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The Effect of Open Tourism Space on Regional Development through Supply Chain Management in Panatapan Danau Toba Area Simalungun, Indonesia

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Abstract— **This study aims to analyze the influence of open space tourism on regional development, both through visitor satisfaction, image or destination image, and visitor interest and loyalty (intention and loyalty). This research was conducted in several Panatapan spots as open-air tourist spaces in Simalungun Regency, with a total of 313 respondents. The data sources used are primary and secondary data obtained through questionnaires and documentation. The data analysis used in this study uses Structural Equation Modeling (SEM) with SmartPLS 3.0 tools. The results of the study show the importance of developing open space in an effort to build a tourism image, tourist satisfaction, visitor interest and loyalty, in supporting regional development in Simalungun District.**

Keywords— *Satisfaction, Image, Loyalty, Regional Development, supply chains*

1.   Introduction

Indonesia is a country that has excellent and unique tourism potential. The vast landscape in the form of islands creates diverse and amazing natural beauty. The condition of this amazingly beautiful natural resource should be used well as well as maintained and preserved so that it can continue to provide prosperity for the people around it. Of the several destinations in Indonesia, Lake Toba is one of the most interesting attractions in the world. This is because Lake Toba is the largest lake in Indonesia. Based on data from Litbang SDA, Lake Toba is at 905 meters above sea level with a length of 275 km, a width of 150 km and an area of 1130 km². The depth in the northern part of the lake is 529 m, while in the south is 429 m. Lake Toba is the ninth deepest lake and is the largest volcanic caldera lake in the world [1-5].

Crilley states that the image of a tourist destination is supported by the quality of hospitality. The quality of tourism services directly on community hospitality, location attractiveness, local products and others [6]. The dimensions of the quality of tourism services include security, atmosphere, privacy, respect, friendliness, competence, empathy, reliability, responsiveness, courtesy and honesty. The perceived service quality of tourism is said to influence tourist satisfaction, and they always provide the best for tourists which ultimately affects the intention of tourists to return (intention loyalty). The linkages of transportation, promotion, tourist attractions are important to increase competitiveness including the image of tourist destinations [7]. The success of a tourism activity is largely determined by the level of hospitality that is given to visitors, because service quality is believed to be directly proportional to visitor satisfaction (satisfaction). If visitor satisfaction can be fulfilled, then efforts to improve service procedures can be done better [8-12].

The Panatapan building in Lake Toba is part of the tourist infrastructure that visitors are interested in so that they can form the desired image or image. Panatap building should be managed well by the government by improving community awareness of the environment. Imaging can be done through the construction of social reality, even though the reality is artificial [13, 14]. Regional image or image can be defined as a marketing activity to promote a positive image of a tourist destination in

order to influence consumer decisions to visit it. The image of a good tourist area will influence visitors to come back (intention loyalty. Therefore, the local government needs to foster the community in improving the tourism image through revamping the Panatapan facility as a tourism space to be worth visiting as well as being one of the tourist destinations that presents the scenic beauty of Lake Toba as a whole. In addition, the planning of various facilities that support the use of sloping land and tourism open space around Lake Toba also needs to be addressed because the quality of existing tourism space will affect the image and satisfaction of visitors and regional development in the Lake Toba region (regional development). The formulation of the problem of this research is "How is the effect of open air space on visitor satisfaction, tourism image, interest and loyalty and regional development in the Lake Toba Archipelago, Simalungun Regency?

2. Literature Review

2.1 Concept of Regional Development

Region is a group of regions that are located close together and inhabited by a number of residents above certain territories or spaces. In summary, the concept of space / region is characterized by absolute location and area distribution of certain images on the surface of the earth. Space has a geometrical, absolute and unique distance in relation to other locations and has a shape that is limited by a fixed location boundary. Regional development (regional development) is an activity to add, improve, improve and expand. The concept of regional development in Indonesia is born from an iterative process that combines the basics of theoretical understanding with practical experiences as a form of dynamic application [15-20].

2.2. Visitor Loyalty in Tourism Development

In this study, the relationship between panatapan as open space for tourism, tourism image, satisfaction of visitors with interest and loyalty of tourist visitors is very close and interrelated. Panatapan as a tourist open space that will both influence the image or image of a tourist destination. The good image or image of a tourist destination can attract visitors to come to these tourist destinations. The good quality of service and completeness of facilities at tourist sites will make visitors satisfied. Visitors' satisfaction can finally attract interest and make them loyal so that they return to the tourist sites later on.

