dominance of the Indonesian language on information boards and location names demonstrates compliance with national policy while creating a perception of legitimacy and order in public spaces. Meanwhile, the presence of the Batak language and script serves as a strong marker of cultural identity, presenting symbols of heritage, history, and cosmology that reinforce the authenticity of the destination. English

is used strategically to meet the accessibility needs of international tourists, giving an impression of modernity and cosmopolitanism, and placing Toba within the global tourism network. Through this combination, the three languages form a communicative hierarchy that combines regulation, heritage, and market orientation.

Visually, this study shows that colors, typography, layout, and cultural symbols such as Batak *gorga* play an important role in reinforcing linguistic meaning and creating a focused and nuanced travel experience. Official signage emphasizes Indonesian in a bold, formal visual style, while commercial signs use more expressive colors and shapes to attract tourists' attention. The integration of these elements produces a natural and persuasive multimodal narrative that presents Toba as a space rich in cultural meaning, while remaining in line with state policy and global tourism demands. Thus, this study confirms that signage in

the Toba Caldera not only conveys information but also constructs identity, produces cultural value, and strengthens the competitiveness of the destination at the national and international levels.

Language Dominance and the Negotiation of Identity

A closer look at the use of language in key tourist spots in the Lake Toba area is important for understanding how language hierarchies function and change in daily interactions among visitors, local communities, and cultural sites. Instead of assuming that multilingual signs appear the same way everywhere or come from careful planning, the data in Table 1, which outlines the language options available in 19 tourist destinations, offering a concrete way to study these complex social and language processes, allows us to explore which languages are prominent, which ones are overlooked, and how these trends reflect broader issues of identity, accessibility, and cultural representation.

Table 1
Language Grouping by Tourist Destination

Tourist Destinations	Indonesian Language	Batak Language	English Language	Short Description
Air Terjun	✓	✓	-	Waterfall with a beautiful view of Lake Toba.
Situmurun				
Bukit Holbung	✓	✓	-	The hill is famous for its views of the grasslands and Lake Toba.
Menara Pandang	✓	✓	-	Tower to see the panorama of Lake Toba from a height.
Tele				
Bukit Gibeon	✓	-	-	A hill with a retreat center and beautiful natural scenery.
Bukit Indah	✓	✓	-	Tourist attractions with Instagrammable photo spots and views of Lake Toba.
Simarjarunjung				
Air Terjun Efrata	✓	-	✓	A waterfall surrounded by pine forests.
Taman Eden 100	✓	-	-	A garden with different types of plants and fruits.
Desa Wisata				
Tomok	✓	✓	-	A tourist village that is famous for its Batak traditional houses and <i>Sigale-gale</i> dance performances.
Museum Batak	✓	✓	-	A museum that stores a collection of Batak historical objects.
Tomok				
Desa Lumban Suhi	✓	✓	-	<i>Ulos</i> , a traditional woven fabric.
Suhi				
Batu Gantung	✓	-	-	The rock hangs on the cliff and becomes a legend of the local community.
Parapat				
Pulau Tulas	✓	-	-	A small island in the middle of Lake Toba that can be accessed by boat.
Samosir				
Pantai Pasir Putih	✓	✓	-	A beach with white sand that is suitable for swimming and playing in the water.
Parbaba				
Gunung Pusuk	✓	✓	-	A mountain that is considered sacred by the Batak people.
Buhit				
Paropo	✓	-	-	The village is famous for its view of Lake Toba and paragliding spots.
Bukit Gajah Bobok	✓	✓	-	A hill with a beautiful sunrise view and a panoramic view of Lake Toba from above.
Negeri Bakkara	✓	✓	-	A historical site for the Batak people, featuring beautiful scenery.
Bukit Siadtaratas	✓	-	-	A hill with a view of Lake Toba and suitable for camping.
Pulau Sibandang	✓	✓	-	An island in Lake Toba that is famous for its mangoes.

A careful examination of this distribution raises further questions about whose communication needs take priority, how local languages relate to Indonesian and English, and what these practices show about the conflict between preserving heritage and meeting global tourism demands. The analysis of public signage across the Toba Caldera Geosite reveals a deliberate multilingual design reflecting both national language policy and local cultural identity. Indonesian dominates all place names and most information boards, confirming compliance with Presidential Regulation No. 63 of 2019, which mandates the use of the national language in official and public domains. This dominance ensures accessibility for domestic visitors and reinforces a sense of national unity.

In contrast, the Batak language and script appear primarily in locations of high cultural or historical value, such as Huta Siallagan (ᡥᡳᡳᡳᡧᡳᠯᡳᡳᡨᡳ) and Desa Wisata Tomok.

At the denotative level, these inscriptions identify the site; connotatively, they act as cultural anchors that index local heritage and pride. Their presence signifies resistance to cultural homogenization and serves as a semiotic affirmation of Batak identity within a national space largely framed by Bahasa Indonesia.

English appears less frequently in the Lake Toba landscape. Yet, it occupies highly strategic positions primarily in information signage and accommodation branding, such as Danau Toba International Cottage Parapat and Samosir Cottages Resort. Its selective presence signals cosmopolitanism and positions the region as receptive to global tourism. In this multilingual environment, Indonesian sustains national cohesion, Batak reinforces local cultural authenticity, and English projects international visibility. Their interaction produces a layered identity aligned with Indonesia's broader principle of "unity in diversity."

