INTRODUCTION

Tuktuk Siadong Tourism Village is located on a peninsula and it has many hotels with various choices that offer direct views of the lake. Tourists from foreign countries have often visited this area to relax and lie down on the quiet shores of Lake Toba while also swimming or playing. In addition to being a freshwater, it is very clear and hygienic. In 1972, Gunn argued that a more thorough and customer-centered approach was required for the travel and tourism sector, the idea of the vacation getaway first emerged. The first book to make the case that Vacationscape: A Planned Approach to Tourism was created to demonstrate the importance of a strategic approach to tourism-one based on the demands of visitors as a whole, which are not standard or straightforward. Creating Tourism Areas. The book provided the basis for tourist design, a field that has advanced greatly in recent years, and its main theme is to improve the environment for tourism, or vacation escapes, through better design participation (Gunn, 1972).
The organizing and administration of visitor encounters are typically the focus of tourist design, which in some ways has similar flexibility and scope of design as a concept. It can be viewed as a comprehensive, client-centered technique or way of thinking and is essential for creating value in the tourism sector (Xiang et al., 2021). Richards (2020) designed tourism destinations with an emphasis on environmental sustainability (Dolnicar, 2020), and utilizing technology to increase information gathering and analysis to make travel destinations smarter (Williams et al., 2020).

Controlling how people interact with a location's media, social, and physical aspects can promote tailored experiences (Tussyadiah, 2014). Graphic design specifically addresses two of these components in tourism design: tangible artifacts and media/marketing, both significant touchpoints. It is a vital component of tourist engagement, playing the role of an impersonal, highly visible mediator (Tussyadiah & Fesenmaier, 2009); influencing visitor behavior and experiences, for instance through store fronts or printed maps. In addition to examining design as a comprehensive and customer-centered approach to tourism, Many studies on tourism have examined how tourist attractions have evolved and taken into account (graphic) design elements.

Tourists can visit a historical attraction, namely the Batu Kursi Trial in Siallagan Village. This is a Batak village in ancient times, where large stones were laid out during the reign of King Siallagan as a trial place for people who committed crimes such as traitors, captured enemies, thieves, rapists, and others. This village has a row of traditional houses of the local Batak community. Also, there is an execution place for criminals who were sentenced to death, where their heads are beheaded using a large sword in front of traditional kings and King Siallagan. Tuktuk Siadong- adong Tourist Village provides a greater understanding of Batak culture, daily life, and notably traditional Batak, in addition to the natural beauty of Lake Toba. This traditional community is an agrarian society that makes settlements the center of community life and the surrounding agricultural land as their source of life. The patterns of settlements in the community that still maintain local cultural traditions have changed in line with the surrounding developments.

Consistency, like authenticity, is crucial to the design of the tourism industry and the vacation landscape and it is particularly pertinent to this subject. It is possible to maximize the perceived worth and significance of those experiences if the dining area is meticulously and consistently planned (Tussyadiah, 2014). This lends support to the congruity theory, which contends that when consumers perceive the environment to be consistent, they are more likely to think favorably of a product (Agapito, 2022). Moreover, despite being frequently planned, certain design components can also be seen as "genuine" (Rickly & McCabe, 2017). The location's components can be considered as components of genuine visitor experiences, even some that could be described as existential (Rickly-Boyd, 2013). Local identities can also contribute to and influence marketing as well as tourism design (Jarratt et al., 2019; Kastenholz et al., 2016). Therefore, components of place identity can influence a tourism design that seems consistent and authentic. Likewise, according to Gunn (1972), genius loci are a driving factor behind the growth of the tourism industry; a location's unique culture and history can be viewed as a benefit when planning a getaway.

Farming gives importance to the lives of traditional agrarian communities, where settlements are seen as inseparable from land ownership and control over human resources. Also, vernacular settlements show that the collective life that underlies the formation of space in settlements is still ongoing. Therefore, research on settlements and vernacular architecture needs to be expanded from matters relating to purely physical aspects to those that involve the socio-political history of the formation process. In order to improve community life, it is hoped that more may be learned about the elements that affect the viability of settlement patterns.

