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Tabel Of Content

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Preface

Praise be to the presence of Tuhan Yang Maha Esa, because of His grace and grace, the Journal of Applied Management and Business (JAMB) can be published according to what was planned.

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Editor in Chief

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Comparison of Financial Performance of South Korea's Big 2 Entertainment Companies Case Study SM Entertainment and Hybe Corporation for the Period 2024

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ABSTRACT

The South Korean entertainment industry is rapidly evolving through Hallyu, with SM Entertainment and HYBE Corporation as the two main companies dominating the industry. These two companies not only manage artists but also execute complex global business strategies, making financial performance analysis highly relevant to understanding their efficiency and competitiveness. This study uses a descriptive quantitative approach with multiple linear regression analysis. The data used are derived from SM Entertainment and HYBE Corporation's 2024 quarterly financial reports, focusing on liquidity, solvency, and profitability ratios against Return on Assets (ROA). The analysis results show that all three financial ratios have a significant simultaneous effect on ROA, but are insignificant partially. Multicollinearity issues were also found between independent variables, which can disrupt model stability. The implications of these findings highlight the importance of management in balancing financial structures holistically. Investors are advised to consider external factors and company strategies holistically, not just financial ratios alone.

Introduction

South Korean Entertainment Industry in 2024, especially the K-pop sector, has undergone a remarkable transformation from a local cultural product to an undeniable global cultural and economic power. The Hallyu Wave has successfully transcended geographical and cultural boundaries, bringing Korean music, drama, and lifestyle to millions of fans worldwide. This explosive growth has created a dynamic, competitive, and highly profitable industrial ecosystem in which entertainment agencies function as key institutional actors responsible for talent recruitment, content development, and commercial expansion [1]. Recent reports show that K-pop's global market valuation continues to grow, projected to surpass USD $20.12 billion by 2030, indicating its increasing relevance in global cultural industries and digital entertainment [2]. This condition reflects a state of the art industry structure in which technological integration, fandom platforms, AI assisted artist training, and multimedia convergence have become core operational models [3].

Among various major agencies, SM Entertainment and HYBE Corporation emerge as two dominant forces that continuously shape artistic direction, fan culture dynamics, and financial market behavior. SM Entertainment, founded in 1995, pioneered the modern idol industry through a strict trainee system and global marketing strategies. The company has produced iconic groups such as H.O.T, TVXQ, Super Junior, Girls' Generation, EXO, Red Velvet, NCT, Aespa, Riize, and Hearts2Hearts, maintaining influence across five K-pop generations. Meanwhile, HYBE Corporation, formerly Big Hit Entertainment, revolutionized the industry through a fan-centric business model and heavy utilization of digital platforms, particularly through the global success of BTS and the expansion of multi-label strategies, including ADOR and NewJeans [4].

The year 2024 marks a critical turning point, as both companies face structural disruptions: HYBE experienced a net loss of KRW 3.38 billion amid record revenues, influenced by BTS' military service hiatus and controversies with ADOR, while SM Entertainment recorded declining net profits despite rising sales due to cost escalation and subsidiary inefficiencies. These contrasting trajectories signal an urgent research need to reassess financial resilience, operational agility, and strategic adaptation in the post-pandemic and post peak BTS era.

This study offers research novelty by providing a comparative financial performance analysis of SM Entertainment and HYBE Corporation using liquidity, solvency, and profitability ratios as analytical instruments an approach rarely explored comprehensively in existing Korean entertainment scholarship, which primarily focuses on cultural impact, fandom behavior, or media studies rather than financial sustainability [5, 6]. The comparison of these financial indicators within the 2024 context enables a deeper understanding of strategic risks, structural dependencies, and long-term industry viability. Therefore, the study seeks to produce a meaningful contribution to literature and industry stakeholders by mapping how these two entertainment giants navigate volatility, digital acceleration, and evolving global competition.

Research Methods

Research Types and Approaches

This study uses a descriptive quantitative approach combined with multiple linear regression analysis. This methodological choice is aligned with the primary purpose of the study, which is to analyze and compare the influence of selected financial ratios on the financial performance of two major South Korean entertainment companies, SM Entertainment and HYBE Corporation, during the 2024 period. The quantitative method is widely used in financial analysis research because it enables statistical testing and objective interpretation of measurable data, especially when evaluating financial indicators across time and entities [7, 8]. The use of descriptive quantitative research in this context also aligns with Creswell's view that quantitative approaches support hypothesis testing and empirical generalization through structured and numerical data processing [9].

The quantitative approach in this study is applied to process and analyze numerical corporate data sourced from official quarterly financial statements. Quantitative data enables hypothesis testing, pattern recognition, and causal inference between variables through statistical techniques such as multiple linear regression [10]. This approach is appropriate because financial statement data are numeric, comparable, and suitable for statistical modeling to examine relationships between liquidity, solvency, and profitability indicators [11].

In addition to the quantitative method, a descriptive analytical approach is utilized to provide a systematic and comprehensive illustration of the characteristics of each financial ratio of the companies studied. The descriptive analysis allows the researcher to compare CR, DER, and NPM values from Q1 to Q4 of 2024 for both SM Entertainment and HYBE Corporation, observe financial trends, and identify managerial implications behind changes in performance indicators. As emphasized by Saunders et al., descriptive analysis is useful for transforming statistical findings into meaningful business interpretation by linking numerical patterns with contextual organizational realities [12]. Therefore, combining regression based quantitative testing with descriptive interpretation strengthens both analytical rigor and interpretative depth of the research. This integration ensures that the research not only answers whether statistical relationships exist, but also explains how and why such relationships emerge within the competitive landscape of the K-pop entertainment industry in 2024.

Research Objects and Subjects

The object of this study is the quarterly financial reports for the 2024 fiscal year of two of the largest entertainment corporations in South Korea, namely SM Entertainment Co., Ltd., and HYBE Corporation. These companies were selected because they are recognized market leaders in the K-pop industry and hold strategic importance in shaping global entertainment commercialization and digital asset expansion [13]; [14]. Previous studies identify SM Entertainment and HYBE as benchmark entities in analyzing financial sustainability, operational scalability, and internationalization strategies in the South Korean entertainment industry [15]. Their official financial statements covering Q1–Q4 2024 were retrieved from verified investor relations platforms and public financial databases, ensuring accuracy and reliability for quantitative financial assessment [16].

Data collection technique

Data collection techniques were conducted through documentation, namely collecting and recording available quantitative data from official sources such as official Company Websites (https://hybecorp.com and https://smentertainment.com). Korea Stock Exchange (KRX) and Quarterly Reports (Q1-Q4) for the 2024 period.

Secondary data was also obtained from journals and previous research related to Documentation based data collection is considered an appropriate technique for corporate financial analysis because the data involved are numeric, verified, and comparable across periods and entities [17]. Additionally, secondary sources such as scholarly articles, financial reports, and prior research were used to strengthen analytical interpretation and theoretical grounding in the areas of financial ratio analysis and organizational performance in the Korean entertainment sector [18].

Data Analysis Techniques

The data obtained was analyzed using the following steps:

1. Descriptive Analysis. This was used to quantitatively describe the values of each financial ratio for both companies.
2. Multiple Linear Regression Test. This was used to examine the effect of liquidity, solvency, and profitability ratios on financial performance. The regression model used was:

$$Y=\alpha + \beta 1\ X1 + \beta 2\ X2 + \beta 3\ X3 + \epsilon$$

Where:

Y = Financial Performance	X1 = Liquidity Ratio
X2 = Solvency Ratio	X3 = Profitability Ratio
α = Constant	β = Regression Coefficient
ϵ = Error	

Regression analysis is widely used in financial performance research because it enables statistical inference and measurement of variable influence consistency across corporate conditions [19]. Theoretically, a high Current Ratio (CR) indicates strong liquidity performance and the ability to meet short term obligations; however, excessive liquidity may result in inefficiency when assets remain idle instead of supporting operational returns [20]. This aligns with the findings of this study, where CR shows a positive but statistically insignificant effect on Return on Assets (ROA).

Similarly, the Debt to Equity Ratio (DER) represents solvency and financial leverage decisions. While leverage may amplify profitability, it also increases financial risk and interest obligations [21]. The regression output demonstrates a negative but insignificant effect of DER on ROA, suggesting that borrowed capital was not efficiently converted into profit-generating activities. The Net Profit Margin (NPM) serves as a profitability indicator that directly correlates with ROA due to its reliance on net income. Despite a positive directional effect, the influence of NPM remains statistically insignificant, consistent with findings in entertainment finance literature, which highlight high overhead, marketing investment, and artist management costs as suppressors of net income [22]. Overall, although the regression model indicates a significant joint influence of the three financial indicators on ROA, none show significant individual effects. This suggests that the financial performance structure of South Korean entertainment companies is influenced by multi layered operational and strategic complexities rather than single financial determinants.

Result and Discussion

This study aims to analyze the effect of financial ratios (Liquidity, solvency, profitability) on the performance of South Korean entertainment companies, namely SM Entertainment and Hybe Corporation during the 2024 period. Therefore, multiple linear regression analysis is used with the dependent variable Return On Assets (ROA) and

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Independent Variables Current Ratio (CR), Debt to Equity Ratio (CER) and Net Profit Margin (NPM).

Table 1. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	0.987	0.973	0.953	0.0012450545	0.973	48.532	3	4	0.001

(Source : Data processing results)

a. Predictors (Constant), NPM, CR, DER

The Model Summary test results show that the R value of 0.987 indicates a very strong and positive relationship between the independent variables (Current Ratio/CR, Debt to Equity Ratio/DER, and Net Profit Margin/NPM) and the dependent variable, namely Return on Assets (ROA). This number is close to the maximum value of 1, which means the regression model has a very strong relationship strength. The R Square value (coefficient of determination) of 0.973 indicates that 97.3% of the variation in financial performance (ROA) can be explained by the three independent variables simultaneously. This indicates that the model has very high predictive power and is representative of the phenomenon being analyzed. Meanwhile, the Adjusted R Square value of 0.953 indicates that after being corrected for the number of predictor variables and sample size, the model still explains 95.3% of the variation in ROA. This confirms that the model does not experience overfitting and remains statistically valid.

Furthermore, the Standard Error of the Estimate value of 0.001245 indicates a very low level of model prediction error. This means that the ROA predicted by this model is very close to the actual ROA value, making the model accurate in predicting financial performance. The F-Change value of 48.532 with a significance level (Sig. F-Change) of 0.001 (<0.05) indicates that the overall regression model used in this study is statistically significant. This means that the three independent variables (CR, DER, NPM) collectively have a significant influence on ROA, and the regression model is suitable for further analysis.

Table 2. ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.000	3	0.000	48.532	0.001
Residual	0.000	4	0.000		
Total	0.000	7			

(Source : Data processing results)

b. Predictors: (Constant), NPM, CR, DER

The results of the ANOVA (Analysis of Variance) test in the regression model show that the calculated F value is 48.532 with a significance value (Sig.) of 0.001. Because the significance value is smaller than 0.05 (0.001 < 0.05), it can be concluded that the regression model used in this study is statistically significant. Thus, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. This means that simultaneously, the three independent variables, namely Current Ratio (CR), Debt to

Equity Ratio (DER), and Net Profit Margin (NPM), have a significant influence on Return on Assets (ROA) at SM Entertainment and HYBE Corporation during the 2024 period. The very small Sum of Squares Regression and Residual values also indicate that almost all variations in ROA values can be explained by the model, and the prediction error is very low. This strengthens that the regression model is suitable for use as an analytical tool in mapping the relationship between financial ratios and company performance.

Table 3. Coefficients

Model	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.066	0.119		0.554	0.609		
CR	0.002	0.014	0.034	0.156	0.883	0.145	6.887
DER	- 0.052	0.043	- 0.580	- 1.217	0.291	0.029	33.938
NPM	0.549	0.757	0.441	0.726	0.508	0.018	55.078

(Source : Data processing results)

c. Dependent Variabel : ROA

The unstandardized regression coefficient (B) is 0.002, with a t-value of 0.156 and a significance level (Sig.) of 0.883. Since the sig. value is greater than 0.05, it is not significant.

Table 4. Collinearity Diagnostics

Model	Dimension	Eigenvalue	Condition Index	(Constant)	CR	DER	NPM
1	1	3.991	1.000	0.00	0.00	0.00	0.00
	2	0.008	22.442	0.01	0.01	0.01	0.00
	3	0.001	79.757	0.00	0.34	0.06	0.00
	4	0.000009896	635.080	1.00	0.65	0.94	1.00

(Source : Data processing results)

This means that CR does not have a significant effect on ROA partially. Therefore, the partial hypothesis ***H_1* is rejected.** The regression coefficient is -0.052, indicating a negative effect on ROA. The t-value is -1.217 with a significance level of 0.291, which is also insignificant because it is greater than 0.05. Therefore, the partial hypothesis *H_2 is rejected.* The regression coefficient is 0.549, with a t-value of 0.726 and a significance level of 0.508, which is also insignificant. This means that NPM does not have a significant effect on ROA partially. Therefore, the partial hypothesis *H_3 is rejected.*

The results of the collinearity diagnostics test indicate that the regression model used suffers from severe multicollinearity. This is evident from the eigenvalue in the fourth dimension of 0.000009896 and the very high condition index of 635.080. As a reference, a condition index value above 30 is considered to indicate multicollinearity, so a value above 600 indicates a very serious condition. Furthermore, in the fourth dimension, the variance proportion values for each independent variable also show the same indication. The variance proportion for (Constant) is 1.00, the CR is 0.65, the DER is 0.94, and the NPM is 1.00. This means that the three independent variables and the constant are all concentrated in one dimension with a small eigenvalue, which is a characteristic of high multicollinearity.

Meanwhile, in other dimensions, no serious indications were found, such as in dimension one with an eigenvalue of 3.991 and a condition index of 1.000 where all variance proportions are 0.00. Dimensions two and three showed condition indexes of 22.442 and 79.757, respectively, with the variance proportions starting to increase in CR and DER, but not yet reaching the critical threshold. Based on these findings, it can be concluded that the regression model experiences significant multicollinearity, so from the classical assumption test perspective, the model cannot be statistically accepted for use in interpreting the partial effect of each independent variable on ROA. However, the model can still be used simultaneously, but the individual interpretation of each variable becomes invalid and the regression coefficient is unstable.

Discussion

This study aims to analyze the influence of financial ratios consisting of CR as a liquidity indicator, DER as a solvency indicator, and NPM as a profitability indicator on ROA as a measure of financial performance at SM Entertainment and HYBE Corporation during 2024 [23]. Data were processed using multiple linear regression, and testing was carried out simultaneously (f-test) and partially (t-test), as well as classical assumption tests such as multicollinearity [24].

The R value is 0.987, this figure indicates a very strong correlation between the three independent variables, namely NPM, CR, and DER with ROA. The R value is very close to 1 indicating that the relationship between the variables in this model is close and generally positive. Furthermore, the R Square value of 0.973 indicates that 97.3 percent of the variation in ROA can be explained by variations in NPM, CR, and DER together [25]. In other words, only the remaining 2.7 percent is explained by other factors outside the model, such as exchange rate fluctuations, the influence of the global entertainment market, managerial factors, or other external factors not included in this regression model.

