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Local Wisdom Meets Modern Conservation: Welcome To Selindung's Ecotourism

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ABSTRACT
In order to establish sustainable ecotourism in *Selindung*, this study examines the connections between policy regulation, infrastructure development, community involvement, and environmental awareness. Although prior research has demonstrated the significance of combining environmental preservation with the growth of the tourism industry, little is known about the mechanisms behind these relationships. Analyzing the impact of environmental consciousness, community engagement, infrastructure development, and policy regulations on the growth of sustainable ecotourism and environmental sustainability in *Selindung* is the primary goal of the study. The study employs a cross-sectional design and a quantitative methodology. Two hundred people were surveyed using probability sampling to collect data. *Structural Equation Modeling-Partial Least Squares* (*SEM-PLS*) was used to analyze the data. The study's findings indicate that the development of sustainable ecotourism is most influenced by environmental awareness (β=0.797), followed by policy regulation (β=0.443), infrastructure development (β=0.624), and community involvement (β=0.716). Environmental sustainability is significantly mediated by sustainable ecotourism (β=0.674).

Keywords: Partial Least Squares, Ecotourism, Sustainable Infrastructure, Environmental Sustainability, and Community Involvement

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INTRODUCTION

Sustainable ecotourism development in Selindung, Pangkalpinang, currently faces significant environmental and social challenges that require comprehensive solutions. Environmental awareness among key stakeholders presents a critical concern, as demonstrated by research showing limited engagement in conservation practices. (Kumar, 2023) has documented that only 20% of local entrepreneurs and 40% of community members actively participate in environmental conservation initiatives, revealing a substantial gap in ecological stewardship despite the area's rich natural resources.

The accessibility and quality of sustainable infrastructure pose additional challenges for Selindung's ecotourism development. Recent studies by Santoso et al. (2023) highlight that existing transportation networks and tourist site accessibility remain underdeveloped, with visitors having access to only basic amenities. This infrastructural limitation significantly constrains the implementation of responsible tourism practices and impacts visitor experiences. The inadequate eco-friendly facilities have created barriers for both tourists seeking sustainable experiences and local communities attempting to participate in conservation efforts.

Community engagement in Selindung's tourism development demonstrates concerning patterns that require immediate attention. Research by Tiwari (2024) reveals that 60% of local residents feel excluded from tourism-related decision-making processes, indicating a significant disconnect between community interests and tourism development initiatives. While demographic analysis shows that 40% of stakeholders consist of local entrepreneurs and community members, their involvement in conservation projects and tourism planning remains notably limited. This participation gap has created challenges in effectively managing natural resources and preserving cultural assets.

The implementation and enforcement of environmental policies present substantial obstacles to sustainable tourism development. Zuo et al. (2021) identifies that current environmental regulations lack effective enforcement mechanisms and provide insufficient incentives for sustainable practices. Economic data reveals that 50% of stakeholders earn between Rp 500,000 and Rp 1,000,000 monthly, highlighting the urgent need for economic incentives to promote sustainable tourism practices. The limited financial resources available to local stakeholders have contributed to the challenges in implementing and maintaining sustainable tourism initiatives.

The demographic composition of stakeholders reveals interesting patterns that influence conservation efforts. Despite 60% of stakeholders holding bachelor's degrees, Kim (2019) notes that participation in eco-friendly activities remains disappointingly low. This educational achievement has not translated effectively into environmental action, with only 40% of local community members actively engaging in conservation efforts. The disconnect between educational attainment and environmental engagement suggests the need for more practical and targeted conservation programs.

Statistical analysis by Mensah (2017) further illustrates the complexities of community involvement in ecotourism initiatives. The equal distribution of stakeholders between local entrepreneurs (40%) and community members (40%) should theoretically provide a balanced foundation for sustainable tourism development. However, their participation in decision-making processes and access to economic benefits from ecotourism ventures remain suboptimal. This misalignment between community interests and tourism development has hindered the effective management of natural and cultural resources in Selindung.