2.3 Satisfaction of Tourist Visitors

Tourist satisfaction is an indicator of recognition of the success of the capacity and management of tourist attractions. Tourist satisfaction is a statement of loyalty in travel and is positive. Understanding of tourist satisfaction is important in positioning strategies for tourist attractions. Satisfaction of travel will make tourists come back to travel [21].

2.4 Image of Travel Destinations

Fakeye and Crompton consider that tourism products are intangible products, so it is very difficult to measure the destination image in a destination loyalty model. Fakeye and Crompton continued that destination images only consist of cognitive components, whereas cognitive perception or evaluation only refers to an individual's knowledge and belief in an object that is perceived or evaluated [22]. Milman and Pizam cognitively offer three components that shape the image of a destination, namely: facilities or attractions (facility of attractions), memorable host behavior (the memorability hosts' behavior and attitude), and the environment of sustainable destinations such as climate, environmental cleanliness and facilities [19]. Meanwhile, Goeldner and Ritchie, identify that cognitively, destination images consist of psychological components of tourists, uniqueness, and destination attributes holistically [12].

2.5. Perception

Said Keliwar states that the conditions for perception are several things, namely the existence of objects that are perceived, then the existence of attention as the first step to hold perception, besides that there are sensory devices as receptor recipient stimulus to forward information to the brain in order to create a response to stimuli. Perception does not stand alone, but is influenced by understanding and experience of the context that is related to that perception [23].

2.6. Previous Studies

Research by Ellen Grace, et al. entitled "Visitor Satisfaction Levels on Service Quality in Tomohon Temboan Peak Tourism Area". The results of this study show that good service influences visitor satisfaction [8]. Research by Aprilia et al. with the title "The Effect of Tourist Attraction and Service Facilities on Tourist Satisfaction on Balekambang Beach, Malang Regency". The results of the study show that tourist attraction and service facilities together have a significant effect on satisfaction and increasing numbers of tourists [2]. Others is Devilian Fitri conducted a study entitled "The Influence of the Tourism Sector on Regional Original Revenue (PAD) in South Coastal District". The results of this study indicate that the number of tourists, accommodation facilities and places of shopping for tourists simultaneously have a positive and significant effect on the revenue of PAD coast Selatan District [24].

3. Methodology

3.1. Sampling

The type of research is the Explanatory Survey, which is a study that explains the relationship between the variables studied. This research used quantitave approach. The population in this study were visitors in the Lake Toba area who enjoyed rest and tourism of Panatapan area, in Simalungun District. The total number of tourist visits in Simalungun District specifically to the tourist area which is on the edge of the Lake Toba Region is 146,125 inhabitants. The minimum number of samples needed is:

$N = (96 \; 1.96〗 \; ^2 \; (0.75) \; (1-0.75)) / 〖0.05〗 \; ^2 = 288.12 \approx 289$ Samples

Thus, the minimum number of samples needed in an unknown population evaluation is 289 visitors.

3.2. Variable Operationalization

Table. 1. Operational Definition of Variables

Variable	Subvariable	Indicator	Theory used
Panatapan as a tourist open space (X1)	Economy	Willingness To Pay	[7], [20], [14]
	Social	Acceptability	[7], [20]
	Environment	Optimalization	[7], [20]
Tourist Destination Image (Y1)	Attractions	Design Attraction	[19]
	Hospitality	Memorability	[19]
	Environment	Sustainability	[19]
Visitor satisfaction (Y2)	Accessibility	Accessibility	[7]
	Amenity	Amenity	[7]
	Hospitality	Satisfying Hospitality	[7]
Interest and Loyalty (Y3)	Interest	Willingness to visit again	[21], [25]
	Loyalty	Willingness to give recommendation	[21], [15]
Regional development (Y4)	Infrastructure	Adequateness	[24]
	Human Resources	Appropriateness	[24] [20]
	Income	Revenue	[24], [13] [20]

