

## **STRUCTURAL MODELS FOR SUSTAINABLE TOURISM DEVELOPMENT IN MEDAN CITY**

Edy Sahputra Sitepu<sup>1</sup>, Rismawati<sup>2</sup>, Dewi Comala<sup>3</sup>, Edi Putra Berutu<sup>4</sup>, Jamardua Haro<sup>5</sup>,  
Agus Edy Rangkuti<sup>6</sup>

<sup>1,2,3,4,5,6</sup> Administrasi Niaga, Politeknik Negeri Medan, Indonesia.

Email: <sup>1</sup>eddiestp@gmail.com, <sup>2</sup>rismawatisitumorang2004@yahoo.com,  
<sup>3</sup>dewi.cs\_83@yahoo.com, <sup>4</sup>edi.berutu77@gmail.com, <sup>5</sup>jamar2haro@gmail.com  
<sup>6</sup>arangkuti@yahoo.com.

### **ABSTRACT**

Medan City is currently designated as one of the 20 national tourism destinations that implement Sustainable Tourism Development (STD) in Indonesia. The commitment to implement STD nationally is marked by the signing of the text of the Memorandum of Understanding (MoU) of 20 Regional Heads who are committed to implementing STD together with the Indonesian Ministry of Tourism. Furthermore, under the supervision of the Republic of Indonesia Ministry of Tourism, 20 existing Regencies / Cities made various improvements in each region so that they were finally eligible for STD certification from the STD international certification body. Medan City itself, through the Medan City Tourism Office, related to the implementation of the STD, has established a number of leading tourism destinations. It is hoped that in the future, Medan City will have tourist destinations that have received STD certification. This research was conducted to formulate a model of implementing sustainable tourism development in Medan with a total sample of 220 people spread over 11 leading tourist destinations in the city of Medan, samples were taken with a purposive random sampling technique. The research variables used include; sustainable management, socio-cultural benefits, economic benefits for the surrounding community, environmental benefits and the application of sustainable tourism. Data analysis was carried out with a structural model of the Structural Equation Model (SEM) with the help of Amos 22 software. The results showed that the management aspects, economic aspects, socio-cultural aspects of environmental aspects, and the impact of tourism directly and indirectly have a positive effect on the implementation of sustainable tourism in the city of Medan.

*Keywords: sustainable management, sustainable tourism, sustainable tourism development*

### **INTRODUCTION**

The idea of sustainable tourism development is an idea that has developed since the release of the Brundtland Report. Related to the report, in the context of sustainable tourism, tourism is related to how to manage the desires of the present generation by

not ignoring the interests of the next generation (WECD, 1987). Since then, the concept of sustainable tourism has become the main discourse for various groups, tourism destination owners and industry managers, environmentalists, communities, developers, politicians and academics (Macnaghten & Urry, 1998).

Furthermore, in his report Hall & Dickson (2011) mentioned a key factor in organizing ideas and policies for sustainable tourism development based on the United Nations Environment Program (UNEP) and the World Tourism Organization (UNWTO). This policy has 3 pillars that are balanced, namely; a) economic, b) socio-cultural and 3) environmental sustainability. On the other hand, related to efforts to balance the 3 pillars, Cater (1995) argues that the language of "balance" can be misleading because economic growth through tourism will often conflict with environmental protection, with difficult "exchanges" needing to be made between economic, social dimensions and the environment. Liu (2003) also mentioned that it is still patchy, not integrated and assumptions that are still likely to be wrong.

Similar to sustainable development, sustainable tourism development also has various definitions according to experts, as stated by Pérez et al. (2017), Hall (2019), Law et al. (2017), Nunkoo & Seetanah (2019) Bramwell & Lane, (2011) and others. UNWTO defines sustainable tourism as an activity to meet the various needs of tourists at the moment and the needs of the related tourist destination, while still protecting and increasing various opportunities and resources for the future. This is considered to lead to the management of existing resources in such a way that various economic, social, aesthetic and environmental preservation needs can be met by continuing to promote cultural integrity, important ecological processes, preservation of biodiversity and strengthening life support systems (UNEP & UNWTO, 2005).

In Indonesia, the STD concept was introduced in early 2016. Along with the launching of SDGs, the Indonesian government through the Ministry of Tourism created a pilot project for tourism development with the concept of sustainable tourism development. Kemempdar RI cooperates with 20 regencies / cities that are committed to implementing sustainable tourism implementation (Sitepu, 2017). Even to support the program the Ministry of Tourism and Republic of Indonesia has issued Permenpar No.14 / 2016 on Sustainable Destinations Guidelines (Sitepu, 2019). According Sitepu

(2019) STD is defined as measures for the development of tourism in an area that is oriented towards efforts to preserve resources that are also needed for the future. Sustainable tourism development emphasizes not only the economic aspects, but also still considers ecological, socio-cultural and governance aspects.

Criteria and Indicators of Sustainable Tourism Development Based on the Global Sustainability Tourism Council (GSTC) there are 4 pillars to assess whether a tourism destination, hotel or tour operator has carried out sustainable tourism development or not. The four pillars of sustainable destinations include; a) demonstrate sustainable destination management, b) maximize economic benefits to the host community and minimize negative impacts, c) maximize communities, visitors, and culture benefits and d) maximize the environment benefits. The criteria development process has been designed to comply with the ISO code of ethics and the ISEAL alliance standard code, an international body that provides guidance for the development and management of sustainability standards for all sectors (GSTC, 2017).

By the Indonesian government, through the Ministry of Tourism, the four pillars, along with the criteria for sustainable tourism development, the GSTC was later adopted as a standard for managing tourism destinations that are managed sustainably and set forth in Permenpar No.14 / 2016. The scope of sustainable tourism destinations as outlined in Permenpar No.14 / 2016, among others, includes; a) management of sustainable tourism destinations, b) economic empowerment for local communities, c) preservation of local cultures for the community and visitors and d) environmental preservation.