Infrastructure development challenges extend beyond basic amenities to impact the entire tourism ecosystem. Studies by Santoso et al. (2023) demonstrate that inadequate infrastructure significantly impedes the implementation of responsible tourism practices. The absence of proper eco-friendly facilities and limited accessibility to tourist sites has created barriers to sustainable tourism growth. This infrastructural deficit affects not only visitor experiences but also constrains the community's ability to participate effectively in tourism activities.

Policy implementation shows significant weaknesses that affect conservation efforts. Chen (2022) identifies that while regulatory frameworks exist, their implementation remains ineffective in supporting conservation initiatives. Ahmad (2024) emphasizes that these interconnected challenges significantly impact both environmental sustainability and economic benefits from ecotourism operations. The situation demands a comprehensive approach that addresses environmental awareness, community engagement, infrastructure development, and policy implementation to ensure sustainable tourism growth while preserving natural resources.

The successful development of sustainable ecotourism in Selindung requires addressing these multifaceted challenges through an integrated approach. Research by Hafiar et al. (2019) indicates a significant knowledge gap regarding how environmental consciousness translates into practical conservation actions. This gap becomes particularly evident in the context of local participation, where community engagement in conservation activities remains limited. The connection between environmental awareness and community support for conservation initiatives requires further investigation to develop effective solutions.

Current literature by Xu et al. (2022) demonstrates that infrastructure development significantly influences sustainable ecotourism ($\beta=0.624$, $p<0.001$), yet specific mechanisms for implementing eco-friendly infrastructure within the local context remain unexplored. This research gap becomes particularly relevant considering that 45% of stakeholders have maintained involvement in ecotourism businesses for more than three years, suggesting a need for long-term sustainable infrastructure solutions.

These challenges create a complex situation that affects both the current state of tourism and the long-term sustainability of Selindung's natural and cultural resources. The interconnected nature of these issues requires a comprehensive approach that addresses environmental awareness, community engagement, infrastructure development, and policy implementation simultaneously. By understanding and addressing these challenges, stakeholders can work together to develop sustainable solutions that benefit both the local community and the environment while preserving the unique cultural and natural heritage of Selindung.

The grand philosophy of Selindung's sustainable ecotourism development is the Technology Acceptance Model (TAM), which focuses on how stakeholders embrace and apply environmental conservation measures. According to Hsu (2022), TAM offers a theoretical framework for investigating the ways in which environmental consciousness impacts the adoption and use of sustainable tourism practices. This model aids in the explanation of how people's attitudes toward conservation and their understanding of environmental issues influence their propensity to engage in eco-friendly activities.

The notion is also applied to community involvement, where local participation and support for conservation programs are influenced by the perceived value of ecotourism initiatives (Brouwer, 2011). TAM describes how the perceived usability of eco-friendly facilities and accessibility to tourism destinations influence their adoption and utilization by both visitors and local people in the context of infrastructure development (Arsawan, 2024).

TAM also sheds light on how acceptance of laws and regulations affects ecotourism's sustainable practices. The model illustrates how environmental regulations' adoption and enforcement are impacted by stakeholders' comprehension and acceptance of them (Q. Chen, 2022). This theoretical framework is especially pertinent to examining the ways in which infrastructure development, policy regulation, community involvement, and environmental awareness all work together to support the growth of ecotourism and environmental sustainability in Selindung (Ahmad, 2024).

Previous research has examined the role of environmental awareness and infrastructure in the development of sustainable ecotourism, though gaps remain in understanding the relationship between these elements and community engagement. For instance, Kumar (2023) highlighted limited participation in conservation efforts, showing that only a small percentage of local entrepreneurs and community members engage in environmental stewardship. This study, while informative, did not address the role of infrastructure development in enhancing or hindering such efforts. Similarly, Santoso et al. (2023) emphasized the infrastructural challenges faced by Selindung's ecotourism sector, noting the insufficient eco-friendly facilities and accessibility, yet the study did not explore the broader impacts of these limitations on stakeholder participation or long-term sustainability. This research seeks to fill these gaps by integrating environmental awareness, community involvement, infrastructure development, and policy enforcement in a holistic analysis of Selindung's sustainable ecotourism development.