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3.3. Path Diagram

Submission of structural equation model research based on the conceptual framework studied is as follows:
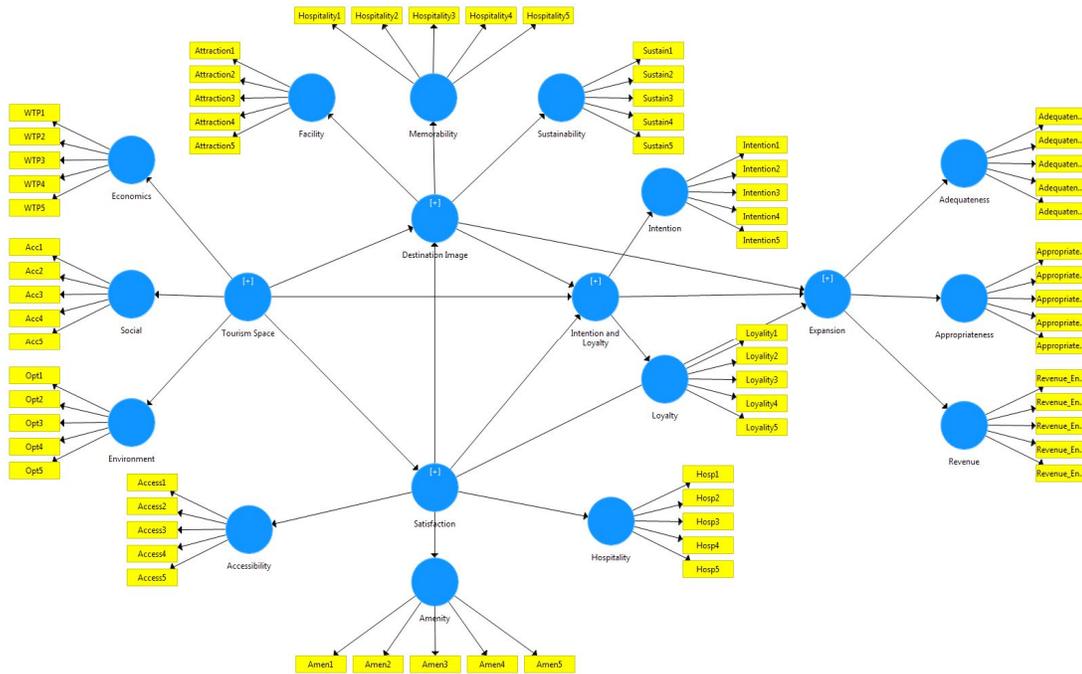

Figure 1. Research Flow Chart Model

The structural equation model in this study refers to two forms, namely in the physical level of order and second order. Table 2 provides a summary of the structural equations in this study.

Table. 2. Structural Equations of the Research Model

Latent variable	Structural Equations
First Order	
Tourist Image (Z1)	$Z_1 = \gamma_1 X + \gamma_2 Z_2 + \zeta_{15}$
Visitor Satisfaction (Z2)	$Z_2 = \gamma_3 X + \zeta_{16}$
Visitor Loyalty (Z3)	$Z_3 = \gamma_4 X + \gamma_5 Z_1 + \gamma_6 Z_2 + \zeta_{17}$
Regional Development (Y)	$Y = \gamma_7 X + \gamma_8 Z_1 + \gamma_9 Z_2 + \gamma_{10} Z_3 + \zeta_{18}$
Second Order	
Economics	$= \beta_1 X + \zeta_1$
Social	$= \beta_2 X + \zeta_2$
Environment	$= \beta_3 X + \zeta_3$
Facility	$= \beta_4 Z_1 + \zeta_4$
Memorability	$= \beta_5 Z_1 + \zeta_5$
Sustainability	$= \beta_6 Z_1 + \zeta_6$

Accessibility	$= \beta_7 Z_2 + \zeta_7$
Amenity	$= \beta_8 Z_2 + \zeta_8$
Hospitality	$= \beta_9 Z_2 + \zeta_9$
Intention	$= \beta_{10} Z_3 + \zeta_{10}$
Loyalty	$= \beta_{11} Z_3 + \zeta_{11}$
Adequateness	$= \beta_{12} Y + \zeta_{12}$
Appropriateness	$= \beta_{13} Y + \zeta_{13}$
Revenue Enhancer	$= \beta_{14} Y + \zeta_{14}$

4. RESULT

4.1. Direct Effect

The results of the SmartPLS algorithm in directly assessing path coefficient are given in Figure 2 and Table 3.
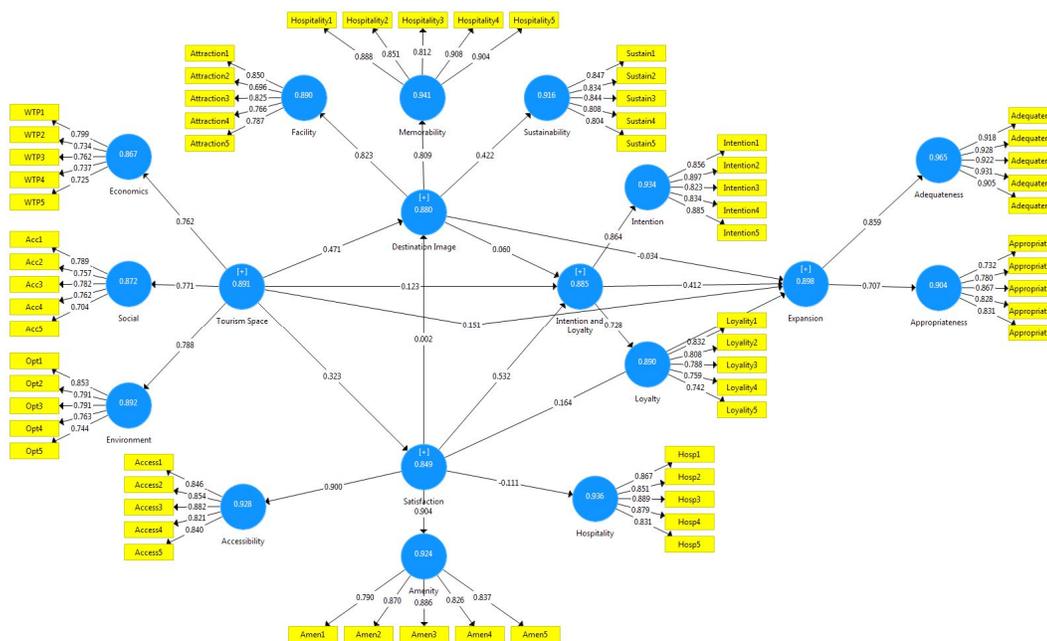