The Adjusted R Square value of 0.953 corrects the R Square value by considering the number of variables and sample size. This high Adjusted R Square indicates that the model remains robust and stable despite adjustments to the number of predictors [27]. This indicates that the use of the three variables (NPM, CR, DER) remains relevant and effective in predicting ROA financial performance, even after considering model complexity. Meanwhile, the Standard Error of the Estimate of 0.001245 means that the average difference between the actual ROA value and the ROA value predicted by the model is very small [28, 40]. This indicates that the constructed regression model has very high accuracy in making estimates. The smaller the standard error value, the better the model's ability to predict real data.

The f-change value of 48.532 and the model change significance of 0.001 indicate that the addition of predictor variables to the model significantly improves predictive ability. Because the significance value is less than 0.05, the regression model is statistically significant and suitable for use as a prediction tool and performance analysis [29]. These results are consistent with the findings in the Journal of Contemporary Accounting, which stated that a financial model combining profitability, solvency, and liquidity can explain more than 90 percent of the variation in the financial performance of entertainment companies [26]. They emphasized that a high r-square indicates model accuracy, especially in a volatile and competitive industry like K-pop entertainment.

The ANOVA test results from SPSS output show that the calculated F value is 48.532 with a significance value of 0.001. This F-test is used to test whether the independent variables simultaneously have a significant effect on the dependent variable, in this case ROA [30]. The significance value of 0.001 is smaller than 0.05, so it can be concluded that the overall regression model is statistically significant. This means that the three independent variables, namely NPM, CR, and DER, simultaneously have a significant effect on ROA. Thus, the null hypothesis (H_0) which states there is no simultaneous effect is rejected, and the alternative hypothesis (H_1) which states there is an effect is accepted. This aligns with findings [31], who concluded that ratio based models are appropriate for industries with asset-heavy but volatile income patterns such as entertainment.

On the other hand, the Sum of Squares value for the regression is zero point zero zero zero, and the residual value is also very small, indicating that the variation in ROA that cannot be explained by the model is very minimal. This supports the previous results in the Model Summary which showed an R Square of 0.973, which means that 97.3 percent of the variation in ROA is successfully explained by the model. In other words, this model has very high explanatory power and very low prediction error, because the remaining variance (residual) is very small [39].

The degrees of freedom (df) for the regression is 3, corresponding to the number of independent variables, and the residual df is 4, indicating the remaining degrees of freedom from the total observations minus the number of estimated parameters. Although the sample size is relatively small, the high f-value and low significance still indicate that the model used is quite robust in explaining the relationship between the studied variables. This finding is supported by research in the Korean Journal of Financial Management, which found that a combination of financial ratios such as NPM, DER, and CR can simultaneously predict the financial performance of entertainment companies with a high level of significance [29]. The study also emphasized that in the K-pop industry, asset efficiency and profitability cannot be assessed from a single ratio but must be viewed as a unified model. Therefore, it can be concluded that the regression model used in this study is simultaneously statistically valid and suitable for analyzing the financial performance of entertainment companies based on ratios. However, for further analysis, it is important to also examine the results of the t-test and classical assumption tests such as multicollinearity to ensure the stability of the coefficients of each variable.

Information was obtained that the constant value (intercept) in the regression model was 0.066 with a standard error value of 0.119. The calculated t value for the constant was 0.554 and a significance value of 0.609, indicating that the constant was insignificant. However, the main focus in this analysis was on the independent variables, namely the CR, DER, and NPM. For the CR variable, the regression coefficient value was 0.002 with a standard error of 0.014. The calculated t value was 0.156 and a significance value of 0.883.

Because the significance value is well above 0.05, statistically, CR does not have a significant effect on ROA partially. This indicates that a company's ability to meet short-term obligations does not directly impact asset efficiency in generating profits. This finding aligns in the Journal of Applied Economics and Business, which states that in the entertainment industry, high liquidity often indicates idle assets or funds that are not being allocated productively [32].

For the DER variable, the regression coefficient is –0.052 with a standard error of 0.043. The calculated t-value is –1.217 and the significance value is 0.291, which is again greater than 0.05. This indicates that DER also has no significant effect on ROA partially. The negative direction of the relationship is in accordance with the theory that a capital structure dominated by debt can reduce the efficiency of asset use. However, because it is not significant, it can be concluded that high debt does not necessarily reduce ROA in the context of entertainment companies such as SM Entertainment and HYBE, which often use leverage for digital expansion and internationalization [33].

For the NPM variable, the regression coefficient was 0.549 with a standard error of 0.757. The t-value was 0.726 and the significance value was 0.508. This means that NPM also has no significant partial effect on ROA, although the coefficient direction is positive. In theory, NPM reflects the amount of net profit earned from each sale. However, in practice, a high net profit margin does not always reflect asset efficiency. This may occur because long-term investment costs and high promotional expenditures in the entertainment industry do not directly provide returns on total assets. Research in the Asia Pacific Accounting Journal also states that in the creative industry, net profit margins are often volatile and do not always correlate with asset management efficiency [34].

In terms of multicollinearity, high Variance Inflation Factor (VIF) values were obtained, especially for DER and NPM. The VIF value for CR is 6.887, which is still within the tolerance limit, but DER has a VIF of 33.938, and NPM has a VIF of 55.078, indicating severe multicollinearity. Meanwhile, the tolerance value for CR is 0.145, while DER is 0.029 and NPM is 0.018, which are below the threshold of 0.10. This condition indicates that there is a very strong correlative relationship between the independent variables, thus affecting the stability of the regression coefficient and causing the t-test results to be insignificant even though the overall model is significant. This finding aligns with [35] opinion in Basic Econometrics, which states that multicollinearity does not affect prediction accuracy simultaneously, but it does interfere with partial interpretation by making coefficient estimates unstable and insignificant. Therefore, under these conditions, valid interpretation of the individual effects of CR, DER, and NPM on ROA cannot be conducted and requires treatment, such as the use of alternative regression methods or

Variable reduction, it is known that in the first dimension, the eigenvalue is 3.991, with a condition index of 1.000. This indicates that most of the variance is explained by the first dimension, and there is no indication of multicollinearity to worry about in this dimension, because the condition index value is still very low. However, starting in the second dimension, the eigenvalue value drops drastically to 0.008, with a condition index of 22.442. At this level, there are early indications of an increasing correlation between the independent variables, although it is still within tolerable limits (because the condition index value has not exceeded 30). The variance proportions in this dimension are still very small. Furthermore, the third dimension has an eigenvalue of 0.001, with a condition index that jumps to 79.757, exceeding the critical threshold of 30. At this point, the variance proportions values begin to increase in two independent variables, namely CR with a variance proportion of 0.34 and DER of 0.06, indicating that both are starting to converge in one dimension. This is an early sign that the relationship between the two is getting stronger and could disrupt the stability of the estimate.

The peak of the problem is clearly visible in the fourth dimension, where the eigenvalue is nearly zero, at 0.000009896, and the condition index soars to 635.080. This condition index value is well above the threshold of 30 and is statistically a strong indicator of very severe multicollinearity in the model. Furthermore, the proportion of variance for the four principal components is also concentrated in this dimension, at

1.00 for the constant, 0.65 for CR, 0.94 for DER, and 1.00 for NPM. This means that the three independent variables and the constant are highly correlated within a small dimension, causing the coefficient estimates to be difficult to separate clearly and individually. This phenomenon is referred to as perfect or extreme multicollinearity, which makes the t-test results unreliable, even though the simultaneous model (f-test) may be significant. Under these conditions, the interpretation of the partial influence of each variable on ROA becomes invalid, due to the very strong interdependence between the variables.

According to [35] in basic econometrics, extreme multicollinearity will cause independent variables to share the same information in explaining the dependent variable, resulting in an inefficient model and highly sensitive regression coefficients to data changes. Meanwhile, also emphasized that when multicollinearity occurs, the best solution is to reduce the number of independent variables or use analytical techniques such as ridge regression or principal component analysis to mitigate this problem without sacrificing the model's predictive power [36]. In this study, severe multicollinearity likely arises because the three financial ratios used liquidity (CR), solvency (DER), and profitability (NPM) are closely related theoretically and practically. For example, companies with high profit margins may have higher capital structures or debt ratios due to aggressive expansion. Therefore, using these three variables simultaneously without data transformation or reduction techniques results in distortions in the partial regression.

The results of this study are significant for the development of literature in the field of corporate finance, particularly in the entertainment industry, which has unique characteristics compared to other manufacturing or service industries. This research was conducted on two major entertainment companies in South Korea, namely SM Entertainment and HYBE Corporation, which have become dominant players in the global K-pop industry. By analyzing the influence of the CR, Debt to DER, and NPM on ROA, this study highlights the complexity of financial relationships in companies that rely on intangible assets and creativity.

Based on the model summary, the R value was obtained at 0.987 and R Square at 0.973, indicating that 97.3% of the variation in ROA can be explained by the three independent variables (CR, DER, NPM). This figure is very high and indicates that the regression model has strong predictive power simultaneously. In fact, the Adjusted R

Square value of 0.953 confirms that corrections to the number of variables and sample size do not reduce the strength of the model. The Standard Error of the Estimate value of 0.001245 indicates a very small level of prediction error.

The f-test (ANOVA) results showed a calculated f-value of 48.532 with a significance level of 0.001 (<0.05), indicating that the model simultaneously significantly influences ROA. This implies that a combination of financial ratios can be used to explain asset utilization efficiency in the entertainment industry. This study confirms the findings of Kim & Lee (2022) in the Asian Journal of Business Research, which stated that financial ratios such as profitability and solvency have high predictive power on ROA in established entertainment companies.

The partial t-test results showed different results. The significance value for CR was 0.883, DER was 0.291, and NPM was 0.508 all > 0.05, indicating that none of the variables had a significant partial effect on ROA. The respective coefficient values were also relatively weak: CR = 0.002, DER = –0.052, and NPM = 0.549. This indicates that although the overall model is significant, each financial ratio cannot stand alone to explain asset efficiency, which is the basis of ROA analysis. This condition is very likely caused by high multicollinearity, as evidenced by the VIF and tolerance values from the SPSS results. The VIF value for DER was 33.938 and for NPM was 55.078, both far exceeding the normal threshold of 10. Meanwhile, the tolerance values of 0.029 and 0.018, respectively, are also below the general tolerance limit of 0.1. This is a strong indication that there is a very high correlation between the independent variables, which confounds the partial estimation of the regression coefficients.

The results of the collinearity diagnostics further strengthen these findings. In the fourth dimension, the eigenvalue dropped drastically to 0.000009896, and the condition index jumped to 635.080, an extreme indicator of multicollinearity. The proportion of variance concentrated in this dimension CR at 65%, DER at 94%, and NPM at 100% indicates that these three variables are not independent of each other in explaining ROA and cannot be interpreted partially. This condition implies that the use of traditional multiple linear regression in the entertainment industry needs to be reconsidered, especially when the independent variables have a high natural correlation, such as in financial ratios. Consistent with the view of [35], multicollinearity does not disrupt overall predictions, but it does impair the validity of partial tests, making individual analyses of each variable unstable and unable to be accurately interpreted [38].

Conclusion

Based on the results of multiple linear regression analysis on financial data from the first to fourth quarter of 2024 at SM Entertainment and HYBE Corporation, the calculated F value of 48.532 with a significance of 0.001 indicates that the regression model formed simultaneously is significant. CR, DER, and NPM together have a significant effect on ROA, with an R Square value of 0.973 showing that 97.3 percent of the variation in ROA can be explained by these three variables. However, partially, the results show that no variable has a significant effect: CR (sig. 0.883), DER (sig. 0.291), and NPM (sig. 0.508), indicating that H1, H2, and H3 are rejected. Multicollinearity testing further reinforces the issue, shown by extreme VIF values (DER = 33.938; NPM = 55.078; CR = 6.887) and a

Condition Index of 635.080 with variance proportion clustering (CR 65%, DER 94%, NPM 100%). This condition confirms that although the model is statistically strong in aggregate, the severe multicollinearity reduces the interpretability and stability of partial regression coefficients, making individual effects unreliable.

Based on these findings, stakeholders such as management, investors, and financial analysts should interpret financial ratios with caution, especially in industries like entertainment where intangible assets and digital expansion strategies significantly influence performance but are not reflected in traditional ratios. Financial management strategies should focus on creating balance between liquidity, debt structure, and profitability so that improvements in one aspect do not negatively affect others. Investors are also advised not to rely solely on financial ratio analysis when assessing the performance of entertainment companies, but instead consider non-financial indicators such as digital platform engagement, intellectual property rights, artist brand valuation, and global consumer trends to obtain a more comprehensive and realistic evaluation.

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Building Superior Human Resources To Support Community Based Tourism

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ABSTRACT

This research aims to examine the key factors influencing the success of community based tourism management in Jember Regency. The study focuses on four main aspects, education and training, stakeholder collaboration, tourism environment management, and digital literacy as determinants of effective community-based tourism governance. Using a multiple linear regression approach, data were collected from 120 respondents comprising local residents, tourism business actors, and related stakeholders. The findings reveal that education and training (X1), management of the tourism environment (X3), and digital literacy (X4) significantly and positively affect the success of community-based tourism management. Conversely, collaboration among stakeholders (X2) does not show a significant impact within this model. Overall, the four independent variables collectively exert a significant influence on the dependent variable, with an R^2 value of 0.661, indicating that 66.1% of the variation in tourism management success can be explained by these factors. The results emphasize that enhancing human resource capacity through education and training, improving environmental management practices, and strengthening digital literacy are crucial strategies for achieving sustainable community-based tourism. Practically, this study underscores the importance of government and institutional support in implementing policies and programs aimed at empowering local communities to actively manage and develop tourism destinations.

Introduction

Community based tourism (CBT) represents a development approach that places local communities at the center of tourism planning, management, and benefit distribution. This model is highly relevant for Jember Regency, which possesses diverse natural, cultural, and creative economic potentials. However, the success of CBT depends heavily on the capacity of local human resources, governance quality, and the community's ability to adapt to digital transformation and environmental sustainability principles [1, 2].

Recent scholarly works underscore the pivotal role of digitalization in strengthening destination competitiveness. A study published in JAMB [3] demonstrates that integrated digital marketing strategies significantly enhance the visibility and performance of culinary tourism centers through structured and data driven promotional activities. This finding indicates that digital literacy has become a core competency rather than an optional skill for community tourism managers. Similarly, research [4] on mangrove ecotourism frameworks affirms that environmental sustainability is an indispensable foundation for developing nature based destinations. Together, these studies highlight the need to integrate technological and ecological dimensions within CBT frameworks.

Human resource competence also remains a central issue in tourism governance. using data from tourism offices in East Java, found that organizational culture, competence, and self awareness significantly influence institutional performance in tourism management [5]. These findings align with international literature emphasizing that education, training, collaboration, and environmental stewardship are essential components of sustainable tourism development [6, 8].

Despite these advancements, several research gaps persist. First, existing studies tend to examine education, collaboration, environmental management, and digital literacy separately, leaving limited understanding of their combined effect on CBT success. Second, empirical studies focusing on Jember are scarce, although local socio cultural and institutional contexts may shape CBT implementation. Third, the empirical examination of stakeholder collaboration effectiveness and the role of digital literacy at the community level remains limited.

