Management Strategic of nature tourism activities in West Bali National Park (WBNP) using Structural Equation Modeling (SEM

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Abstract: The study of natural tourism activities in WBNP aims to: 1) determine the influence of each dimension of tourist service quality (serqual) on tourist satisfaction in natural tourism activities, 2) analyze whether tourist satisfaction has a positive effect on the loyalty of tourists visiting natural tourism destinations, and 3) analyze whether tourist satisfaction through tourist loyalty indirectly has a positive and significant effect on tourist attitudes and behavior. One method to examine the causality of the relationship between the dimensions of serqual, tourist satisfaction and loyalty is SEM. The results of the study found that: 1) tourist satisfaction is measured using serqual indicators, each dimension has a relatively even role in measuring tourist satisfaction, 2) tourist satisfaction has a positive and significant effect on tourist loyalty, and 3) indirectly tourist satisfaction through mediation of tourist loyalty has a positive and significant effect on the attitudes and behavior of tourists. Recommendations regarding the research conclusions are: 1) the serqual indicator in measuring tourist satisfaction needs to be maintained by tourist service officers and needs to be improved, and 2) the are expected to form the basis for formulating sustainable nature tourism management and marketing strategies in the WBNP

Keywords: loyalty of tourists, natural tourism activities, SEM, tourist satisfaction, tourist service quality

1.0 INTRODUCTION

One of the management goals of the WBNP is to improve the governance of nature tourism and environmental services (Balai Taman Nasional Bali Barat 2024). In 2018, WBNP received an award for Best Top 100 Destinations at the Internationale Tourismus Borse (ITB) in Berlin, Germany. This demonstrates that the national park's management objectives have been implemented proportionally and harmoniously, and the potential biodiversity, the primary natural tourist attraction in WBNP, has been maintained. Furthermore, the involvement of the community and other stakeholders in ecotourism management plays a significant role (Dirjen KSDAE 2018).

The WBNP Office increased the visitor quota for four tourist locations, including Labuan Lalang, Tegal Bunder, Banyumandi, and Karangsewu within the WBNP area. This number of visits has increased compared to 2021 and 2020, but is still below the number of visits in 2019 (Administrator Denpost 2022). In fact, at the end of 2022, the Minister of Tourism and Creative Economy, Sandiaga S. Uno, proposed that WBNP become a conservation-based nature tourism destination, due to the presence of the Bali Starling, one of the tourism icons of the Island of the Gods (I Putu Adi Budiastrawan 2022).

Recognizing the unsatisfactory number of tourism visits after Covid-19, a structured study of nature tourism activities in WBNP is needed. Considering the WBNP 2023 Performance Report (Balai Taman Nasional Bali Barat 2024), which successfully developed priority nature tourism destinations in WBNP, this certainly requires a comprehensive study so that the nature tourism destinations developed can have a positive impact on the WBNP office and the surrounding community.

WBNP, as nature tourism destinations, play a crucial role in maintaining the balance between natural resource utilization and conservation (Buckley 2011). However, the increasing number of tourist visits to conservation areas also demands professional management to maintain the quality of the tourism experience without negatively impacting the environment and ecosystems (Eagles et al. 2013). With the growing interest in nature-based tourism, WBNP managers are faced with the challenge of improving the quality of tourism services to create tourist satisfaction and loyalty. Tourist satisfaction is a key factor in the sustainability of a tourism destination, as satisfied tourists tend to have repeat visits, provide positive recommendations, and exhibit behaviors that support destination sustainability (Oliver 1999; Prayag & Ryan 2012).

The tourism industry is a service industry that relies heavily on customer satisfaction from the quality of tourism services to increase tourist loyalty. Nature tourism service providers must be able to pay full attention to service quality (serqual) to ensure tourist satisfaction. The serqual model contains five dimensions of serqual measurement: reliability, responsiveness, assurance, tangibles, and empathy (Maghsoodi et al. 2019; Parasuraman et al. 1988; Parasuraman et al. 1991; Sigit Sugiarto et al. 2021). Various studies have shown that good service quality significantly influences tourist satisfaction and loyalty, including in the context of nature tourism and ecotourism (Chen & Chen 2010; Suhartanto et al. 2020).

Tigor Tambunan (2023) research on Service Quality Improvement Drivers (SQuID) in the Asian region clarified the significant relationship between service quality, cost, and price within serqual. This framework can help companies analyze, develop, and improve service quality effectively, even sustainably. Culture-based service quality, in the tangible and empathy dimensions, requires special attention when applying the SQuID framework in various business sectors.