A similar approach in assessing sustainable tourism development was also carried out by UNEP (2012), OECD, (2014) and WTTC (2018). Castellani & Sala (2010) use a sustainable performance index for tourism policy development, Blancas et al. (2010) use a system of indicators of sustainable tourism. Ritchie & Crouch (2003) in his book *The Competitive Destination* argued that a sustainable destination has 4 pillars, namely; a) ecological sustainability, b) economic sustainability, c) sociocultural sustainability and d) political sustainability. While Hardy et al. (2002) compiled a conceptual overview and operational context of sustainable tourism development consisting of 5 aspects, namely;

a) economic vision, b) conservation vision, c) community vision, d) academic response and e) industry response.

In Indonesia, the concept of sustainable tourism development began in 2015. Through the Indonesian Ministry of Tourism, 20 districts / cities have been launched as a pilot project for sustainable tourism development (Dewipule, 2015). The program was later expanded with the establishment of 10 National Tourism Strategic Areas (KSPN), also known as 10 new Bali (Tempo, (2016); Pemerintah-RI (2016). Furthermore, out of the 10 destinations, 4 destinations are set as priorities, namely; 1) Lake Toba, 2) Borobudur, 3) Mandalika and 4) Labuan Bajo (Prodjo, 2017). Various strategies for developing national tourism can be seen by reflecting the success of the increasing number of domestic and foreign tourists visiting Indonesia.

The inclusion of the Province of North Sumatra and Medan in particular in the national policy of implementing sustainable tourism development has responded to the Medan City government with various programs, ranging from the socialization of sustainable tourism development, including it in the Medan City Tourism Office program and coordinating activities with each tourism destination manager in Medan City Medan (Bangun, 2018; Rmd, 2016; Sitepu, 2017).

Related to the dynamics of tourist visits, as the capital of North Sumatra Province which is included in the National KSPN, Medan City continues to improve to make Medan City as the gateway to North Sumatra tourism, by applying the concept of sustainable tourism development. Through the Medan City Tourism Office a number of existing tourist destinations, including; Maimun Palace, Tjong Afie Mansion, China City Site, Maria Annai Valengkani Church, Al Mashun Grand Mosque, Merdeka Walk, Bintang Garden, Crocodile Park, North Sumatra Museum, Hairos Water Park, Siombak Lake and others have been introduced to sustainable tourism development.

This paper will further outline how aspects of management, economic, socio-cultural and environmental impacts will have a positive impact on regional tourism and will in turn create sustainable tourism development.

## RESEARCH METHODS

The location of the research activities carried out in the city of Medan with the taking of respondents carried out in the community around 11 existing tourism destinations with a sample of 220 respondents. The sample is determined by the purposive random sampling method. The requirements for selecting respondents are adjusted to the following criteria: a) At least 17 years old at the time of the survey, or already married; b) Has lived around the tourist destination for at least 10 years when the survey was conducted; and c) Willing to participate as respondents. The form of the questionnaire is closed in which the respondent is given alternative choices of answers to each question. All variables will be measured using a Likert scale to make measurements related to a person's perception, attitudes, or opinions about social phenomena. In this study the Likert scale uses a 5-level scale that allows respondents to provide answers to the research questionnaire.

The object under study is spread in a number of tourist destinations, including; community around tourist destinations; 1) Maimun Palace, 2) Tjong Afie Mansion, 3) Chinese City Sites, 4) Maria Annai Valengkani Church, 5) Al Mahsum Grand Mosque, 6) Merdeka Walk, 7) Medan Zoo, 8) Taman Buaya, 9) Sumatra Museum North, 10) Hairos Water Park, and 11) Lake Siombak, where the number is not known.

The variables used in this study refer to a number of previous studies, among others by; Sitepu (2019), Kristjánsdóttir, et al. (2018), Delgado & López (2018), Sitepu (2017), Law et al. (2017), (Pérez et al., 2017) Liu, (2010), Castellani & Sala (2010), dan indikator yang dikembangkan oleh GSTC, (2017), (Graham & Twining-Ward, 2005), WTTC (2018).

**Table 1. Variable and Indicator Base on Theory**

No	Variable	Indicators
1	Management aspect; GSTC (2017), Sitepu (2019)	A1: Sustainable destination strategy
		A2: Destination management organization
		A3: Monitoring
		A4: Tourism seasonality management
		A5: Climate change adaptation
		A6: Asset and attraction inventaritation
		A7: Planning and reagulation
		A8: Access for all
		A9 Property acquisition

No	Variable	Indicators
		A10 Visitor satisfaction
		A11 Sustainability standards
		A12 Safety and security
		A13 Crisis and emergency management
		A14 Promotion
2	Economic Benefit; GSTC (2017), Sitepu (2019)	B1 Economic monitoring
		B2 Economic monitoring
		B3 Public participation
		B4 Local community opinion
		B5 Local access
		B6 Tourism awareness and education
		B7 Preventing exploitation
		B8 Support for community
		B9 Supporting local entrepreneurs and fair trade
3	Social and cultural Benefit; GSTC (2017), Sitepu (2019)	C1 Attraction protection
		C2 Visitor management
		C3 Visitor behavior
		C4 Cultural heritage protection
		C5 Site interpretation
		C6 Intellectual property
4	Environment Benefit; GSTC (2017), Sitepu (2019)	D1 Environment Risk
		D2 Protection of sensitive environments
		D3 Wildlife protection
		D4 Greenhouse gas emissions
		D5 Energy conservation
		D6 Water Management
		D7 Water security
		D8 Water quality
		D9 Wastewater
		D10 Solid waste reduction
		D11 Light and noise pollution
		D12 Low-impact transportation
5	Tourism Impact; GSTC (2017), Sitepu (2019), Delgado & López (2018), Kristjánssdóttir, et al. (2018), Law et al. (2017)	E1 Tourism activities bring better economic changes
		E2 Tourism activities change to better environment
		E3 Tourism activities make the government more concerned
		E4 Tourism activities make people care the environment
		E5 Tourism activities make the community more friendly
		E6 Tourism activities encourage accelerated development
		E7 Tourism Activities provides job opportunities