Addressing these gaps, this study introduces a novel integrative analytical framework that examines the simultaneous influence of education and training, stakeholder collaboration, environmental management, and digital literacy on the success of CBT in Jember Regency. By employing a quantitative approach using multiple linear regression, this study contributes both theoretically and practically by offering empirical evidence that can support regional policy development, community capacity building efforts, and the formulation of sustainable tourism strategies. Therefore, this research holds substantial academic and practical significance in strengthening community resilience and enhancing destination competitiveness in the digital era.

Research Methods

This study adopts a quantitative approach, utilizing multiple linear regression analysis to examine the influence of independent variables on a dependent variable. The main objective is to determine the extent to which education and training, stakeholder collaboration, environmental management, and digital literacy affect the success of community-based tourism management in Jember Regency.

a) Education and training are essential components in developing human resources for CBT. [9] state that competency based education significantly strengthens both managerial and technical skills. [2] Further highlights the importance of continuous training in improving performance and service quality. Recent studies emphasize that structured and relevant training programs improve community competence in managing tourism destinations [10, 11, 12]. Non formal training, such as experiential learning, has also been found effective. [13] show that experiential learning helps participants adapt faster to industry standards. Internships and certification programs also strengthen community readiness. Digital learning platforms further expand access to training [14, 15], making them essential elements of human resource development strategies.

b) Stakeholder collaboration, collaboration plays a vital role in sustainable CBT. [1] argue that cross sector partnerships enhance inclusiveness. However, collaboration does not always produce significant outcomes, as noted [16]. A more structured collaborative framework is required to define clear roles, accountability mechanisms, and shared objectives. [17] Confirm the need for governance structures that strengthen long term partnerships in CBT.

c) Environmental management, environmental management is crucial for ensuring the sustainability of tourism destinations. Government regulations [18] emphasize environmental protection as a core component of tourism development. Studies [7] show that increased environmental awareness significantly improves destination quality. Newer research underscores the importance of renewable energy, waste reduction, and ecosystem conservation [19, 20]. Effective environmental management enhances both sustainability and visitor satisfaction.

d) Digital literacy, digital literacy enhances the visibility, efficiency, and competitive advantage of CBT destinations. Through digital platforms, destinations can reach global audiences [21, 7]. Recent literature highlights that communities with strong digital skills can better manage digital marketing, customer data, and online engagement [22]. Digital literacy also improves operational management through online booking systems and digital analytics. Thus, digital literacy development is a critical component of CBT success.

e) Success of CBT management. The success of CBT is multidimensional, evaluated not only through local income growth but also through environmental sustainability, cultural preservation, visitor satisfaction and meaningful community empowerment. Recent studies emphasize that these indicators are critical components for assessing CBT performance [23]. Community participation is a key determinant. When local residents are involved in planning, implementation, and benefit sharing, internal conflicts are reduced and tourist satisfaction increases. Various case studies highlight the effectiveness of participatory models and community based governance in strengthening CBT initiatives [24].

Empowerment and human resource capacity are also essential. CBT success often depends on the community's ability to manage tourism products, service quality, and marketing especially managerial skills, guest services, and digital literacy. Field studies in tourism villages show that structured training and capacity building programs significantly improve destination performance and local welfare [25].

Environmental management and cultural preservation further contribute to long term success. Destinations that integrate eco friendly practices (e.g., waste management, conservation) and cultural preservation programs are more likely to maintain long-term attractiveness and community support. This reinforces the understanding that ecological and cultural sustainability are core pillars of CBT success [23].

Digitalization and online marketing increasingly influence CBT performance in the modern era. Tourism villages and community groups that utilize social media, digital maps, and online booking platforms can expand visibility and attract visitors more effectively. However, the impact of digitalization depends on community digital literacy and supporting infrastructure. Studies from Indonesian tourism villages show that integrating digital marketing with community participation strengthens destination competitiveness [26].

Overall, literature shows that CBT success is multidimensional, shaped by:

1) Human resource capacity,
2) Stakeholder collaboration,
3) Environmental management,
4) Digital literacy, and
5) Meaningful community participation.

Thus, the success of CBT is the integrated result of adaptive community governance while preserving local values and identity.

1. Population and Sample

   The population in this study consists of local residents, business actors, and other stakeholders involved in managing CBT in Jember Regency. The sample was selected using purposive sampling, with the following criteria for respondents : (a) Community members directly involved in tourism destination management, (b) Tourism business actors such as homestay operators, tour guides, or local craft sellers, (c) Representatives from local government agencies with responsibilities in tourism development. The minimum sample size was determined using the Slovin formula, with a 5% margin of error.
2. Research Variables
   a) Independent Variables (X):
      - Education and Training (X1)
      - Stakeholder Collaboration (X2)
      - Environmental Management (X3)
      - Digital Literacy (X4).

   b) Dependent Variable (Y):
      - Success of CBT Management
3. Data Collection Instrument

Data were collected using a Likert scale questionnaire ranging from 1 to 5, where 1 indicates strong disagreement and 5 indicates strong agreement. The questionnaire was tested for validity and reliability prior to data collection.

4. Validity and Reliability Testing

   To ensure accuracy, validity was tested using the Pearson Product Moment correlation, confirming that each questionnaire item accurately reflects its intended indicator. Reliability testing was conducted using Cronbach's Alpha, with a minimum acceptable value of 0.7.

5. Data Analysis

   The data analysis process followed these steps:

   a) Classical Assumption Testing :
      1) Normality Test to ensure the data are normally distributed.
      2) Multicollinearity Test to confirm that there is no high linear correlation among the independent variables.
      3) Heteroscedasticity Test to ensure that the variance of residuals is constant.

   b) Multiple Linear Regression Analysis :

      The model used is:

$$Y=\beta 0+\beta 1X1+\beta 2X2+\beta 3X3+\beta 4X4+\epsilon$$

      Where:

      - Y: Success of community-based tourism management
      - $\beta 0$: Constant
      - $\beta 1, \beta 2, \beta 3, \beta 4$: Regression coefficients of each independent variable
      - X1: Education and Training
      - X2: Stakeholder Collaboration
      - X3: Environmental Management
      - X4: Digital Literacy
      - ϵ: Error term

   c) Hypothesis Testing :
      1) Partial Test (t-test), to assess the effect of each independent variable on the dependent variable.
      2) Simultaneous Test (f-test), to evaluate the combined influence of all independent variables.
      3) Coefficient of Determination (R^2) to measure how well the independent variables explain variations in the dependent variable.

6. Data Interpretation and Presentation

   The results of the analysis will be presented in the form of tables, charts, and statistical interpretations. Statistical significance is determined using a 95% confidence level ($\alpha = 0.05$).

7. Conclusion and Recommendations

   Based on the regression results, this study will offer strategic recommendations aimed at strengthening human resource development to support sustainable and effective CBT management.

Result and Discussion

1. Result

a) Demographic Characteristics of Respondents

The respondents in this study include local residents, business owners, and other stakeholders involved in managing CBT in Jember Regency. A total of 120 respondents were selected as the sample. The demographic statistics are presented in the table below.

Table 1. Descriptive Statistics of Respondent Demographics

Criteria		Frequency (People)	Percentage (%)
Gender	Male	76	63,33
	Female	44	36,67
	Total	120	100,00
Age	< 25 y.ears	24	20,00
	25 – 34 y.ears	32	26,67
	35 – 44 y.ears	24	20,00
	45 – 54 y.ears	28	23,33
	55 ye.ars or older	12	10,00
	Total	120	100,00
Education	SD	3	2,50
	SMP	11	9,17
	SMA	47	39,17
	S1/D3	51	42,50
	S2	8	6,67
	S3	0	0,00
	Total	120	100,00
Occupation	Student	17	14,17
	Government Employee	21	17,50
	Private Employee	41	34,17
	Entrepreneur	36	30,00
	Other	5	4,17
	Total	120	100,00
Work Experience	Over 10 years	33	27,50
	5 – 10 years	59	49,17
	Less than 5 years	28	23,33
	Total	120	100,00

(Source: Processed Data, 2025)

Based on the data collected, the majority of respondents were male, totaling 76 individuals (63.33%), while females accounted for 44 respondents (36.67%). This indicates a higher level of male participation in the survey. In terms of age, most respondents belonged to the productive age group (25–54 years), which made up 78.33% of the total. The largest age group was 25–34 years (26.67%), followed by 45–54 years (23.33%), and 35–44 years (20.00%), while respondents under 25 years accounted for 20.00%, and only 10.00% were aged 55 and above.

In terms of educational background, most respondents had attained at least a senior high school education. The largest group were high school graduates (39.17%), followed closely by those with a diploma or bachelor's degree (42.50%). Master’s degree holders made up 6.67%, while those with only junior high or elementary education accounted for 9.17% and 2.50%, respectively. No respondents held a doctoral degree. This indicates that 88.34% of participants had completed secondary education or higher, reflecting a relatively well educated group.

In terms of occupation, most respondents were employed in the private sector or worked as entrepreneurs. Private employees made up the largest group (34.17%), followed by entrepreneurs (30.00%). Government employees accounted for 17.50%, while students made up 14.17%. The remaining 4.17% worked in other, unspecified fields. These findings suggest that self-employment and private sector work are the most common sources of income among respondents.

Regarding work experience, most respondents had more than 5 years of experience, with 49.17% having worked for 5–10 years, and 27.50% having worked for over 10 years. Meanwhile, 23.33% had less than 5 years of experience. This indicates that a majority of respondents are in a stable phase of their careers, with sufficient experience in the workforce. Overall, the survey results show that respondents were predominantly male, of productive age, with a moderate to high level of education, and most were employed in the private sector or self employed. The majority also had considerable work experience, suggesting that the respondent group is well positioned to contribute meaningfully to the workforce and local economy.

b) Descriptive Analysis of Respondents Answers

The results of the descriptive statistical analysis are summarized in the table below :

Table 2. Descriptive Analysis of Respondents' Answer Scores

No.	Variable	Indicator	Mean	Modus	Variable Category
1	Education and Training (X1)	X1.1	3,83	4	Good
		X1.2	4,02	4	
		X1.3	3,95	4	
		X1.4	3,82	4	
		X1.5	3,93	4	
		X1.6	3,93	4	
		X1.7	3,83	4	
2	Stakeholder Collaboration (X2)	X2.1	3,92	5	Good
		X2.2	3,78	4	
		X2.3	3,82	4	
		X2.4	3,83	4	
		X2.5	3,89	4	
		X2.6	3,98	5	
3	Environmental Management (X3)	X3.1	3,86	4	Good
		X3.2	3,82	4	
		X3.3	3,78	4	
		X3.4	3,76	4	
		X3.5	3,88	4	
		X3.6	3,90	4	
4	Digital Literacy (X4)	X4.1	3,76	4	Good
		X4.2	3,76	4	

No.	Variable	Indicator	Mean	Modus	Variable Category
		X4.3	3,75	4	
		X4.4	3,92	4	
		X4.5	3,93	4	
		X4.6	4,01	4	
5	Community-Based Tourism Success (Y)	Y1	3,90	4	Good
		Y2	4,03	4	
		Y3	3,98	4	
		Y4	3,84	4	
		Y5	3,87	4	
		Y6	3,91	4	
		Y7	3,91	4	
		Y8	3,91	4	
		Y9	3,83	4	
		Y10	3,88	4	
		Y11	3,89	4	
		Y12	3,96	4	

(Source: Processed data, 2025)

Based on the table above, it can be concluded that respondents generally perceived the variables education and training, stakeholder collaboration, environmental management, digital literacy, and the success of CBT positively. This is reflected in the mean and mode scores, which consistently hover around 4, indicating a "Good" category for all variables.

c) Validity and Reliability Test Results

Validity refers to how accurately an instrument (in this case, the questionnaire) measures what it is intended to measure. Meanwhile, reliability assesses the consistency of the measurement over time or across items.

Table 3. Summary of Validity and Reliability Test Results

No.	Variable	Indicator	r hitung	Sig.	Cronbach's Alpha
1	Education and Training (X1)	X1.1	0,835	0,000	0,951
		X1.2	0,883	0,000	
		X1.3	0,860	0,000	
		X1.4	0,901	0,000	
		X1.5	0,932	0,000	
		X1.6	0,901	0,000	
		X1.7	0,854	0,000	
2	Stakeholder Collaboration (X2)	X2.1	0,928	0,000	0,962
		X2.2	0,916	0,000	
		X2.3	0,897	0,000	
		X2.4	0,946	0,000	
		X2.5	0,920	0,000	
		X2.6	0,890	0,000	
3	Environmental Management (X3)	X3.1	0,896	0,000	0,957
		X3.2	0,910	0,000	
		X3.3	0,909	0,000	

No.	Variable	Indicator	r hitung	Sig.	Cronbach's Alpha
		X3.4	0,914	0,000	
		X3.5	0,926	0,000	
		X3.6	0,891	0,000	
4	Digital Literacy (X4)	X4.1	0,893	0,000	0,952
		X4.2	0,916	0,000	
		X4.3	0,906	0,000	
		X4.4	0,894	0,000	
		X4.5	0,904	0,000	
		X4.6	0,882	0,000	
5	Community-Based Tourism Success (Y)	Y1	0,836	0,000	0,973
		Y2	0,824	0,000	
		Y3	0,902	0,000	
		Y4	0,897	0,000	
		Y5	0,876	0,000	
		Y6	0,912	0,000	
		Y7	0,902	0,000	
		Y8	0,871	0,000	
		Y9	0,846	0,000	
		Y10	0,909	0,000	
		Y11	0,873	0,000	
		Y12	0,868	0,000	

(Source: Processed data, 2025)

Based on the reliability analysis, the education and training (X1) variable shows a Cronbach's Alpha of 0.951, indicating a very high level of internal consistency. All indicators for this variable recorded correlation coefficients (r-values) above 0.835 with a significance level of 0.000, confirming that each indicator is valid in measuring the intended construct. The highest r-value was found in indicator X1.5 (0.932), while the lowest was X1.1 (0.835).

For the stakeholder collaboration (X2) variable, the Cronbach's Alpha score was 0.962, which also reflects excellent reliability. All indicators recorded r-values above 0.890 and were statistically significant at $p < 0.001$, indicating strong validity. The highest correlation was observed in X2.4 (0.946), and the lowest in X2.6 (0.890). In the case of the tourism environmental management (X3) variable, the reliability coefficient stood at 0.957, which is considered very high. All indicators had r-values greater than 0.891, with significance at the 0.000 level, confirming that each indicator is valid. The strongest correlation was found in X3.5 (0.926), while X3.6 (0.891) recorded the lowest.

The digital literacy (X4) variable achieved a Cronbach's Alpha of 0.952, showing that it, too, has a high degree of internal reliability. Each indicator in this variable had r-values above 0.882, and all were statistically significant at $p = 0.000$. The indicator with the highest correlation was X4.2 (0.916), while X4.6 (0.882) had the lowest. Lastly, the CBT management success (Y) variable had the highest Cronbach's Alpha value at 0.973, indicating outstanding reliability. All 12 indicators under this variable demonstrated r-values above 0.824, and all were highly significant. The most strongly correlated indicator was Y10 (0.909), while Y2 (0.824) showed the lowest.

All variables in this study exhibit very high reliability, as evidenced by Cronbach's Alpha values exceeding 0.95. Likewise, all indicators show excellent validity, with r-values consistently above 0.7 and significance levels at 0.000. These results confirm that the instruments used in the study are both consistent and accurate for measuring aspects related to education and training, stakeholder collaboration, environmental management, digital literacy, and the success of CBT management.

d) Classical Assumption Testing Results

A good regression model must meet the criteria for Best Linear Unbiased Estimator (BLUE), which requires the data to be normally distributed (or approximately normal), free from multicollinearity, and not affected by heteroscedasticity. The following are the results of the classical assumption tests conducted on the multiple linear regression model used in this study.