Xu and Wang (2016) research in tourism revealed that, among the three latent variables of employee satisfaction, work environment, and living conditions positively influence employee serqual. Serqual significantly impacts of tourist loyalty. To foster tourist loyalty and achieve sustainable tourism development, tourist destinations must take more action to improve the quality of tourism services. Tourist loyalty acts as a mediating variable linking tourism experiences with tourist attitudes and behaviors. Loyalty is reflected not only in the intention to revisit but also in tourists' willingness to recommend a destination to others and support sustainable tourism practices (Yoon & Uysal 2005). In the context of conservation areas, high tourist loyalty can encourage responsible behavior and increase support for environmental conservation efforts (Lee 2011).

This study of nature tourism activities in the WBNP will analyze the causal relationship between tourism serqual measurements, tourist satisfaction, and tourist loyalty. One method for structurally examining causal relationships such as these is SEM. SEM is an important statistical analysis technique that has emerged in the social sciences in recent decades. SEM is a class of multivariate techniques that combines aspects of factor analysis and regression (Hair et al. 2017; Hair et al. 2019). This allows researchers to simultaneously examine relationships between measured variables and latent variables (assessing measurement theory) as well as between latent variables (assessing structural theory). We have conducted a considerable amount of research using SEM in our analyses (Gandhiadi and Kencana 2020a; Gandhiadi and Kencana 2020b; Gandhiadi 2021; Gandhiadi and Jayanegara 2021; Pratiwi et al. 2022; Yadnya et al. 2023).

The research objectives are: 1) determine the influence of each dimension of tourist service quality on tourist satisfaction during nature tourism activities in WBNP, 2) examine the significance of tourist satisfaction on tourist loyalty to visit nature tourism destinations in WBNP, and 3) indirectly, examine the significance of tourist satisfaction through tourist loyalty on tourist attitudes and tourist behavior at nature tourism activities in WBNP.

The expected benefits and recommendations from this research are: 1) understand the structural relationship between each dimension of tourist service quality in measuring tourist satisfaction and tourist loyalty, as reflected in the attitudes and behaviors of tourists visiting the WBNP natural tourism destination, and 2) provide recommendations and considerations for improving, optimizing, and ensuring the sustainability of nature tourism activities at the WBNP tourist destination. The research results are expected to form the basis for formulating sustainable nature tourism management and marketing strategies in the West Bali National Park (WBNP).

2.0 MATERIAL AND METHODOLOGY.

2.1 Materials

Partial Least Squares (PLS) is a variance-based SEM approach, or component-based SEM, commonly used as an alternative to covariance-based SEM. According to Hair et al. (11), the characteristics of the PLS Path method are as follows: 1) PLS assigns values to latent variables measured by one or more indicators (manifest variables); 2) PLS Path avoids the problem of small sample sizes; therefore, PLS Path can be applied when other methods cannot analyze models with relatively small sample sizes; 3) Compared to covariance-based SEM, PLS Path has looser assumptions regarding variable distribution, i.e., it does not require data to be normally distributed. and 4) PLS Path can be applied to both reflective and formative measurement models. PLS path can be categorized into 2 models, namely: (1) structural models which are the relationships between several endogenous latent variables with other latent variables, and (2) measurement models which are the relationships between indicators and latent variables. PLS-SEM is primarily used to develop theory in exploratory research. This is done by focusing on explaining variance in the dependent variable when examining the model. PLS can be used not only to confirm theories but also to establish new relationships or test propositions (Christian Nitzi, 2016).

Manley et al (2020) study suggests that PLS-SEM offers a valuable option that has been highlighted by recent developments. This study provides a comprehensive overview of PLS-SEM and its application to current entrepreneurship research, summarizes the emerging confirmatory composite analysis (CCA) process for implementing and interpreting the analysis, explains why PLS-SEM can be particularly beneficial for research in this area, and concludes with suggestions for academics as they plan future research projects.

Hair et al (2020) study also suggests that confirmatory composite analysis (CCA) is a proposed alternative approach that can be applied to confirm measurement models when using partial least squares structural equation modeling (PLS-SEM). CCA is a series of steps performed with PLS-SEM to confirm a reflective and formative measurement model from a measurement set that is being updated or adapted to a different context. CCA is also useful for developing new measures.