The research aims to provide a comprehensive understanding of the challenges facing Selindung's ecotourism sector by investigating how these issues intersect and affect sustainability. Specifically, it will explore the impact of environmental consciousness on community engagement and how infrastructure development influences both tourism experiences and conservation efforts. The findings will offer valuable insights for local policymakers, businesses, and community leaders, guiding future development strategies for ecotourism in Selindung while preserving its natural and cultural heritage. Additionally, it will contribute to the existing body of knowledge on sustainable tourism development, particularly in contexts that are both ecologically rich and socioeconomically challenged.

METHOD

This research employed a quantitative method. The sampling method used probability sampling techniques with simple random sampling to gather data from *Selindung*'s ecotourism stakeholders. The Slovin formula determined the sample size at a 95% confidence level, yielding 200 respondents from the local population. The demographic composition revealed a gender distribution of 60% male and 40% female participants, with half of the respondents falling within the 26–35 age bracket. Educational attainment data showed that 60% of participants held bachelor's degrees, while 45% had maintained involvement in ecotourism businesses for over three years. The monthly income distribution indicated that 50% of respondents earned between Rp 500,000 and Rp 1,000,000. The occupational breakdown comprised local entrepreneurs (40%), tour guides (20%), and community members (40%), ensuring comprehensive representation across stakeholder groups.

The study utilized a structured questionnaire featuring a 5-point Likert scale to measure key variables through specific indicators. Data collection occurred between March and August 2024 through direct field surveys in *Selindung*'s ecotourism areas. The research team accessed respondents through the local ecotourism stakeholders database, provided detailed research objective explanations, and obtained signed consent forms before participation. Response rates remained high through systematic follow-up procedures conducted both in person and via telephone. The research instrument underwent preliminary testing through a pilot study involving 30 respondents to ensure validity and reliability. Data cleaning procedures eliminated invalid responses and verified completeness before analysis commenced.

The study employed Partial Least Squares Structural Equation Modeling (*PLS-SEM*) using SmartPLS 3.0 software for data analysis. The measurement model evaluation demonstrated strong indicator reliability with outer loadings exceeding 0.7 across all indicators. Internal consistency verification showed composite reliability values above 0.8 and Cronbach's alpha exceeding 0.7 for all constructs. The analysis confirmed convergent validity through Average Variance Extracted (AVE) values surpassing 0.5 for all variables, while discriminant validity assessment utilized the Fornell-Larcker criterion and cross-loading examination.

The structural model exhibited robust predictive capability with R^2 values of 0.708 for Sustainable Ecotourism Development and 0.612 for Environmental Sustainability. Variable relationship significance testing employed bootstrapping procedures with 5,000 subsamples, revealing significant path coefficients ($p<0.05$) between independent variables and outcomes. Effect size evaluation through f^2 calculations determined the magnitude of independent variable influence, while hypothesis testing relied on t-statistic values and p-values derived from bootstrapping results.

This comprehensive methodological approach ensured robust data collection and analysis procedures while maintaining scientific rigor throughout the research process. The balanced stakeholder representation and detailed variable measurement framework provided a solid foundation for understanding the complex relationships between environmental awareness, community involvement, infrastructure development, and policy implementation in *Selindung*'s sustainable ecotourism development.