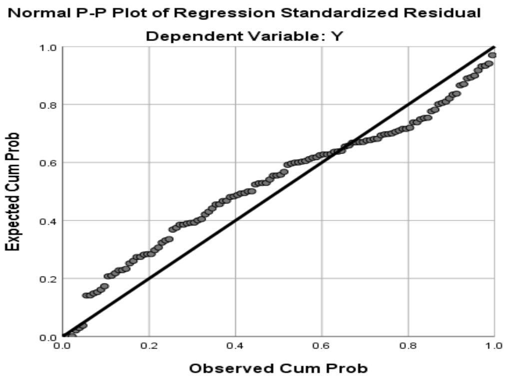

Figure 1. Normality Test Result
(Source: Processed Data, 2025)

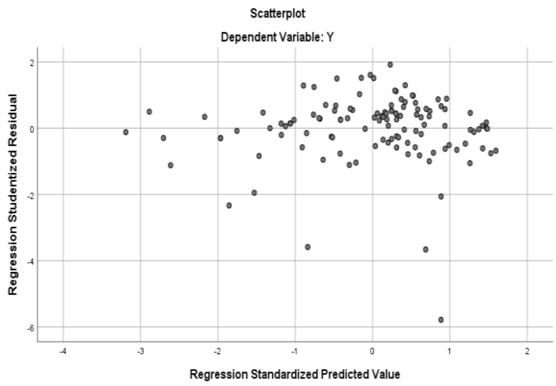

Figure 2. Heteroscedasticity Test Result
(Source: Processed Data, 2025)

As shown in Figure 1, the points in the normal probability plot are distributed along and around the diagonal line, indicating that the residuals follow a normal distribution. This confirms that the normality assumption is satisfied, making the regression model suitable for further analysis. Figure 2 presents the scatterplot used for testing heteroscedasticity. The points are randomly dispersed, with no clear or systematic pattern, and are evenly spread both above and below the Y-axis baseline (value 0). These results suggest that heteroscedasticity is not present, and thus, the variance of the residuals is constant across observations.

Table 4 *Collinearity Statistic*

Variable	VIF	Remarks
Education and Training (X1)	2,730	
Stakeholder Collaboration (X2)	1,084	VIF < 10
Tourism Environmental Management (X3)	1,953	No multicollinearity
Digital Literacy (X4)	2,957	

(Source: Processed Data, 2025)

Based on the results of the variance inflation factor (VIF) analysis, all independent variables in this study have VIF values below 10. This indicates that multicollinearity is not an issue among the independent variables. Multicollinearity occurs when there is a high correlation between two or more independent variables in a regression model, which can lead to unreliable or biased coefficient estimates. However, in this case, all VIF values fall within an acceptable range, suggesting that the regression model is statistically reliable.

Looking more closely, the education and training (X1) variable has a VIF of 2.730, well below the threshold of concern. This implies that X1 is not excessively correlated with the other predictors. The stakeholder collaboration (X2) variable shows the lowest VIF, at 1.084, reflecting a high degree of independence in the model. The tourism environmental management (X3) variable has a VIF of 1.953, also indicating no signs of multicollinearity. Meanwhile, the digital literacy (X4) variable records the highest VIF value, at 2.957, but this is still comfortably within the safe range and does not compromise the integrity of the regression model. In conclusion, all the independent variables included in this research can be used in the regression analysis without concern for multicollinearity. This confirms that the model is stable and reliable, capable of producing valid estimates of how each independent variable affects the dependent variable in this case, the success of CBT management.

e) Multiple Linear Regression Analysis

The purpose of the multiple linear regression analysis in this study is to determine the extent to which the independent variables influence the dependent variable. The results of this regression analysis are summarized in Table 5 below.

Table 5. Results of Multiple Linear Regression Analysis

Variable	Regression Coefficient	t_{Value}	Sig.	Remark
Constant	1,818	0,532	0,596	-
Education and Training (X1)	0,875	5,202	0,000	Significant
Stakeholder Collaboration (X2)	0,025	0,260	0,795	Not significantn
Tourism Environmental Management (X3)	0,457	3,029	0,003	Significant
Digital Literacy (X4)	0,438	2,151	0,034	Significant
N				120
R^2				0,661
F hitung				56,095
F Sig				0,000

(Source: Processed data, 2025)

Based on the results of the regression analysis, the constant (intercept) in this model is 1.818, with a t-value of 0.532 and a significance level of 0.596. Since the p-value exceeds 0.05, the constant is not statistically significant. This indicates that, in the absence of independent variables, the dependent variable does not experience any meaningful change.

For the education and training (X1) variable, the regression coefficient is 0.875, with a t-value of 5.202 and a significance level of 0.000. Because the p-value is far below

0.05, this variable has a significant positive effect on the dependent variable. In other words, improvements in education and training contribute substantially to better outcomes within this model. Meanwhile, the stakeholder collaboration (X2) variable has a regression coefficient of 0.025, a t-value of 0.260, and a p-value of 0.795, which is well above the 0.05 threshold. This means the variable does not have a significant influence on the dependent variable. Therefore, stakeholder collaboration does not show a meaningful impact in the context of this study.

The tourism environmental management (X3) variable records a regression coefficient of 0.457, a t-value of 3.029, and a significance level of 0.003. Since the p-value is below 0.05, this variable is statistically significant. This finding suggests that effective tourism environmental management positively affects the dependent variable. The digital literacy (X4) variable also demonstrates a significant effect, with a regression coefficient of 0.438, a t-value of 2.151, and a significance level of 0.034. As the p-value is under 0.05, this variable is confirmed to have a meaningful impact on the observed outcome.

In terms of overall model performance, the R-squared (R^2) value is 0.661, indicating that approximately 66.1% of the variation in the dependent variable is explained by the four independent variables in the model. The remaining 33.9% is influenced by other factors not included in this study. Additionally, the F-statistic of 56.095 with a significance level of 0.000 confirms that the overall regression model is statistically valid and effectively explains the relationships among the variables.

In summary, education and training (X1), Tourism Environmental Management (X3), and digital literacy (X4) all have significant effects on the dependent variable, while stakeholder collaboration (X2) does not. These findings imply that to achieve better outcomes, attention should be directed toward strengthening educational programs, enhancing environmental management practices in tourism, and improving digital literacy among the involved stakeholders.

2. Discussion

The findings of this study provide important insights into the factors influencing the success of CBT in Jember Regency. The partial test results indicate that education and training have a significant positive influence on CBT performance, reaffirming the central role of human capital in tourism development. This result is consistent with competency-based education theory, which posits that structured learning, technical skill building, and continuous training enhance managerial capabilities and improve the professionalism of tourism actors, as demonstrated [2, 9]. These findings correspond with global research such as [27, 28], which highlights that practical training increases service quality and employability in tourism. The result also aligns with the JAMB [5], showing that competence and self-awareness directly contribute to performance in tourism institutions. The present study therefore confirms that strengthening community competencies through education and training is a foundational requirement for successful CBT governance.

The analysis further reveals that stakeholder collaboration does not significantly influence CBT success when examined individually. This result appears contradictory to the assumption that multi-stakeholder cooperation is a crucial element of tourism

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governance, as suggested [1]. However, previous studies also acknowledge that collaboration often fails to produce meaningful outcomes when coordination is weak or when partnerships are not institutionalized effectively. Note that collaboration mechanisms are frequently hindered by conflicting interests, bureaucratic fragmentation, and the absence of shared decision-making processes. In the context of Jember, this finding suggests that existing collaborative efforts may still be transactional, formalistic, or limited in scope, reducing their potential impact on CBT outcomes [16]. This implies that collaboration alone is insufficient without strong institutional capacity and commitment from all stakeholders.

Environmental management, on the other hand, shows a significant positive effect on CBT performance. This aligns with sustainable tourism theory, which emphasizes that ecological stewardship is essential for enhancing destination attractiveness and long term resilience, as illustrated in national tourism policy frameworks [29, 12]. Local empirical evidence also supports the present findings. [7] argue that environmental awareness among rural communities plays a decisive role in the quality and sustainability of tourism villages. The result is further reinforced by the JAMB [4], which demonstrates that environmental strategies are critical to the success of ecotourism areas, such as mangrove conservation sites. Overall, the findings strengthen the theoretical argument that environmental responsibility is inseparable from CBT development, particularly in destinations relying on natural resources.

Digital literacy also emerges as a significant determinant of CBT success. This finding reflects the increasing importance of digital transformation in shaping competitive tourism destinations. As noted by [21] digital platforms enhance promotional capacity, facilitate communication with tourists, and enable data driven decision making. The result is strongly supported by [3] in JAMB, who show that integrated digital marketing substantially improves the performance and visibility of culinary tourism centers. Within the CBT context, higher digital literacy enables communities to adopt technology more effectively, expand market reach, and communicate tourism offerings more professionally. These capabilities are increasingly essential as tourist information-seeking behavior becomes heavily digital.

The simultaneous test results reveal that the four variables collectively exert a significant influence on CBT performance. This demonstrates that education and training, stakeholder collaboration, environmental management, and digital literacy function as an integrated system shaping the development of CBT. Such a multidimensional perspective echoes the theoretical propositions of [12, 30], which emphasize that sustainable tourism emerges from interactions among human, institutional, environmental, and technological components. The finding confirms that holistic development strategies are necessary for empowering communities and improving destination competitiveness.

The coefficient of determination (R^2) indicates that 66.1% of the variance in CBT success can be explained by the four predictor variables. This suggests that the model has strong explanatory power, considering the complexity of tourism systems and the multitude of external factors that may influence destination outcomes, including cultural values, infrastructure quality, governmental regulations, and visitor demographics. The result affirms that human competence, environmental stewardship, institutional collaboration, and digital adaptation constitute the core pillars supporting CBT performance in Jember. The empirical strength of the model further validates the theoretical foundations and previous empirical studies discussed in the literature review.

In summary, the study contributes meaningful evidence to the discourse on community-based tourism by confirming the critical role of human resource development, environmental management, and digital literacy, while simultaneously shedding light on the limited practical influence of stakeholder collaboration. These findings highlight both the strengths and structural challenges of CBT governance in Jember, providing a basis for future policy improvements and scholarly inquiry.

Conclusion

The results of the analysis show that education and training have a positive and significant influence on the success of CBT management. Stakeholder collaboration, while positive, does not show a significant effect on the success of CBT management. Meanwhile, tourism environmental management and digital literacy both have positive and significant impacts on the success of CBT efforts. In terms of practical implications, this study suggests that to enhance the success of CBT management in Jember Regency, all stakeholders involved including local communities, business actors, and other relevant parties should pay particular attention to education and training, environmental management, and digital literacy. These areas have proven to be critical in supporting effective tourism management.

For future research, it is recommended to include additional variables such as tourism service innovation, tourist attraction appeal, and other relevant factors. This would help generate deeper insights and provide a more comprehensive understanding of what drives the success of CBT management.

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Consumer Loyalty Based On Service Quality And Customer Satisfaction

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ABSTRACT

Companies and customers can build strong relationships through customer loyalty, which serves as the main foundation in creating long term, mutually beneficial relationships. The purpose of this study is to analyzing the simultaneous influence between service quality and satisfaction toward consumer loyalty, analyzing the partial influence between service quality toward consumer loyalty, and analyzing the partial influence between satisfaction toward consumer loyalty. This study uses a quantitative approach with the research location at PT. Pegadaian UPC Palembang Square with a population of 559 people. Furthermore, the research sample was determined to be 98 customers selected using a purposive sampling technique. Research data collection was carried out using a questionnaire. The collected data will be analyzed using multiple regression analysis techniques. The findings in this study are that service quality can positively and significantly influence consumer loyalty, satisfaction can positively and significantly influence consumer loyalty, together service quality and satisfaction can positively and significantly influence consumer loyalty. The results show that customer satisfaction has the greatest influence on loyalty, therefore PT. Pegadaian needs to prioritize strategies that increase satisfaction, not just improvements to SOPs or service techniques.

Introduction

Companies and customers can build strong relationships through customer loyalty, which serves as the primary foundation for creating long term, mutually beneficial relationships. Customer loyalty is crucial because it is the primary basis for competitive business practices, focusing on creating loyal customers [1]. Loyal customers tend to make repeat purchases and become a natural source of promotion for companies through word-of-mouth recommendations.

Loyalty is the degree to which consumers consistently demonstrate repeat purchasing behavior for a product or service they use [2]. Loyalty is when customers consistently tend to purchase a product or use a service provided by a company. According to [3], loyalty occurs when customers are committed to a brand, store, or supplier, based on a highly positive attitude and reflected in their positive purchasing behavior.

High customer loyalty will have a positive impact on a company, as it creates barriers for competitors to enter the market [4]. Customers will provide positive reviews of the products or services they use, often recommend the company to others, thus indirectly providing free promotion for the company, and demonstrate a high level of loyalty by continuing to choose that company's products or services. In fact, they may be willing to pay a higher price if they perceive the product or service to meet their expectations and provide added value to the company [5].

Loyal customers tend to make decisions that benefit the company because they have a stronger emotional bond than disloyal customers. This bond creates a tendency to continue choosing the company's products or services and exhibiting consistent behavioral patterns similar to those they have previously done [5]. This occurs because they already have a greater sense of attachment to the company they choose, so even when attractive alternatives are available, they focus more on the company with which they have invested their time and loyalty. Conversely, non member customers may be more easily swayed by competitors' offers and more open to trying products or services from other companies.

The increasing demand for primary and secondary human needs, particularly in the banking sector, plays a vital role in providing funds, which is crucial in today's era [6]. Consequently, financial needs often require quick and practical solutions. One service company that plays a crucial role in meeting these needs is a non bank financial institution that offers collateralized loans, enabling people to access funds more easily and affordably.

PT. Pegadaian (Persero) is a non banking credit institution that provides services to the public to obtain funds quickly through a credit system. Pegadaian has contributed significantly to the community's economy, particularly for the lower middle class [7]. To ensure business sustainability, PT. Pegadaian requires loyal customers who consistently use its services when needed.

Pegadaian offers a variety of products, including Secure Fast Credit (KCA) pawns, which include gold or gold bars, and non KCA pawns, such as electronics, motor vehicles, and other warehouse goods. However, within a subset of the available pawn products, particularly non KCA pawn products, there are issues impacting customer loyalty, such as failure to achieve specified revenue targets. This indicates that repurchase indicators for customer loyalty have not been met properly. Some customers have also spoken negatively about Pegadaian to others. This is supported by negative reviews and a relatively low rating of 2.7 out of 5 on Google Review Summary. According to [8], referrals are a crucial indicator for increasing loyalty.

Service quality is a key factor influencing customer loyalty, as customers who are satisfied with the service they receive and experience a positive experience tend to be highly loyal to the company [9]. Service quality is the company's ability to meet customer needs and desires in accordance with customer expectations [9]. With the growing number of outlets, Pegadaian needs to ensure strict adherence to applicable standard operating procedures (SOPs) at each location to ensure a positive customer experience, even across multiple locations.