2.2 Methodology

SEM is a class of multivariate techniques that combines aspects of factor analysis and regression. This method will be used to analyze factors from each dimension of service quality to determine the dominant factors influencing tourist satisfaction. Hypotheses will be analyzed using regression to determine the significance (causality) of service quality's influence on tourist satisfaction and loyalty at WBNP. The analysis process begins with the distribution of questionnaires (questions corresponding to the indicators of each factor/variable) to tourists visiting natural tourist destinations at WBNP. The questionnaire data will be processed using Smart PLS 4.0 software. The data processing will reveal the dominant influence of each factor on tourist satisfaction and the significance of the causality between the research variables. Following the FGD (Focus Group Discussion) with preliminary results, a comprehensive study is expected to achieve the research objectives.

This study examines the implementation of one of the WBNP Center's objectives in improving the management of natural tourism and environmental services. A comprehensive study is also needed because WBNP has successfully developed priority natural tourism destinations at 2023. Research on tourism management strategies in WBNP has never been studied using SEM. The SEM method, as found in previous research, will be able to provide advantages in solving the problem of causality between variables in relation to natural tourism activities in WBNP. In addition, the context of the problem in this study is very possible to be analyzed using the SEM

approach and method. Another advantage is that the implementation of FGDs on the findings from the initial data processing is expected to produce more comprehensive study results.

This research was conducted in the Mathematics Study Program, University of Udayana. Data was collected from respondents or tourists visiting tourist destinations in WBNP. The study took eight months, from May to November 2025. A sample of 90 tourists will be selected. The sample size for this study will include tourists visiting natural tourist destinations in WBNP. This study used a questionnaire as an instrument to measure respondents' perceptions, using a survey method through structured interviews. The questionnaires obtained required validity testing (using the product-moment correlation test) and reliability testing (using the Cronbach's Alpha technique) to assess the suitability of the research instrument.

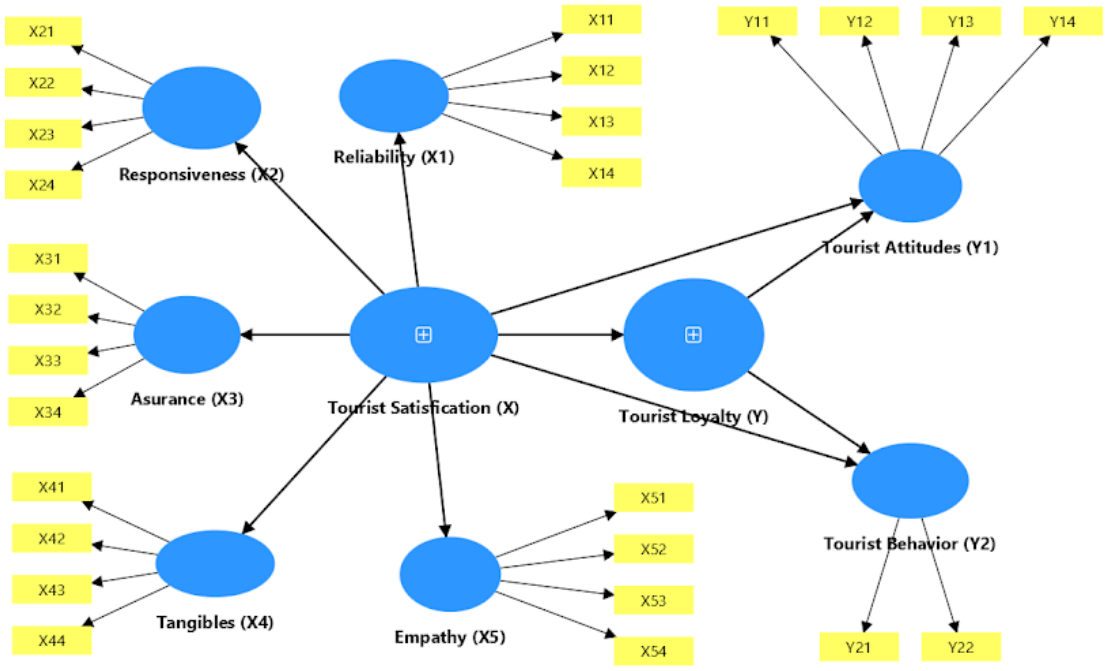

Fig.1. Research Model Design

Research Hypothesis:

H1: Tourist satisfaction has a positive and significant effect on tourist loyalty to natural tourism destinations in the WBNP region.
H2: Tourist satisfaction, through tourist loyalty, has a significant indirect effect on tourist attitudes.
H3: Tourist satisfaction, through tourist loyalty, has a significant indirect effect on tourist behavior.