Figure 2. Path Coefficient between Research Variables

The results of the algorithm in Figure 5.16 are summarized in the form of a table in Table 3.

Table. 3. Direct Variable Effects of Research

Direct Effect	*Direct Effect*
Tourism space → Destination Image	0,471
Tourism space → Satisfaction	0,323
Tourism space → Intention and Loyalty	0,123
Tourism space →Development	0,151

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Satisfaction → Destination Image	0,002
Satisfaction → Intention and Loyalty	0,532
Satisfaction →Development	0,164
Destination Image → Intention and Loyalty	0,060
Destination Image →Development	-0,034
Intention and Loyalty →Development	0,412

Source: Algorithm SmartPLS

The analysis of this direct effect illustrates the influence of each research variable. This analysis is not used in answering the research hypothesis, because it needs to be compared with the significance level of each research influence. The research hypothesis testing will be carried out in the next discussion.

4.2. Indirect Effects

The magnitude of the indirect effect of independent variables on variables can be calculated and summarized in Table 4.

Table. 4. Indirect Effects on Research Variables

Indirect Effects	*Indirect Effect*
Tourism space →Destination Image	0.001
Tourism space → Intention and Loyalty	0.175
Tourism space → Development	0.171
Satisfaction → Intention and Loyalty	0.000
Satisfaction → Development	0.219
Destination Image → Development	0.025

Source: SmartPLS

Table 4 also shows that the magnitude of the indirect influence of each variable through the mediator has a positive influence.

4.3. Total Influence

The total effect of independent variables on the dependent variable with the effect of mediator variables can be calculated and summarized in Table 5.

Table. 5. Effect of Total Research Variables

Total Effect	*Total Effect*
Tourism space → Destination Image	0.472
Tourism space → Satisfaction	0.323
Tourism space → Intention and Loyalty	0.289
Tourism space →Development	0.322
Satisfaction → Destination Image	0.002
Satisfaction → Intention and Loyalty	0.532

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Satisfaction →Development	0.383
Destination Image→ Intention and Loyalty	0.060
Destination Image→Development	-0.009
Intention and Loyalty →Development	0.412

Table 5 shows that the magnitude of the total influence of the research variables increases with the presence of indirect influences.

4.4. Hypothesis Testing

The results of path coefficient and the significance of the path coefficients are shown in Figure:
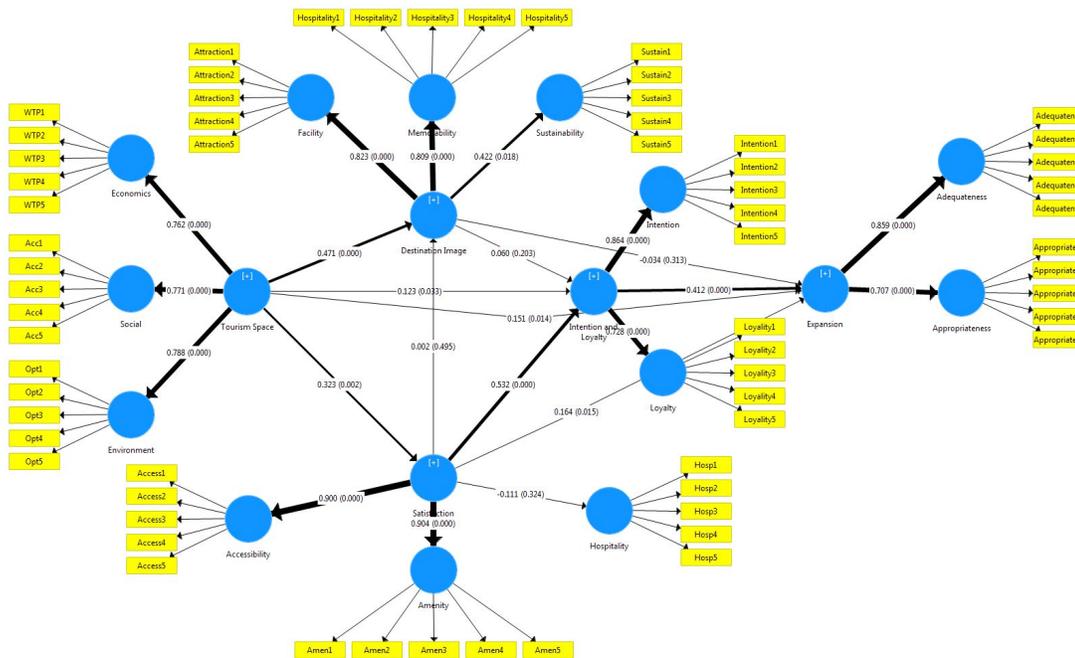