No	Variable	Indicators
6	Sustainable Tourism Development GSTC (2017), Sitepu (2019), Delgado & López (2018), Kristjánsdóttir, et al. (2018)	F1 The government is committed to running sustainable tourism
		F2 The community is aware of the importance of sustainable tourism
		F3 Local companies are also starting to get involved in tourism
		F4 There are regional long-term plans that involve stakeholders
		F5 Various problems are addressed and anticipated
		F6 Seen a lot of environmentally friendly tourism events
		F7 The number of tourist visits continues to increase

In this study there are 6 variables used, the independent variables are: E = the impact of tourism, STD = sustainable tourism development. While the dependent variables are: A = management aspects, B = economic benefits, C = socio-cultural benefits and D = environmental benefits and E = tourism impact. In the form of an equation, the model used in this study can be stated as follows:

$$E = \rho_E A + \rho_E B + \rho_E C + \rho_E D + \varepsilon_1 \dots \dots \dots (1)$$

$$STD = \rho_{STD} A + \rho_{STD} B + \rho_{STD} C + \rho_{STD} D + \varepsilon_2 \dots \dots \dots (2)$$

$$STD = \rho_{STD} A + \rho_{STD} B + \rho_{STD} C + \rho_{STD} D + \rho_{STD} E + \varepsilon_3 \dots \dots \dots (3)$$

Where as:

STD = sustainable tourism development

A = management aspect

B = economic benefit

C = social and cultural benefit

D = environment benefit

E = tourism impact

Furthermore, the research model used is to use the Structural Equation Model (SEM) with AMOS 22 software. Testing the model is done through stages; validity test,

reliability test, normality test, data transformation to the method of successive interval, outlier test, goodness of fit test and hypothesis test.

## RESULT AND DISCUSSION

From a total of 220 questionnaires to be distributed to respondents, the amount received by researchers was 220 questionnaires and no questionnaires were damaged. So that a proper questionnaire was analyzed for 220 questionnaires, the respond rate was 100%. Based on the results of filling respondents from returned questionnaires, it can be obtained an overview of the characteristics of respondents based on gender, age and last education. Based on gender, from 220 respondents 54.55% male and 45.45% female. Based on the age group the majority of respondents aged 40 years and over that is equal to 40.45%. The respondents aged 21-30 years 20.91% and those aged 31-40 years amounted to 38.64%. Furthermore, it is seen from the level of education of the majority of respondents by 50% with a diploma / graduated education background, senior high school 38.64% and master degree of 10.45%.

**Table 2. Characteristics of Respondents**

No	Characteristic	Total	%	
1	Gender	Male	120	54,55%
		Female	100	45,45%
	Total	220	100,00%	
2	Age	21-30	46	20,91%
		31-40	85	38,64%
		> 41	89	40,45%
	Total	220	100,00%	
3	Education	Senior High Scholl	85	38,64%
		Diploma / S1	110	50,00%
		S2	23	10,45%
		S3	2	0,91%
	Total	220	100,00%	

Variable A, the variable aspect of management, in this study was measured using 13 questions based on 13 indicators. The results of data analysis calculations, the overall average of 4.340. The highest average values are in Mgt2 with 4.445 values while the lowest average values are in Mgt10 and Mgt11 each with a value of 4.291.

Variable B is a variable related to the economic impact on the surrounding community, in this study measured using 7 questions based on 7 indicators. The results obtained that the overall average value of 4.258. The highest average value of economic impact indicators is found in Eko5 and Eko7 with a value of 4.305. While the lowest value is in Eko4 with a value of 4.195.

Variable C, related to socio-cultural impacts, was measured using 6 questions based on 6 indicators. Based on the results of the analysis, the average value of all items was 4,077. The highest value of the 6 indicators is found in Bud1 with a value of 4.136 while the lowest value occurs at Bud2 with a value of 4.036. Whereas variable D, the environmental impact of tourism activities, in this study was measured using 12 questions based on 12 indicators. Based on the results of data analysis, the overall average value of items amounted to 4.297, where the environmental impact items that had the highest average value were Lin1 with a value of 4.345 while the lowest value was Lin4 with a value of 4.186.

Furthermore for the F variable, the variable aspect of the impact on the application of STD in this study was measured using 7 questions based on 7 indicators. Based on the results of data analysis, it is found that the overall average is 4,154. The question item that has the highest average is Std7 with a value of 4.280 while the lowest value is a Std5 with a value of 4.059.

### **Validity and Reliability**

Validity Test is done by convergent validity test, which is to test whether the construct (indicator) has a high proportion of variance or not. Indicators can meet the criteria if the value of C.R. > 1.96, while the value of the loading factor or standardized loading estimate > 0.5. Overall validity test results using the Confirmatory Factor Analysis method can be seen in Figure 1.