Tabel 1. Research variables as elements of tourism management strategy

Second-Order Constructs	First-Order Constructs	Indicators and Item Codes
Tourist Satisfaction (X) *Measured based on service quality (serqual) by Parasuraman et al. (10-11)*	Reliability (X1)	Timely (consistent) response to promises (X11)
		Sincerely providing solutions to problems (X12)
		Appropriate first-time service (X13)
		Maintaining valid records (X14)
	Responsiveness (X2)	Accurate information service (X21)
		Quick response (X22)

		Readiness to provide assistance (X23)
		Selective problem handling (X24
	Assurance (X3)	Instilling a high level of trust (X31)
		Cultivating a sense of security in transactions (X32)
		High courtesy (X33)
		Comprehensive knowledge (X34)
	Tangibles (X4)	Using modern technology (X41)
		Attractive objects (X42)
		Neat and polite service (X43)
		Service Balanced Promotion (X44)
	Empathy (X5)	Individualized, Humanistic Attention (X51)
		Convenient Operating Hours (X52)
		Attention to Customer Interests (X53)
		Understanding Specific Needs (X54)
Tourist Loyalty (Y) *Xu and Wang (2)*	Tourist Attitude (Y1)	Desire to Return (Y11)
		Correcting Facility Shortcomings (Y12)
		Spending More Money at the this Destination (Y13)
		Recommending the this Destination to Other Customers (Y14)
	Tourist Behavior (Y2)	Visiting the this Destination Before Going to Other Places (Y21)
		Purchasing Other Services at the this Destination (Y22)

3.0 RESULTS AND DISCUSSION

3.1 Tourism Destinations in the WBNP

The management objectives are a more in-depth elaboration of the vision and encompass the important values of the WBNP area that will be realized over the next 10 years. Based on the vision and mission of the WBNP management, one of the objectives is to improve the management of natural tourism and environmental services for the welfare of the surrounding community.

As the only national park area on the island of Bali, WBNP serves not only as a conservation area for wildlife such as the Bali Starling, turtles, and others. Several tourist attractions are also available in this area, which covers an area of approximately 77,000 hectares. Here are some of them,

1. Karang Sewu is a beach with a beautiful bay surrounded by mangrove forests. Many people use Karang Sewu Beach as a picnic or camping spot. It is located about one kilometer from the main gate of Gilimanuk Harbor. This beach is a favorite tourist destination in Jembrana, Bali. Touring the mangrove forest on a traditional boat is also an option, and you can continue to Prapat Agung Beach.
2. Segara Rupek Temple and Prapat Agung Temple, located within the WBNP area, are entered through the Tegal Bunder Post. This temple is frequently visited by tourists for prayer or religious tourism. Prapat Agung Temple is adjacent to Prapat Agung Beach, and then enter to Segara Rupek Temple, which is the closest to Java Island.
3. Prapat Agung Beach, an exotic stretch of white sand, offers a comfortable recreation area. The area around Prapat Agung Temple can be accessed through the Tegal Bunder Post or Gilimanuk Bay.
4. Tegal Bunder Wildlife Sanctuary Unit, serves as a sanctuary unit (SU) and breeding ground for Bali Starlings. This location is used for observation (research) on the development (growth) of Bali Starlings, from mother to chick, to weaned chicks, ready for release into the WBNP area. There's also a large enclosure for the Bali Starling, which is no longer productive, providing a spectacle for the Bali Starling's behavior.
5. Pulaki Temple, built on the edge of a coral cliff overlooking the sea, shares characteristics with Tanah

Lot Temple and Uluwatu Temple. This place of worship is located on the highway between Singaraja and Gilimanuk. It was built to honor the eldest son of Sang Hyang Nirartha, Bhatiri Melanting.
6. Brumbun Bay, to see the interaction of Bali Starlings in their natural habitat, make time to visit Brumbun Bay. Besides watching the starlings in captivity, tourists can also play on the beach or explore the savanna.
7. Hot springs, located within the West Bali National Park, are located in the Banyuwedang area, near the mangrove forest. These hot springs serve as an alternative to the Toya Bungkah hot springs in Kintamani. Many tourists come here to relax or treat skin ailments.
8. Underwater exploration, snorkeling and diving locations, WBNP offers several areas to explore. The coastal waters around WBNP, especially around Terima Bay, are home to coral reefs with beautiful and captivating panoramas. Around this beach, tourists can see long-tailed macaques.
9. Menjangan Island, a favorite tourist spot within the WBNP area. Popular activities for tourists visiting Menjangan Island include swimming, snorkeling, diving, and fishing. This island is composed of coral, rocks, and black volcanic soil. There is also Tabuan Island to the north of Menjangan Island.