Figure. 3. Bootstrap Research Model

Figure 3. shows that the effect of each variable is positive and significant. The path thickness level in Figure 3. indicates the influence dominance between research variables. The greater the path in the diagram indicates that the absolute value of the influence on the pathway is increasingly important. These results are summarized in Table 6.

Table. 6. Hypothesis Testing Research

No.	Hypothesis	Original Sample (O)	T Statistics (|O/STDEV|)	P Values	Conclusion
H1	Panatapan as tourism space has a positive and significant effect on visitor satisfaction	0,323	2,827	0,002	Accepted
H2	Panatapan as a tourism space has a positive and significant effect on the tourism image of Panatapan	0,471	6,296	0,000	Accepted
H3	Panatapan as tourism space has a positive and significant effect on visitor interest and loyalty	0,123	1,836	0,033	Accepted
H4	Panatapan as a tourism space has a positive and significant effect on the development of the Lake	0,151	2,211	0,014	Accepted

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	Toba region, Simalungun Regency				
H5	Visitor satisfaction has a positive and significant effect on the tourism image of Panatapan	0,002	0,012	0,495	Rejected
H6	Visitor satisfaction has a positive and significant effect on visitor interest and loyalty	0,532	9,600	0,000	Accepted
H7	Visitor satisfaction has a positive and significant effect on the development of the Lake Toba region, Simalungun Regency	0,164	2,177	0,015	Accepted
H8	Panatapan's tourism image has a positive and significant effect on visitor interest and loyalty	0,060	0,833	0,203	Rejected
H9	Panatapan tourism image has a positive and significant effect on the development of the Lake Toba region, Simalungun Regency	-0,034	0,489	0,313	Rejected
H10	The interest and loyalty of visitors has a positive and significant influence on the development of the Lake Toba region, Simalungun Regency	0,412	6,576	0,000	Accepted
H11	Panatapan as tourism space has a positive and significant effect on interest and loyalty through image, and visitor satisfaction	0,279	4,559	0,000	Accepted
H12	Panatapan as tourism space has a positive and significant effect on regional development through image, satisfaction, and interest and loyalty	0,170	2,979	0,001	Accepted
H13	Visitor satisfaction has a positive and significant effect on regional development through image and interest and loyalty	0,219	4,742	0,000	Accepted
H14	Panatapan's tourism image has a positive and significant effect on regional development through interest and loyalty	0,025	1,734	0,042	Accepted

Source: Bootstrap SmartPLS

Thus statistically there is enough evidence to show that there is an indirect influence of Panatapan tourism space in improving regional development through image creation, visitor satisfaction, and interest and loyalty. The twelfth hypothesis was accepted. The study also evaluated the indirect effect of visitor satisfaction on regional development through the establishment of a tourism image and loyalty. Table 6 provides information that visitor satisfaction has an indirect influence on regional development through image and interest and loyalty with a total indirect effect of 0.218 and a significance level of 0.000 <0.05. Thus there is enough evidence to state that visitor satisfaction indirectly influences regional development through the formation of Panatapan's image and interest and loyalty. Thirteen research hypotheses were accepted.

This study also evaluates the indirect influence of Panatapan tourist destination image in improving regional development through the formation of interest and loyalty. Table 6 provides information that there is a small positive effect with a total indirect effect of 0.025 which is significant with a significance level of 0.042 <0.05. Thus, there is enough evidence to indicate that the Panatapan tourism image has a positive and significant contribution to the development of the region through the interest and loyalty of the visitors. Directly, the image does not affect the development of the region. But this influence becomes significant if and only if the Panatapan image is able to generate interest and loyalty. The fourteenth hypothesis of the study was accepted.