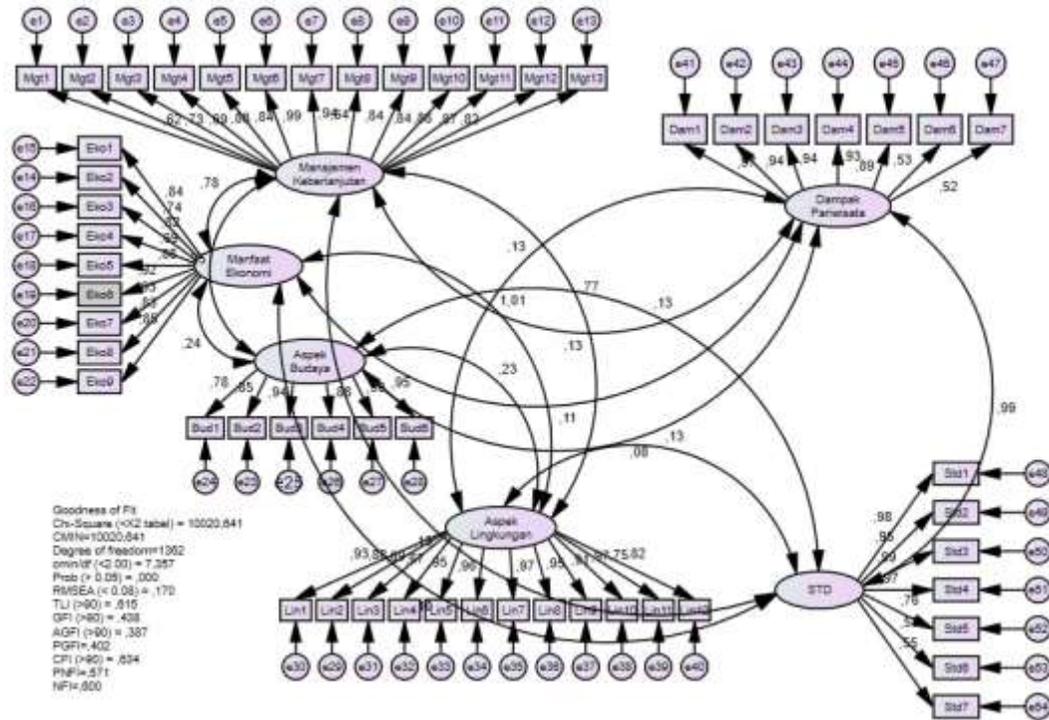


Figure 1. Output Confirmatory Factor Analysis

The reliability test is done by construct reliability test, which is testing the reliability and consistency of the data. This test meets the criteria if Construct Reliability > 0.7. Construct Reliability values between 0.6 to 0.7 can still be accepted provided that the construct validity (indicator) in the model is good. Ghozali (2013) explains that the indicator of the variable is called reliable if the value of AVE  $\geq 0.05$  and CR  $\geq 0.07$ . The reliability test results showed that all variable constructs passed the reliability test.

### Structural Model Analysis

After analyzing the validity and reliability of the indicators forming latent variables, the next analysis is the full Structural Equation Modeling (SEM) analysis. Analysis of the results of data processing at the full SEM model stage is done by conducting the model feasibility test as well as the significance test of causality. A path diagram for a full analysis of invalid and reliable indicator models has been aborted and presented in Figure 2.

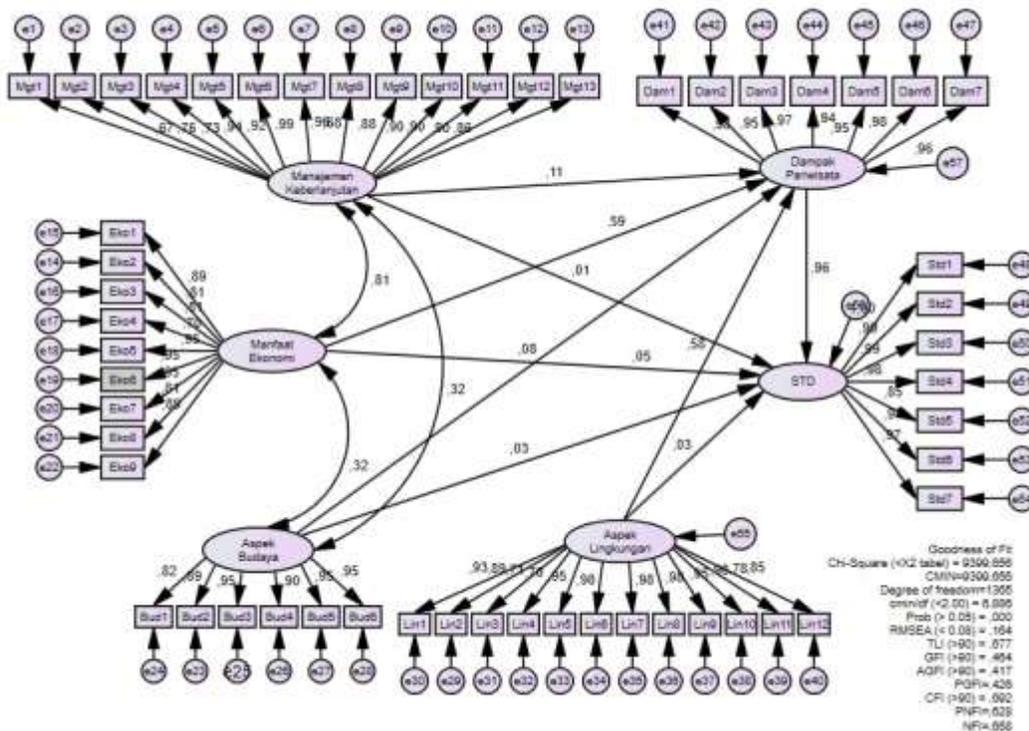


Figure 2. Output Structural Equation Model - Full Model

Based on Figure 2 it can be seen that the value of the feasibility test of the model has not shown a fit model. So it is necessary to modify the model based on modification indices according to AMOS recommendations. Modification indices by seeing the value of variances regression weights. After modifying it by adding an arrow in accordance with AMOS recommendations, the results presented in Figure 3, are models that can be said to be better in Goodness of Fit values.