Two months (June and July), researchers and a team of surveyors distributed questionnaires through structured interviews with tourists visiting the natural tourist destinations in the WBNP area. The survey team successfully collected data from 90 respondents. The majority of respondents had diplomas and bachelor's degrees (53%), and were considered to have a fairly rational perception of completing the questionnaire. Respondents generally visited Menjangan Island and Prapat Agung Beach for nature tourism (76%), not for research tourism at USCC and WBNP. Tourists were still predominantly from Bali (64%), so more intensive promotion is needed to attract tourists from outside Bali.

At the Karang Sewu tourist destination, researchers did not find any respondents willing to complete the questionnaire, despite the surveyors' efforts to distribute questionnaires. This was because tourists were rare during the survey; at most, the surveyors encountered two tourists, but they refused to complete the questionnaire. Management of the Karang Sewu tourist destination needs to pay attention by presenting more attractive tourist attractions to increase tourist visits.

Before obtaining complete data from the 90 respondents, a questionnaire feasibility and validity test was conducted on the initial 30 respondents (Hamed 2016; Slamet 2019). The results of data processing using SPSS 26 software, all constructs have feasibility test results, with Cronbach's Alpha (α) values above 0.7 (the threshold for a feasible construct). Although one Tourist Behavior construct is lacking, when rounded up, it still meets the feasibility criteria. Meanwhile, all indicators yielded item-to-total item correlation values above 0.3 (the validity indicator test limit), thus declaring all indicators valid. These test results indicate that the questionnaire used was appropriate and valid, allowing it to be distributed to 90 respondents.

3.2 Measurement Model Testing (Outer Model)

Measurement model testing consists of: (1) convergent validity, (2) discriminant validity, and (3) composite reliability. The convergent validity test examines the validity of each indicator through the significance level of its outer loading factor. This study used a bootstrapping process with 500 samples. It is recommended that the outer loading factor measurement value be greater than 0.50 or significant at a specific t-test level (with an α level of 5%).

Discriminant validity testing can also use the Average Variance Extracted (AVE) value for each latent variable (construct). A sufficient AVE value indicates adequate discriminant validity, meaning that the latent variable is able to explain more than half of the average variance of the indicator (Hair et al. 2017). A qualified AVE value must be greater than 0.5 or significant at a specific statistical test level.

Reliability can be measured using Cronbach's Alpha (CA) and Composite Reliability (CR). Cronbach's Alpha measures the lower limit of a construct's reliability, while Composite Reliability measures the true value of a construct's reliability. An instrument is considered reliable if the Cronbach's Alpha or Composite Reliability reliability coefficient (rxy) is greater than 0.7. However, if the result is closer to 0.7 (e.g., 0.6), it is still acceptable

for exploratory studies.

The results of this reflective measurement model test were obtained after processing research data for 90 respondents (sample) using Smart PLS 4.1.1 software. The final results of the reflective measurement using bootstrapping (6,000 samples) are shows that the AVE value for each construct is greater than 0.5, or significant at the 5% statistical test level. This indicates that all constructs used in this study have adequate discriminant validity. The Cronbach's Alpha (CA) value for each construct is greater than 0.6, or significant at the 5% P-test level (P_Values <0.5), so each construct is reliable at the 5% Cronbach's Alpha test. Meanwhile, the Composite Reliability (CR) value for each construct, which turns out to be all constructs with values greater than 0.7, also means that they have met the construct reliability requirements. The significance test at the 5 percent level (P_values below 0.05), so that all indicators are significant; because they have P_values less than 0.05, as in Figure 2, below.