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5. Discussion

5.1. Effect of *tourism space* on visitor satisfaction

The results of this study are in line with previous research which indicates that one source of satisfaction and dissatisfaction from visitors is based on tourist locations or tourist attractions. Marin and Taberner identify attributes that affect satisfaction with tourist attractions in Malaysia and provide a conclusion that one of the factors that influence satisfaction is derived from the tourist attraction itself, or the space that becomes a tourist attraction for visitors [25]. In addition, Foster also explained that in the tourism industry, visitor satisfaction is influenced by tourism space which is a tourist area. Panatapan's development as a good tourism space will encourage the satisfaction of tourists visiting Panatapan [26-29].

Damanik and Weber further explain that sustainable tourism will make the economic capacity of tourism places more efficient and lead to lower costs. Cost efficiency makes visitors more satisfied. The model in this study developed the concept even deeper. Panatapan as a tourism space not only speaks of economic efficiency, but also optimizes Panatapan's role as a tourism space. The economic, social and environmental functions of Panatapan are optimized to provide optimal tourism services. Providing better tourism services will increase visitor satisfaction. In essence, satisfaction is the result of the moment of truth when visitors consume, in this case feel the experience of traveling in Panatapan. If the development of Panatapan as tourism space increases or gets better, then visitors will become more satisfied with the experience gained [7].

5.2. Effect of tourism space on tourism imagery

The results of this study are in line with the research conducted by Stepchenkova et al. which indicates that in the meta analysis of the image of a tourist destination, regional development is one of the concepts that describes the image of the destination. The closer and more real the information is to the public, the stronger the image of a tourist destination that is formed. Thus, the development of Panatapan as a good tourism space will form a good image of Panatapan tourism in the public mind [26].

5.3. Effect of tourism space on interest and loyalty

Panatapan's development as a tourism space will help increase the interest and loyalty of visitors. Panatapan's development in optimizing its economic, social and environmental functions will help establish tourism services, experience gaps, selfies, rest, and culinary tourism to be better, so that it will encourage the achievement of interests and loyalty that are getting better as well. The results of this study indicate the importance of developing Panatapan as tourism space in such a way that service delivery on consumption of tourist experiences becomes increasingly good and leads to loyalty.

5.4. Effect of tourism space on regional development

Sirojuzilam states that regional development is based on three main elements, namely adequate infrastructure, qualified human resources, and increased regional income. In this study an increase in regional income was issued in the analysis model because it was difficult to measure due to inconsistencies arising from the opinions of the visitors of Panatapan. Regional development is the goal of developing Panatapan in general. Panatapan development is one of them done by forming Panatapan tourist destination area that uses a combination of elements of scenery, ravine, selfie, rest, and culinary. The results of this study confirm the existing concept of regional development where the better the development of Panatapan as tourism space, the higher the achievement of regional development, especially in infrastructure and human resources in the Panatapan region [24].

Amnar et al., conducted research in the Aceh region and identified that the greater the number of tourist objects in an area, the greater the development of the area achieved, especially from the economic aspect [1]. In order to run optimally, the tourism sector needs to develop tourism areas that specifically build tourism in the area [22]. Panatapan as a tourism space is one of the special steps in developing the area in the Lake Toba Region. This development aims to develop the community economy while building better human resources and infrastructure. Previous research provides conclusions that are in line with the findings of this study, where Panatapan as tourism

space will encourage the achievement of the development of the Panatapan region.

Regional development as a tourism space is based on three aspects, namely economic, social and environmental aspects. This development includes optimizing all of these aspects, where Panatapan uses five tourist elements efficiently, namely scenery, ravine experience, selfie, rest, and culinary. This tourist element optimizes economic functions that attract visitors' attention and can be well received by the public and visitors. In addition, the use of space and environmental functions is part of the development carried out at Panatapan. The success of Panatapan's development as a tourism space will encourage the achievement of better tourism infrastructure improvements while encouraging HR to do better tourism services.

5.5. Effect of satisfaction on panatapan tourism images

The results of this study do not support the general condition that often occurs between satisfaction and product image previously stated. The image is essentially an accumulation of information and observations made and accepted by the community towards an object. Citra Panatapan as a tourist destination is also a public perception of Panatapan in general. The main element of the image is the uniqueness that reflects a product. Panatapan, in this case is often associated with 'the road to Lake Toba', or 'Resting place to Lake Toba' or 'A gorge with an interesting view'. In this concept, the image of Panatapan itself tends to be covered by the context of Lake Toba. This finding indicates the importance of developing Panatapan as a separate tourism space in order to build its own image.

