

The Impact of Attractiveness, Facilities, and Service Quality on Visitor Satisfaction: A Case Study of XYZ Attraction

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Abstrak. Kepuasan pengunjung merupakan indikator krusial dalam mempertahankan keberlanjutan dan daya saing destinasi di tengah ketatnya kompetisi industri oceanarium di wilayah Jabodetabek. Urgensi penelitian ini didasari oleh data ulasan tahun 2025 yang menunjukkan bahwa salah satu destinasi wisata edukasi bahari utama di Jakarta memiliki rating terendah dibandingkan kompetitor utamanya, yang mengindikasikan adanya kesenjangan signifikan dalam kepuasan pengunjung. Permasalahan utama yang ditemukan meliputi penurunan daya tarik visual akibat kebersihan akuarium yang buruk, fasilitas yang kurang terawat, serta rendahnya kualitas layanan akibat keberadaan pihak ketiga tidak resmi dan staf yang kurang ramah. Penelitian ini bertujuan untuk menganalisis secara empiris pengaruh daya tarik, fasilitas, dan kualitas layanan terhadap kepuasan pengunjung di destinasi tersebut. Menggunakan metode kuantitatif dengan pendekatan survei terhadap 173 responden, data dianalisis menggunakan teknik PLS-SEM melalui aplikasi SmartPLS 4.0. Hasil penelitian menunjukkan bahwa ketiga variabel independen berpengaruh positif dan signifikan terhadap kepuasan pengunjung. Variabel fasilitas teridentifikasi sebagai faktor yang paling dominan dalam membentuk kepuasan dengan nilai koefisien jalur sebesar 0,494, diikuti oleh kualitas layanan (0,312), dan daya tarik (0,215). Secara keseluruhan, model penelitian ini mampu menjelaskan fluktuasi kepuasan pengunjung hingga 93,4%. Temuan ini memberikan kontribusi praktis bagi manajemen pengelola untuk memprioritaskan revitalisasi fasilitas, peningkatan standar pelayanan melalui pelatihan staf, serta pemeliharaan kebersihan wahana guna menciptakan pengalaman wisata yang lebih berkesan dan meningkatkan loyalitas pengunjung.

Kata kunci: Kepuasan Pengunjung; Daya Tarik; Fasilitas; Kualitas Pelayanan; Oceanarium.

Abstract. Visitor satisfaction is a crucial indicator in maintaining the sustainability and competitiveness of a destination amidst the intense competition within the oceanarium industry in the Greater Jakarta area. The urgency of this study is driven by 2025 review data, which indicates that a leading marine educational tourism destination in Jakarta holds the lowest rating compared to its main competitors, suggesting a significant gap in visitor satisfaction. The primary issues identified include a decline in visual appeal due to poor aquarium cleanliness, poorly maintained facilities, and low service quality resulting from the presence of unauthorized third parties and less responsive staff. This study aims to empirically analyze the influence of attraction, facilities, and service quality on visitor satisfaction at the destination. Utilizing a quantitative method with a survey approach involving 173 respondents, the data were analyzed using the PLS-SEM technique via the SmartPLS 4.0 application. The results demonstrate that all three independent variables have a positive and significant effect on visitor satisfaction. The facility variable was identified as the most dominant factor in shaping satisfaction with a path coefficient of 0.494, followed by service quality (0.312) and attraction (0.215). Overall, this research model explains 93.4% of the fluctuations in visitor satisfaction. These findings provide practical contributions for the management to prioritize facility revitalization, enhance service standards through staff training, and improve aquarium cleanliness to create a more memorable tourism experience and increase visitor loyalty.

Keywords: Visitor Satisfaction; Attractiveness; Facilities; Service Quality; Oceanarium.

Introduction

The tourism industry is a strategic sector that supports the national economy, where the success of a tourist destination is highly dependent on its ability to create and maintain visitor satisfaction (Sudarmawan & Djunaid, 2024). In the modern tourism landscape, there has been a significant shift in trends toward artificial tourism that integrates entertainment and educational aspects (edutainment), particularly in densely populated urban areas (Tjakra & Wening, 2024). One prominent manifestation of artificial tourism is artificial marine tourism, or oceanariums. Unlike natural marine tourism, which relies on geographical conditions, oceanariums offer opportunities to observe marine life through advanced technological and architectural engineering, making them inclusive public spaces for all age groups, from children to the elderly (Novalita & Rucitra, 2020). In the Jabodetabek area (Jakarta, Bogor, Depok, Tangerang, and Bekasi), this business ecosystem has become increasingly competitive with the presence of three major entities (Lorenza & Berutu, 2024).