The linguistic and visual construction of site names around Lake Toba, therefore, carries both semantic value and semiotic symbolism, expressing strong local identity while remaining compliant with national language policies. Semantically, names like Air Terjun Situmurun, Bukit Holbung, and Menara Pandang Tele use Indonesian lexemes *air terjun* (waterfall), *bukit* (hill), and *menara pandang* (viewing tower), to mark the natural characteristics and functions of each site. The predominance of Indonesian in these toponyms standardizes naming practices and reinforces national identity within the local context.

The repetition of natural descriptors, particularly in Air Terjun Situmurun and Air Terjun Efrata, reinforces a semantic network of purity, movement, and natural grandeur, which aligns with the ecological narrative of the Toba Caldera Geosite. Similarly, names like Bukit Gibeon, Bukit Indah

Simarjarunjung, and Bukit Siadtaratas combine topographic references with adjectives of beauty or spirituality, encoding cultural values of elevation, contemplation, and aesthetic appreciation embedded in Batak cosmology.

Another meaning can be made from the way in which Indonesian stands out most clearly in the landscape. It often appears in bold, all-caps lettering, with consistent colors and placed right at the center of sign choices that make it easy to notice and hard to question (Kress & van Leeuwen, 2010). These visual cues do more than ensure legibility. They quietly communicate that Indonesian is the official language of public space, the one trusted to define how places around Lake Toba should be recognized and understood. In other words, the design itself reinforces the idea that Indonesian is the legitimate voice of spatial identity.

The incorporation of hybrid or localized names such as Taman Eden 100, Desa Wisata Tomok, and Desa Lumban Suhi Suhi illustrates how linguistic creativity merges religious, numerical, and spatial elements to construct symbolic appeal. For instance, Taman Eden 100 fuses the biblical connotation of "Eden" (a paradise) with the numeral "100," semantically intensifying the sense of completeness and abundance. This combination produces a mythical semiotic frame that links tourism with spirituality and abundance.

Other site names, such as Batu Gantung Parapat, Pulau Tulas Samosir, and Pantai Pasir Putih Parbaba, demonstrate a clear indexical relationship between language and landscape. Their lexical composition foregrounds physical features, such as rock, island, and beach, that visually and symbolically represent the natural environment. The dominance of Indonesian text in these names acts as both a visual and linguistic anchor, asserting local authenticity while remaining accessible to national and regional visitors.

Overall, the toponymy of the Lake Toba region represents an intersection of semantic clarity, semiotic structure, and ideological intent. The linguistic choices denote geographical reality, while their visual presentation connotes authority, identity, and authenticity. This interplay between language and visual design transforms each name into a semiotic artifact, simultaneously descriptive, symbolic, and regulatory, mirroring how local identity is negotiated within broader frameworks of national language policy and cultural tourism.

The semiotic landscape of the Toba Caldera Geosite extends well beyond place names. Informational signs play an equally important role, using language and visual design to guide how visitors move, behave, and understand the site. Whereas toponyms mostly signal identity and describe what a place is, these boards take on more directive and interactional work. They tell visitors what to do, how to engage, and, at times, how to

appreciate the cultural and natural value of the surroundings. Meaning, therefore, emerges on multiple levels: the text states information directly, while layout, color, and typography suggest authority, accessibility, and welcome. In this way, Lake Toba's LL becomes a fully multimodal system—one in which policy expectations, cultural expression, and tourism needs are negotiated through the very signs that structure the visitor experience.

The use of Indonesian and English on informational signage reflects a purposeful semiotic strategy to maintain national legitimacy while remaining attractive to global visitors. Indonesian typically appears first and in more prominent visual forms, such as larger fonts, bold type, and upper-level placement, marking the message as official and necessary for navigation or safety. Those choices visually affirm governmental authority and signal that everyone, including local residents, is included in the communication, in line with national language policy (Presidential Rules No. 63/2019).

English follows beneath, usually in smaller type. Its presence offers translation and reassurance, showing that the space is ready to welcome an international audience.

Meanwhile, the selective appearance of the Batak language and script on directional and heritage signage adds a culturally rooted dimension. Even when its communicative role is limited, it reminds visitors of the region's distinct identity and living heritage. Together, these languages present Lake Toba as locally grounded, nationally regulated, and globally connected. Figure 1 showcases the informational board at the Sibaganding Geosite, strategically positioned to command visibility over Lake Toba. The bilingual header, "Geosite Sibaganding," delivers a dual message: it classifies the location within global geoheritage frameworks while grounding it firmly in Batak spatial identity. This deliberate lexical pairing is not simply descriptive; it signals a strong brand positioning at the intersection of international geotourism and local cultural equity.

Figure 1
Photo of Sibaganding Geosite Information Board



Source: personal photo

The centered layout, clean formal typography, and government insignias collectively project institutional credibility, ensuring visitors immediately recognize the board as an authoritative communication touchpoint. In line with Kress and van Leeuwen's (2010) theory of compositional meaning, the board's multimodal balance of text and imagery transforms it into more than a static sign. It acts as a curated knowledge interface and a visible statement of state-led cultural stewardship, a semiotic asset advancing Indonesia's place-branding strategy in the global tourism marketplace.

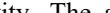
The Toba Caldera's multilingual ecology functions through layered semiotic codes that fuse linguistic meaning with cultural heritage and visual identity. The appearance of Batak script, such as  (Huta Siallagan) in Figure 2, operates well beyond basic labeling. It activates deep associations with ancestry, kinship structures, and the territorial authority of the clans tied to the site.