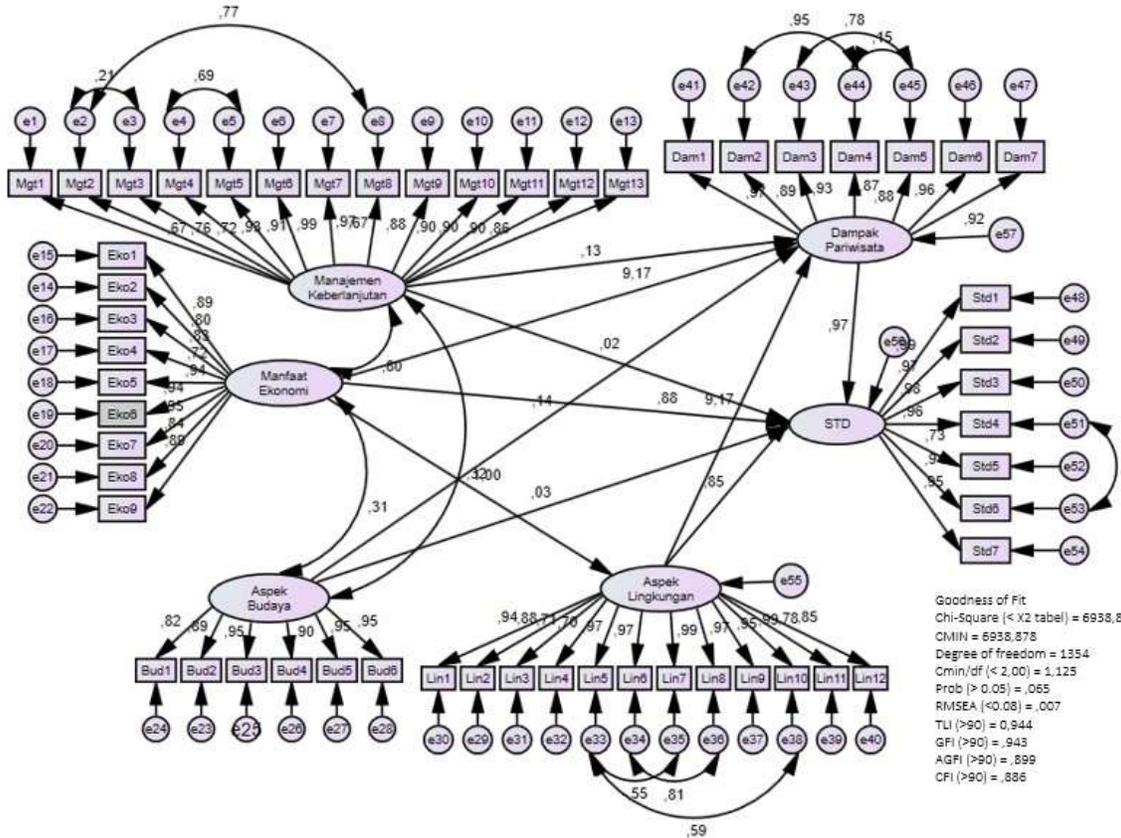


Figure 3. Output SEM Full Model with Modifications

Based on observations in the figure on the full model analysis chart it can be shown that the model meets the Goodnes of Fit criteria. Chi-square test results on the full model modification obtained a chi-square value of 6938,978 above the chi-square table for 1,354 degrees of freedom at a 5% significance level of 1,440,717. These results indicate that the overall model meets the model fit criteria. Probability value of 0.650 which is above 0.05 and other criteria that mostly meet well such as RMSEA 0.07 <0.08 then TLI value = 0.944, GFI value = 0.943, AGFI value = 0.899 and CFI = 0.886 . These results indicate that the overall model meets the model fit criteria.

Table 3. Goodness of Fit Test

Goodness of Fit Criteria	Acceptance Limits Goodness of Fit	Result	Conclusion
Chi square (Cmin)	Smaller is better	6938,878	Fit
Degree of freedom	Must be (+)	1354	Fit
Probability	> 0,05	0,065	Fit
Cmin/df	<2.0 or <5.0	1,125	Fit
RMSEA	0,05≤RMSEA≤0,08	0,007	Fit

Tucker Lewis Index (TLI)	$0,80 \leq TLI \leq 1$	0,944	Fit
Composite Fit Index (CFI)	$0,80 \leq CFI \leq 1$	0,886	Marginal
Normed Fit Index (NFI)	$0,80 \leq NFI \leq 1$	0,854	Marginal
Goodness of Fit Index (GFI)	$0,80 \leq GFI \leq 1$	0,943	Fit

Furthermore, to facilitate the evaluation of the hypothesis test used a causality table between variables as presented in Table 4 below:

**Table 4. Summary of Causality Between Variables**

	Estimate	S.E.	C.R.	P
Impact (E) <--- Management (A)	,202	,174	2,161	,046
Impact (E) <--- Economy (B)	1,129	2,338	2,902	,036
Impact (E) <--- Culture (C)	,168	,087	1,936	,040
Impact (E) <--- Environment (D)	1,558	1,674	3,904	,032
STD (F) <--- Management (A)	,026	,035	2,750	,043
STD (F) <--- Economy (B)	1,102	1,919	3,574	,006
STD (F) <--- Culture (C)	,041	,018	2,216	,027
STD (F) <--- Environment (D)	1,012	1,816	,557	,577
STD (F) <--- Impact (E)	1,002	,049	2,626	***