However, this competitive dynamic poses serious challenges for incumbent players. Based on preliminary survey data from 2025, Attraction XYZ is indicated to be experiencing a customer satisfaction crisis. Comparative data collected from three major digital review platforms such as Google Reviews and Ticket.com reveal concerning findings: Attraction XYZ recorded the lowest average rating among its competitors. This underperformance serves as a warning signal for the company's business sustainability, given that reputation in the digital era is strongly influenced by digital footprints and visitor reviews. An in-depth analysis of visitor reviews reveals that dissatisfaction stems from three main problem dimensions. First, in terms of tourist attractions, visitors highlight the degradation of visual quality, such as murky aquarium water and stained glass, which fundamentally diminishes the core experience of observing marine life. Second, supporting facilities are perceived as outdated and inadequate compared to those of newer competitors. Third, service quality has drawn

sharp criticism, particularly regarding discomfort caused by the presence of unauthorized photographers within the attraction area and perceptions of staff unfriendliness (Wiraguna & Purwanto, 2024). Customer satisfaction theory emphasizes that satisfaction is formed through a comparison between expectations and actual performance; when operational realities fail to meet expectations, satisfaction levels decline significantly (Sari *et al.*, 2023). Based on these phenomena, this study aims to analyze and empirically test the effects of tourist attractions, facilities, and service quality on visitor satisfaction at Attraction XYZ. To address this objective, the study adopts a quantitative explanatory problem-solving approach. This approach begins with an exploration of secondary data through User Generated Content (UGC) on Google Reviews to map the frequency of complaints, where preliminary findings indicate that attraction and service quality variables are dominated by negative sentiment.

Subsequently, primary data are collected through on-site surveys using structured questionnaires administered to visitors to measure their perceptions of aquarium cleanliness, facility completeness, and service professionalism. The collected data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to validate the hypotheses and determine which variables have the most significant impact, thereby enabling management to formulate precise improvement strategies. The novelty lies in the focus of the research object, namely crisis management of customer satisfaction in the oldest oceanarium in Indonesia facing aggressive competition from newer entrants. Moreover, this study explicitly integrates specific operational disturbances, such as illegal photographers, as indicators of service quality—an aspect rarely discussed in conventional tourism satisfaction models. The use of triangulated rating data from three different sources in 2025 also provides a more current and robust problem foundation compared to studies that rely on a single data source.

Research Methodology

Research Design

This study adopts a quantitative research approach to examine the effect of attractions, facilities, and service quality on customer satisfaction. Data were collected using a structured questionnaire with a five-point Likert scale ranging from strongly disagree to strongly agree. The respondents consisted of visitors who had previously visited Attraction XYZ and were selected using a purposive sampling technique. Data collection was conducted from January 2025 to October 2025. To ensure data validity, a screening question was applied at the beginning of the questionnaire to verify that respondents had visited the attraction within the last ten months. The collected data were analyzed using statistical methods to test the proposed relationships.

Variable Measurement

The variables in this study were measured using a Likert scale, which is consistent with contemporary quantitative research practices as described by Koo and Yang (2025). The scale ranges from strongly disagree to strongly agree, with the following categories:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

$$n = \frac{Z^2PQ}{e^2}$$

n = sample size

z = standard normal value at a 5% significance level (1.96)

p = probability of success (50% or 0.5)

q = probability of failure (50% or 0.5)

e = margin of error

Results and Discussion

Results

Analysis Results

Respondent Characteristics

Respondent characteristics represent the profile of the research subjects related to factors influencing attractions, facilities, and service quality. These characteristics include gender, occupation, area of residence, and highest level of education attained.

Table 1. Respondent characteristics

Gender	Total	Percentage
Male	93	46,2%
Female	80	53,8%
Employment Status	Total	Percentage
Student	108	62,8%
Entrepreneur	18	10,5%
Employee	43	25%
Retired	3	1,7%
Domicile	Total	Percentage
Jakarta	80	46,2%
Tangerang	59	34,1%
Depok	17	9,8%
Bogor	10	5,8%
Bekasi	7	4%
Other	0	0%
Educational Attainment	Total	Percentage
Primary School	0	0%
Junior High School	5	2,9%
Senior High School	43	24,9%
Diploma Degree	12	6,9%
Undergraduate	109	63%
Postgraduate	4	2,3%

Based on the respondent data, a total of 173 respondents participated in this study, consisting of 93 male respondents (53.8%) and 80 female respondents (46.2%). The majority of respondents were domiciled in Jakarta and Tangerang and had previously visited Attraction XYZ.