The Batak Toba settlements are arranged in a layout with two villages facing one other on axes to the north and south, forming a village known as lumbar or huta. On the north and south sides of the settlement, there are two gates (bahal). Furthermore, the surroundings are fenced with a 2-meter-high wall (parik) made of clay and stone. Each corner is made into a watchtower...
because there were often wars in the past. Therefore, it is no exaggeration as long as the original form of the Batak tribal village used to resemble a fort.

Geographical and anthropological research on popular tourist locations inspired studies on social, cultural, and spatial imaginaries (Graburn & Gravari-Barbas, 2011; Salazar & Graburn, 2014), moreover, it recognizes that 'places acquire common, collective meanings, mediated by language, symbols, and other significations. These meanings have the ability to influence reality through people's and groups' behavior (O'Reilly, 2014; Howard, 2016; Waysdorf & Reijnders, 2017) Destination pictures, representations, and accompanying fantasies are presented by tourism marketers and the media, which are reinforced by tourists', businesses', locals', and governments' actions (Gravari-Barbas et al., 2017; Zhou, 2014; Moore, 2019).

Traveling experiences for visitors as well as their interactions with locals are frequently influenced by implicit natural and cultural landscape symbolism (Minca, 2007; Reijnders, 2011; Mostafanezhad & Norum, 2019). Rural destination images frequently aim closeness to natural and cultural assets is a fundamental element of these portrayals, which aim to reflect a traditional working landscape in a modern economic setting (Ramaswamy & Kuentzel, 1998). Hence, landscape fantasies promote personal, societal, and regional identity as well as create deep emotional connections (Shucksmith, 2018). According to McCarthy (2008) investigating the commonly used metaphors, interpretations, and acts referred to be "rural" is necessary to comprehend amenity migration. Tourists, immigrants, and long-term residents all contribute to the conceptualization of rural places.

Based on the observations of researchers, some previous research results have not found how the spatial development of tourism destination areas in Tuktuk Siadong Village which is part of the Lake Toba Region. The location which is a developing tourist attraction and which affects the spatial development of the area, is seen at a macro level, its relationship with Samosir Island with the mainland or other districts can support other destination areas. The phenomenon that occurs today is that there are factors that influence the spatial development of tourism destination areas in Tuktuk Siadong Village, so it is necessary to look at these factors and concepts and minimum standards (theoretical) with the reality in the field. This needs to be bridged by exploring the spatial development of the Lake Toba tourism destination area on Samosir Island at the tourism development level. This research tries to enrich the concept of the spatial development of sustainable tourism destination areas by looking at spatial patterns, spatial structures, and tourist attractions that have been formed that can affect the spatial layout of the Lake Toba tourism destination area on Samosir Island. Research on the relationship between spatial development and sustainable tourism destination areas by looking at spatial patterns, spatial structures, and tourist attractions that affect the spatial layout of the Lake Toba tourism destination area has not been done much before.

**METHODS**

Because this study used descriptive qualitative approach, the data can provide an accurate and precise representation of the topic under consideration. Descriptive research does not involve the testing of hypotheses; rather, its goal is to rigorously measure some social phenomena by developing concepts and gathering evidence (Singarimbun & Effendi, 1982). In general, qualitative techniques strive to highlight the different individuality existing in persons, organizations, communities, or groupings in daily life, according to Miles and Taylor in Basrowi & Sukidin (2002). Additionally, the case study emphasizes more on testing contemporary phenomena or on novelty related to real life (Yin, 2009) and is used to collect real facts. The context of research on the distribution of tourism destination locations, in this case, is the Lake Toba tourist region, the influencing factor, and tourist travel patterns (Gerring, 2007).

To fully comprehend the topic being discussed, the case study's data must be examined as a single, integrated actor, the project must therefore be exploratory in nature (Vrendenburg,
The case is a limited system and that the case study benefits from a depth of investigation due to its distinctiveness (Smith, 2016). The goal is to give a thorough explanation of the background, traits, and case features so that the findings can subsequently be generalized with the choice of the appropriate subject. Study area could be seen at Figure 1.