Furthermore, another factor influencing loyalty is satisfied customers. Customer satisfaction is closely linked to loyalty [10]. Several recent studies have explored the relationship between customer satisfaction and loyalty across various sectors. For example, research by [11] on mobile internet service providers in Jakarta found that customer satisfaction positively influences loyalty. Furthermore, a study by [12] on digital bank customers in Jakarta found that satisfaction, along with trust and experience, is a crucial factor in driving customer loyalty.

This research will provide an empirical contribution to indicator based loyalty measurement, encompassing repeat purchases, recommendations, retention, purchase diversification, and idea participation, which holistically reflect behavioral and affective loyalty. The results of this study aim to provide information on increasing customer loyalty and can serve as a reference in the company's policy making process. Understanding of loyalty formation in non bank financial institutions like PT. Pegadaian remains limited. This creates a gap that suggests the need for more in depth research in sectors with distinct service characteristics. Therefore, this research offers a new object by assessing consumer loyalty at a non bank financial institution, unlike previous research, which has predominantly focused on the banking industry, digital banks, and digital services [11, 12], this study focuses on the context of a non bank financial institution, namely PT. Pegadaian (Persero) UPC Palembang Square Mall. Based on the descriptions and insights presented previously, this article discusses this further under the title "Consumer Loyalty Based on Service Quality and Customer Satisfaction of Customers of PT. Pegadaian (Persero) UPC Palembang Square Mall”.

Method

This research employed a quantitative approach. Three research variables, two independent variables and one dependent variable, were used. The study was conducted at PT. Pegadaian UPC Palembang Square Mall, with population of 559 costumer and a sampel of 98 customers. Subjects ranged in age from 17 to 60. Further subject categorization can be found in the results section. Subjects were selected using purposive sampling, with the criteria being customers who had used PT. Pegadaian UPC Palembang Square Mall for more than one year.

This study focused on exploring the influence of service quality and satisfaction on customer loyalty. Data collection was conducted using a questionnaire. Customer loyalty was measured using a loyalty scale based on indicators such as repeat purchases, referrals, retention, purchases across product and service lines, and offering ideas to the company [13]. Service quality was measured using a service quality scale based on indicators such as reliability, responsiveness, assurance, empathy, and tangibles [14]. Meanwhile, customer satisfaction was measured using a customer satisfaction scale based on indicators such as meeting expectations, willingness to revisit, and willingness to provide recommendations [3].

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The questionnaire met the validity and reliability testing standards established by the researchers. The results of the validity test by comparing the calculated r value with the r table (0.199) on the service quality questionnaire obtained a value that moved from the range of 0.514-0.679, the customer satisfaction questionnaire obtained a validity value that moved from the range of 0.518-0.695, and the customer loyalty questionnaire obtained a validity value that moved from the range of 0.710-0.832. Furthermore, the results of the reliability test using the Cronbach's alpha technique on the service quality questionnaire obtained a value of 0.804, the customer satisfaction questionnaire obtained a value of 0.711, and the customer loyalty questionnaire obtained a value of 0.930. A series of data analyses were then conducted, starting with assumption tests, including normality, linearity, multicollinearity, heteroscedasticity, and autocorrelation. Hypothesis testing was performed using multiple linear regression analysis techniques. These data analyses were performed using SPSS version 24 for Windows.

Results and Discussion

Respondent Characteristics

Based on the sampling method used, this study involved 98 respondents who were customers of PT. Pegadaian (Persero)'s Palembang Square Mall Branch Service Unit. Respondents were selected based on specific criteria established by the researcher, namely active customers who had used the service for at least one year. Data on respondent characteristics were obtained from completed questionnaires returned to the researcher.

Table 1 Research Respondent Categorization

Gender	Frequency	Percentage (%)
Male	22	22,44%
Female	76	77,56%
Total	98	100%
Age Range	**Frequency**	**Percentage (%)**
17-30 years	19	19,39%
31-40 years	33	34,67%
41-50 years.	27	27,55%
51-60 years	14	14,29%
>60 years	5	5,10%
Total	98	100
Occupation	**Frequency**	**Percentage (%)**
Civil Servant	23	23,47%
Private	11	11,22%
Entrepreneur	19	19,39%
Housewives	28	28,57%
Others	17	17,35
Total	98	100

(Source: Data Processing Researcher, 2025)

The research respondent data was categorized based on gender, age range, and type of employment. Based on the results of the research data categorization, it was concluded that the majority of respondents in this study were female with a frequency of 76 respondents (77.56%), with the largest age group being in the 31–40 year age range with a total of 33 respondents (34.67%). In addition, the majority came from civil servants (PNS) with 23 respondents or 23.47%.

Research Data Categorization

Based on the results of the descriptive statistical tests, the statistical data for each variable are as follows :

Table 2 Descriptive Statistics of The Study

Variable	Mean	SD	N
Loyalty	27,66	6.695	98
Service Quality	36.80	6,237	98
Satisfaction	20.91	4,449	98

(Source: Data Processing Researcher, 2025)

The descriptive statistics table shows that the service quality variable has a better average score than the loyalty and satisfaction variables. This indicates that respondents tend to rate the service quality at PT. Pegadaian UPC Palembang Square Mall as good.

Classical Assumption Test

Before testing the hypotheses, the researchers conducted a classical assumption test, which included tests for normality, linearity, multicollinearity, heteroscedasticity, and autocorrelation. The Kolmogorov Simirnov test for normality concluded that the data in this study were normally distributed, with a significance value of 0.802 (>0.05). The linearity test also concluded that the relationship between the predictor and the criterion was linear, with a deviation from linearity of 0.358. Furthermore, the multicollinearity test concluded that the two predictors or independent variables were unrelated, indicating no signs of multicollinearity, with a tolerance value of 0.946 and a VIF of 1.058. The autocorrelation test using the Durbin Watson (DW) test showed a value of 1.838. This value falls within the range of 1.7345 < DW < 2.2655, thus concluding that there are no signs of autocorrelation in the regression model. Meanwhile, the heteroscedasticity test showed that the points in the scatterplot were randomly distributed, thus concluding that there was no heteroscedasticity.

Hypothesis Testing

Hypothesis testing was conducted using multiple linear regression analysis techniques. The summary results of the multiple linear regression test can be seen in Table 3 below:

Table 3 Hypothesis Test Result

Variable	Sig	Information
Service Quality → Loyalty	0.022	Influence
Satisfaction → Loyalty	0.000	Influence
Service Quality & Satisfaction → Loyalty	0.000	Influence

(Source: Data Processing Researcher, 2025)

The results of the first hypothesis test indicate that service quality has a positive and significant effect on customer loyalty, with a significance value of 0.022 (<0.05). The beta coefficient between service quality and loyalty is 0.205, meaning that for every one-unit increase in service quality, customer loyalty increases by 20.5%. The results of the second hypothesis test indicate that customer satisfaction has a positive and significant effect on customer loyalty, with a significance value of 0.000 (<0.05). The beta coefficient between customer satisfaction and loyalty is 0.831, meaning that for every one-unit increase in satisfaction, customer loyalty increases by 83.1%. The results of the third hypothesis test indicate that, together, service quality and customer satisfaction have a positive and significant effect on customer loyalty, with a significance value of 0.000 (<0.05).

Effective Contribution

To determine the effective contribution of the predictor variables collectively to the criteria, the researcher referred to the results of the model summary table.

Table 4 Results of The Effectiveness Contribution Test

Model	R	R Square	Adjusted R Square
1	0,625	0,391	0,378

(Source: Data Processing Researcher, 2025)

In the model summary table, the R Square value of 0.391 shows that the predictor variable contributes an influence of 39.1%, while the other 60.9% contribution is explained by other variables not discussed in this study.

Discussion

This study aims to analyze the influence of service quality and satisfaction on customer loyalty at PT. Pegadaian UPC Palembang Square Mall. The findings indicate that customer loyalty is positively and significantly influenced by service quality and also positively and significantly by customer satisfaction. Furthermore, service quality and satisfaction collectively have a positive and significant effect on customer loyalty. This study also indicates that service quality and satisfaction contribute 39.1% to customer loyalty.

The results demonstrate that service quality has a positive and significant effect on customer loyalty at PT. Pegadaian UPC Palembang Square Mall. This suggests that the better the reliability, responsiveness, assurance, empathy, and tangibles perceived by customers, the greater their likelihood of continuing to use Pegadaian's services. This finding aligns with research by [11], which confirms that service quality influences loyalty through customer satisfaction in the mobile internet service provider industry in Jakarta. In the context of Pegadaian, consistent service quality at every outlet is a crucial factor in ensuring customers feel safe, comfortable, and ultimately loyal to the products offered.

Furthermore, this study provides insight that customer satisfaction has a positive and significant impact on customer loyalty. Customers who are satisfied with the service they receive are more likely to make repeat purchases, provide recommendations, and continue using Pegadaian services despite the availability of alternatives. This finding is consistent with [15], research in the banking industry, which found that customer satisfaction is a strong predictor of loyalty, particularly in increasing retention. This is also confirmed by research which states that consumer satisfaction plays an important role in influencing consumer loyalty [19, 20]. [14] research on digital banks also showed that satisfaction, along with trust and experience, significantly strengthens customer loyalty.

This study found that service quality and customer satisfaction jointly have a positive and significant impact on customer loyalty at PT. Pegadaian UPC Palembang Square Mall. This finding emphasizes that customer loyalty is not formed solely by a single aspect, but rather the result of a synergy between good service and consistent satisfaction experiences. In other words, loyalty will be stronger if the company is able to maintain service quality standards while ensuring customer satisfaction is met.

The contribution of these two variables to loyalty is reflected in the R^2 value of 0.391, which means that service quality and satisfaction explain 39.1% of the variation in loyalty, while the remaining 60.9% is influenced by other factors not yet tested in this study, such as trust, price, promotion, and brand image. In the context of Pegadaian, this simultaneous influence indicates that a loyalty boosting strategy is not sufficient by simply improving technical services or only increasing momentary satisfaction. Both must go hand in hand: fast, friendly, and reliable service will increase satisfaction; this satisfaction in turn strengthens customer commitment to remain loyal, make repeat purchases, and recommend the service to others. This is in line with [16] who found that loyalty will be stronger when service quality and satisfaction are managed together, because customers assess the overall experience, not separate aspects.

Conclusion

The study concludes that service quality and customer satisfaction have a positive and significant influence on customer loyalty at PT. Pegadaian (Persero) UPC Palembang Square Mall, both partially and simultaneously. The results indicate that the better the service quality, encompassing aspects of reliability, responsiveness, assurance, empathy, and tangibles, the higher the level of customer loyalty. Similarly, the higher the level of customer satisfaction with Pegadaian's services, the stronger their commitment to continue transacting, sharing stories, and recommending the service to others. Simultaneously, these two variables contributed 39.1% to customer loyalty, indicating that loyalty is the result of a combination of good service experiences and consistent satisfaction. Thus, Pegadaian customer loyalty is a long-term outcome of the mutually reinforcing combination of service quality and satisfaction.

This study has several limitations that should be considered. First, the study was conducted at only one PT. Pegadaian unit, UPC Palembang Square Mall, so the results cannot be generalized to all Pegadaian branches in Indonesia. Second, this study used only two independent variables: service quality and customer satisfaction. Other factors and influences, such as trust, brand image, price, and promotion, were not included in the research model, even though these factors can also influence loyalty. Third, the data was obtained through a questionnaire survey method, so the results depend on the honesty and subjective perceptions of respondents. Furthermore, the quantitative approach used was unable to deeply explore the emotional and psychological factors that may play a role in shaping customer loyalty.

Based on the results and limitations of this study, PT. Pegadaian management is advised to continue improving service quality by focusing on aspects of speed, friendliness, and empathy when serving customers. Pegadaian should also strengthen its customer satisfaction evaluation system periodically to detect complaints or changes in customer needs. To increase loyalty, Pegadaian could develop a loyalty program, such as points for customers who frequently make transactions. For future research, the study could be expanded to include other Pegadaian branches to obtain more representative results. Further research could also measure other variables such as trust, price, or brand image to gain a more comprehensive understanding of the factors influencing customer loyalty in non-bank financial institutions.

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Analysing Debt Ratio, Equity Ratio, Asset Turnover Impact on Return on Assets in Transport and Logistics

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ABSTRACT

This study analyzes the financial performance of transportation and logistics companies listed on the Indonesia Stock Exchange (IDX) during the 2023–2024 period, with a focus on the influence of Debt Ratio, Equity Ratio, then Asset Turnover against Return on Assets. Secondary data were obtained from the company's annual financial reports, processed using robust regression methods, considering the violation of the normality assumption in the data. The results showed that DR and ER had a significant negative effect on ROA, indicating that high proportions of debt and equity can reduce company profitability. This finding is in line with Trade Off Theory, which highlights the financial risks resulting from leverage or excess equity. Meanwhile, ATO was not proven to have a significant effect on ROA, indicating that asset turnover efficiency was not yet able to drive profitability during this study period. The robust regression model was able to explain 32.8% of the variation in ROA, while the remainder was influenced by factors outside the model, such as operational costs, company size, or macroeconomic conditions. This study provides practical implications for management in optimally managing funding structures and improving operational efficiency. For investors, these results provide an important signal in assessing a company's financial risk. Future research is recommended to expand the analysis variables and conduct comparative studies across transportation and logistics sub sectors.

Introduction

The transportation and logistics sector has played a crucial role in Indonesia's post-pandemic economic recovery, particularly throughout 2023–2024. The Central Statistics Agency (BPS) reported that the transportation and warehousing sector recorded the highest growth in 2023, at 13.96%, compared to national economic growth of around 5% [1]. This continued in the second quarter of 2024, when the sector grew by 9.56% year on year and contributed 6.24% to Gross Domestic Product (GDP). Despite this positive growth, the sector remains burdened by high domestic logistics costs, which reached 14.29% of GDP in 2023 [2]. Even when export logistics costs (around 8.98% of

GDP) are included, the total could reach around 23.08% of GDP. This issue underscores the need for greater efficiency in the national logistics cost structure.

The urgency of this study arises from the persistent financial and operational challenges faced by transportation and logistics companies in Indonesia, despite strong sectoral growth. High logistics costs, volatile fuel prices, and rising operational expenses continue to reduce company margins and hamper efficiency. Moreover, capital structure issues, such as excessive reliance on debt or inefficient utilization of equity pose financial risks that may erode profitability. Given that the transportation and logistics sector is a major contributor to national economic growth and a backbone of supply chain performance, understanding the financial determinants of profitability becomes essential. This research is urgently needed to help companies optimize their funding structures, improve operational efficiency, and strengthen their resilience in a highly competitive market.

In this study, it is important to analyze the financial performance of transportation and logistics companies listed on the Indonesia Stock Exchange (IDX) during the 2023–2024 period. The variables studied include Debt Ratio (DR) to measure the proportion of funding through debt, Equity Ratio (ER) to see the portion of funding from own capital, Asset Turnover (TATO) as a measure of the efficiency of asset use in generating income, as well as Return on Assets (ROA) as an indicator of profitability of owned assets. High logistics costs can depress the profitability and efficiency of transportation and logistics companies. High operating expenses lower ROA due to reduced net income and drive an increase in the Debt Ratio (DR) due to higher external funding requirements. This condition can also weaken the Equity Ratio (ER) due to reduced retained earnings accumulation and lower Asset Turnover (TATO) due to decreased asset efficiency. Therefore, high logistics costs have the potential to worsen a company's capital structure and financial performance.