Descriptive Statistical Analysis

Descriptive statistics primarily serve to describe the profile of a data set, ensuring that the informational validity represents the specific sample conditions instead of the general population (Subhaktiyasa *et al.*, 2025).

Table 2. Frequency Distribution of Visitor Satisfaction

No	Research Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
KP1	I felt satisfied as the visiting experience fulfilled my expectations.	64 (37%)	85 (49,1%)	8 (4,6%)	11 (6,4%)	5 (2,9%)	1,890	0,958
KP2	I am satisfied with the combination of offered attractions, available facilities, and the quality of service received.	67 (38,7%)	80 (46,5%)	10 (5,8%)	6 (3,5%)	10 (5,8%)	1,913	1,047
KP3	I possess a strong intention to return to this tourist destination in the future.	78 (45,1%)	69 (39,9%)	10 (5,8%)	10 (5,8%)	6 (3,5%)	1,827	1,011
KP4	I am willing to recommend this destination to family and acquaintances, reflecting positive word of mouth.	54 (31,2%)	88 (50,9%)	12 (6,9%)	11 (6,4%)	8 (4,6%)	2,023	1,025
KP5	Overall, I am very satisfied with the experience I had at this tourist attraction.	64(37%)	88 (50,9%)	5 (2,9%)	4 (2,3%)	12 (6,9%)	1,913	1,053
Average		37,7%	47,5%	5,2%	4,9%	4,7%		

Overall, the average score for the Visitor Satisfaction variable indicates that 85.2% of respondents provided negative feedback (Disagree/Strongly Disagree), while only 14.8%

gave positive or neutral responses. This suggests that visitors, in general, are highly dissatisfied with the tourist attraction.

Table 3. Frequency Distribution of Attractiveness

No	Research Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
DT1	This tourist attraction possesses a unique appeal or distinctive characteristics that serve as the fundamental reason for choosing this destination to visit.	56 (32,4%)	84 (48,6%)	9 (5,2%)	13 (7,5%)	11 (6,4%)	2,069	1,115

DT2	The main attractions offered such as the Main Aquarium, Antasena Tunnel, and various marine life serve as a strong identity for this site.	65 (37,6%)	73 (42,2%)	9 (5,2%)	6 (3,5%)	20 (11,6%)	2,092	1,264
DT3	The inclusion of special attractions and supporting events enhances the overall quality of my visit.	56 (32,4%)	82 (47,4%)	11 (6,4%)	14 (8,1%)	10 (5,8%)	2,075	1,107
DT4	The attractions presented offer the educational and recreational value that I am looking for.	71 (41%)	67 (38,7%)	12 (6,9%)	16 (9,2%)	7 (4%)	1,965	1,101
DT5	Overall, these tourist attractions successfully evoke a sense of joy and wonder.	74 (42,8%)	71 (41%)	10 (5,8%)	9 (5,2%)	9 (5,2%)	1,890	1,072
Average		37,2%	43,6%	5,9%	6,7%	6,6%		

Overall, based on the average values in the table, the Attraction variable was rated poorly by respondents. This is evident from the high cumulative percentage of negative responses, where an average of 43.6% responded with

'Disagree' and 37.2% with 'Strongly Disagree.' Conversely, positive responses ('Agree' and 'Strongly Agree') were minimal, with a combined total of only 19.2%.

Table 4. Frequency Distribution of Facilities

No	Research Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
FS1	The primary facilities (such as toilets, seating area, or parking space) are available and meet my core needs.	68 (39,3%)	89 (51,4%)	7 (4%)	6 (3,5%)	3 (1,7%)	1,769	0,822
FS2	The facilities provided (both primary and supporting) are clean, organized, and well-maintained.	74 (42,8%)	77 (44,5%)	16 (9,2%)	4 (2,3%)	2 (1,2%)	1,746	0,808
FS3	Supporting facilities at the location (such as directional signage and access paths) are fully available and function properly.	79 (45,7%)	67 (38,7%)	17 (9,8%)	7 (4%)	3 (1,7%)	1,775	0,907