**Data Collection Techniques**

The researchers employed primary data collection and secondary data gathering methodologies to characterize the items in the Tutuk Siadong Tourist Village in Simanindo District. Primary data come from actual observations of the object being examined. Primary data is gathered in this way:

*Observation*

Observation is a technique for gathering data by keeping an eye on the subject of the study. The observation technique utilized in this study was a direct observation, which involves examining the symptoms of the people under investigation without the use of any intermediary aids (directly to the field). Make use of a cellphone or digital camera.

*Interview*

Together with observation, in-depth interviews with the community, visitors, managers, and local government were conducted in-person using a recorder.

*Visualization (Shooting)*

In order to gather observational data in the form of images of the physical state of the region, object visualization, also known as "shooting," uses video, cameras, or sketch drawings. Using a digital camera or a mobile phone. The information derived from secondary data and recorded using the following techniques are considered secondary data.
Library Studies
Searching for relevant information, references, and reading material from books, magazines, newspapers, journals, and other works of literature to boost study. This literature research was carried out by visiting relevant venues, such as libraries, and completing online searches. Aims to support research-related supporting theories.

Institutional Survey
Specifically, the collection of data from related agencies such as the BAPPEDA Office, Population Service, Environment Service, Culture and Tourism Office, BPS (Central Bureau of Statistics), District Office, and so on that are closely related to study problems.

Research Stages
There are 2 things that must be considered in the case study research of spatial development of sustainable tourism destination area in Tuktuk Siadong Village, namely:

1. The distribution of spatial designations in a region, including those for cultivation and protection purposes, is referred to as the spatial pattern.
2. Spatial structure is the configuration of settlement hubs and a web of amenities and infrastructure that supports the socioeconomic activities of the community and has a hierarchical functional link.

Based on this, several stages were carried out in this study, as follows:

a. Planning/preparation stage
This step is intended to make preparations including:
1) Initial preparation, evaluating relevant information and literature as well as data or information and compiling a list of required data, secondary data and primary data from interviews.
2) Preparation of secondary data survey instruments in the form of a list of data requirements.
3) Gathering secondary data from government agencies such as BAPPEDA, and Samosir Regency's Department of Culture and Tourism.
4) Determine the unit of analysis and the theoretical basis formulation.

b. Data collection and processing
This research was carried out by collecting secondary and primary data by:
1) Observations (observations) are carried out, among others, by taking pictures and recording phenomena that occur in the field, especially in the form of physical space and activities of local community life.
2) Organizing, classifying and describing the results of the interviews into a series of information on the results of the interviews so that they are easy to analyze using analytical tools and then carry out the analysis.

c. Conclusions and recommendations
1) Reviewing the findings and discussing the results of research on the implementation of tourism area management towards the fulfillment of its objectives.
2) Draw conclusions in the form of evaluation descriptions based on the analysis results and make recommendations based on the research findings.
RESULTS AND DISCUSSION

Overview of Tuktuk Siadong Village

**Land Use**

Tuktuk Siadong is a tourist village in Samosir Regency's Simanindo Sub-district. This village has a population of 2,296 people and an area of 231.04 hectares. Using satellite pictures and collected field data as a guide, the research area has a variety of land uses totaling 231.04 ha. The largest land use allocation is for agriculture/plantation at 55.16%. Meanwhile, the smallest allocation is public service facilities at 1.08%. More details are shown in Table 1 below.

<table>
<thead>
<tr>
<th>No</th>
<th>Land Use</th>
<th>Area (Ha)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Travel Destinations</td>
<td>3.11</td>
<td>1.35</td>
</tr>
<tr>
<td>2</td>
<td>Empty land</td>
<td>46.20</td>
<td>20.00</td>
</tr>
<tr>
<td>3</td>
<td>Trade and Services</td>
<td>47.38</td>
<td>20.51</td>
</tr>
<tr>
<td>4</td>
<td>Settlement</td>
<td>4.42</td>
<td>1.91</td>
</tr>
<tr>
<td>5</td>
<td>Agriculture/Plantation</td>
<td>127.44</td>
<td>55.16</td>
</tr>
<tr>
<td>6</td>
<td>SPU</td>
<td>2.49</td>
<td>1.08</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>231.04</td>
<td>100</td>
</tr>
</tbody>
</table>