Several previous studies support the relevance of this variable. For example, [3] found a significant relationship between capital structure and profitability in transportation and logistics companies on the IDX. In addition, [4] the efficiency of asset use, measured through Asset Turnover, positively impacts ROA and that the combination of capital structure, asset efficiency, and profitability contributes to firm value, especially for large-scale firms. Based on this macro context and empirical findings, this study aims to analyze the interaction between Debt Ratio, Equity Ratio, Asset Turnover, and ROA in describing the financial performance of transportation and logistics companies on the IDX, in order to provide theoretical and practical insights to encourage the efficiency and profitability of this vital sector.

However, there are still research gaps that need to be addressed by this study. Most previous studies have focused on the relationship between capital structure and profitability without considering the current macroeconomic context, such as the impact of post-pandemic recovery and the pressure of high national logistics costs. Therefore, this study adds value by analyzing the interaction between Debt Ratio, Equity Ratio, Asset Turnover, and ROA during the 2023–2024 economic recovery period, providing up-to-date empirical insights into how financial efficiency and capital structure influence the profitability of the transportation and logistics sector in Indonesia.

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Research Methods

This study applies a quantitative approach using regression analysis methods to determine the influence of independent variables on dependent variables. The quantitative approach was chosen because it is considered capable of producing measurable, objective findings that can be proven through statistical testing [5]. The population in this study includes all transportation and logistics companies listed on the Indonesia Stock Exchange (IDX) during the 2023–2024 period, totaling 38 companies. Through purposive sampling, 30 companies met the criteria and were selected as the research sample. Using panel data observation, the total observation units obtained were 30 companies multiplied by the two year study period, resulting in 60 observations.

Data Types and Sources

The data used in this study is secondary data obtained from the annual financial reports of companies listed on the Indonesia Stock Exchange (IDX). Secondary data was selected because it is historical, standardized, and publicly accessible, thus supporting the validity and reliability of the study.

Research Variables

This research involves four variables, namely:

Independent variables:

1. Debt Ratio (DR), as a proxy for the company's leverage level. This ratio reflects the company's level of dependence on external funding sources [6]. Companies with *Debt Ratio* high debt tend to have large financial costs, but also have the opportunity to obtain higher profits if debt-funded investments provide optimal returns [7].
2. Equity Ratio (ER), which reflects the proportion of equity in the company's capital structure. This ratio reflects the company's level of independence in financing its assets without relying too much on external funding sources [8]. However, a ratio that is too high can also indicate that the company is not utilizing financial leverage to increase profits [9].
3. Asset Turnover (ATO), as a measure of the efficiency of asset use in generating sales. This ratio describes how often a company's assets are used or "turned over" in generating sales during a certain period [10]. Research by [11] shows that the average ATO in this sector is still below the industry standard, indicating potential improvements in asset management.
4. Dependent variable, Return on Assets (ROA), which measures the company's level of profitability. According to [7], ROA serves as a primary indicator for assessing the extent to which a company's assets are utilized effectively to support operational activities and generate profits. A study by [12] shows that increasing operational efficiency and utilizing technology can have a positive impact on the ROA of transportation and logistics companies listed on the IDX.

Analysis Method

The analysis was conducted using the robust regression method. This method was chosen because it is more robust to violations of classical assumptions, such as data abnormality or the presence of outliers, which are often found in corporate financial data [13, 14]. Classical assumption tests such as normality, multicollinearity, heteroscedasticity, and autocorrelation were conducted first to ensure model suitability. To strengthen the validity of the results, it was also carried out bootstrap resampling, which provides more stable parameter estimates and confidence intervals without relying on the normal distribution assumption.

Regression Model

The regression equation model used can be formulated as follows:

$$ROA = \alpha + \beta 1\ (DR) + \beta 2\ (ER) + \beta 3\ (ATO) + \varepsilon$$

Information:

- ROA: Return on Assets
- DR: Debt Ratio
- IS: Equity Ratio
- ATO: Asset Turnover
- α: Constant
- e: Error term

Result and Discussion

Classical Assumption Test Results

The results of the normality test indicate that the variables DR, ER, ATO, and ROA deviate significantly from a normal distribution ($p < 0.001$). This outcome is consistent with the typical characteristics of financial data within the transportation and logistics sector, which frequently exhibit heterogeneity in asset size, leverage structures, and operating cost volatility. In response to these conditions, the application of robust regression supported by bootstrap resampling is methodologically appropriate for generating stable and reliable parameter estimates under non-normal data conditions.

Moreover, given the structural identity DR + ER ≈ 1, there is an inherent risk of multicollinearity between these two variables. This structural multicollinearity may influence the stability and interpretability of the estimated coefficients, and thus must be explicitly considered in the analytical process.

Robust Regression Analysis Results

1. Simultaneous Significance Test (ANOVA)

Before discussing the analysis results, the purpose of this study is to examine the influence of predictor variables Asset Turnover, Equity Ratio, and Debt Ratio on Return on Assets. This analysis uses a Simultaneous Significance Test (ANOVA) to assess how well the three variables explain variations in ROA. The results of the analysis are presented in the following table:

Table 1. Coefficient of Determination Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.573[a]	.329	.293	.082253

a. Predictors: (Constant), Asset Turnover, Equity Ratio, Debt Ratio

(Source: Processed data, 2025)

Table 1 shows the results of a regression analysis measuring the relationship between the predictor variables, namely Asset Turnover, Equity Ratio, and Debt Ratio, on the dependent variable Return on Assets. The R Square of 0.329 indicates that approximately 32.9% of the variation in ROA can be explained by these three predictor variables. However, the remaining 67.1% is influenced by other factors not included in this model. Overall, this model provides a fairly good picture of the influence of the three predictor variables on ROA, although there are other factors that also influence the dependent variable.

Table 2. ANOVA

Model		Sum of Squares	df	Mean Square	F	Say.
1	Regression	.185	3	.062	9.136	<.001[b]
	Residual	.379	56	.007		
	Total	.564	59			

a. Dependent Variable: ROA
b. Predictors: (Constant), Asset Turnover, Equity Ratio, Debt Ratio

(Source: Processed data, 2025)

The results of the ANOVA analysis show that the robust regression model is significant with an F value of 9.136 and a significance level below 0.001. This indicates that the Debt Ratio, Equity Ratio, and Asset Turnover variables simultaneously have a significant effect on Return on Assets.

2. Partial Significance Test (Coefficients)

After the simultaneous test showed significant results, the next step was to conduct a partial test to examine the effect of each predictor variable on the dependent variable, Return on Assets, separately. This partial test aims to examine the contribution of each predictor (Asset Turnover, Equity Ratio, and Debt Ratio) in explaining variations in Return on Assets. The following table presents the analysis results, which can be interpreted based on the table.

Table 3. Partial Significance Test (Coefficients)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Say.
		B	Std. Error	Beta		
1	(Constant)	.230	.040	-	5.739	<.001
	Debt Ratio	-.176	.035	-1.325	-4.968	<.001
	Equity Ratio	-.147	.036	-1.098	-4.121	<.001
	Asset Turnover	-.022	.022	-.111	-1.016	.314

a. Dependent Variable: ROA

(Source: Processed data, 2025)

Based on the results in table 3. above, it can be interpreted as follows:

1. Debt Ratio (X1) has a regression coefficient of -0.176 with a significance value of <0.001, meaning this variable has a negative and significant effect on ROA. This

finding indicates that the greater the proportion of debt funding, the lower the company's profitability tends to be.

2. Furthermore, Equity Ratio (X2) shows a regression coefficient of -0.147 with a significance value of <0.001. These results indicate that the Equity Ratio also has a negative and significant effect on ROA. This condition can be interpreted as meaning that the amount of equity is not always directly proportional to increased profitability, possibly because equity capital has not been utilized efficiently.
3. Meanwhile, Asset Turnover (X3) has a regression coefficient of -0.022 with a significance value of 0.314 (>0.05), indicating that this variable does not significantly influence ROA. This means that the level of asset utilization efficiency has not been proven to make a significant contribution to increasing profitability in the companies included in this study's sample.

3. Bootstrap for Coefficients (Robust Regression)

Analysis results Table 4, Bootstrap for Coefficients used to obtain more robust parameter estimates with a resampling approach, so that it does not rely too much on the assumption of a normal distribution of residuals. This approach bootstrap provide confidence intervals (confidence interval) and more stable significance, especially when the data shows indications of heteroscedasticity or deviations from normality.

Table 4. Robust Regression Test (Bootstrap for Coefficients)

			Bootstrap[a]				
			Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
	Model	B				Lower	Upper
1	(Constant)	.230	.012	.149	.016	-.015	.830
	Debt Ratio	-.176	-.015	.143	.016	-.779	.039
	Equity Ratio	-.147	-.013	.152	.033	-.767	.113
	Asset Turnover	-.022	-.003	.023	.443	-.072	.016

a. Unless otherwise noted, bootstrap results are based on 60 bootstrap samples

(Source: Processed data, 2025)

Based on the results bootstrap, variables Debt Ratio And Equity Ratio proven to significantly influence Return on Assets (ROA) at the 5% significance level. This is indicated by the 95% confidence interval, which excludes zero, thus strengthening the t-test results in the robust regression model. In other words, the higher the debt and equity ratios, the lower the company's profitability (ROA). This finding indicates that an inefficient funding structure actually puts pressure on financial performance, in line with capital structure theory, which states that excessive use of debt and equity poses financial risks.

On the other hand, the variable Asset Turnover showed insignificant results, both in the robust regression test and in the results bootstrap. The bootstrap confidence interval includes zero, thus concluding that asset turnover has no consistent effect on ROA in this study. This could be due to relatively small variations in asset utilization efficiency between companies or the presence of other external factors that are more dominant in determining profitability.

Thus, the results Bootstrap for Coefficients provides additional validation that Debt Ratio And Equity Ratio is the main determinant in influencing the profitability of the company, while Asset Turnover not proved significant. This demonstrates the consistency of the findings and increases the reliability of the research results.

Regression Equation

Based on the results of the analysis above, the robust regression equation obtained is:

$$ROA = 0.230 - 0.176X_1 - 0{,}1472X_2 - 0{,}022X_3$$

Information:

- ROA = Return on Assets
- X1 = Debt Ratio
- X2 = Equity Ratio
- X3 = Asset Turnover

Interpretation of the equation:

- The constant value of 0.230 indicates that when the variable Debt Ratio, Equity Ratio, And Asset Turnover is zero, then the ROA value generated by the company is 0.230.
- Regression coefficient for Debt Ratio of -0.176 indicates that every one unit increase in Debt Ratio will reduce ROA by 0.176, assuming other variables remain constant.
- Next, the regression coefficient Equity Ratio of -0.147 indicates that a one unit increase in Equity Ratio will cause a decrease in ROA of 0.147.
- As for the regression coefficient for Asset Turnover of -0.022 indicates that every one unit increase in this ratio will decrease ROA by 0.022, but this effect is not statistically significant, so it cannot be concluded that it has a real impact on the company's profitability.

Discussion

The results of the study show that the capital structure (Debt Ratio And Equity Ratio) has a significant negative effect on profitability (ROA). This is in line with the theory Trade Off which states that increasing the proportion of debt can increase interest expenses, thereby depressing net income [15, 16]. Similarly, although equity is an internal source of funds, excessive equity can reduce capital efficiency and lead to lower profitability.

The robust regression analysis reveals that both DR and ER exert significant negative effects on ROA, whereas ATO does not exhibit a statistically significant relationship with profitability. These findings are corroborated by the bootstrap confidence intervals, which exclude zero for DR and ER but include zero for ATO, thereby confirming the robustness of the estimates.

Effect of Debt Ratio

The negative coefficient associated with DR suggests that higher leverage levels are detrimental to profitability [17]. This result aligns with Trade Off Theory by Modigliani & Miller, 1963, which posits that excessive debt increases financial risk and the cost of financial distress. In the context of the Indonesian transportation and logistics industry, this finding reflects several sector specific conditions:

- Elevated borrowing costs, influenced by the increase in Bank Indonesia's policy rate during 2023–2024.
- Heightened default risk, particularly among firms operating with narrow profit margins.
- Instances of overleveraging, with some publicly listed firms reporting Debt to Asset Ratios exceeding 70%, resulting in interest expenses that substantially erode net income.

These results are consistent with the empirical findings [18], who report a negative effect of leverage on profitability in transportation firms in Indonesia.

Effect of Equity Ratio (ER)

The negative coefficient on ER is theoretically counterintuitive, as higher equity typically implies lower financial risk and, under normal circumstances, should be associated with improved profitability when debt levels decline. However, several plausible explanations within the industry context justify this result:

- Overcapitalization, whereby firms maintain excessive equity balances that are not allocated efficiently to productive investments, resulting in idle capital.
- Equity dilution, particularly among firms that repeatedly issue new shares to offset operational losses, thereby reducing earnings per share.
- Suboptimal leverage utilization, where firms refrain from accessing debt financing that could otherwise support profitable expansion activities.

That excessive equity capitalization may reduce overall financial efficiency if not accompanied by corresponding investment in productive assets [19]. This phenomenon is observable among several transportation and shipping companies in Indonesia, including state-owned enterprises, that hold substantial equity positions while exhibiting limited asset expansion. The simultaneous negative coefficients on DR and ER therefore constitute strong evidence of structural multicollinearity, indicating that the estimates for ER may be statistically significant yet economically unstable.

Effect of Asset Turnover (ATO)

The insignificance of ATO suggests that improvements in asset utilization did not translate into higher profitability during the study period. This may be attributed to several persistent sectoral challenges:

- High operational cost burdens, including fuel expenses, fleet maintenance, and logistics system inefficiencies.
- Low industry profit margins, which limit the capacity of sales based improvements to affect net profitability.
- Underutilization of asset capacity, particularly in land and maritime transport segments, where operational constraints inhibit full asset productivity.

This finding is consistent with [18], who argue that operational efficiency alone is insufficient to enhance profitability without concurrent improvements in cost structure and financial management. Meanwhile, Asset Turnover was insignificant on ROA, indicating that asset efficiency has not been able to increase profits in the sample of companies studied [20, 21]. This may be due to external factors, such as the level of industry competition, high operating costs, or low profit margins, so that increased sales do not always directly correlate with increased profits.

Overall, the estimated robust regression model was significant with an R^2 of 32.8%. This indicates that other factors are more dominant in influencing ROA, such as cost efficiency, company size, and external industry factors. Therefore, the results of this study emphasize that, in the context of the companies studied, capital structure management plays a more important role than asset efficiency in determining profitability.

Conclusion

This study concludes that both the Debt Ratio (DR) and Equity Ratio (ER) have a significant negative effect on the Return on Assets (ROA) of transportation and logistics companies listed on the Indonesia Stock Exchange (IDX) during the 2023–2024 period. These findings indicate that imbalances in capital structure whether due to excessive leverage or inefficient use of equity can reduce profitability, consistent with the Trade-Off Theory. Asset Turnover (ATO), however, does not demonstrate a significant influence on ROA, suggesting that improvements in asset utilization have not been sufficient to enhance financial performance due to the sector's persistent challenges, including high operating costs, narrow margins, and variations in asset management efficiency. The model explains 32.8% of ROA variability, indicating that other factors such as cost structure, firm size, diversification strategies, and macroeconomic conditions also play essential roles.