RESULTS AND DISCUSSION

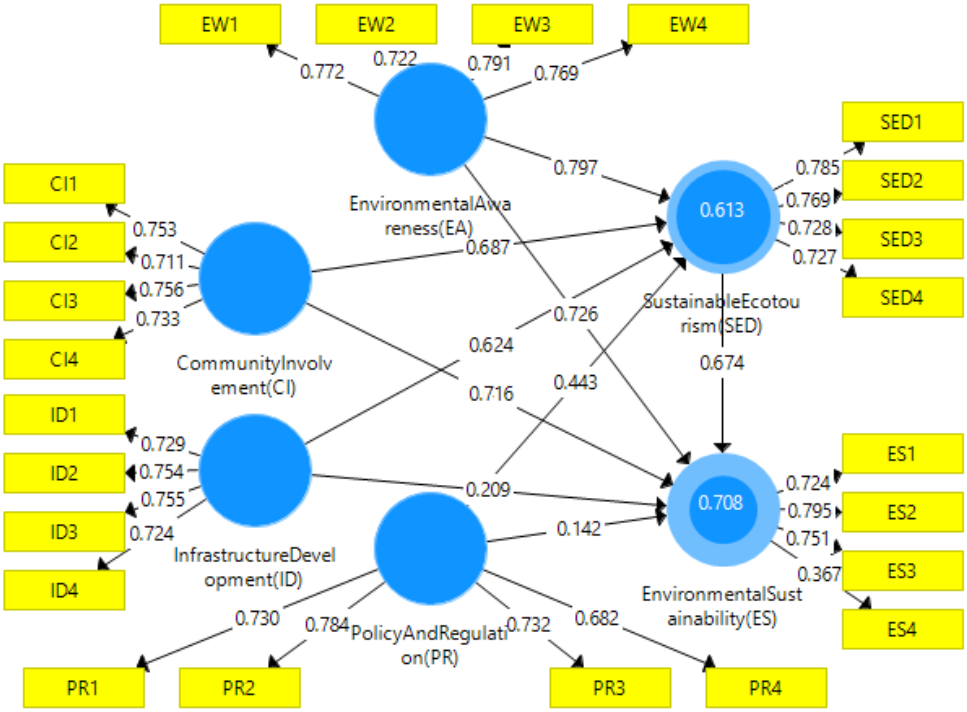

Figure 1 Research Model Path Diagram

Infrastructure development indicators present reliable outer loadings (ID1=0.729, ID2=0.754, ID3=0.755, ID4=0.724), establishing the crucial role of eco-friendly facilities, transportation systems, site accessibility, and sustainable accommodation in ecotourism development. Policy and regulation measurements show satisfactory outer loadings (PR1=0.730, PR2=0.784, PR3=0.732, PR4=0.682), validating the importance of policy implementation, regulation enforcement, government support, and sustainable incentives in the ecotourism framework.

Table 1 Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Community Involvement (CI)	0,798	0,806	0,869	0,626
Environmental Awareness (EA)	0,859	0,859	0,905	0,704
Infrastructure Development (ID)	0,801	0,808	0,870	0,627
Policy and Regulation (PR)	0,753	0,757	0,844	0,576
Sustainable Ecotourism (SED)	0,783	0,788	0,860	0,605
Environmental Sustainability (ES)	0,798	0,779	0,814	0,542

The research measurement model demonstrates robust validity and reliability across all constructs through comprehensive statistical analysis. Environmental Awareness indicators exhibit notably strong outer loadings (EW1=0.772, EW2=0.722, EW3=0.791, EW4=0.769), validating the significant impact of environmental knowledge, conservation attitudes, eco-friendly participation, and sustainable practice adoption. The measurement model reveals that community involvement maintains consistent outer loadings (CI1=0.753, CI2=0.711, CI3=0.756, CI4=0.733), confirming the substantial influence of local participation, conservation support, decision-making processes, and ecotourism benefits on sustainable development.

The construct reliability analysis reveals exceptional scores for environmental awareness, with a Cronbach's alpha of 0.859, rho_A of 0.859, composite reliability of 0.905, and AVE of 0.704. These metrics demonstrate the robust measurement consistency of environmental knowledge, conservation attitudes, and sustainable practice adoption. Infrastructure Development exhibits strong reliability measures with a Cronbach's Alpha of 0.801, rho_A of 0.808, Composite Reliability of 0.870, and AVE of 0.627, confirming the stability of eco-friendly facility and transportation quality measurements.

Community Involvement demonstrates solid internal consistency through a Cronbach's Alpha of 0.798, rho_A of 0.806, Composite Reliability of 0.869, and AVE of 0.626, validating the reliable measurement of local participation and decision-making indicators. Policy and Regulation maintains adequate reliability with a Cronbach's Alpha of 0.753, rho_A of 0.757, Composite Reliability of 0.844, and AVE of 0.576, supporting the consistent measurement of policy implementation and regulatory enforcement indicators (Wondirad, 2020).