![Figure 2. Land Use in Tuktuk Siadong Village](image)

Figure 2. Land Use in Tuktuk Siadong Village, A: Visual sampling of tourism destination; B: Visual sampling of empty land; C: Visual sampling of agriculture/plantation; D: Visual sampling of public infrastructure; E: Visual sampling of trading and services; F: Visual sampling of settlement

**Road Network**

The road network is a supporting infrastructure whose maintenance needs to be maximized in tourist areas. The existing road network in an area should be better because the good condition...
of the road network can affect the turnover and movement of the local economy. Also, the length of the existing road network in the research area reaches 15.61 Km². Overall, the construction of the existing network in Tuktuk Siadong Village is asphalt with a length of 11.51 Km², but it has Sirtu construction with a total length of 1.73 Km². More details can be seen in Table 2, as well as Figure 3 and Figure 4.

Table 2. Construction and Road Length in Tuktuk Siadong Village

<table>
<thead>
<tr>
<th>No</th>
<th>Construction</th>
<th>Length (Km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Asphalt</td>
<td>11.51</td>
</tr>
<tr>
<td>2</td>
<td>Concrete</td>
<td>2.37</td>
</tr>
<tr>
<td>3</td>
<td>Sandstone</td>
<td>1.73</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>15.61</td>
</tr>
</tbody>
</table>

Figure 3. Road Network Condition in Tuktuk Siadong Village

Figure 4. Road Network Construction Map of Tuktuk Siadong Village
Drainage Network

A drainage network is the natural or artificial removal of water masses from the surface or subsurface of a place. This disposal can be carried out by streaming, draining, dumping, or diverting water. Tuktuk Siadong Village has a drainage network, namely secondary and tertiary channeled directly to Lake Toba. The length of the drainage in the village is 12.97 km² with an open drainage type of 14.74 km² and a closed one of 2.33 km². The condition of the network shows it has not functioned optimally, such as many that are not maintained, filled with scattered garbage, and the water does not flow. The detailed drainage conditions in Tuktuk Siadong Village can be seen in Figures 5 and 6, as follows.

Figure 5. Construction Map of The Drainage Network in Tuktuk Siadong Village

Figure 6. Condition of Drainage Network in Tuktuk Siadong Village
Electricity Network

An electricity network is a system consisting of electrical conductors and equipment that are connected to distribute electrical energy. Tuktuk Siadong Village is served with a comprehensive electricity network by PT PLN (Persero) Pangururan. The electricity network condition can be seen in Figures 4.

![Figure 7. Electricity Network Condition in Tuktuk Siadong Village](image1)

![Figure 8. Map of Electric Network Construction in Tuktuk Siadong Village](image2)

Structural forms of spatial use are the elements that make up the area, which is hierarchically and structurally related to each other to form a spatial structure. The elements that form the spatial structure also lie in the infrastructure. Tourism development is based on the characteristics,
capabilities, functions, and marketing coverage space to be achieved. Reach can be local, regional, national, and even international (Sujali, 1989). The primary driver behind the growth of tourism in a tourist site, whether local tourism, regional tourism, or the scope of a country, is very closely related to the region's or country's economic development. The second reason for tourism development is more non-economic. One of the motivations for tourists who come to visit a tourist destination is to witness and see the beauty of nature and this includes nature reserves, botanical gardens, historic sites, and temples. The third reason for developing tourism is to eliminate short-sighted thinking and reduce misunderstandings, especially for the community where the tourism object is built (Yoeti, 2008). The government's role in creating tourism generally entails providing infrastructure (not simply physical infrastructure), expanding different sorts of facilities, coordinating efforts between public authorities and the business sector, and regulating and promoting international travel (Spillane, 1985).

**Spatial Planning Concept**

The arrangement of the activity center is planned by rejuvenating the area. In general, the activities that can be carried out are recreational, although elements of traditional villages (Huta Batak) are also the main attraction. Furthermore, this area is dominated by commercial tourism services, including hotels, cafes, restaurants, and others, with a fairly varied choice of accommodation facilities and types of food. The activity space is open, with pedestrian-friendly corridors and the provision of supporting facilities such as directions, seats, and others. The character of the corridor is directed to show cultural elements as the theme of the tourist area. Also, the activities around the cultural heritage and the Ambarita-Tuktuk geosite (Ambarita-Tuktuk, Dancing Lava Dome) are regulated and restricted. Public spaces with access to lakes and agricultural areas are controlled, therefore not built up, or limited by buffer zones, mainly by commercial services (permanent or non-permanent).