The results of the evaluation of the research model indicate that at present location imagery can only be formed based on the success of the development of the Panamanian space theory. The achievement of satisfaction with Panatapan itself in this study has not been able to encourage or influence the image of Panatapan directly. The public perception of the evaluation of tourism experiences in Panatapan is more directed towards the perception of Lake Toba itself. Interviews conducted with visitors hinted that they visited Panatapan not as a tourist destination, but as an intermediary before

heading to the actual tourist destination, Lake Toba.

5.6. Effect of satisfaction on interest and loyalty

This study provides empirical evidence that there is a positive and significant effect of visitor satisfaction on visitor interest and loyalty Panatapan (path coefficient = 0.532; p-value = 0,000). The results of this study indicate that if visitors are more satisfied with the tourism experience they get at Panatapan, it will increasingly reflect the visitor's loyal behavior in the form of an interest in returning or also recommending Panatapan to others. A significance value of <0.05 indicates that this condition can be generalized to all Panatapan visitors, Simalungung, North Sumatra.

Kotler and Keller suggest that in marketing theory, satisfaction is the main element in achieving customer loyalty [16]. In general, customers will be loyal to the product provided if satisfaction when consuming the product or service can be fulfilled properly. Loyal consumers provide many benefits for the company. In the context of consumers who are loyal to a product will at least show behavior: (i) Re-consume the intended product (repurchase), (ii) Suggest to others (recommend), (iii) Stick to the product (retain) and (iv) The research results achieved through the evaluation of research models confirm the theory that explains the relationship and the influence between satisfaction and loyalty. In essence, consumers who are satisfied with the product, in this case visitors who are satisfied with the tourism experience in Panatapan will behave loyally with an indication of the two main behaviors. First, visitors will intend to make a repeat visit to Panatapan in the future (repurchase). Both visitors will point to recommending Panatapan to their partners in the future. Thus, the satisfaction of Panatapan visitors is key in achieving the interest and loyalty of Panatapan visitors.

5.7. Effect of satisfaction on regional development

This study provides empirical evidence that there is a positive and significant effect of visitor satisfaction on regional development (path coefficient = 0.164; p-value = 0.015). The results of this study indicate that if visitors are more satisfied, regional development will be achieved in

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Panatapan. A significance value of <0.05 indicates that this condition can be generalized to all Panatapan visitors, Simalungung, North Sumatra. Visitors who are satisfied with their tourist destinations will build tourist preferences to those destinations. Panatapan visitors who are satisfied with Panatapan will build tourism preferences to Panatapan in the future. The more frequent tourist visits occur, the aspects of regional development in Panatapan will increase.

5.8. Effect of image on interest and loyalty

This study provides empirical evidence that there is an influence from the image of Panatapan tourist destination on visitor interest and loyalty (path coefficient = 0.060; p-value = 0.203). The results of this study indicate that there is an influence of image on interest and loyalty but not significant. This indicates that the image of Panatapan tourist destinations cannot consistently predict the interest and loyalty of Panatapan visitors in the Lake Toba Region, Simalungun Regency. Loyalty is essentially built on the concept of experience, satisfaction, and loyalty [16]. In the loyalty theory, loyalty will emerge as a result of an evaluation between consumer perceptions and what they actually feel. In theory, the higher the image or perception that is in the minds of visitors will be more difficult to give birth to loyalty in meeting these perceptions. This theory supports the research findings that loyalty cannot be predicted through image. The image that has been evaluated through service consumption will encourage the creation of that loyalty.

5.9. Effect of image on regional development

The results of this study indicate that the image cannot influence regional development directly. Panatapan tourism destination image will not directly affect the development of the region but through the intermediary of other variables which will be discussed in the next section. Image is a visitor's perception of Panatapan. The image of Panatapan itself is often biased with the image of Lake Toba so that the measured image of Panatapan often depicts Lake Toba, which makes it increasingly difficult to explain the conditions of territorial development in Panatapan.

5.10. Effects of interest and loyalty on regional development

Sirojuzilam states that aspects of regional development are based on the achievement of three things, namely infrastructure improvement, HR improvement, and regional income improvement. These improvements can be achieved through business activities that run smoothly. The smooth running of business activities in the field of tourism itself is very dependent on visitors. Without visitors, no tourism activities will be achieved [24].