Then the variable evaluation can be arranged as follows:

- 1) The direct effect of the impact of sustainable management (A) on the impact of tourism (E). Hypothesis 1 of this study states that the aspect of sustainable management has a positive effect on the impact of tourism. Based on the results of data analysis it is known that the value of C.R. the causal relationship between sustainable management and the impact of tourism is 16,103 and the P value is 0.046. Both of these values indicate the value of C.R. > 1.96 and the P value below 0.05. Thus, based on the description it can be explained that the null hypothesis is rejected and hypothesis 1 is accepted, which means that in this study sustainable management has a positive effect on the impact of tourism.
- 2) The direct effect of the economic impact on the surrounding community (B) on the impact of tourism (E). Hypothesis 2 in this study states that the economic aspect has a positive effect on the impact of tourism. Based on the results of data analysis it is known that the value of C.R. the causality of the economic impact on the impact of tourism is 2.902 and the P value is 0.036. Both of these values indicate the value

of C.R.  $> 1.96$  and the P value below 0.05. Based on the description it can be explained that the null hypothesis is rejected and hypothesis 1 is accepted, which means in this study the economic impact has a positive effect on the impact of tourism.

- 3) Direct influence of socio-cultural impacts (C) on the impacts of tourism (E). Hypothesis 3 of this study states that socio-cultural impacts have a positive effect on the impact of tourism. Based on the results of data processing presented in the table it is known that the value of C.R. the causality of social cultural impacts on the impact of tourism is 1.936 and the P value is 0.04. Both of these values indicate the value of C.R.  $> 1.96$  and the P value below 0.05. Based on the description it can be explained that the null hypothesis is rejected and hypothesis 1 is accepted, which means that in this study the socio-cultural impact has a positive effect on the impact of tourism.
- 4) 5) Direct influence of environmental impact (D) on the impact of tourism (E). Hypothesis 4 in this study states that the environmental impact has a positive effect on the impact of tourism. Based on the results of data processing presented in the table it is known that the value of C.R. on the causality relationship the environmental impact on the impact of tourism is 3.904 and the P value is 0.032. Both of these values indicate the value of C.R.  $> 1.96$  and the P value below 0.05. Based on the description it can be explained that the null hypothesis is rejected and hypothesis 1 is accepted, which means that in this study the environmental impact has a positive effect on the impact of tourism.
- 5) The direct effect of management's impact (A) on sustainable tourism development (F). Hypothesis 5 of this study states that the impact of sustainable management has a positive effect on the application of STD. Based on the results of data processing presented in the table it is known that the value of C.R. the causal relationship between management's impact on STD is 2.750 and the P value is 0.043. Both of these values indicate the value of C.R.  $> 1.96$  and the P value below 0.05. Based on the description it can be explained that the null hypothesis is rejected and hypothesis 1 is accepted, which means that in this study the impact of management has a positive effect on the application of STD.

- 6) The direct effect of the impact of the economy (B) on the STD (F). Hypothesis 6 in this study states that the economic impact has a positive effect on the application of STD. Based on the results of data processing presented in the table it is known that the value of C.R. the causality of the economic impact on STD is 3.574 and the P value is 0.006. Both of these values indicate the value of C.R. > 1.96 and the P value below 0.05. Based on the description it can be explained that the null hypothesis is rejected and hypothesis 1 is accepted, which means that in this study the economic impact has a positive effect on the application of STD
- 7) Direct influence of social cultural impact (C) on STD (F). Hypothesis 7 of this study states that the socio-cultural impact has a positive effect on the application of STD. Based on the results of data processing presented in the table it is known that the value of C.R. the causality of socio-cultural impacts on STD is 2.216 and the P value is 0.027. Both of these values indicate the value of C.R. > 1.96 and the P value below 0.05. Based on the description it can be explained that the null hypothesis is rejected and hypothesis 1 is accepted, which means that in this study the socio-cultural impact has a positive effect on the application of STD.
- 8) Direct influence of environmental impact (D) on STD (F), Hypothesis 8 in this study states that the environmental impact has a positive effect on the application of STD. Based on the results of data processing presented in the table it is known that the value of C.R. the causal relationship between the environmental impact of STD is 0.557 and the P value is 0.577. Both of these values indicate the value of C.R. <1.96 and the P value above 0.05. Based on the description it can be explained that the null hypothesis is accepted and hypothesis 1 is rejected, which means that in this study the environmental impact does not have a positive effect on the application of STD.
- 9) Direct effect of tourism Impact (E) on STD (F). Hypothesis 9 in this study is the impact of positive tourism on the application of STD. Based on the results of data processing presented in the table it is known that the value of C.R. on the causality relationship the impact of tourism on the STD is 2.626 and the P value is 0.001 (\*\*\*). Both of these values indicate the value of C.R. > 1.96 and the P value below 0.05. Based on the description it can be explained that the null hypothesis is rejected and

hypothesis 1 is accepted, which means in this study the impact of tourism has a positive effect on the application of STD.

Further analysis can be done by observing the total, direct and indirect relationship between variables used in this study. Direct, indirect and total relationships are shown in Tables 9, 10 and 11.