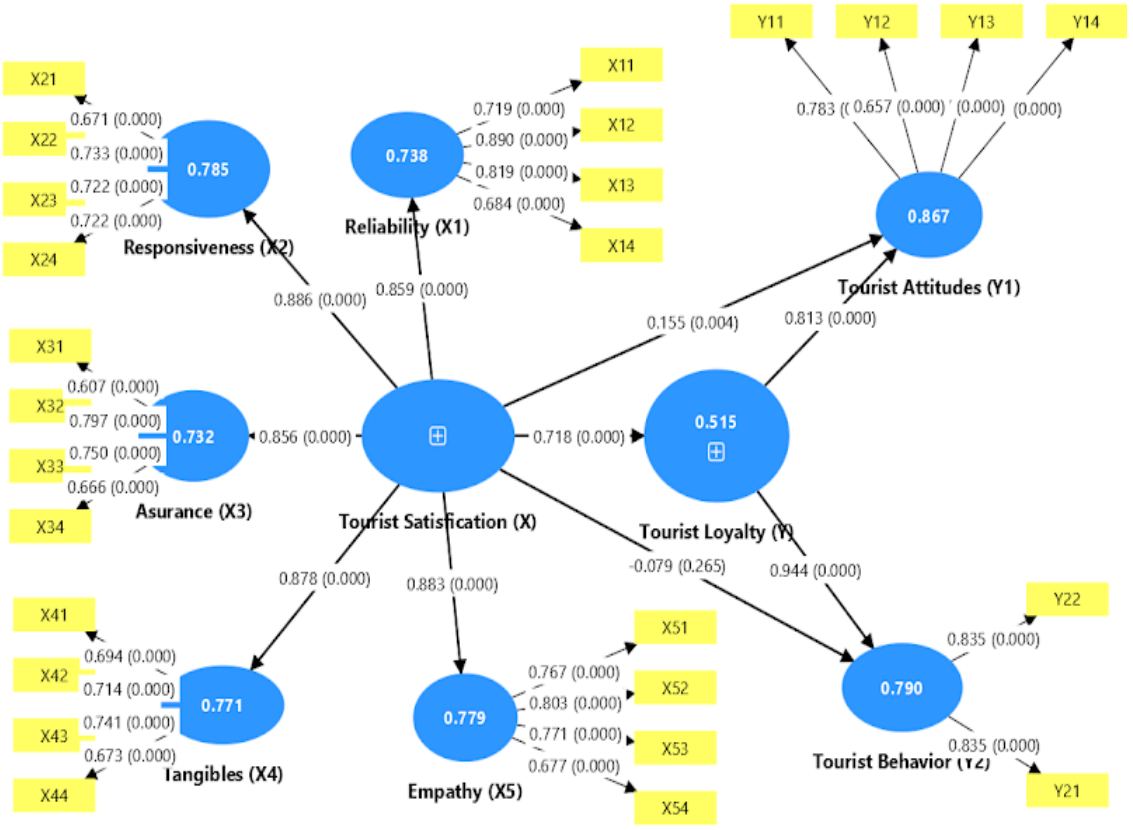

Fig.2. Result of PLS-SEM Bootstrapping test

The measurement model (outer model) tests all met the testing requirements. This means that all indicators and constructs in this study are valid and suitable for use in the structural model (inner model) analysis. The outer loading values for each indicator, as shown are high (above 0.66), indicating that each indicator has significant meaning or dominance in building its construct.

3.3 Structural Model Testing (Inner Model)

The structural model is evaluated using R-square for the dependent (endogenous) variable, and its significance is tested based on the P-values for each path in the causal relationship. Inner model testing relates to the causality of the relationship between endogenous latent constructs by analyzing the estimated path coefficient values and their significance levels.

The coefficient of determination (R-square) is an important metric that provides information about the proportion of variation in the dependent variable that can be explained by the regression model using the independent (predictor) variables. The coefficient of determination (R-square) indicates how well the regression model explains the variation (diversity) in the data, or how much of the variation in the dependent variable can be explained by the independent variables in the regression model. Its value ranges from 0% (no explanation) to 100% (perfect explanation).

An R-square value between 0.67 and 1 indicates a good structural model, while an R-square value between 0.34 and 0.66 indicates a moderate structural model, and an R-square value below 0.33 indicates a weak structural model (22). The results of the R-square calculation for the research model are as follows: 1) Tourist Loyalty (Y) is 0.515, 2) Tourist Attitude (Y1) is 0.867, and 3) Tourist Behavior (Y2) is 0.790

This shows the R-square value for endogenous variables, such as the Tourist Loyalty construct, of 0.515 (a fairly good structural model). This means that 51.5 percent of the variability in the tourist loyalty factor for visitors to the WBNP natural tourism destination can be explained by the tourist satisfaction factor, while the remaining 48.5 percent is explained by other factors.

It is noteworthy that the R-square is relatively moderate (0.515). This means that although the model is able to explain a significant amount of absolute variation in the tourist loyalty construct, its proportion of total variation remains small. On the other hand, the large regression coefficient (0.718) indicates that changes in the exogenous construct (tourist satisfaction) have a large absolute influence on the endogenous construct (tourist loyalty), but this influence may be small compared to the total variation within the endogenous construct (tourist loyalty). Therefore, further research is needed to identify other factors influencing tourist loyalty to the WBNP tourist destination.

The R-square value, can be used to calculate the Q^2 value or Stone Geiser Q-Square test to examine the indirect influence of the tourist satisfaction construct on tourist attitudes and behavior through the tourist loyalty construct. Two indirect relationships can be explained as follows: 1) $Q^2 = 1 – [(1 – 0.517)(1 – 0.876)] = 0.940$; this means that the construct of tourist attitudes is indirectly explained by the construct of tourist satisfaction through the construct of tourist loyalty by 94 percent, while the remaining 6 percent is explained by the causality of other constructs, and 2) $Q^2 = 1 – [(1 – 0.517)(1 – 0.802)] = 0.904$; this means that the construct of tourist behavior is indirectly explained by the construct of tourist satisfaction through the construct of tourist loyalty by 90.4 percent, while the remaining 9.6 percent is explained by the causality of other constructs.