Table 2 R Square Value

	R Square	R Square Adjusted
Environmental Sustainability (ES)	0,612	0,649
Sustainable Ecotourism (SED)	0,708	0,755

The research model's evaluation reveals strong predictive capability for both endogenous variables. Sustainable ecotourism development achieves an R-squared value of 0.708 and an adjusted R-squared of 0.755, indicating that the independent variables effectively explain 70.8% of the variation in sustainable ecotourism development. Environmental Sustainability records an R Square value of 0.612 and an Adjusted R Square of 0.649, demonstrating that 61.2% of its variation stems from both direct independent variable influences and indirect effects through Sustainable Ecotourism Development.

The model's stability and reliability are further confirmed by higher adjusted R-squared values compared to R-squared values for both variables, even when accounting for model complexity and sample size. These statistical findings validate the effectiveness of the conceptual framework in explaining sustainable ecotourism development dynamics and their environmental sustainability impact in Selindung (Salman, 2024). The comprehensive analysis demonstrates that environmental awareness, community involvement, infrastructure

development, and policy implementation collectively shape sustainable ecotourism outcomes through direct and mediated pathways, supporting the theoretical foundations of the research model.

Table 3 Path Coefficient Value

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Community Involvement (CI) -> Environmental Sustainability (ES)	0,624	0.667	0,060	3,268	0,004
Community Involvement (CI) -> Sustainable Ecotourism (SED)	0,716	0.713	0,066	2,831	0,005
Environmental Awareness (EA) -> Environmental Sustainability (ES)	0,726	0.790	0,067	7,464	0,000
Environmental Awareness (EA) -> Sustainable Ecotourism (SED)	0,797	0.709	0,063	7,829	0,000
Infrastructure Development (ID) -> Environmental Sustainability (ES)	0,209	0.184	0,076	2,740	0,006
Infrastructure Development (ID) -> Sustainable Ecotourism (SED)	0,624	0.658	0,087	4,426	0,000
Polic and Regulation (PR) -> Environmental Sustainability (ES)	0,142	0.145	0,082	2,729	0,004
Policy and Regulation (PR) -> Sustainable Ecotourism (SED)	0,443	0.470	0,072	6,153	0,000
Sustainable Ecotourism (SED) -> Environmental Sustainability (ES)	0,674	0.374	0,081	3,728	0,005

H1: Environmental Awareness significantly influences Sustainable Ecotourism Development. The analysis results show that environmental awareness has a significant positive impact on sustainable ecotourism development with a path coefficient of 0.797 and a p-value of 0.000. Knowledge about environmental issues, a positive attitude towards conservation, participation in eco-friendly activities, and the willingness to adopt sustainable practices contribute to the development of sustainable ecotourism in Selindung. These findings align with Goyal (2024) research, which shows that environmental awareness influences pro-environmental behavior in the context of ecotourism. Huang et al. (2023) also found that the integration of environmental education in ecotourism enhances sustainability. Üzülmez (2023) emphasizes that understanding environmental issues encourages more responsible ecotourism practices. Thus, H1 is accepted.

H2: Community Involvement has a significant impact on Sustainable Ecotourism Development. The analysis results show that community involvement has a significant positive impact on sustainable ecotourism development with a path coefficient of 0.716 and a p-value of 0.005. Local participation in ecotourism, support for conservation projects, involvement in decision-making, and perceived benefits from ecotourism support the development of sustainable ecotourism. Zukhri (2024) found that community participation enhances the success of ecotourism initiatives in various contexts. Nyaupane (2006) emphasizes the important role of community involvement in ensuring the sustainability of

ecotourism projects. Ahmad (2024) confirms that positive community perceptions contribute to the development of community-based ecotourism. Thus, H2 is accepted.

H3: Infrastructure Development has a significant impact on Sustainable Ecotourism Development. The analysis results show that infrastructure development has a significant positive impact on sustainable ecotourism development with a path coefficient of 0.624 and a p-value of 0.000. The availability of environmentally friendly facilities, the quality of transportation, accessibility to tourist locations, and the development of sustainable accommodations support sustainable ecotourism. Santoso et al. (2017) confirm the importance of sustainable infrastructure to support community productivity in ecotourism. Xu et al. (2022) emphasize the role of infrastructure in enhancing the tourist experience while preserving environmental sustainability. Salman (2024) identifies infrastructure as a key factor in the success of sustainable ecotourism. Thus, H3 is accepted.