FS4	Supporting facilities (lighting, seating, toilets, viewing areas for attractions, or prayer rooms) are available and enhance my comfort.	60 (34,7%)	84 (48,6%)	14 (8,1%)	8 (4,6%)	7 (4%)	1,948	0,987
FS5	The physical quality of the facilities (such as the design and the condition of the equipment) generally creates a positive impression.	73 (42,2%)	80 (46,2%)	13 (7,5%)	5 (2,9%)	2 (1,2%)	1,746	0,808
Average		40,9%	45,9%	7,7%	4,8%	2,2%		

Based on the 'Average' row in Table 8, it can be concluded that the Facilities variable is rated as inadequate. This is evidenced by the accumulated percentage of respondents who chose 'Disagree' (47.7%) and 'Strongly Disagree' (40.5%), totaling more than 85% of

all respondents. Conversely, the percentage of respondents who felt satisfied ('Agree' and 'Strongly Agree') was very small, at only approximately 7.0% overall.

Table 5. Frequency Distribution of Service Quality

No	Research Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
KL1	Staff members demonstrate reliability in performing their duties and providing consistent service.	60 (34,7%)	86 (49,7%)	12 (6,9%)	7 (4%)	8 (4,6%)	1,942	0,995
KL2	The staff provides quick and responsive assistance to my needs or inquiries.	60 (34,7%)	78 (45,1%)	24 (13,9%)	7 (4%)	4 (2,3%)	1,942	0,923
KL3	Staff members are friendly, polite, and show individual attention (empathy).	71 (41%)	70 (40,5%)	22 (12,7%)	6 (3,5%)	4 (2,3%)	1,855	0,929
KL4	The staff possesses a high level of professionalism and provides adequate information	67 (38,7%)	85 (49,1%)	13 (7,5%)	7 (4%)	1 (0,6%)	1,786	0,794
KL5	Overall service systems and procedures run smoothly and efficiently.	55 (31,8%)	84 (48,6%)	23 (13,3%)	7 (4%)	4 (2,3%)	1,965	0,905
Average		36,2%	46,6%	10,9%	3,9%	2,4%		

Overall, based on the 'Average' row in the table, it can be concluded that the service quality was rated poorly by visitors. This is evidenced by the cumulative percentage of respondents who answered 'Disagree' (46.6%) and 'Strongly Disagree' (36.2%).

The total percentage of dissatisfaction reached 82.8%, while satisfied respondents ('Somewhat Agree', 'Agree', and 'Strongly Agree') only accounted for a minority at approximately 17.2%. The outer model, or measurement model, describes the relationship between each

block of indicators and its corresponding latent variables.

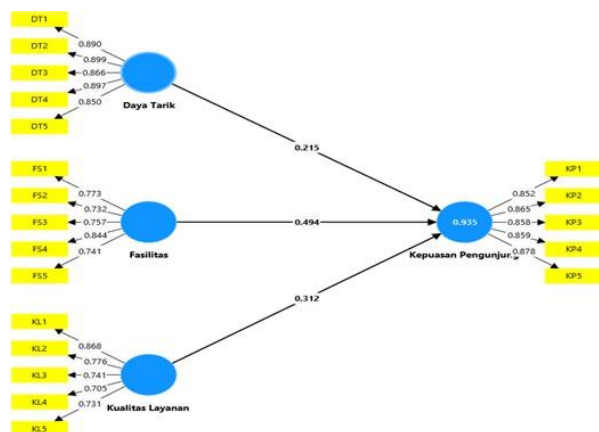


Figure 1. Outer Model

Outer Loading

The assessment of outer loadings represents the initial step in testing reliability, requiring a minimum value of 0.708 to be considered acceptable (Hair & Alamer, 2022).

Table 6. Outer Loading Value

Variabel	Item	Loading Factor	Hasil
DT	DT1	0,890	Valid
	DT2	0,899	Valid
	DT3	0,866	Valid
	DT4	0,897	Valid
	DT5	0,850	Valid
FS	FS1	0,773	Valid
	FS2	0,732	Valid
	FS3	0,757	Valid
	FS4	0,844	Valid
	FS5	0,741	Valid
KL	KL1	0,868	Valid
	KL2	0,776	Valid
	KL3	0,741	Valid
	KL4	0,705	Valid
	KL5	0,731	Valid
KP	KP1	0,852	Valid
	KP2	0,865	Valid
	KP3	0,858	Valid
	KP4	0,859	Valid
	KP5	0,859	Valid

The table indicates that all indicator items have outer loading values exceeding 0.708. Composite Reliability can be used to assess the true reliability level of a construct (Kono & Sato, 2023). Based on the rule of thumb, the required value for both composite reliability and Cronbach's Alpha is ≥ 0.7 . Table 7 demonstrates that each variable has met the

standards, with Composite Reliability and Cronbach's Alpha values exceeding 0.7. Therefore, it can be concluded that each indicator represents the research constructs effectively and has satisfied the reliability criteria.