3.4 Discussion

Further research will examine the direct, indirect, and total effects between constructs (latent variables) to explain the relationships between constructs within the research variables. The research constructs in question include tourist satisfaction (TS), tourist loyalty (TL), tourist attitudes (TA), and tourist behavior (TB). Direct effects are expressed by the coefficients of all latent variable arrows (Fig. 1) with a single-ended significance level using a 5% P-value test (P-value less than 0.05). Indirect effects are demonstrated by the role of one or more intervening (mediating) variables.

Table 2. Path Coefficient Values (Direct Effect)

Relationship	Path Coeff	Standard Dev	P-Values	Result
TS (X) →TL (Y)	0.718	0.060	0.000	Significant
TS (X) →TA (Y1)	0.155	0.050	0.004	Significant
TS (X) →TB (Y2)	-0.079	0.067	0.265	Not Significant

Source: Primary Data (2025), Processed

Table 2 explains the direct effect of the tourist satisfaction (TS) on tourist loyalty (TL) and also significantly on tourist attitudes (TA). Furthermore, the tourist satisfaction (TS) has a negative and not significant effect on tourist behavior (TB).

Table 5 can also be used to answer hypothesis H1. The H1 hypothesis test concluded that tourist satisfaction (TS) has a positive (0.718) and significant effect on tourist loyalty (TL). These results indicate that tourist loyalty to natural tourist destinations in the WBNP area is significantly influenced by tourist satisfaction. This requires attention for management strategic on tourism managers in WBNP to continuously improve existing and existing tourist service indicators that are still lacking and maintain existing service quality indicators.

Meanwhile, the direct effect of tourist satisfaction (TS) on tourist attitudes (TA) was found to be weakly positive but significant. This needs to be maintained and enhanced through the role of the attitude loyalty indicator (providing corrections for facility deficiencies/Y12) by adding a number of suggestion boxes. Conversely, the direct effect of tourist satisfaction (TS) on tourist behavior (TB) was negative and insignificant. This requires further attention and study through the following indirect and total relationships.

Table 3. Indirect Effect Values

Relationship	Path Coeff	Standard Dev	P-Values	Result
TS(X) →TL(Y) →TA(Y1)	0.597	0.061	0.000	Significant
TS(X) →TL(Y) →TB(Y2)	0.698	0.068	0.000	Significant

Source: Primary Data (2025), Processed.

Table 3 can be used to explain hypotheses H2 and H3, where tourist satisfaction (TS), through the mediation of tourist loyalty (TL), has a positive and significant effect on tourist attitudes (TA) and tourist behavior (TB). This indicates that tourist satisfaction visiting natural tourist destinations in the WBNP area indirectly has a positive and significant effect on tourist attitudes (TA) and tourist behavior (TB) through the mediation of the construct of tourist loyalty (TL).

The direct relationship is negative and insignificant, while the indirect relationship is positive and significant. This will be further examined using the following total relationship.

Table 4. Total Effects

Relationship	Path Coeff	Standard Dev	P-Values	Result
TS (X) →TL (Y)	0.718	0.060	0.000	Significant
TS (X) →TA (Y1)	0.744	0.050	0.000	Significant
TS (X) →TB (Y2)	0.619	0.083	0.000	Significant

Source: Primary Data (2025), Processed

Table 4 shows that the total causality between constructs in the structural model is all significant at the 5 percent test level. The total path coefficient is the sum of the direct (Table 2) and indirect (Table 3) relationships. Overall, the causality between the exogenous construct of tourist satisfaction (TS) and the endogenous construct of tourist loyalty (TL) has a positive and significant effect (in accordance with hypothesis H1). Similarly, the exogenous construct of tourist satisfaction (TS) on the endogenous construct of tourist attitude (TA) has a positive and significant effect in total (according to hypothesis H2). It also turns out that the total causality of exogenous tourist satisfaction (TS) on tourist behavior (TB) has a positive and significant effect (according to hypothesis H3), although the direct relationship is not significant.