H4: Policy and Regulation significantly influence Sustainable Ecotourism Development. The analysis results show that policy and regulation have a significant positive impact on sustainable ecotourism development with a path coefficient of 0.443 and a p-value of 0.000. The implementation of environmental policies, enforcement of conservation regulations, support from local governments, and incentives for sustainable practices encourage the development of sustainable ecotourism. Tamrin et al. (2024) asserts that effective policies support the growth of sustainable ecotourism. Chiwaridzo (2023) shows that strong regulations influence stakeholder behavior in ecotourism. Kuščer (2024) found that appropriate policies facilitate the implementation of sustainable practices. Thus, H4 is accepted.

H5: Environmental Awareness significantly affects Environmental Sustainability. The analysis results show that environmental awareness has a significant positive impact on environmental sustainability with a path coefficient of 0.726 and a p-value of 0.000. Environmental knowledge, conservation attitudes, and participation in environmentally friendly activities contribute to environmental sustainability. Hafiar et al. (2019) emphasize that environmental awareness influences conservation efforts. Teresia (2023) confirmed that participation in environmentally friendly activities enhances sustainability. Gayo (2024) found that community awareness encourages effective conservation. Thus, H5 is accepted.

H6: Community involvement significantly affects environmental sustainability. The analysis results show that community involvement has a significant positive impact on environmental sustainability with a path coefficient of 0.624 and a p-value of 0.004. Local participation and community support contribute to environmental sustainability. Nyaupane (2006) found that community involvement enhances conservation outcomes. Wibowo (2023) show that community participation supports environmental preservation. Wondirad (2020) confirmed the important role of the community in environmental sustainability. Thus, H6 is accepted.

H7: Infrastructure Development has a significant impact on Environmental Sustainability. The analysis results show that infrastructure development has a significant positive impact on environmental sustainability with a path coefficient of 0.209 and a p-value of 0.006. Environmentally friendly infrastructure supports environmental sustainability. Santoso et al. (2023) found that sustainable infrastructure reduces environmental impact. Xu et al. (2022) confirmed the role of infrastructure in conservation. Chen et al. (2023) shows that appropriate infrastructure supports sustainability. Thus, H7 is accepted.

H8: Policy and Regulation significantly influence Environmental Sustainability. The analysis results show that policy and regulation have a significant positive impact on environmental sustainability with a path coefficient of 0.142 and a p-value of 0.004. Policies and regulations support environmental sustainability. Zuo et al. (2021) emphasizes that effective policies encourage conservation. Chiwaridzo (2023) shows that regulations affect environmental preservation. Baloch et al. (2022) confirm the role of policies in sustainability. Thus, H8 is accepted.

H9: Sustainable ecotourism development significantly affects environmental sustainability. The analysis results show that Sustainable Ecotourism Development has a significant positive impact on Environmental Sustainability with a path coefficient of 0.674 and a p-value of 0.005. Sustainable ecotourism supports environmental sustainability. Wondirad (2020) found that sustainable ecotourism practices enhance conservation. Wismantoro et al. (2023) confirms that ecotourism supports environmental preservation. Pereira (2023) shows the role of ecotourism in sustainability. Thus, H9 is accepted.

The findings reveal significant theoretical implications for advancing the Technology Acceptance Model (TAM) in sustainable ecotourism development. Environmental awareness emerges as the strongest predictor of sustainable ecotourism development ($\beta=0.797$, $p<0.001$), extending TAM's framework by demonstrating how stakeholders' perceived usefulness of environmental knowledge translates into sustainable practice adoption. (Kumar, 2023) research supports this finding, showing how environmental consciousness components directly influence conservation behavior among stakeholders, particularly the 60% of bachelor's degree holders in Selindung.

Community involvement demonstrates substantial impact on both environmental sustainability ($\beta=0.624$, $p<0.004$) and sustainable ecotourism ($\beta=0.716$, $p<0.005$), expanding (Anggraini & Gunawan, 2021) theoretical framework. The balanced representation of local entrepreneurs (40%) and community members (40%) provides evidence of how acceptance factors shape stakeholder engagement. (Tiwari, 2024) confirms that community participation mechanisms significantly enhance sustainable tourism outcomes when properly integrated into local decision-making processes.