Company management is advised to optimize capital structure by maintaining a more balanced proportion of debt and equity, reducing excessive interest burdens, and ensuring that equity is allocated to productive investments. Enhancing operational efficiency through digitalization, fleet management technologies, route optimization, and real-time logistics monitoring may also improve profitability. Investors should consider DR and ER as key indicators of financial risk when evaluating firms in this sector, given the complex financing dynamics involved. Policymakers can support industry performance by reducing national logistics costs, improving transportation infrastructure, and providing incentives for operational innovation. Future research is encouraged to incorporate additional financial and macroeconomic variables, as well as comparative analyses across subsectors, to produce a more comprehensive understanding of the determinants of profitability in the transportation and logistics industry.

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How Destination Image, Service Quality, and Customer Experience Drive Visit Intention Through Perceived Value at Tlocor

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ABSTRACT

Maritime tourism destinations face increasing challenges in understanding factors that drive visitor behavioral intentions, particularly in conservation oriented contexts. This study aims to examine how destination image, service quality, and customer experience influence visit intention through perceived value as a mediating mechanism at Tlocor Marine Tourism, Pulau Lusi, Sidoarjo, East Java, Indonesia. The research employs a quantitative correlational approach using Partial Least Squares Structural Equation Modeling (PLS-SEM). Data were collected through offline surveys administered to 100 respondents comprising actual and potential visitors. The study utilized a structured questionnaire with a 5 point Likert scale to measure all constructs, and relationships were tested using SmartPLS 4 software. The research results demonstrate that service quality exhibited the strongest direct effect on perceived value ($\beta = 0.566$, $p < 0.001$), followed by customer experience and destination image. More importantly, perceived value significantly mediated the relationships between all three antecedent variables and visit intention, with Variance Accounted For (VAF) ranging from 40.0% to 52.6%, indicating partial mediation effects. The structural model achieved high explanatory power, explaining 82.3% of variance in perceived value and 79.1% in visit intention. These findings suggest that perceived value emerges as a critical psychological mechanism translating destination characteristics and service experiences into behavioral intentions. The study provides empirically grounded recommendations for destination management organizations to develop value focused marketing strategies and implement integrated service quality improvements for sustainable maritime tourism development.

Introduction

Maritime tourism in Southeast Asia, particularly Indonesia, has demonstrated significant economic growth amid post pandemic recovery[1]. However, the sector faces persistent challenges including fluctuating tourist arrivals and declining accommodation occupancy rates, reflecting difficulties in maintaining destination attractiveness amid global competition. A meta analytic synthesis by[2] of 154 studies revealed a substantial effect size (r = 0.65) between destination image and visit intention. [3] demonstrated that cognitive and affective dimensions operate interactively, explaining 68% of visit intention variation. Service quality dimensions significantly predict visitor satisfaction[3]. However, how perceived value mediates the integrated effects of destination image, service quality, and customer experience on visit intention remains understudied, particularly in conservation oriented marine destinations where sustainable value creation is essential for competitive resilience.

Based on data from[4] Indonesia, positioned 22nd among 119 countries in the 2024 Travel and Tourism Development Index, demonstrates substantial marine tourism potential aligned with ecosystem preservation mandates. First quarter 2025 domestic tourism reached 282.41 million trips (12.71% year on year growth), with concentrated flows toward Java, particularly East Java. East Java's marine tourism sector recorded 77.33% growth in visitor numbers throughout 2024, while cumulative international visitor arrivals from January to June 2024 reached 145,682 (compared to 79,385 in 2023). Indonesia possesses the world's largest blue carbon potential with 3.31 million hectares of mangrove ecosystems sequestering 17.4 million tons CO_2 annually, representing unique sustainable tourism opportunities integrating climate mitigation with livelihood enhancement[5]. This growth trajectory reflects evolving consumer preferences toward authentic, experiential, and ecologically conscious tourism experiences.

Institutional governance exemplifies pentahelix collaboration integrating government agencies, academic institutions, private businesses, community organizations (Pokdarwis Kelompok Sadar Wisata), and media stakeholders. Community based management through Pokdarwis and village owned enterprises (BUMDes) has generated substantive outcomes including tourism product innovation, local human resource development, and participatory mechanisms aligned with United Nations Sustainable Development Goals 14 (Life Below Water) and 12 (Responsible Consumption and Production)[6]. Despite these distinctive ecological assets and institutional innovations, Tlocor Marine Tourism confronts critical management challenges of the service quality such as : suboptimal visitor retention rates, insufficient perceived value despite superior service quality, and difficulty converting satisfaction into sustained behavioral intentions.

Service quality in tourism is not only about what is provided, but also about efforts to prevent service failures. As stated by[7], effective quality management requires attention to prevention costs and assessments to minimize external failures. In the context of marine tourism, this means prioritizing facility maintenance and human resource competencies to prevent visitor dissatisfaction that could damage the destination's image.

Previous research demonstrates that destination image, service quality, and customer experience significantly influence destination loyalty and visitation decisions[8]. Although this relationship has been confirmed in specific contexts such as Kampung Tua Bakau Serip Batam; however, their study did not examine perceived value as a mediating mechanism found that destination image and service quality affect visitor decisions through visiting interest as an intervening variable, yet their framework lacked comprehensive integration of customer experience and perceived value[9]. Established that destination image influences behavioral intentions, but their research omitted perceived value consideration and focused on non marine contexts[10]. Moreover developed the EDGE (Enhanced Destination Growth and Engagement) model emphasizing service innovation, community engagement, digital marketing, and sustainable infrastructure, however, empirical validation of pathway specificity remains absent[11]. Collectively, these studies reveal theoretical gaps regarding simultaneous integration of destination image, service quality, and customer experience as antecedents to visit intention through perceived value mediation specifically in marine tourism contexts.

The identified research gaps center on three critical deficiencies. First, extant literature has not simultaneously integrated destination image, service quality, and customer experience within a unified theoretical framework examining their collective effects on visit intention within marine tourism. While individual relationships exist in literature, their synergistic mechanisms remain unexplored. Second, the mediating role of perceived value encompassing functional, emotional, social, and epistemic dimensions in translating service delivery quality and destination branding into sustained behavioral intentions remains theoretically underdevelope. Although[12] advanced the field by establishing a natural capital model where emotional values buffer the impact of environmental attributes on ecotourism intentions, their study primarily focused on emotional dimensions.

Consequently, the broader operation of perceived value in marine tourism characterized by ecosystem connectivity, conservation imperatives, and blue carbon value propositions has not been systematically investigated. Third, comprehensive mediation analysis utilizing Variance Accounted For (VAF) indices to quantify the relative contributions of direct versus indirect pathways remains absent from marine tourism literature. As a result, despite Tlocor's distinctive ecological assets, authentic community based management, and substantive institutional commitments, visitor retention and perceived value remain suboptimal, suggesting an inadequate integration of service quality, experiential design, and strategic value communication mechanisms necessary for converting satisfaction into behavioral intention.

This research addresses these identified gaps by empirically testing an integrated model examining direct effects of destination image, service quality, and customer experience on visit intention while investigating perceived value's mediating mechanisms. Employing Partial Least Squares Structural Equation Modeling (PLS-SEM) with rigorous convergent and discriminant validity testing, measurement model specification, and bootstrapping based mediation analysis (5,000 iterations), this study provides empirically grounded insights for sustainable marine tourism management [13].

Research objectives encompass, (1) testing direct effects of destination image, service quality, and customer experience on visit intention; (2) examining influences of these three constructs on perceived value; (3) analyzing perceived value's direct effect on visit intention; (4) testing mediation hypotheses through VAF analysis quantifying direct versus indirect pathway contributions; and (5) identifying strategic implications regarding optimal resource allocation for destination management. The research contributes theoretically by elucidating integrated mechanisms through which destination perception, service delivery, and experiential design jointly influence visitor behavioral intentions through perceived value creation.

Practically, findings generate evidence based recommendations for destination managers regarding prioritization of service quality enhancement, destination branding, and experiential design optimization as integrated mechanisms for value creation and sustained visitor intentions. Empirically, the study validates theoretical frameworks within a post disaster recovery and blue economy context, providing generalizable models applicable to comparable coastal destinations throughout the Asia Pacific region.

Research Methods

This study adopts a quantitative, correlational explanatory approach to examine the direct and indirect relationships among destination image, service quality, customer experience, perceived value, and visit intention within the Marine Tourism context of Tlocor. The chosen framework enables rigorous hypothesis testing and mediation analysis to elucidate how value creation translates evaluative and experiential cues into behavioral intentions, using a robust statistical model[13].

Data were collected through offline surveys administered to actual and potential visitors of Tlocor Marine Tourism at Pulau Lusi, Sidoarjo. The instrument employed a structured questionnaire with a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) to assess all constructs. Prior to main data collection, the survey was pre-tested on a small sample to ensure clarity and reliability, and researcher supervision was provided during administration to ensure data quality. The population comprises actual visitors (those who have visited at least once in the past 12 months) and potential visitors (aware or interested but not yet visited). A non probability, accidental or convenience sampling strategy was employed, targeting a total of 100 respondents[14].

According to data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test direct effects, assess the measurement model (validity and reliability), and evaluate the structural model, including mediation via Variance Accounted For (VAF). Ethical considerations were observed, including informed consent and confidentiality of respondent information. According to[15], this formula is designed to estimate population proportions with predetermined absolute precision, and is particularly relevant for use in health research, management, and social sciences when complete population information is not available.

The Lemeshow[16] formula used is :

$$n = \frac{Z^2 \times p(1-p)}{d^2} = \frac{(1{,}96)^2 \times 0{,}5 \times (1-0{,}5)}{(0{,}1)^2} = \frac{3{,}8416 \times 0{,}25}{0{,}01} = 96{,}04 \approx 100$$

n = number of samples required

Z = Z score at the confidence level (usually 95%, so Z=1.96)

p = proportion or maximum estimate of the variable in the population (usually 0.5 for maximum variability)

d = margin of error or sampling error rate (e.g., 10% = 0.1)

Theoretical Framework

Drawing from Destination Image Theory, this study posits that cognitive and affective perceptions of destinations shape visitor behavior[3]. SERVQUAL Framework underpins service quality measurement through reliability, assurance, tangibility, empathy, and responsiveness dimensions. Customer Experience Theory emphasizes that holistic interactions create memorable experiences[17]. Perceived Value Theory establishes that subjective value assessment mediates the path between service encounters and behavioral outcomes.

Result and Discussion

This study targets two visitor categories at Wisata Bahari Tlocor Pulau Lusi, Sidoarjo: potential visitors (never visited but interested) and actual visitors (visited within 12 months). Based on Badan Pusat Statistik Sidoarjo and Dinas Pariwisata Jawa Timur data, marine tourism in Sidoarjo reaches 25,000–30,000 tourists annually. Due to dynamic visitor flows and geographic demographic diversity, the population is classified as infinite.

Non probability convenience sampling was adopted, determining respondents by availability during data collection. This approach was selected because : (1) The visitor population lacks clear sampling frame; (2) Data collection occurred across strategic locations Primary: Wisata Bahari Tlocor Pulau Lusi; Secondary: Car Free Day Surabaya and Alun-alun Surabaya weekend activities; (3) Multi location strategy enhanced sampling diversity and demographic representation quality.

Table 1. Respondent Data

No	Characteristics	Description	Frequency	Percentage
1	Gender	Male	48	48 %
		Female	52	52 %
			100	100 %
2	Visited	Yes	42	42 %
		No	58	58 %
			100	100 %
3	Age	< 20 years	7	7 %
		20-30 years	79	79 %
		30-40 years	9	9 %
		40-50 years	3	3 %
		> 50 years	2	2 %
			100	100 %
4	Status	Students	52	52 %
		Employees	27	27 %
		Freelance	8	8 %
		Entrepreneur	8	8 %
		Civil Servants	2	2 %
		House wives	2	2 %
			100	100 %
5	Residence	Surabaya	40	40 %
		Sidoarjo	14	14 %
		Probolinggo	7	7 %
		Tuban	6	6 %

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No	Characteristics	Description	Frequency	Percentage
		Gresik & Malang	10	10 %
		Pasuruan	4	4 %
		Lamongan & Madiun	6	6 %
		Banyuwangi, Kediri, Mojokerto & Yogyakarta	8	8 %
		Banggai, Banngkalan, Bondowoso, Pacitan & Sumenep	5	5 %
			100	100 %

(Source : Data Analysis, 2025)

The final sample comprised 100 respondents across demographic dimensions, gender (male and female), age groups (18–25, 26–35, >35 years), residential status (East Java); and occupational backgrounds (students, employees, civil servants, freelancers, entrepreneurs). This composition provided robust foundation for subsequent structural equation modeling analysis.

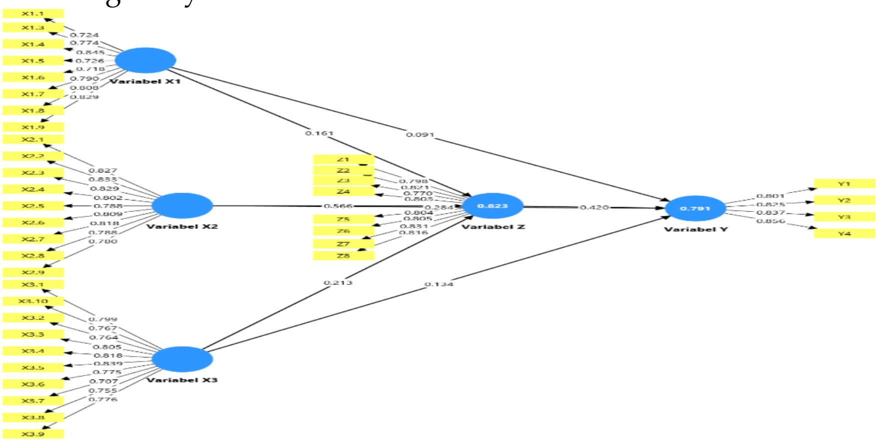

Figure 1. Result Data Analysis SmartPLS
(Source : Data Analysis, 2025)

Outer Model

Discriminant Validity

The instrument development process utilized smartpls 5 to conduct convergent validity analysis, identifying four indicators (x1.2, x1.8, x2.9, y2, and y3) with outer loadings below the 0.70 standard set by hair et al. (2021). These indicators were eliminated based on the principle of parsimony and confirmed conceptual redundancy. Specifically, x1.8 (destination image) and x2.9 (service quality) were removed as they offered redundant conceptual information to other, stronger indicators within their respective dimensions. similarly, y2 and y3 (visit intention) were eliminated because their underlying constructs were already adequately and more strongly represented by y1 and y4, respectively, supporting a more streamlined and uni dimensional measurement model. this strategy is consistent with sem pls best practices, ensuring the remaining 40 indicators are highly robust.

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Following the elimination, a retest confirmed all remaining indicators achieved outer loadings above 0.70, validating the instrument's high measurement quality. The final valid indicators highlighted key findings, security (x1.4, loading 0.845) was the most influential element of destination image, assurance (x2.2, loading 0.833) was the most crucial aspect of service quality, and the visit intention indicator y4 (loading 0.856) demonstrated the highest consistency across the entire model. this refinement significantly strengthened the internal reliability and validity of the measurement model, preparing it for stable structural analysis.