Table 7. Composite Reliability Value

Variabel	Cronbach's Alpha	Composite Reliability
DT	0,928	0,945

FS	0,828	0,879
KL	0,822	0,876
KP	0,914	0,936

Convergent Validity

The Average Variance Extracted (AVE) value is used to assess the convergent validity of a construct, with a minimum criterion of 0.5 (Hair & Alamer, 2022). AVE testing is

conducted to ensure that each variable is capable of adequately explaining the variance of its indicators.

Table 8. Average Variant Extracted (AVE)

Variable	Average Variant Extracted (AVE)
DT	0,776
FS	0,594
KL	0,587
KP	0,744

Based on Table 8, all variables have Average Variance Extracted (AVE) values above 0.5, indicating that each construct is capable of adequately explaining the variance of its indicators. Each indicator or construct must

have a low correlation with other variables. The objective is to ensure that the boundaries and identity of each variable remain clearly defined (Hair & Alamer, 2022).

Table 9. Cross Loading Analysis Results

	Daya Tarik	Fasilitas	Kepuasan Pengunjung	Kualitas Layanan
DT1	0.890	0.720	0.774	0.740
DT2	0.899	0.668	0.727	0.672
DT3	0.866	0.703	0.722	0.648
DT4	0.897	0.749	0.808	0.755
DT5	0.850	0.781	0.828	0.788
FS1	0.584	0.773	0.715	0.659
FS2	0.529	0.732	0.646	0.605
FS3	0.667	0.757	0.737	0.677
FS4	0.762	0.844	0.826	0.750
FS5	0.614	0.741	0.666	0.560
KL1	0.749	0.776	0.829	0.868
KL2	0.582	0.666	0.696	0.776
KL3	0.600	0.580	0.642	0.741
KL4	0.586	0.598	0.631	0.705
KL5	0.616	0.608	0.660	0.731
KP1	0.724	0.796	0.852	0.754
KP2	0.709	0.804	0.865	0.828
KP3	0.753	0.820	0.858	0.771
KP4	0.828	0.811	0.859	0.749

Discriminant validity testing is conducted to ensure that each latent construct is distinct from one another. Based on Table 13, the results of the cross-loading analysis show that each indicator has the highest loading value on its intended variable compared to other latent

variables. Indicators for the variables of Attraction, Facilities, Service Quality, and Visitor Satisfaction consistently demonstrate dominant loadings on their respective constructs. This indicates that each indicator is capable of clearly reflecting the measured

construct without any overlap. Consequently, the research model has met the criteria for good discriminant validity and is suitable for further analysis.

Inner Model

The inner model, often referred to as the structural model, is an analysis stage aimed at explaining the relationships between latent variables in a study. The inner model table resulting from the PLS-SEM analysis can be seen in Table 10.

Table 10. Inner Model

	Original sample (O)	Sample mean (M)	Standard Deviation (STDEV)	T statistics (O/STDEV)	P values
Daya Tarik -> Kepuasan Pengunjung	0,215	0,219	0,063	3,433	0,000
Fasilitas -> Kepuasan Pengunjung	0,494	0,495	0,060	8,290	0,000
Kualitas Layanan -> Kepuasan Pengunjung	0,312	0,307	0,052	6,053	0,000

Variance Inflation Factor

Diagnostically, the Variance Inflation Factor (VIF) is used to detect the inflation of the variance of regression coefficients caused by

close linear relationships among predictor variables (Muntean *et al.*, 2023).

Table 11. Variance Inflation Factor

Variabel	VIF
	Visitor Satisfaction
DT	3,754
FS	4,350
KL	4,278

Based on Table 11, the Variance Inflation Factor (VIF) values for all variables range from 3.754 to 4.350, indicating that there are no multicollinearity issues within the model. VIF values below the common thresholds of 5 or 10 suggest that the independent variables Attraction (DT), Facilities (FS), and Service Quality (KL) do not excessively influence each other within the Visitor Satisfaction measurement model.