Figure 2

The Result of Capturing The Name of The Huta Siallagan Tourist Location



Source: maps.google.com

The carved or printed script also carries iconic value in Peircean terms, embodying endurance and the sacred continuity of Batak heritage. Culturally significant terms like ulos (✉✉✉✉) follow the same logic: denoting a woven textile while connoting protection, reciprocity, and the communal ethics embedded in Batak cosmology. When these linguistic resources are featured in public signage, they don't just inform; they reinforce cultural

legitimacy and anchor Batak identity within the tourism experience. The result is a landscape that communicates history and belonging as powerfully as it showcases scenery.

Indonesian dominates formal signage across the Toba Caldera, seen in examples like Museum TB Silalahi Center (displayed in Figure 3) and Air Terjun Sipiso Piso, positioning it as the primary language for public communication and collective understanding.

Figure 3

The Result of Capturing The Name of The TB Silalahi Center Tourist Location



Source: maps.google.com

This consistency does more than comply with national policy; it visually reinforces the belief that linguistic unity underpins social cohesion and a shared sense of citizenship. English, on the other hand, appears in names such as Lake Toba Geopark and Sipinsur Botanical Garden to align the region with global tourism circuits and scientific recognition. Its visual role is typically secondary in scale and placement signals credibility, modernity, and a readiness to engage international visitors.

This clear hierarchy between Indonesian and English operates as a semiotic strategy that prioritizes national identity while simultaneously expanding global reach. Combined with the selective deployment of the Batak language in culturally significant zones, the signage system

constructs a layered identity architecture: deeply rooted in local heritage, fully synchronized with national governance, and confidently connected to the worldwide tourism market. Visitors encounter not only directions and labels but a purposeful cultural narrative embedded in the everyday visual experience of the landscape.

When English is used in place names such as The TB Silalahi Center Museum, it does more than designate a space for cultural learning. It communicates an outward-facing stance, positioning the site as an active participant in global knowledge exchange and intercultural dialogue. Across the Toba Caldera, the presence of Batak, Indonesian, English, and Batak script produces a visually and linguistically layered environment. This multilingual

design honors local identity while ensuring accessibility for national and international audiences.

Names like Huta Siallagan, Desa Haranggaol, and Museum TB Silalahi Center serve practical reference functions, yet they also carry deeper associations with community lineage, collective memory, and cultural pride. Through this semiotic layering, signage in the Toba Caldera operates as a connective infrastructure: it preserves vernacular heritage, satisfies national regulatory expectations, and signals global readiness. The landscape thus becomes a communicative bridge where local stories and international visibility advance together.

Viewed holistically, the denotative functions of signage across the Toba Caldera provide the basics of navigation and governance: they label places, identify institutions, and communicate rules that structure movement and behavior. Yet the deeper connotative layer is where the real strategic value lies. Through visual and linguistic choices, the landscape affirms Batak cultural identity, reinforces the authority of the state, and signals a deliberate alignment with international tourism markets. In other words, semiotic design in this context does more than convey information, it shapes perception. Each sign becomes a negotiation zone where heritage, regulation, and global ambition co-exist within the visitor experience. Literal and symbolic meanings converge to articulate who the community is, what it stands for, and how it intends to position itself on both national and global stages.

Cultural symbols intensify this semiotic story. Traditional Batak houses featuring *gorga* carvings act as durable anchors of visual identity. Denotatively, *gorga* refers to the carved motifs that structure Batak architecture; connotatively, the red-black-white triad embodies the core principles of Batak cosmology: life, death, and the balance that sustains the universe. These designs are far more than an ornament. They operate as public expressions of spiritual order and collective memory, continually replicated in homes, ceremonial settings, and tourist sites to keep cultural knowledge alive and visibly present within the contemporary landscape.

Cultural symbols amplify the semiotic narrative at Lake Toba. Traditional Batak houses with their distinctive *gorga* carvings function as enduring brand assets of visual identity. Denotatively, *gorga* refers to the carved motifs embedded into Batak architectural frames; connotatively, the red-black-white triad encodes the fundamental logic of Batak cosmology, life, death, and the equilibrium that holds the universe together. These motifs are not decorative extras. They are strategic, visible expressions of spiritual order and collective memory, purposefully replicated across homes, ritual complexes, and tourism touchpoints. Through this ongoing reproduction, *gorga* ensures that cultural wisdom is not only preserved but

actively showcased as part of Lake Toba's modern visitor experience.

The Interaction of Linguistic and Visual Elements on Public Signage

Across the Toba Caldera Geosite, linguistic and visual elements on public signage function as a tightly integrated semiotic system that shapes perceptions of the destination's identity, authenticity, and modernity. Drawing on Barthes' (1977) distinction between denotation and connotation and Kress and van Leeuwen's (2010) visual grammar, this analysis demonstrates how signage simultaneously delivers factual information and advances a persuasive cultural narrative. The linguistic layer provides direct semantic clarity, while design choices, such as color, scale, typography, and spatial placement, enhance emotional resonance and reinforce ideological cues. In combination, these components create a robust multimodal landscape that strategically positions the Toba Caldera as a place that is deeply local in heritage, nationally aligned in governance, and globally relevant in tourism branding.

(a) Linguistic Elements: Denotation and Connotation

The linguistic choices embedded in Toba Caldera's signage deliver a deliberate balance between local identity, national policy, and international tourism aspirations. Indonesian holds the dominant role as the primary channel of public communication, fulfilling regulatory requirements under Presidential Regulation No. 63 of 2019 and projecting authority, inclusivity, and a unified civic identity. Batak language and script seen in names such as Huta

Siallagan (հա շօտաքան) operate as powerful cultural markers, indexing ancestral ownership and visually asserting the continuity of community heritage. English functions as a strategic global interface, ensuring that information is accessible to international audiences and signaling modernity, professionalism, and global hospitality. Denotatively, these languages clarify places and purposes; connotatively, they elevate status and cultural prestige. The result is a multilingual communication system that is not just informative, it actively engineers a cosmopolitan brand identity for the Toba Caldera.

The structure of place names across Lake Toba reflects a sophisticated layering of cultural meaning and market positioning. Names like Danau Toba International Cottage Parapat merge the geographic familiarity of "Danau Toba" with the global promise embedded in "International" and the comfort-oriented connotations of "Cottage," projecting world-class hospitality rooted in local identity. Samosir Cottages Resort achieves a similar effect by pairing a deeply local toponym with the aspirational

language of leisure and luxury. Branding strategies extend to more personalized naming conventions, such as Carolina Hotel and LEO'S Restaurant, which cultivate approachability and brand recall. Meanwhile, hybrid constructs such as Damar Toba ~ Lakeside Eatery & Stay strategically combine local signifiers ("Damar Toba") with globally recognizable descriptors ("Eatery & Stay") to meet international expectations without diluting cultural roots. This semiotic engineering aligns with Leeman and Modan's (2009) view of linguistic commodification, where names serve as economic instruments that package heritage as a marketable asset.

Linguistically, the signage in the image displays a combination of English, Indonesian, and a few Dutch elements, each creating different denotative and connotative meanings. Denotatively, the words "LEO'S RESTAURANT," "BBQ • Lobster • Chicken • Catfish," and "COLD BEER – BITTERBALLEN – KROKETTEN" provide direct information about the types of services and menus offered. From Gorter's perspective, these are bottom-up signs produced by businesses to attract visitors and position their products in the context of global tourism. However, connotatively, the choice of English and Dutch indicates a strong orientation towards the international market, creating a cosmopolitan impression and strengthening commercial appeal through an image of globalization reinforced by the presence of the Bintang logo.

From Shohamy's point of view, the use of foreign languages is not a neutral choice, but rather an ideological strategy that presents a language hierarchy in which English and Dutch are considered more economically valuable in the context of tourism. Indonesian only appears in the government slogan "Samosir Negeri Indah Kepingan Surga" (Samosir, Beautiful Piece of Paradise), signifying the dominance of state policy

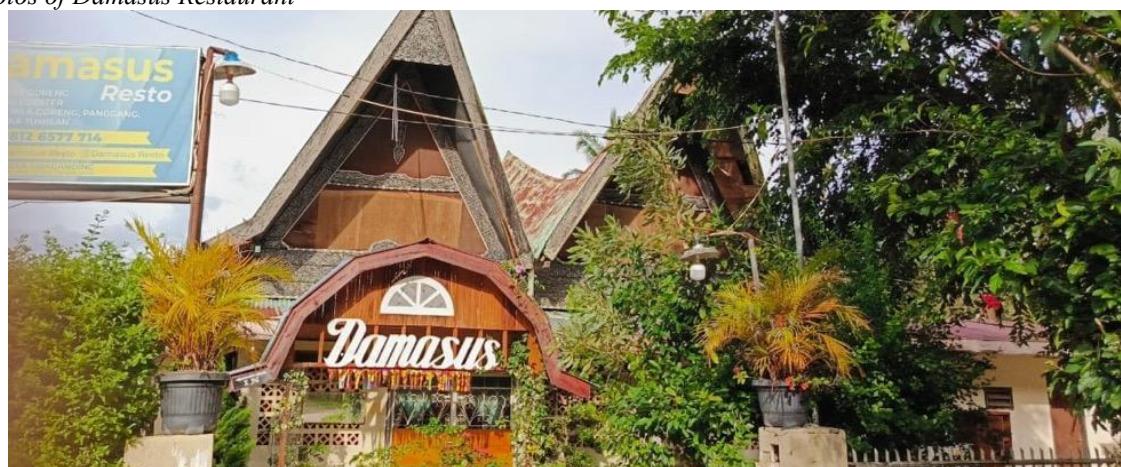
in top-down signage. This slogan carries connotations of national identity and produces a romantic image of the tourist destination. Thus, the linguistic signs in the image form two layers of ideology: Indonesian as a symbol of state authority, and foreign languages as symbols of globality and commercial prestige.

Across the region, each language performs a distinct value function: Indonesian carries authority and accessibility as the mandated medium of public communication; Batak indexes authenticity, ancestry, and territorial belonging; English signals prestige, modernity, and global reach. Together, these communicative layers cultivate a destination identity that feels culturally grounded yet cosmopolitan, positioning Lake Toba as a premium geotourism brand capable of competing on a global stage without sacrificing its indigenous essence.

(b) Visual Elements: Color, Typography, and Spatial Composition

Alongside language, the visual design of signage through color schemes, typography, layout, and ornamental motifs, acts as a critical semiotic layer that shapes how Lake Toba's identity is perceived and experienced. Guided by Barthes' (1977) distinction between denotation and connotation and Kress and van Leeuwen's (2010) principles of visual grammar, the analysis demonstrates that these design choices do more than support readability. They extend linguistic meaning into a broader visual narrative, conveying cultural heritage, aesthetic values, and institutional authority. In this way, the visual and verbal codes work interdependently, ensuring that every sign communicates not only information but a perspective on what Lake Toba represents. Figure 4 shows the structure of signage that combines Indonesian, Batak, and English languages in one visual space, creating intertwined layers of meaning.

Figure 4
Photos of Damasus Restaurant



Source: personal photo

From Barthes' perspective (1977), Indonesian serves as a denotative layer that explains information directly, while the presence of the Batak script presents connotations of local identity, evoking cultural associations that connect the sign with the ethnic heritage of the Toba community.

The visual composition of the signage can also be analyzed using the grammar of visual design by Kress and van Leeuwen (2006), in which the use of font size hierarchy and vertical layout creates a "given-new" structure that directs the reader from informative elements to symbolic elements. The emplacement of signage in the context of geosites reinforces its meaning, as explained by Scollon and Wong Scollon (2003), that the meaning of a sign is highly dependent on the social space in which it is placed. In this context, the position of signage in

cultural tourism areas makes the Batak language not just decoration, but an index of cultural authentication that strengthens the relationship between visitors and local spaces. Thus, Figure 4 shows how language and visuals simultaneously create representations of local identity within the framework of modern tourism.

Figure 5 shows signage that is more complex in its use of color, iconography, and typographic composition, providing a strong illustration of how tourism messages are constructed multimodally. Indonesian language remains dominant as an authoritative marker of information, but the presence of icons, symbols, and other visual elements serves to support meaning, expanding accessibility for multilingual visitors.

Figure 5

Photos of LEO'S Restaurant



Source: maps.google.com

Referring to Barthes (1977), the images and icons used not only carry a denotative function as visual representations, but also convey connotative meanings related to natural beauty, local hospitality, or tourism orientation. Within the framework of Kress and van Leeuwen (2010), the selection of contrasting colors and balanced spatial arrangement creates salience that directs the reader's attention to important parts of the signage, thereby increasing the effectiveness of communication. Geosemiotically, the position and orientation of the signage shown in Figure 5 demonstrate how the signs are deliberately placed to maximize visibility for the flow of visitors, in line with Scollon and Wong Scollon's (2003) idea of the relationship between signs, bodies, and space. Thus, Figure 5 confirms that the construction of meaning in signage does not only depend on language, but on the

dynamic interaction between visual, material, and spatial elements.

Color and ornamentation reinforce the semiotic messaging across the Toba Caldera landscape. On official signboards, blue and white backgrounds ensure high visibility and formal legibility, while also connoting institutional credibility and national authority. In contrast, restaurant signage such as Damasus Resto, Maruba Restaurant (see Figure 6), and LEO'S Restaurant uses vivid reds, yellows, and oranges to attract attention and evoke warmth, hospitality, and social energy, semiotic cues widely associated with tourism engagement. Batak *gorga* ornaments, identifiable by the triadic palette of red, black, and white, visually encode the cosmological foundations of Batak culture: red symbolizes vitality and courage, black signifies protection and resilience, and white expresses purity and harmony (Sitindjak et al., 2016).

Figure 6

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Photos of Maruba Restaurant



Source: maps.google.com

Whether carved or painted, these motifs transform built space into what Barthes (1972) describes as a visual myth materializing spiritual balance and the enduring strength of Batak heritage within the contemporary tourism environment. Visually, the signage in Figure 5 utilizes color, typography, and spatial composition to construct meaning and attract attention. The LEO'S RESTAURANT sign uses large capital letters and white color that contrasts with the red background of the Star logo, resulting in high visibility. Gorter views visual elements such as these as multimodal markers that reinforce the appeal of commercial signs. The composition of the board, which is hung high, ensures that it is legible from a distance, indicating a visual strategy to direct visitors' gaze.

From Shohamy's perspective, the choice of colors and typography is a form of symbolic control, as the design is made to influence consumer behavior, inviting them to enter, buy, and interact. The large wooden board with white letters spelling out the menu uses simple typography, giving a traditional impression while remaining legible. The natural color of the wood conveys authenticity, reinforcing the image of a destination close to nature. The front of the restaurant is filled with various boards, plants, and ornaments, creating a visually dense composition and conveying the message that this place is dynamic, lively, and tourism-oriented. Overall, the visual elements are not merely decorative but are a strategy of visual commodification to attract tourists.

Typography and layout further drive meaning across the Toba Caldera's signage system. Bold, capitalized Indonesian text anchors formality and ensures clear readability, while smaller English subtitles introduce a modern, globally inclusive tone visible, for instance, in the signage of Maruba

Restaurant (see Figure 7). Heritage and cultural boards often employ serif typefaces that evoke continuity and tradition, whereas commercial signage leans into clean sans-serif fonts to signal efficiency, innovation, and contemporary professionalism. Consistent with Kress and van Leeuwen's (2010) compositional principles, the placement of Indonesian text at the top of signboards creates a visual hierarchy that prioritizes national authority over international messaging. Balanced arrangements of text, imagery, and official logos generate a stable visual identity presenting the region as both regulated and cosmopolitan. Architecture and spatial design also shape semiotic interpretation. Damasus Resto incorporates a roof form inspired by the traditional Batak Jabu house, denoting vernacular architectural heritage and connoting cultural pride, protection, and communal hospitality. In contrast, the minimalist structure and English-forward branding of LEO'S Restaurant reflect modern commercial aesthetics and signal comfort aligned with global consumer expectations.

Following Scollon and Wong Scollon's (2003) framework of geosemiotics, meaning emerges from the interaction between signage and its surroundings. In this landscape, architecture, material placement, and linguistic design converge to produce spatial narratives that showcase heritage and modernity not as competing values but as co-existing components of Lake Toba's tourism identity.