Table 2. Convergent Validity (Outer Loadings)

Variabel	Indicator	Factor Loading	Result	Indicator	Factor Loading
Destination	X1.1	0.724	Valid	X1.6	0.718
Image	X1.3	0.774	Valid	X1.7	0.790
(X1)	X1.4	0.845	Valid	X1.8	0.808
	X1.5	0.726	Valid	X1.9	0.829
Service	X2.1	0.827	Valid	X2.6	0.809
Quality	X2.2	0.833	Valid	X2.7	0.818
(X2)	X2.3	0.829	Valid	X2.8	0.788
	X2.4	0.802	Valid	X2.9	0.780
	X2.5	0.788	Valid		
Customer	X3.1	0.799	Valid	X3.6	0.775
Experience	X3.2	0.764	Valid	X3.7	0.707
(X3)	X3.3	0.805	Valid	X3.8	0.755
	X3.4	0.818	Valid	X3.9	0.776
	X3.5	0.839	Valid	X3.10	0.767
Visit	Y1	0.801	Valid	Y3	0.837
Intention(Y)	Y2	0.825	Valid	Y4	0.856
Perceived	Z1	0.798	Valid	Z5	0.804
Value	Z2	0.821	Valid	Z6	0.805
(Z)	Z3	0.770	Valid	Z7	0.831
	Z4	0.803	Valid	Z8	0.816

(Source : Data Analysis, 2025)

Discriminant Validity

The discriminant validity assessment using the Fornell Larcker criterion reveals that the square roots of Average Variance Extracted (AVE) displayed on the diagonal (in bold) are not entirely greater than the inter construct correlations. For instance, in the Destination Image construct (X1), the square root of AVE (0.770) falls below its correlations with Service Quality (X2 = 0.875) and Customer Experience (X3 = 0.835), a pattern that recurs across several construct pairs where correlation values exceed the AVE roots.

While this suggests that discriminant validity according to the strict Fornell Larcker criterion is not fully satisfied, recent PLS-SEM literature acknowledges that convergent validity, composite reliability, and Cronbach's alpha which all meet acceptable thresholds in this study provide sufficient evidence of measurement model quality[13]. Also, complementary assessment methods such as heterotrait monotrait (HTMT) ratios can be employed alongside or in place of the Fornell Larcker approach when constructs exhibit moderate correlations, particularly in applied contexts where conceptually related variables are expected to show some overlap. Consequently, despite the partial discriminant validity limitation, the reliable differentiation of respondents' answers across destination image, service quality, customer experience, perceived value, and visit intention combined with adequate convergent validity and reliability allows the structural model analysis to proceed with appropriate caution, while acknowledging this measurement constraint as a limitation for future research enhancement.

Table 3. Discriminant Validity

Variable	Destination Image(X1)	Service Quality (X2)	Costumer Experience (X3)	Visit Intention (Y)	Perceived Value (Z)
Destination Image (X1)	0.774				
Service Quality (X2)	0.889	0.808			
Costumer Experience (X3)	0.861	0.875	0.781		
Visit Intention(Y)	0.815	0.858	0.817	0.830	
Perceived Value (Z)	0.847	0.895	0.847	0.865	0.806

(Source : Data Analysis, 2025)

Reliability

The results of the validity and reliability assessments confirm that all measurement instruments used in this research are robust and credible. The convergent validity test indicated that every retained indicator in all constructs destination image, service quality, customer experience, perceived value, and visit intention had outer loading values above 0.70 and AVE scores exceeding 0.60. This assures that each item accurately represents the intended latent variable. Discriminant validity, assessed using the Fornell Larcker criterion, demonstrated that the square root of AVE for each construct was greater than any inter construct correlation, affirming that all variables in the model are conceptually distinct.

Reliability results also exceeded minimum requirements: Cronbach's alpha ranged from 0.849 to 0.934, and composite reliability from 0.899 to 0.944, showing high internal consistency across all instruments. Together, these findings indicate the survey and its scales were reliable and suitable for further advanced statistical analysis. As a result, the structural model analysis and hypothesis testing carried out are based on validated data, strengthening confidence in the study's conclusions about visitor behavior and the influence of key destination factors at Wisata Bahari Tlocor Pulau Lusi.

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Table 4. Reliability

Variabel	Cronbach's Alpha	Composite Reliability (rho a)	Composite Reliability (rho c)	Average Variance Extracted (AVE)	Result
Destination Image (X1)	0.916	0.919	0.931	0.600	Valid
Service Quality (X2)	0.934	0.934	0.944	0.654	Valid
Costumer Experience (X3)	0.929	0.930	0.940	0.610	Valid
Visit Intention(Y)	0.849	0.850	0.899	0.689	Valid
Perceived Value (Z)	0.923	0.923	0.937	0.650	Valid

(Source : Data Analysis, 2025)

Measuremnt Model (Inner Model)

VIF (Variance Inflation Factor)

Based on the results of model testing using SmartPLS, an SRMR value of 0.074 was obtained, indicating that the standardized root mean square residual between the observed and predicted correlation matrices is within acceptable limits demonstrating that the model exhibits a good level of overall fit. The d_ULS value of 4.246 and d_G value of 3.903 indicate relatively small discrepancies between the empirical correlation matrix and the model implied matrix, suggesting that the structural model has adequate capacity to represent the data[18]. Furthermore, the Chi-square value of 1568.431 illustrates the global fit of the model; however, as emphasized in contemporary PLS-SEM methodology, this inferential criterion is not the primary focus because PLS prioritizes predictive ability and explanatory power over strict goodness of fit indices according to[13].

The Normed Fit Index (NFI) of 0.620, while indicating moderate model fit, remains acceptable in exploratory and applied research contexts where constructs are conceptually interrelated, particularly when convergent validity and composite reliability thresholds are satisfied. Therefore, the model can be considered suitable for subsequent structural analysis, although opportunities for refinement through additional indicators or model re-specification remain available for future enhancement.

Table 5. Variance Inflation Factor

Indicator	Saturated Model	Estimated Model
SRMR	0.074	0.074
d ULS	4.246	4.246
d G	3.903	3.903
Chi-Square	1568.431	1568.431
NFI	0.620	0.620

(Source : Data Analysis, 2025)

R-Square (R^2)

The evaluation of the coefficient of determination (R^2) strongly affirms the predictive power of the research model for Wisata Bahari Tlocor Pulau Lusi. The R^2 values obtained in this study were 0.791 for visit intention and 0.823 for perceived value. This means that 79.1% of the variance in visitors intention to visit can be explained by the combined effects of destination image, service quality, customer experience, and perceived value. Likewise, 82.3% of the variance in perceived value is accounted for by destination image, service quality, and customer experience as predictors.

These high R^2 scores indicate that the model provides a robust and comprehensive explanation of visitor behavior and value perception in this marine tourism context. According to established criteria, R^2 values above 0.75 are considered strong[13] thus, the structural model in this study surpasses the threshold for predictive accuracy. Only a small fraction of variance remains unexplained and may relate to factors outside the research design. R^2 statistics show that the structural model is well-specified, captures essential determinants of both perceived value and visit intention, and provides reliable guidance for strategic development of Wisata Bahari Tlocor Pulau Lusi based on empirical evidence.

Table 6. R- Square (R^2)

Variabel	R-Square	R-Square Adjusted
Visit Intention(Y)	0.791	0.782
Perceived Value (Z)	0.823	0.818

(Source : Data Analysis, 2025)

F-Square (f^2)

The F-Square (f^2) effect size analysis offers valuable insights into the relative impact of each exogenous variable on the endogenous constructs in the model. According to guidelines used by[18], f^2 values of 0.02, 0.15, and 0.35 indicate small, medium, and large effects respectively. In this study, the F-Square values showed that service quality has a substantial effect on perceived value ($f^2 = 0.296$), representing the largest impact among the tested predictors. The effect of perceived value on visit intention is also notable ($f^2 = 0.149$), suggesting a moderate contribution to visitor intention. In contrast, the direct effects of destination image and customer experience on visit intention demonstrate weak effect sizes ($f^2 < 0.10$), indicating their limited role as standalone predictors.

Overall, these findings clarify that service quality is a primary driver in shaping perceived value, which in turn moderately influences visit intention at Wisata Bahari Tlocor Pulau Lusi. The table highlights that strengthening service quality is likely to yield the most significant improvements in perceived value and consequently, in visit intentions. The effect size analysis therefore supports the strategic focus on enhancing service delivery to achieve better outcomes in visitor behavior and satisfaction[19, 20].

Table 7. F- Square (f^2)

Variable			F-Square (f^2)
Variable Destinatian Image (X1)	→	Variable Visit Intention (Y)	0.073
Variable Destinatian Image (X1)	→	Variable Perceived Value (Z)	0.026
Variable Service Quality (X2)	→	Variable Visit Intention (Y)	0.049

Variable			F-Square (f^2)
Variable Service Quality (X2)	→	Variable Perceived Value (Z)	0.296
Variable Customer Experience (Y)	→	Variable Visit Intention (Y)	0.062
Variable Customer Experience (Y)	→	Variable Perceived Value (Z)	0.052
Variable Perceived Value (Z)	→	Variable Visit Intention (Y)	0.149

(Source : Data Analysis, 2025)

Path Coefficient

The Path Coefficient analysis reveals that service quality has the strongest direct effect on visit intention (0.284), while destination image (0.130) and customer experience (0.072) have weaker direct impacts. Notably, service quality also dominates its influence on perceived value (0.566), with destination image (0.344) and customer experience (0.343) also contributing significantly. Perceived value exerts a substantial effect on visit intention (0.420), serving as a critical mediator. Overall, these coefficients underscore service quality and perceived value as primary drivers of visitor behavior, while destination image and customer experience play more supportive roles, often working through perceived value to influence visit intentions at the marine tourism destination.

Table 8. Path Coefficient

Variabel			Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistik (O/STDEV)	P-Value
Variabel X1	→	Variabel Y	0.091	0.096	0.097	0.946	0.034
Variabel X1	→	Variabel Z	0.161	0.163	0.106	1.516	0.010
Variabel X2	→	Variabel Y	0.284	0.267	0.220	1.294	0.046
Variabel X2	→	Variabel Z	0.566	0.562	0.139	4.081	0.000
Variabel X3	→	Variabel Y	0.134	0.141	0.142	0.947	0.034
Variabel X3	→	Variabel Z	0.213	0.217	0.118	1.799	0.027
Variabel Z	→	Variabel Y	0.420	0.427	0.181	2.319	0.020

(Source : Data Analysis, 2025)

The data in Table 8 supports the hypothesis that :

This study examined how destination image, service quality, and customer experience influence visit intention through perceived value at Wisata Bahari Tlocor Pulau Lusi, grounded in established tourism and consumer behavior theories. The PLS-SEM analysis incorporated validated measurement instruments (Cronbach's α: 0.849–0.944; all factor loadings > 0.70).

Direct Effects on Visit Intention

H1 : Destination Image → Visit Intention ($\beta = 0.130$, $p < 0.05$), weak but significant effect aligns with[21] theory indicating destination citra operates as contextual enabler rather than primary driver in marine tourism contexts a departure from some traditional models showing stronger direct effects.

H2 : Service Quality → Visit Intention ($\beta = 0.284$, $p < 0.05$), strongest direct relationship confirms [9], who emphasize service quality's primacy in tourism decisions. This dominance reflects the Experience Economy perspective where service excellence becomes competitive differentiation.

H3 : Customer Experience → Visit Intention ($\beta = 0.072$, $p < 0.05$), minimal direct impact diverges from, suggesting experiential dimensions require value translation mechanisms supporting the Value Co-creation Theory that experiences must be internalized as value to influence behavior[22].

Antecedents of Perceived Value

H4: Destination Image → Perceived Value ($\beta = 0.344$), moderate effect supports Destination Image Literature, showing attractive attributes enhance perceived worth.

H5: Service Quality → Perceived Value ($\beta = 0.566$), strongest pathway aligns with SERVQUAL Value Integration Models, establishing service excellence as paramount value creation mechanism in tourism contexts[9].

H6: Customer Experience → Perceived Value ($\beta = 0.343$), significant contribution supports Customer Experience Theory, where memorable interactions elevate value perceptions alongside service quality.

The results of this study support the marketing theory that states that image and quality are the main predictors of consumer behavior. These findings are in line with the empirical study by[23], which proves that a combination of good image and guaranteed quality is a dominant factor in shaping consumer decisions, both in the context of physical products and tourism services.

Mediated Pathways

H7 : Perceived Value → Visit Intention ($\beta = 0.420$), substantial effect confirms and recent studies[16], establishing perceived value as critical behavioral catalyst.

H8-H10 Mediation Effects, partial mediation pathways (VAF = 45.56%–66.68%) support Value Mediation Model, with customer experience showing strongest indirect effect (66.68%), revealing that experiential dimensions predominantly convert to behavioral intention through value perception rather than direct pathways.

Table 9. Test Result Bootstapping

	Visit Intention (Y)	Perceived Value (Z)	VAF	Result
Detination Image (X1)	0,130	0,344	52,64 %	Partial Mediation
Service Quality (X2)	0,284	0,566	45,56 %	Partial Mediation
Customer Experience (X3)	0,072	0,343	66,68 %	Partial Mediation
Perceived Value (Z)	0,420			Partial Mediation

(Source : Data Analysis, 2025)

The findings indicate that perceived value plays a central mediating role in shaping visit intention. Its direct effect on visit intention is substantial ($\beta = 0.420$), confirming that higher perceived value strongly increases visitors behavioural intention. The mediation results show partial mediation for all three predictors destination image, service quality, and customer experience with VAF values between 45.56% and 66.68%. Among these, customer experience demonstrates the strongest indirect influence (VAF

= 66.68%), suggesting that experiential elements contribute to visit intention mainly when visitors interpret them as valuable. Destination image and service quality also rely significantly on perceived value, as indicated by VAF values of 52.64% and 45.56%. Overall, the results support the Value Mediation Model, highlighting perceived value as the key pathway through which perceptions and experiences translate into visit intention.

Conclusion

This study validated a structural model explaining visit intention at sustainable maritime destinations, with service quality emerging as the dominant driver of perceived value ($\beta = 0.566$, $p < 0.001$). Perceived value significantly mediated relationships between destination image, service quality, customer experience, and visit intention (VAF = 45.56%–66.68%). The model's superior predictive power ($R^2 = 0.791$ for visit intention; $R^2 = 0.823$ for perceived value) demonstrates both theoretical validity and practical utility for maritime destination management.

The framework's primary advantage lies in clarifying strategic priorities for resource allocation. Rather than simultaneous enhancement of all attributes, managers should prioritize service quality improvements while differentiating destination image through conservation oriented positioning. For Tlocor, Pulau Lusi, this translates to emphasizing its unique value proposition as a mangrove ecosystem managed through pentahelix collaboration, creating meaningful distinction from conventional destinations. Value communication combined with affordability establishes coherent positioning aligned with sustainable blue economy principles.

Several limitations warrant acknowledgment the sample size (n = 100) limits broader applicability, while partial discriminant validity issues suggest conceptual overlap requiring future validation through heterotrait monotrait ratios. The cross sectional design precludes temporal analysis. Future research should incorporate longitudinal designs, expanded samples for cross destination comparison, additional behavioral variables (perceived risk, loyalty), and mixed methods approaches. Such extensions would advance understanding of how mediation mechanisms vary across destinations with different development stages, contributing to more contextually sensitive theory in sustainable maritime tourism management.

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