This idea has a broad definition and is the basis of for many concepts, policies, and development programs, including tourism development (Baiquni, 2007). Demand for cultural tourism is another significant factor influencing the development of cultural tourism in addition to these types of governance. The consumption of culture by tourists has shifted over the last two decades. On the one hand, tourists are seeking more than just notable cultural landmarks and tangible cultural resources; more people are traveling to places where the modern way of life is authentic. This includes seeking truth in the modern culture of the places they visit, in addition to recognizable heritage monuments and tangible cultural assets (Frisch et al., 2019; Richards, 2018). Smith (2016) identified these travelers as "new leisure tourists" and relates them to experiential tourism, a branch of cultural tourism. Calvi et al. (2020) described the demand for cultural tourism as being "slow" and "rapid" for these two different customer categories. Little, dispersed niches represent the slow demand for cultural tourism, with travelers prepared to pay a premium to experience particular, "genuine" aspects of local culture.

According to Calvi et al. (2020), four possible possibilities for cultural tourism have been suggested based on the confluence between demand for cultural tourism and modalities of governance: (1) Slow, locally-driven cultural tourism; (2) economic-driven, slowly growing culture tourism; (3) globalized culture tourism; and (4) localized cultural tourism. The model in Fig. 1 is predicated on the idea that cultural tourism's supply side will adapt to changing customer preferences; however, Calvi et al. (2020) acknowledge that a destination's governing style may influence the provision of cultural goods to a certain extent.

The development of Simanindo Subdistrict is Culture because of the cultural elements that are very strong in influencing 2 geosites are as, namely Simanindo-Batu Hoda (Simanindo-Batu Hoda, Uplift Samosir) and Ambarita-Tuktuk (Ambarita-Tuktuk, Dancing Lava Dome). These are in the form of the Huta Bolon Museum, the anthropological site of Huta Siallagan, the archaeological site of Sipalaka Siallagan, and Arsophagus Tomok or known as the Tomb of King Sidabutar.
The development of priority areas is based on the theme of tourism as well as natural and cultural potential, with the principle of preserving the authenticity of traditional Batak cultural and natural assets in this area. Furthermore, it involves developing existing assets into a better tourist attraction according to the conservation-minded concepts, especially in traditional Batak villages (Huta) where some have archaeological remains. This carries the theme of Cultural tourism and the concept of Rural Leisure (as a resting place with a rural atmosphere) by bringing back the character of Batak traditional buildings and landscapes as dominant and still active today.

Despite the UNWTO's long-standing support for sustainable growth, more and more academics are now doubting whether it is really viable (Fletcher & Rammelt, 2017; Parrique et al., 2019). Furthermore, some (for example, Gascón, 2019) have disapproved of the UNWTO's tourism growth strategy, claiming it is detrimental to societal wellbeing and have attacked the UNWTO's objective for expanding tourism as being detrimental to societal welfare. Sustainable growth alternatives include tourism degrowth (Fletcher et al., 2019; Higgins-Desbiolles et al., 2019; Milano et al., 2019; Sharpley, 2020). In a cultural tourism utopia, local communities would understand that it is their common duty to bring about change and put citizens' welfare first. According to this viewpoint, Cultural tourism regulation would be based on neighborhood initiatives, neighborhood partnerships, and moral consumption (Latouche, 2006). Endogenous cultural tourism items and services would be produced and consumed locally first. Tourism in my country and the area would be prioritized to reduce reliance on outbound markets (Romagosa, 2020). Place attachment would increase and social capital leakages would be prevented if locals invested their time, money, and effort in their community (Hollenhorst et al. 2014). Cultural variety would also be a crucial component of carrying capacity indices in a perfect world of cultural tourism (Higgins-Desbiolles et al., 2019).