(c) Integration and Meaning Construction

Across the Toba Caldera, linguistic and visual elements work together to build a unified multimodal discourse. On the surface, signage delivers the essential tasks of informing and orienting visitors. Yet beneath this denotative layer,

it also communicates who the region is and how it wishes to be understood. The visual priority of Indonesia asserts national authority and inclusivity; Batak language and symbols inscribe cultural belonging and heritage pride; and English signals global connectivity and touristic hospitality. This semiotic alignment produces what Barthes (1972) characterizes as a myth: a narrative so seamlessly constructed that it feels natural. In this case, the myth presents Lake Toba as both an ancestral homeland and a contemporary international destination. Through this interplay of text, image, and spatial design, signage surpasses mere functionality. It emerges as a cultural script, one that articulates identity, authenticity, and aspiration in the evolving story of the Toba Caldera.

(d) Theoretical Implications

This analysis shows that linguistic and visual resources work in concert within a multimodal semiotic framework to shape both cultural meaning and economic value. Barthes' (1977) semiotics helps explain how the signs provide denotative clarity, naming places, directing movement, and connotative symbolism that communicates identity and prestige. Kress and van Leeuwen's (2010) visual grammar further accounts for how composition, typography, and color guide interpretation and influence visitor perception. At the same time, Scollon and Wong Scollon's (2003) geosemiotics highlights the importance of spatial placement and material context, situating signage as part of the lived environment rather than a static communicative tool. Taken together, these perspectives reveal a signage system that does more than deliver information. It constructs a cohesive semiotic narrative that balances local authenticity with national governance and global tourism appeal, turning public signs into instruments of cultural diplomacy and purposeful visual storytelling.

Meaning-making strategies in the Toba Caldera Geosite

This analysis reveals that linguistic and visual elements operate together in a multimodal semiotic system that shapes cultural meaning and enhances economic value. Barthes' (1977) semiotics clarifies how signage combines denotative information naming places and guiding visitors with connotative cues that communicate identity and status. Kress and van Leeuwen's (2010) visual grammar explains how composition, color, and typography direct attention and shape interpretation. Meanwhile, Scollon and Wong Scollon's (2003) geosemiotics emphasizes that meaning also emerges from the spatial and material embedding of signs in the landscape. Across these perspectives, it becomes clear that signage in the Toba Caldera does more than transmit information: it produces a harmonized semiotic narrative that honors local heritage, aligns

with national language policy, and advances global tourism ambitions. In this way, public signs function as tools of cultural diplomacy, translating place identity into a compelling visual story for diverse audiences.

(a) Linguistic Policy and Multilingual Strategy

The multilingual signage strategy deployed across the Toba Caldera is not accidental; it demonstrates a calibrated alignment between government regulation, heritage stewardship, and global customer engagement. Indonesian anchors the communication system, ensuring legal compliance with Presidential Regulation No. 63 of 2019 and guaranteeing universal readability for domestic audiences. It carries both semantic clarity and brand-level symbolism: Indonesian doesn't just denote shared language; it connotes unity, inclusivity, and a cohesive national identity that underwrites visitor experience.

Simultaneously, the Batak language and script operate as high-value cultural differentiators.

Instances such as Huta Siallagan (ହୁତା ଶିଳାଗାନ)

serve as visible investments in Indigenous identity capital, retaining heritage authenticity while fortifying community pride. Juxtaposing Batak script with the Latin alphabet publicly reclaims local voice inside a globalized marketplace, an act that resonates with Eriksen's (1992) idea of symbolic resistance to cultural homogenization.

English adds the third layer: international accessibility and market readiness. Its presence across visitor information and hospitality branding signals global competence and low-friction engagement for foreign guests. The rise of bilingual and trilingual displays creates a functional linguistic hierarchy engineered for strategic outcomes: Indonesian for state legitimacy, Batak for cultural authenticity, and English for borderless tourism appeal. This aligns with Shizhu et al. (2024), who argue that public signage is not merely communicative infrastructure but a tool for projecting national identity within global competition.

(b) Communicating Meaning through Naming

The semantic choices shaping place names across the Toba Caldera indicate purposeful efforts to make the landscape intelligible, culturally resonant, and competitive within the tourism economy. The most prevalent strategy relies on descriptive naming that communicates the physical qualities of each location. Names such as Air Terjun Situmurun, Bukit Holbung, and Pantai Pasir Putih Parbaba clearly denote waterfalls, hills, and beaches, supporting ease of recognition and visitor navigation. As noted by Yan and Lee (2014), this descriptive clarity strengthens destination legibility and encourages deeper engagement with the site.

Equally important are names rooted in cultural and historical meaning, such as Desa Wisata Tomok, Museum Batak Tomok, and Negeri Bakkara. These designations extend beyond geographic precision to evoke heritage, community narratives, and collective memory, enhancing the educational value of the visit and deepening emotional attachment. In line with Oralkan (2021), integrating local history and storytelling into toponymy invites visitors to appreciate the cultural depth of the destination rather than merely consuming it.

A meaning-making strategy blends local identity with global brand language, most clearly seen in the naming of hospitality facilities. Danau Toba International Cottage Parapat, Samosir Cottages Resort, and Damar Toba ~ Lakeside Eatery & Stay reinforce local place identity while incorporating globally recognizable descriptors such as “International,” “Resort,” and “Eatery.” This hybrid construction reflects what Chang et al. (2022) describe as a synthesis of cultural authenticity and tourism market positioning, making the destination appealing to foreign guests while preserving a distinct regional character.