**Table 5. Standardized Total Effects**

	F3 (culture)	F2 (economy)	F1 (mgt)	F4 (environment)	F5 (tourism Impact)	F6 (STD)
F4 (Envi)	,000	,999	,000	,000	,000	,000
F5 (Impact)	,138	,010	,133	9,172	,000	,000
F6 (STD)	,166	,039	,146	9,758	,971	,000

**Table 6. Standardized Direct Effects**

	F3 (culture)	F2 (economy)	F1 (mgt)	F4 (environment)	F5 (tourism impact)	F6 (STD)
F4 (Envi)	,000	,999	,000	,000	,000	,000
F5 (Impact)	,138	,169	,133	,172	,000	,000
F6 (STD)	,032	,880	,017	,853	,971	,000

**Table 7. Standardized Indirect Effects**

	F3 (culture)	F2 (economy)	F1 (mgt)	F4 (environment)	F5 (tourism impact)	F6 (STD)
F4 (Envi)	,000	,000	,000	,000	,000	,000
F5 (Impact)	,000	,159	,000	,000	,000	,000
F6 (STD)	,134	,841	,129	,906	,000	,0

Based on the results of data analysis stated. It can be argued that this research has succeeded in proving that the management variable has a positive effect on the impact of tourism. Based on these results it can be explained that the better the sustainability management applied from tourism destinations, the better the effect on tourism impacts. This result confirms previous opinions that link management with the impact of tourism.

Research also proves that the economic impact variable has a positive effect on the impact of tourism. Based on these results it can be explained that the better the economic impacts applied from tourism destinations, the better the effect on tourism impacts. Likewise with other variables; cultural aspects and environmental aspects used in this study. On the other hand the impact of tourism is also proven to be an intervening variable of the four exogenous variables, among others; sustainable management, economic benefits for the surrounding community, socio-cultural benefits and environmental benefits in influencing sustainable tourism development.

## CONCLUSION

- 1) Management aspects, economic aspects, social cultural aspects and environmental aspects directly have a positive effect on the impact of tourism.
- 2) Management aspects, economic aspects, social cultural aspects and environmental aspects directly have a positive effect on sustainable tourism.
- 3) Management aspects, economic aspects, social cultural aspects and environmental aspects indirectly through the economic impact variables have a positive effect on sustainable tourism.

The recommended recommendations related to this research are, given that the variables of management, economic, cultural and environmental aspects affect the impact of tourism activities, the Medan City government is expected to be able to improve tourism governance by considering these four aspects. The Medan City Government is also expected to be able to approach and strengthen existing destinations through the concept of sustainable tourism development.

## REFERENCES

- Bangun, S. (2018). Pembinaan Pariwisata Berkelanjutan Demi Mewujudkan Medan Kota Wisata. Retrieved from <http://waspada.co.id/medan/pembinaan-pariwisata-berkelanjutan-demi-mewujudkan-medan-kota-wisata/>
- Blancas, F. J., González, M., Lozano-Oyola, M., & Pérez, F. (2010). The Assessment of Sustainable Tourism: Application to Spanish Coastal destinations. *Ecological Indicators*, 10(2), 484–492. <https://doi.org/10.1016/j.ecolind.2009.08.001>

- Bramwell, B., & Lane, B. (2011). Critical Research on The Governance of Tourism and Sustainability. *Journal of Sustainable Tourism*, 19(4–5), 411–421. <https://doi.org/10.1080/09669582.2011.580586>
- Castellani, V., & Sala, S. (2010). Sustainable performance index for tourism policy development. *Tourism Management*, 31(6), 871–880. <https://doi.org/10.1016/j.tourman.2009.10.001>
- Cater, E. (1995). Environmental Contradictions in Sustainable Tourism. *The Geographical Journal*, 161(1), 21. <https://doi.org/10.2307/3059924>
- Graham, M., & Twining-Ward, L. (2005). *Monitoring for a Sustainable Tourism Transition: The Challenge of Developing and Using Indicators*. CABI Publishing.
- GSTC. (2017). GSTC Criteria - Global Sustainable Tourism Council (GSTC). Retrieved November 30, 2017, from <https://www.gstcouncil.org/gstc-criteria/>
- Hall, C. M. (2019). Constructing Sustainable Tourism Development: The 2030 Agenda and The Managerial Ecology of Sustainable Tourism. *Journal of Sustainable Tourism*, 27(7), 1044–1060. <https://doi.org/10.1080/09669582.2018.1560456>
- Hall, C. R., & Dickson, M. W. (2011). Economic, Environmental, and Health/Well-Being Benefits Associated with Green Industry Products and Services: A Review 1. *J. Environ. Hort*, 29(2), 96–103. Retrieved from [https://aggiehorticulture.tamu.edu/faculty/hall/publications/JEH 29\(2\) 96-103.pdf](https://aggiehorticulture.tamu.edu/faculty/hall/publications/JEH%2029(2)%2096-103.pdf)
- Hardy, A., Beeton, R. J. S., & Pearson, L. (2002). Sustainable tourism: An overview of the concept and its position in relation to conceptualisations of tourism. *Journal of Sustainable Tourism*, 10(6), 475–496. <https://doi.org/10.1080/09669580208667183>
- Kristjánsdóttir, K. R., Ólafsdóttir, R., & Ragnarsdóttir, K. V. (2018). Reviewing Integrated Sustainability Indicators for Tourism. *Journal of Sustainable Tourism*, 26(4), 583–599. <https://doi.org/10.1080/09669582.2017.1364741>
- Law, A., DeLacy, T., & McGrath, G. M. (2017). A Green Economy Indicator Framework for Tourism Destinations. *Journal of Sustainable Tourism*, 25(10), 1434–1455. <https://doi.org/10.1080/09669582.2017.1284857>
- Liu, Z. (2003). Sustainable Tourism Development: A Critique. *Journal of Sustainable Tourism*, 11(6), 459–475. <https://doi.org/10.1080/09669580308667216>
- Liu, Z. (2010). Journal of Sustainable Sustainable Tourism Development : A Critique Sustainable Tourism Development : A Critique. *Journal of Sustainable Tourism*, 11(6), 459–475. <https://doi.org/10.1080/09669582.2011.580586>
- Macnaghten, P., & Urry, J. (1998). *Contested Natures*. London: Sage. Retrieved from [https://books.google.co.id/books?hl=en&lr=&id=PCMVYZ3xwfmC&oi=fnd&pg=PP2&dq=Contested+natures.+London:+Sage&ots=GdR66AxQLi&sig=-VHEmrPB4A0kD65F3Kj2oFlxj\\_k&redir\\_esc=y#v=onepage&q=Contested+natures.London%3ASage&f=false](https://books.google.co.id/books?hl=en&lr=&id=PCMVYZ3xwfmC&oi=fnd&pg=PP2&dq=Contested+natures.+London:+Sage&ots=GdR66AxQLi&sig=-VHEmrPB4A0kD65F3Kj2oFlxj_k&redir_esc=y#v=onepage&q=Contested+natures.London%3ASage&f=false)
- Nunkoo, R., & Seetanah, B. (2019). Special Issue: Innovation in Sustainable Tourism. *Tourism Review*, 72(2), 129–292. Retrieved from