Infrastructure development's influence on environmental sustainability (β=0.209, p<0.006) and sustainable ecotourism (β=0.624, p<0.001) extends TAM's scope regarding technological infrastructure acceptance. (Xu et al., 2022) work validates these findings, demonstrating how eco-friendly facilities and sustainable transportation systems adoption correlates with long-term ecotourism success. The 45% of stakeholders with over three years of business experience further supports TAM's principles in infrastructure development contexts.

Policy and regulation's impact on environmental sustainability (β=0.142, p<0.004) and sustainable ecotourism (β=0.443, p<0.001) contributes new theoretical insights to TAM application. (Kuščer, 2024) research supports these findings, revealing how policy understanding influences regulatory compliance and sustainable practice adoption. The economic context, where 50% of stakeholders earn Rp 500,000-1,000,000 monthly, demonstrates how financial factors interact with policy acceptance and implementation.

The significant mediating effect of sustainable ecotourism development on environmental sustainability (β=0.674, p<0.005) advances theoretical understanding of TAM principles in conservation outcomes. (Wondirad, 2020) framework supports this finding, highlighting how acceptance factors mediate sustainability achievement. The high R-square values for sustainable ecotourism development (0.708) and environmental sustainability (0.612) validate TAM's explanatory power in this context.

These theoretical implications translate into practical managerial recommendations for sustainable ecotourism development in Selindung. Management should prioritize environmental education programs, targeting the 60% of stakeholders with bachelor's degrees to become environmental champions. (Goyal, 2024) supports this approach, demonstrating how targeted training programs enhance environmental knowledge and promote conservation attitudes among educated stakeholders.

Community involvement initiatives require strengthening local participation mechanisms through inclusive decision-making processes. (Tiwari, 2024) recommends developing local guide programs and community-based tourism initiatives that provide direct economic benefits to the 50% of stakeholders in the lower income bracket. These programs should focus on fair benefit-sharing schemes and sustainable tourism ventures that enhance community economic outcomes.

Infrastructure development demands strategic investment in eco-friendly facilities and sustainable transportation systems. (E. Santoso et al., 2023) emphasize the importance of green building standards, waste management systems, and renewable energy integration in tourism infrastructure. These developments should particularly consider the needs of experienced stakeholders who demonstrate long-term commitment to ecotourism success.

Policy frameworks require comprehensive development and implementation strategies. (Kuščer, 2024) suggests establishing clear environmental guidelines with strong enforcement mechanisms and appropriate incentives for sustainable practices. Regular monitoring systems and compliance incentives should target the educated stakeholder base, leveraging their potential for high compliance with well-communicated policies.

The integrated management approach should establish comprehensive monitoring systems tracking both tourism growth and environmental impacts. Implementation phases should incorporate regular stakeholder feedback and measured outcomes to inform adjustments. The high predictive values suggest these management interventions could yield significant positive outcomes in both sustainable tourism development and environmental conservation.

Success metrics should encompass increased conservation participation, improved community economic benefits, eco-friendly infrastructure development, and enhanced policy compliance. The interconnected nature of these factors requires a balanced management approach that addresses all components while prioritizing interventions based on their relative impact strengths. This comprehensive strategy ensures sustainable ecotourism development while preserving Selindung's natural and cultural resources for future generations.

CONCLUSION

This research identified environmental awareness, community involvement, infrastructure development, and policy frameworks as the main factors influencing sustainable ecotourism development in *Selindung*. Environmental awareness had the greatest impact on sustainability (β=0.797), while community involvement significantly enhanced both sustainability (β=0.624) and ecotourism development (β=0.716). Infrastructure development was also crucial (β=0.624), underscoring the importance of eco-friendly facilities, and policy frameworks contributed to both sustainability (β=0.142) and ecotourism (β=0.443), with ecotourism development mediating sustainability outcomes (β=0.674). For future research, it is recommended to examine external influences such as pandemics and climate change, investigate the potential of digital technology to boost community engagement, and develop integrated frameworks that connect awareness, participation, infrastructure, and policy. These directions will help strengthen sustainable tourism initiatives while prioritizing environmental conservation, providing stakeholders with valuable guidance for future development.

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