(c) Semiotic and Visual Strategy: Symbolism and Representation

Figure 7
Photos of Gorga Batak



Source: maps.google.com

Typography and layout further operationalize meaning. The prominence of bold, capitalized Indonesian at the top of signage denotes state authority and regulatory clarity, while smaller English subtitles connote openness to global participation. Serif fonts at cultural locations evoke tradition and continuity, whereas sans-serif fonts in hotels and restaurants communicate contemporary professionalism. As Scollon and Wong Scollon's (2003) geosemiotic theory asserts, spatial placement

The semiotic strategies evident across the Toba Caldera extend beyond language into visual symbolism, color, spatial composition, and architectural design, core elements of what Kress and van Leeuwen (2010) define as multimodal communication. This visual analysis is grounded in Barthes' (1977) framework, where denotation provides literal meaning and connotation signals deeper ideological and cultural narratives.

A key strategy is the dual-script display of the Batak and Latin alphabets. This combination not only facilitates bilingual communication but also asserts ongoing cultural presence, countering pressures of linguistic marginalization and reinforcing Batak identity within both national and global contexts (Eriksen, 1992). Likewise, as displayed in Figure 7, *gorga* ornaments marked by the signature red, black, and white triadic palette carry a layered semiotic charge. Denotatively, they are decorative patterns; connotatively, they embody Batak cosmological values: red representing vitality and courage, black symbolizing protection, and white invoking purity and harmony (Sitindjak et al., 2016). Through this symbolism, local philosophy is materially embedded into the visitor environment.

also matters: meaning is produced not only by signs themselves but by where and how they are positioned in the built landscape.

Architecture operates as yet another semiotic interface. Damasus Resto employs a Batak-style roof that visually enacts vernacular heritage and conveys hospitality anchored in local identity. In contrast, the minimalist architectural and branding choices at LEO'S Restaurant foreground cosmopolitanism and modern comfort. Together,

these design choices render Toba's tourism space as both culturally rooted and globally ambitious, visually narrating a destination identity in which heritage and modernity are not opposing forces but complementary assets.

At a deeper semiotic level, the signage in the image displays a combination of local and global symbols that produce a complex representation of identity. Wooden boards, tree trunks, and natural decorations serve as symbols of locality and authenticity, marking a visual connection with traditional Batak architecture. Within Gorter's framework, these non-linguistic elements are part of the semiotic landscape, which is as important as text in shaping the perception of space. However, at the same time, the use of English and Dutch as well as international beer logos creates a global representation that blends with the local space.

According to Shohamy, this combination of symbols shows how visual signs are used to create a marketable tourist identity: local culture is commodified, while foreign languages are used as representations of modernity and global appeal. Large decorative wooden signs with menu writing—which look like traditional ornaments but are in a foreign language—become hybrid symbols that signify the negotiation between locality and commercialization. The government signage “Samosir Negeri Indah Kepingan Surga” (Samosir, Beautiful Piece of Paradise) adds a layer of ideological representation, reinforcing the official narrative that Samosir is a “tourism paradise” in line with the country's branding goals. Thus, the overall signs in the image form a semiotic strategy that combines local identity, cultural commodification, globalization, and symbolic control in a unified visual landscape.

(d) Integrative Discussion

Taken together, the linguistic, semantic, and semiotic strategies across the Toba Caldera compose a coherent and intentionally designed system that positions the Geosite as a compelling, educational, and culturally significant destination. The linguistic dimension guarantees accessibility and policy alignment; the semantic dimension provides clear descriptors and embeds cultural narratives; and the visual-semiotic dimension amplifies authenticity, emotion, and aesthetic value. This integrated communicative approach simultaneously reinforces Indonesia's national language agenda and advances global tourism competitiveness, producing what Barthes (1972) terms a naturalized myth: a seamless narrative of Toba as both ancestral homeland and internationally relevant attraction. In this sense, signage across the landscape transcends mere functionality, operating instead as a multimodal cultural text that projects identity, ideology, and aspiration within a rapidly globalizing tourism context.

Reflection on Indonesian Policy and Promotion Objectives

The semantic and semiotic strategies observed across the Toba Caldera Geosite reveal how language policy and tourism development work in tandem to construct a unified narrative of national identity, cultural authenticity, and global connectivity. Through the coordinated use of Indonesian, Batak, and English, supported by intentional visual design choices, the signage system simultaneously adheres to Indonesia's linguistic regulations. It strengthens cultural preservation efforts while ensuring accessibility for international audiences. This synthesis demonstrates that multilingual communication and semiotic design are not merely supportive elements but integrated instruments for reinforcing heritage, affirming place identity, and elevating Lake Toba's competitive positioning within the global tourism landscape.

(a) Alignment with Indonesian Language Policy

The predominance of Indonesian on public signage throughout the Toba Caldera reflects precise adherence to Presidential Regulation No. 63 of 2019, which mandates the use of the national language in public communication. This implementation serves not only administrative compliance but also critical symbolic functions, reinforcing Indonesian as a language central to unity and nation-building. As Dardjowidjojo (1998) notes, Indonesia's language policy is designed to promote social cohesion and facilitate interaction across diverse linguistic groups. Within the tourism landscape of the Toba Caldera, the visibility of Indonesian on signage signals official legitimacy while connoting inclusivity, shared identity, and national belonging. In this context, language operates as more than a conduit for information; it becomes a semiotic instrument of nation branding, positioning Indonesia as a resource that is simultaneously functional and ideological.