Sulibhavi and Shivashankar in their study stated that loyal consumers will behave favorably towards the product in question. For example, loyal consumers will buy and spend more on the product. In addition they will advise others and tell us the advantages of our products without asking for compensation. This loyal behavior directs the achievement of better sales and encourages business development. In line with this, the results of this study indicate that loyal visitors will help improve the achievement of regional development. Loyal visitors will reflect two things, namely intention in the future to come again to Panatapan, or recommend others to stop at Panatapan on their journey. These two behaviors will help improve the economy of the local community and build a better regional development [27-29].

5.11. Effect of tourism space on interest and loyalty through image and satisfaction

The development of Panatapan tourism space in terms of improving economic, social and environmental aspects will build an image and facilitate visitors in achieving tourist satisfaction. A good image will bring visitors to Panatapan. Good tourism services, especially in the development design of Panatapan as a tourism space will help achieve visitor satisfaction that directs it to visitor loyalty.

5.12. Effect of tourism space on regional development through image, satisfaction, and interest and loyalty

Previously it was discussed how the indirect influence of tourism space in increasing the loyalty of visitors Panatapan. In the proposed research model, the final destination variable of the structural equation is the development of the region from Panatapan. Kotler and Keller provide three

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advantages that occur in loyal consumers. The three superior behaviors include various activities that encourage business growth. Loyal consumers will repurchase, suggest to others (recommend), and have a barrier to switching costs for similar products (retain). The direct and indirect influence of Panatapan as tourism space will encourage visitor interest and loyalty. The higher the interest and loyalty of visitors, the more benefits gained by developing the region. This situation confirms that there is an indirect influence that has occurred in increasing the success of regional development in the Panatapan [16].

5.13. Effect of satisfaction on regional development through image and interest and loyalty

This study provides empirical evidence that there is a positive and significant indirect effect of satisfaction with regional development through image creation and visitor interest and loyalty (indirect effect = 0.219; p-value = 0,000). The results of this study indicate that there is an indirect influence on the satisfaction of visitors of Panatapan in the success of the development of the Panatapan area. Indirect influence occurs through image creation, as well as interest and loyalty as a result of visitors' satisfaction with tourism experiences that occur. The image and the interest and loyalty generated will help drive increased regional development in Panatapan.

The results of this study indicate that interest and loyalty are the main keys that support the success of regional development. Interest and loyalty in this study contain two elements of the approach, namely the interest in revisiting and loyalty in recommending Panatapan to others. These two elements are very important in the success of the development of the Panatapan region. Satisfaction plays a key role in realizing that loyalty. Marketing expert Kotler and Keller state that achieving customer (consumer) satisfaction is key in opening the gates of visitor loyalty. Thus, satisfied visitors will make them loyal. The loyalty that is formed will direct visitors to succeed in developing the Panatapan region [16].

5.14. Effect of image on regional development through interest and loyalty

This study provides empirical evidence that there is a positive and significant indirect effect of the

image on regional development through the interest and loyalty of Panatapan visitors (independent effect = 0.025; p-value = 0.042). The results of this study indicate that there is an indirect influence from the Panatapan tourism image in the success of the development of the Panatapan area. Indirect influence occurs through the creation of interest and visitor loyalty to the tourist experience that occurs. Interest and loyalty produced will help encourage the development of the area in the Lake Toba Region of Simalungun Regency.

The results of this study are the results that most need special attention. The image directly does not affect both interest and loyalty or regional development. The results of the study indicate that achieving regional development through the development of Panatapan's image can only be achieved through the success of increasing visitor interest and loyalty. From other literature states that if there is no direct influence of the image on regional development, it is not necessary to interpret the indirect effects that occur. When we consider this statement, it is very important to develop Panatapan's image through the development of tourism open spaces proposed in this research model.

6. Conclusions and Recommendations

Panatapan directly has a positive and significant effect on image, satisfaction, loyalty and regional development. Visitor satisfaction does not contribute to shaping Panatapan's image, but it is important to increase interest and loyalty and support regional development. Imagery cannot directly support regional interest and loyalty and development. Interest and loyalty are able to contribute positively to the development of the region. Thus, it is necessary to optimize the open space of tourism, which is the key basis for tourism development and regional development in the Panatapan Danau Toba Region, Simalungun Regency. The evaluation results of the tourism elements in Panatapan gave a follow-up to the implementation of the Panatapan tourism design steps. Also, vacation tourism is the most preferred, most memorable, most satisfying tourist element, most adequate and most increases interest and loyalty at Panatapan. Panatapan is an ideal place to rest and restore stamina before continuing the trip to Lake Toba. The majority of visitors only stop for a short duration so that it does not require further

development to lodging facilities. Nevertheless, it is necessary to develop infrastructure that increasingly supports the resting elements. The development of building infrastructure, hospitality, and other supporting facilities such as parking locations will make vacation tourism more attractive to visitors.

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