<https://www.cabdirect.org/cabdirect/abstract/20193219382>

- OECD. (2014). Green Growth Indicators 2014. <https://doi.org/https://doi.org/10.1787/9789264202030-en>
- Pemerintah-RI. Peraturan Presiden No 3 Tahun 2016 tentang Percepatan Pelaksanaan Proyek Strategis Nasional, Lampiran Daftar Proyek Strategis Nasional (2016).
- Pérez, V. E., Santoyo, A. H., Guerrero, F., León, M. A., da Silva, C. L., & Caballero, R. (2017). Measuring The Sustainability of Cuban Tourism Destinations Considering Stakeholders' Perceptions. *International Journal of Tourism Research*, 19(3), 318–328. <https://doi.org/10.1002/jtr.2114>
- Prodjo, W. A. (2017). 10 Destinasi “Bali Baru”, 4 Destinasi Jadi Prioritas. Retrieved from <https://travel.kompas.com/read/2017/11/18/122700027/10-destinasi-bali-baru-4-destinasi-jadi-prioritas>
- Ritchie, J. R. B., & Crouch, G. I. (2003). *The Competitive Destination: A Sustainable Tourism Perspective - J. R. Brent Ritchie, Geoffrey Ian Crouch - Google Buku*. Cabi. Retrieved from [https://books.google.co.id/books?hl=id&lr=&id=yvydAwAAQBAJ&oi=fnd&pg=PR5&dq=Ritchie+dan+Crouch+The+Competitive+Destination+&ots=IRKVbnncYJ&sig=f6Je7Z2BKkYGXIZc4k3Lnx75JZ8&redir\\_esc=y#v=onepage&q=Ritchie+dan+Crouch+The+Competitive+Destination&f=f](https://books.google.co.id/books?hl=id&lr=&id=yvydAwAAQBAJ&oi=fnd&pg=PR5&dq=Ritchie+dan+Crouch+The+Competitive+Destination+&ots=IRKVbnncYJ&sig=f6Je7Z2BKkYGXIZc4k3Lnx75JZ8&redir_esc=y#v=onepage&q=Ritchie+dan+Crouch+The+Competitive+Destination&f=f)
- Rmd. (2016). Medan Segera Laksanakan Pengembangan Pariwisata Berkelanjutan. Retrieved from <http://harian.analisadaily.com/kota/news/medan-segera-laksanakan-pengembangan-pariwisata-berkelanjutan/207869/2016/01/23>
- Sitepu, E. S. (2017). Baseline Assessment of Sustainable Tourism Development (STD) Implementation: Case study in Medan City. In *International Conference on Public Policy, Social Computing and Development (ICOPOSDev) 2017, 20th October 2017, Hotel Grandika, Indonesia*. Medan-Sumatera Utara. Retrieved from [https://www.researchgate.net/publication/331877114\\_Baseline\\_Assessment\\_of\\_Sustainable\\_Tourism\\_Development\\_STD\\_Implementation\\_A\\_case\\_study\\_in\\_Medan\\_City](https://www.researchgate.net/publication/331877114_Baseline_Assessment_of_Sustainable_Tourism_Development_STD_Implementation_A_case_study_in_Medan_City)
- Sitepu, E. S. (2019). Improving Destination Management Through Sustainable Tourism Development Model: A Case Study of Taman Simalem Resort. *International Journal of Applied Sciences in Tourism and Events*, 3(1), 38–53. <https://doi.org/10.31940/ijaste.v3i1.1347>
- Tempo. (2016). Membangun Konektivitas 10 Kawasan Strategis Pariwisata Nasional. Retrieved from <https://inforial.tempo.co/info/1000761/membangun-konektivitas-10-kawasan-strategis-pariwisata-nasional>
- Torres-Delgado, A., & López Palomeque, F. (2018). The ISOST Index: A Tool for Studying Sustainable Tourism. *Journal of Destination Marketing & Management*, 8, 281–289. <https://doi.org/10.1016/J.JDMM.2017.05.005>
- UNEP. (2012). Measuring Progress towards an Inclusive Green Economy. *Unep*.

- UNEP, & UNWTO. (2005). Making Tourism More Sustainable - A Guide for Policy Makers. Retrieved July 17, 2018, from <http://sdt.unwto.org/content/about-us-5>
- WECD, S. W. S. (1987). World Commission on Environment and Development - Our Common Future.
- WTTC. (2018). *The Comparative Economic Impact of Travel and Tourism*. Retrieved from [https://www.wttc.org/-/media/files/reports/benchmark-reports/the\\_comparative\\_economic\\_impact\\_of\\_travel\\_\\_tourism.pdf](https://www.wttc.org/-/media/files/reports/benchmark-reports/the_comparative_economic_impact_of_travel__tourism.pdf)