(b) Cultural Revitalization through Local Language and Symbols

Complementing the national emphasis on Indonesian is the intentional use of the Batak language and Batak script, which functions as a form of cultural revitalization and local empowerment. This approach reflects Picard and Wood's (1997) argument that tourism rooted in local culture can drive cultural regeneration and strengthen community participation. Across the

Toba Caldera, the visibility of Batak script (𠁧𠁧)

and traditional motifs such as *gorga* ornaments signals a tangible effort to preserve heritage through linguistic and visual expression. These semiotic elements denote regional identity markers while connoting cultural pride, historical continuity, and communal belonging. The

integration of traditional symbols into contemporary tourism infrastructure demonstrates that Batak culture is not simply showcased but actively embedded in the construction of destination identity. In doing so, the Toba Caldera's semiotic landscape becomes a medium of cultural negotiation, enabling local identity to remain visible and meaningful within a nationally unified and globally oriented tourism environment.

(c) Global Orientation and Linguistic Adaptation

The integration of English into signage and promotional materials reflects a deliberate response to globalization and the demands of international tourism. Consistent with Phillipson's (2009) conception of English as a global lingua franca, its presence in the Toba Caldera is motivated less by linguistic dominance than by pragmatic considerations of cross-cultural communication. English expands the accessibility of tourist information and connotes modernity, professionalism, and cosmopolitan readiness. Together with Indonesian and Batak, it forms a multilingual system that speaks to different stakeholders simultaneously: Indonesian signals national coherence, Batak anchors cultural authenticity, and English enables global visibility and engagement. This semiotic calibration aligns with Bruyèl-Olmedo and Juan-Garau's (2009) observations that multilingual signage in tourism settings fosters market growth and intercultural communication without diminishing local identity. In this way, linguistic design becomes a strategic asset, positioning the Toba Caldera as culturally grounded yet fully prepared to welcome the world.

(d) Integrative Policy Reflection

Taken together, the Toba Caldera's linguistic and visual strategies demonstrate a comprehensive implementation of language policy that harmonizes national regulation, cultural preservation, and global positioning. The semantic layer ensures that place names and descriptions are clear, meaningful, and grounded in local cultural narratives. In contrast, the visual-semiotic layer amplifies these meanings through color, typography, spatial composition, and traditional iconography. Through this dual mode of representation, the landscape produces what Barthes (1972) would describe as a mythologized image, the naturalized portrayal of Toba as both a protected national heritage site and an internationally competitive destination. In this configuration, signage evolves from basic information infrastructure into a multimodal cultural text through which Indonesian identity, Batak heritage, and global engagement are actively communicated. The Toba Caldera Geosite thus illustrates the effective integration of Indonesia's linguistic policy into tourism communication. By positioning Indonesian as the national standard, elevating Batak

as a marker of cultural authenticity, and employing English as a channel for international accessibility, the site models an adaptive and future-oriented approach to multilingual governance. This triadic system ensures that the Toba Caldera is promoted not merely as a physical place but as a semiotic representation of Indonesia's cultural diversity, national cohesion, and global ambition.

CONCLUSION

The LL surrounding Lake Toba demonstrates a deliberate and multidimensional strategy in leveraging language and visual symbolism for the naming of hotels, restaurants, and tourist destinations. This strategy reflects a dual objective: strengthening the region's international competitiveness while actively preserving Batak cultural heritage. A balanced multilingual approach combining Indonesian, Batak, and English ensures both global visibility and local authenticity in the tourist experience.

Across the sixteen Toba Caldera geosites, the use of multiple languages signals an inclusive communication policy that aligns with national regulations while accommodating diverse visitor needs. Indonesian functions as the primary linguistic code, fulfilling the requirements of Presidential Regulation No. 63 of 2019 and projecting national unity through its denotative clarity and connotative authority. English plays a complementary role by enhancing accessibility for international audiences and positioning the site within global geotourism networks. Meanwhile, the Batak language and script serve as crucial markers of cultural continuity and identity, grounding the landscape in its Indigenous roots. This multilingual coordination not only facilitates communication but also reveals the region's layered sociocultural identity.

Visual semiotics contributes a parallel narrative. Traditional Batak motifs such as *gorga* carvings, *ulos* patterns, and geometric ornamentation provide recognizable cultural signatures across signage and architectural features. While denotatively decorative, they connotatively encode Batak cosmology and collective memory, symbolizing balance, protection, and vitality. Their integration into contemporary design reinforces authenticity within modern tourism aesthetics, transforming the environment into an interactive cultural text that visually and linguistically communicates Batak identity within Indonesia's national unity and global tourism discourse.

The findings also highlight that maintaining equilibrium between cultural preservation and global adaptation is an ongoing process. Although Indonesian and English dominate due to communication and regulatory needs, Batak linguistic and visual elements are essential to sustaining cultural integrity. Strengthening this

balance requires: (1) continued multilingual capacity-building for local tourism stakeholders; (2) consistent inclusion of the Batak language in printed and digital media; and (3) expanded interpretive programs that showcase Batak language, performance, and oral heritage. These initiatives would deepen visitor engagement while reinforcing community ownership of cultural representation.

Taken together, the linguistic and visual landscape of the Toba Caldera Geosite offers a compelling example of Indonesia's cultural and linguistic diplomacy in tourism. The coordinated use of multimodal semiotic strategies positions the site as both a national heritage symbol and a globally competitive destination. By applying a semiotic lens, this study demonstrates how linguistic and visual codes co-construct meaning, mediate identity, and influence perception in multilingual tourism contexts. While rooted in the Toba Caldera, these insights hold broader significance for language planning, cultural heritage preservation, and sustainable tourism communication in Indonesia and other culturally diverse destinations navigating globalization.

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