Direct and indirect causality, which differ in significance, are examined below: 1) tourist satisfaction directly influences tourist attitudes, while the indirect relationship, through the mediation of tourist loyalty, is also positive and significant. This indicates a partial mediation construct (the mediation construct does not affect the significance of the causality), and 2) tourist satisfaction directly influences tourist behavior, while the indirect

relationship, through the mediation of tourist loyalty, is positive and significant. This indicates a total mediation construct (without the mediator construct, the causality would not be significant).

Further discussion is inseparable from the research problem formulation and objectives, which are examined based on the results of the research data processing. The discussion indicates that the hypotheses developed in the research design have met the criteria for hypothesis testing. It should be understood that the research results obtained from sample data (respondents) represent conclusions for the population of tourists visiting natural tourism destinations throughout the WBNP area.

The following results were obtained in this study:

1. Tourist satisfaction is measured using service quality (serqual) indicators, whose components include: reliability, responsiveness, assurance, tangibles, and empathy, with each component containing four indicators. The influence of each component plays a relatively equal role in measuring tourist satisfaction in WBNP (having a high average path coefficient above 0.86), as shown in Figure 1. This means that all components and service quality indicators need to be maintained and improved, especially indicators with an outer loading below 0.7 (see the end arrow in Figure 1).
2. Tourist satisfaction visiting TNBB natural tourism destinations has a positive (0.723) and significant effect on tourist loyalty, although the R-square is relatively moderate. This indicates that changes in variations in the tourist satisfaction construct have a large absolute influence on the tourist loyalty construct, but this influence is relatively small compared to the total variation in the tourist loyalty construct itself. The findings of this study indicate that tourist loyalty is significantly influenced by tourist satisfaction, although other factors still influence it. Therefore, it is necessary to maintain and improve the quality of existing tourist services for the sustainability of nature tourism activities in TNBB.
3. Indirectly, the construct of tourist satisfaction, through the mediation of the construct of tourist loyalty, has a positive and significant effect on the construct of tourist attitudes. Directly, the construct of tourist satisfaction also has a significant effect on the construct of tourist attitudes, so that overall, the construct of tourist satisfaction has a significant effect on the construct of tourist attitudes. In this case, the mediating factor (tourist loyalty) on tourist attitudes is partial.
4. Indirectly, the construct of tourist satisfaction, through the mediation of the construct of tourist loyalty, has a positive and significant effect on the construct of tourist behavior. Although the construct of tourist satisfaction does not directly have a significant effect on the construct of tourist behavior, it does have a significant effect on the construct of tourist behavior. In this case, the mediating factor (tourist loyalty) on tourist behavior is total (must be present).

4. CONCLUSION AND RECOMMENDATION

4.1 Conclusion

1. In management strategic, tourist satisfaction is measured using service quality (SERQUAL) indicators, whose components include: reliability, responsiveness, assurance, tangibles, and empathy, with each component containing four indicators. The influence of each component plays a relatively equal role in measuring tourist satisfaction at the WBNP natural tourism destination.
2. Tourist satisfaction visiting WBNP natural tourism destinations has a positive and significant effect on tourist loyalty (measured using the components of tourist attitudes and behavior).
3. Indirectly, the construct of tourist satisfaction, through the mediation of the construct of tourist loyalty, positively and significantly influences the construct of tourist attitudes visiting natural tourism destinations in the WBNP area. In this case, the mediating factor (tourist loyalty) on tourist attitudes is partial.
4. Indirectly, the construct of tourist satisfaction, through the mediation of the construct of tourist loyalty, positively and significantly influences the construct of tourist behavior visiting natural tourism destinations in the WBNP area. In this case, the mediating factor (tourist loyalty) on tourist attitudes is holistic.

4.2 Recommendations

1. All components of tourism service quality measurement, including reliability, responsiveness, assurance, direct evidence, and empathy, need to be maintained and improved in management strategic of serving tourists visiting natural tourist destinations in the WBNP area.
2. Service quality (serqual) indicators for measuring tourist satisfaction need to be maintained by tourist service staff. Furthermore, improvements should be made, particularly to indicators that still have insufficient measurement weight. For example, timely response to promises, selective handling of tourist problems, instilling a high level of trust, comprehensive staff knowledge, use of modern technology, balanced promotional services, and understanding the specific needs, especially facilities for tourists with disabilities.
3. WBNP management needs to maintain the facilities of indicators used to measure tourist loyalty. Indicators that still have insufficient measurement weight should also be added and improved, such as the addition of a suggestion box at the entrance post to facilitate tourists in providing corrections regarding deficiencies in tourism facilities in the WBNP area.
4. The conclusions of this study can be used as consideration for WBNP management, especially officers involved in managing tourist visits in developing marketing strategies and managing natural tourism activities in the WBNP area.

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