Coefficient of Determinant (R²)

R² is a measure that indicates the proportion of variance in the dependent variable that can be explained by the independent variables. As a statistical indicator, R² describes the closeness between the regression line and the observed data, thereby providing an overview of the extent to which the regression model fits the analyzed data (Chicco *et al.*, 2021).

Table 12. R-Square Values

	R-Square	R-Square Adjusted
KP	0,935	0,934

Based on Table 12, it is evident that the variables of Attraction, Price Perception, and

Amenities play a crucial role in this research model. This is evidenced by the Adjusted R-

Square value of 0.934, which means that these three variables together are able to explain 93.4% of the fluctuations in visitor satisfaction.

Analysis of Research Results

The analysis of research results is the process of identifying, understanding, and evaluating data obtained from the study.

Table 13. Results of the Influence Analysis

Hypothesis	Standardized Path Coefficient	P values	T-statistics	Result
H1: Attraction -> Visitor Satisfaction	0,215	0,000	3,433	H1 Supported
H2: Facilities -> Visitor Satisfaction	0,494	0,000	8,290	H2 Supported
H3: Service Quality -> Visitor Satisfaction	0,312	0,000	6,053	H3 Supported

Hypothesis 1 indicates that Attraction has a positive effect on Visitor Satisfaction, with a standardized path coefficient of 0.215, a p-value of 0.000, and a t-statistic of 3.433, which exceeds the critical threshold of 1.96; thus, Hypothesis 1 is supported. Hypothesis 2 shows that Facilities have a positive influence on Visitor Satisfaction, with a standardized path coefficient of 0.494, a p-value of 0.000, and a t-statistic of 8.290, surpassing the 1.96 limit; therefore, Hypothesis 2 is supported. Hypothesis 3 demonstrates that Service Quality positively affects Visitor Satisfaction, with a standardized path coefficient of 0.312, a p-value of 0.000, and a t-statistic of 6.053, which is also greater than 1.96; hence, Hypothesis 3 is supported. Consequently, all hypotheses in this study are proven to have a significant impact on Visitor Satisfaction.

Discussion

This study empirically demonstrates that visitor attraction, facilities, and service quality collectively exert a robust positive influence on visitor satisfaction at Attraction XYZ, with a predictive power reaching 93.4%. Facilities were identified as the most crucial determinant and a primary strategic weakness; despite having the most dominant influence, this variable received the lowest ratings from respondents due to poorly maintained internal infrastructure, such as restrooms and escalators. This finding theoretically implies that for current visitors, basic physical

infrastructure needs (such as cleanliness and comfort) are considered more urgent and critical than the addition of new marine attractions. Visual appeal becomes less significant if the fundamental physical comfort is not fulfilled. Meanwhile, service quality contributes significantly to satisfaction but remains hindered by issues regarding staff professionalism and external disturbances. Conversely, visitor attraction yielded the lowest influence, reflecting a decline in competitive advantage and uniqueness caused by a lack of innovation and inadequate aquarium maintenance. Consequently, the management of Attraction XYZ must prioritize the modernization of physical facilities and the enhancement of service standards to cultivate a memorable tourism experience and sustain long-term visitor loyalty.

Conclusion

Based on the research results and discussions presented, several conclusions can be drawn regarding visitor satisfaction at Attraction XYZ. Firstly, tourist attraction has a positive and significant effect on visitor satisfaction, encompassing the uniqueness of the exhibits, the educational value provided, and the visual and interactive experiences felt by visitors. Secondly, facilities also play a crucial role, with their positive influence stemming from the availability of supporting amenities such as

restrooms, parking areas, information boards, and rest areas, as well as their cleanliness and comfort. Thirdly, service quality significantly impacts visitor satisfaction, which includes factors such as the friendliness and politeness of the staff, their ability to provide clear information, responsiveness in assisting visitors, and empathy in handling visitor needs and complaints. In light of these findings, the study proposes managerial implications categorized by time frame. For short-term priorities, management should focus on controlling unauthorized third parties, particularly photographers who disrupt visitor comfort in the aquarium tunnels, and implementing a higher frequency cleaning schedule for critical facilities, especially restrooms and aquarium glass, during peak hours. For medium-term priorities, the study recommends facility revitalization by allocating a budget for the renovation of aging infrastructure, such as air conditioning systems and waiting areas, to enhance physical comfort, as well as digitalization by replacing static information boards with interactive digital displays to improve educational value without increasing physical clutter.

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