Lessons learned from the first Barcelona Neighborhood Forum of Tourism indicate that cutting funding and subsidies to travel companies and marketing campaigns (also known as demarketing) and promoting participatory models of tourism governance and urban planning procedures are There are two key strategies to slow the expansion of the tourism sector (Milano et al., 2019). The concept of locally-led, leisurely cultural tourism matches our desired future very well. Utopian cultural tourism would also redefine the "right to tourism," correlate with the SDGs, and put them into practice, according to the 2017 UNTWO Framework Convention on Tourism Ethics, which was ratified by (Tremblay-Huet., 2020). Higgins-Desbiolles et al. (2019) found reasons why local communities' rights should take precedence over tourists' rights and the financial interests of global tourism companies in order to promote a more just and sustainable future. In summary, attempts to slow the rise of cultural tourism would encourage a multi-stakeholder investigation into the root causes of overtourism and serve as a great forum for discussion (or mass cultural tourism). Despite criticism of tourism degrowth, there might not be many workable options at the moment.

Figure 9. Cluster Concept in Tourism Development (Modified from Gunn, 2002)
According to him, the tourist concept includes one aspect of the several aspects it formulates, namely services provided by tourism companies or organizations (lodging companies, restaurants, cafes, travel agents, water parks, thematic parks, etc). Monford focuses on cluster features and components and identifies external relationships in the form of networks (Allayorov, 2019). Links between these service aspects must be clustered to provide an overview of development so that there is the integration of services in one tourist area.

Cluster support and development should be emphasized in all documents related to the development of tourism strategies in local and regional contexts. In this case, the definition of tourism clusters, the assessment of their impact on the regional economy, and the management of cluster development in the tourism sector are very important (Allayorov, 2019). As stated (Agus, 2019), "the development and development of tourism has been proven to be able to increase regional development and improve the people's economy".

Tuktuk Siadong Village has many tourist facilities in the form of accommodation in the peninsula area, right on the edge of the lake (Lake waterfront). There are also traditional Batak settlements (Huta) and archaeological remains in the form of the Trial and Execution Stones on the lake's shores (waterfront). The following are included in the development concept for this area:

1) Developing infrastructure to promote tourism and enhancing the environment's physical quality, such as adding environmental service functions, enhancing pedestrian pathways' physical condition and related elements, traffic and parking arrangements, and so on.
2) Revitalize hotels that have declined in performance and adjust to future service standards.
3) Develop hiking trails in the hilly area of Beta Hill and its surroundings.
4) Rehabilitate Huta Siallagan and the surrounding area using cultural heritage restoration and preservation principles, and keep building it up to become a significant tourism landmark.
5) Arranging commercial spaces/stalls and other auxiliary/additional amenities to improve the Huta Siallagan complex's tourist appeal by maintaining its authenticity.
6) Enhancing Ambarita's physical environment and infrastructure to facilitate tourism-related activities, such as structuring the port area, adding urban service functions, improving the physical pedestrian path and its accessories, regulating traffic and parking, and others.

CONCLUSION

Tuktuk Siadong Village's spatial planning is more directed to be spread out and follow the existing circulation path, although it is not immediately connected to the primary circulation route, it adheres to the conventional Batak development plan that produces clusters. Huta Batak traditional tourism attractions may be built in Tuktuk Siadong, which will be developed as a tourist village. As a result, traditional villages must be preserved, as well as the landscape as part of the spatial structure.

ACKNOWLEDGMENTS

The author would like to express gratitude to the Government of Samosir Regency for providing data and maps for the research.
DECLARATIONS
Conflict of Interest
The authors declare that in the research and preparation of this article, there are no conflict of interests related to certain organizations, institutions, and individuals or groups.

Ethical Approval
On behalf of all authors, the corresponding author states that the paper satisfies Ethical Standards conditions, no human participants, or animals are involved in the research.

Informed Consent
On behalf of all authors, the corresponding author states that no human participants are involved in the research and, therefore, informed consent is not required by them.

DATA AVAILABILITY
Data used to support the findings of this study are available from the corresponding author upon request.

REFERENCES


Fletcher, R., Mas, I. M., Blanco-Romero, A., & Blázquez-Salom, M. (2019). Tourism and degrowth:


