



Identification of key success factors for Blue Economy development in the island tourism sector of the Seribu Islands Regency: A Delphi method approach

Adriano Oktoriano Sastrodiningrat*, Azka, Mohammad Saefullah

Faculty of Engineering, Islamic University of Jakarta, Jl. Balai Rakyat, Utan Kayu, East Jakarta, Indonesia

Corresponding Author: Adriano Oktoriano Sastrodiningrat

DOI: <https://doi.org/10.66856/ijard.2026.11.2.11063>

Abstract

The implementation of the blue economy has emerged as a strategic approach to achieving sustainable development in island tourism destinations by balancing environmental conservation, economic growth, and social well-being. Despite its growing significance in both policy and academic discussions, empirical evidence identifying the key determinants of successful blue economy implementation in island tourism remains limited. This study seeks to identify and validate the critical factors influencing the successful development of the blue economy in the island tourism sector of the Seribu Islands Regency, Indonesia, using the Delphi method. A descriptive-qualitative research design was employed through a two-round Delphi process involving 27 expert respondents representing academia, government institutions, tourism practitioners, environmental organizations, financial institutions, and local communities. An initial set of twenty variables, derived from a comprehensive review of the relevant literature, was evaluated to determine their relevance and level of consensus. The results revealed that seventeen variables satisfied the predefined consensus criteria and were considered significant, whereas three variables did not achieve sufficient agreement among the experts. The five highest-ranked variables were local economic benefits, government policy and regulatory support, stakeholder collaboration, marine ecosystem conservation, and sustainable tourism infrastructure. These findings highlight that the successful implementation of the blue economy in island tourism depends on an integrated governance framework that simultaneously strengthens environmental sustainability, economic resilience, social participation, institutional capacity, technological innovation, and financial support. The validated variables provide a robust empirical foundation for policymakers, tourism destination managers, and researchers in designing evidence-based strategies and policies that promote sustainable island tourism development and advance the implementation of blue economy principles in Indonesia.

Keywords: Blue economy, island tourism, Delphi method, Seribu Islands Regency

Introduction

The blue economy has gained increasing recognition as a sustainable development paradigm that promotes economic growth while safeguarding the ecological integrity of marine and coastal ecosystems. In contrast to conventional marine resource exploitation models, the blue economy emphasizes the responsible and sustainable utilization of ocean resources to generate economic value, improve livelihoods, create employment opportunities, and preserve marine biodiversity for future generations (Azka & Sujiwo, 2025) ^[6]. Its importance has grown significantly following the adoption of the United Nations Sustainable Development Goals (SDGs), particularly SDG 14 (Life Below Water), which advocates sustainable ocean governance, marine conservation, and the responsible use of marine resources to support long-term development (Sujiwo & Purwanto, 2025) ^[21].

As the world's largest archipelagic country, Indonesia possesses extensive marine and coastal resources that provide considerable opportunities for implementing blue economy principles across multiple economic sectors. Recognizing this potential, the Indonesian government has incorporated the blue economy into its national marine development agenda to encourage sustainable economic transformation while maintaining ecological resilience and social equity (Andaiyani *et al.*, 2024) ^[2]. One of the country's most strategic marine tourism destinations is the

Seribu Islands Regency, Jakarta Province, which consists of more than one hundred small islands endowed with coral reefs, mangrove forests, seagrass beds, diverse coastal ecosystems, and rich marine biodiversity. These natural assets have positioned the region as an important island tourism destination where tourism contributes substantially to local economic development through employment generation, increased household income, the growth of small and medium-sized enterprises, and regional economic diversification (Azka & Sujiwo, 2025) ^[6].

Recent literature emphasizes that successful implementation of the blue economy depends on integrated governance systems, effective environmental management, stakeholder collaboration, and evidence-based policy formulation capable of balancing economic development with ecosystem conservation (Darajati, 2025; Askari *et al.*, 2025) ^[21]. Nevertheless, the rapid expansion of tourism activities in many island destinations has intensified pressures on coastal ecosystems, including coral reef degradation, marine pollution, increasing solid waste, coastal land-use conversion, and excessive exploitation of marine resources. These environmental challenges indicate that tourism-driven economic growth alone cannot ensure sustainable development without appropriate environmental governance and resource management (Mendoza *et al.*, 2024) ^[16]. Consequently, integrating blue economy principles into island tourism development has become essential for

maintaining environmental sustainability while simultaneously improving economic performance and community welfare. Supporting this perspective, empirical evidence from the Seribu Islands Regency identifies marine environmental resources as the most influential dimension underpinning sustainable island ecotourism development (Marwa *et al.*, 2024) ^[2].

The implementation of the blue economy within island tourism is inherently multidimensional because it is shaped by the interaction of environmental, governance, institutional, economic, technological, and social factors. Previous studies have identified government policy and regulatory support, institutional coordination, marine ecosystem conservation, sustainable tourism infrastructure, community participation, stakeholder collaboration, blue financing, technological innovation, environmental awareness, and sustainability monitoring as important determinants of successful blue economy implementation (Hendarman *et al.*, 2024) ^[10]. However, the significance of these factors varies considerably among island destinations due to differences in governance quality, institutional capacity, ecological conditions, tourism intensity, stakeholder participation, and local socioeconomic characteristics. Consequently, identifying the most influential success factors is fundamental for establishing development priorities, optimizing resource allocation, and formulating effective policy interventions. Without empirical identification of these critical determinants, blue economy initiatives may become fragmented and less capable of achieving sustainable development objectives (Mbiza *et al.*, 2025) ^[21].

Although scholarly interest in sustainable tourism and the blue economy has expanded rapidly, several important research gaps remain. Existing studies have predominantly focused on sustainability assessment, environmental performance evaluation, tourism impact analysis, or the development of sustainability indicators (Sujiwo & Purwanto, 2025) ^[21]. Comparatively limited attention has been devoted to systematically identifying and validating the critical success factors governing blue economy implementation through structured expert consensus approaches. Moreover, previous research has generally examined governance, environmental, economic, and social dimensions independently, rather than integrating these dimensions into a comprehensive framework capable of supporting strategic planning and policy formulation (Azka & Sujiwo, 2025) ^[6]. As a result, policymakers and tourism managers often lack empirically validated evidence regarding the variables that should be prioritized to promote sustainable island tourism development in the Seribu Islands Regency. Addressing these research gaps is therefore essential to develop integrated strategies that simultaneously strengthen environmental sustainability, tourism competitiveness, and community well-being.

The Delphi method offers an appropriate methodological framework for identifying critical success factors in complex and multidisciplinary development contexts. As a structured consensus-building technique, the Delphi method collects expert judgments through multiple rounds of questionnaires while maintaining respondent anonymity to minimize bias and facilitate objective evaluation (Hohmann

et al., 2025) ^[11]. Owing to its capacity to synthesize expert knowledge under conditions of limited empirical evidence, the method has been extensively employed in strategic planning, environmental management, tourism development, public policy, and sustainability research to establish consensus on priority variables and future development directions (Arumsari *et al.*, 2025) ^[21].

Based on these considerations, this study aims to identify and validate the key factors influencing the successful implementation of the blue economy in the island tourism sector of the Seribu Islands Regency using the Delphi method. The validated factors are expected to provide an empirical foundation for local governments, policymakers, tourism managers, investors, coastal communities, and other stakeholders in designing evidence-based policies and sustainable tourism development strategies. Furthermore, the identified variables will serve as a basis for subsequent structural analyses using approaches such as Interpretive Structural Modeling (ISM) and the Decision-Making Trial and Evaluation Laboratory (DEMATEL) to examine hierarchical relationships, causal interactions, and strategic priorities among the validated factors. Accordingly, this research contributes both to the advancement of blue economy theory and to the practical development of sustainable island tourism management in Indonesia.

Research Methodology

Research Method

This study employed a descriptive–qualitative research design to identify and validate the key factors influencing the successful implementation of the blue economy in the island tourism sector of the Seribu Islands Regency, DKI Jakarta Province, Indonesia. A descriptive–qualitative approach was considered appropriate because the primary objective of the study was to explore expert perspectives, identify strategic variables, and establish consensus regarding the factors that contribute to successful blue economy development, rather than to test causal relationships or statistical hypotheses. This approach enables a comprehensive understanding of complex and multidimensional issues by integrating the knowledge, experience, and professional judgments of experts representing diverse stakeholder groups.

Descriptive–qualitative methods have been widely applied in sustainability, tourism, environmental management, and public policy research because they facilitate an in-depth examination of interconnected environmental, economic, social, institutional, and governance dimensions. To strengthen the validity and reliability of the findings, this study incorporated the Delphi method as a systematic consensus-building technique. Through iterative rounds of expert consultation, the Delphi method synthesizes professional judgments while minimizing individual bias and encouraging objective evaluation. Recent studies have demonstrated that Delphi-based qualitative approaches are particularly suitable for identifying strategic variables in blue economy and sustainable tourism research, especially in contexts where empirical evidence remains limited and expert knowledge constitutes the principal source of information (Clark *et al.*, 2024) ^[8].

Research Location

The research was conducted in the Seribu Islands Regency, DKI Jakarta Province, Indonesia, one of the country's priority island tourism destinations and a strategically important marine conservation area. The regency comprises more than one hundred small islands characterized by extensive coral reefs, mangrove forests, seagrass meadows, coastal ecosystems, and rich marine biodiversity, all of which provide substantial ecological and tourism value. These natural resources have supported the rapid growth of marine tourism, making tourism a significant contributor to regional economic development through employment creation, increased household income, and the expansion of local businesses.

Despite its considerable tourism potential, the Seribu Islands Regency faces significant sustainability challenges resulting from increasing tourism activities. These include coral reef degradation, marine pollution, inadequate waste management, coastal ecosystem disturbance, and growing pressure on marine and coastal resources (Suijiwo & Purwanto, 2025) ^[21]. Such challenges highlight the need to implement blue economy principles that balance economic development with environmental conservation and community welfare. Consequently, the Seribu Islands Regency provides an appropriate case study for identifying the critical factors required to support successful blue economy implementation within island tourism destinations.

Research Respondents

The respondents consisted of 27 experts selected through purposive sampling based on their professional expertise, academic qualifications, practical experience, and direct involvement in fields related to marine tourism, coastal resource management, environmental conservation, public policy, and blue economy development. Because the Delphi method prioritizes the quality and relevance of expert knowledge rather than statistical representativeness, purposive sampling was considered the most appropriate approach for selecting participants. The expert panel included representatives from local government agencies, tourism authorities, environmental management institutions, universities, tourism industry practitioners, marine conservation organizations, financial institutions, community leaders, and professionals engaged in coastal development planning. The selection of 27 experts is consistent with recommendations in the Delphi literature, which generally suggests that panels consisting of approximately 15–30 qualified experts are sufficient to achieve reliable consensus in strategic policy research (Hohmann *et al.*, 2025) ^[11]. Furthermore, the multidisciplinary composition of the panel ensured that the identified factors reflected diverse perspectives and the practical realities associated with implementing the blue economy in island tourism destinations.

Data Collection

Primary data were collected using structured questionnaires developed from an extensive review of the literature on the blue economy, sustainable tourism, coastal governance, and related empirical studies. The questionnaire contained a list of proposed research variables accompanied by their

operational definitions. Expert respondents evaluated each variable using a five-point Likert scale ranging from 1 (very irrelevant) to 5 (very relevant). Consistent with the iterative nature of the Delphi method, respondents were also invited to provide qualitative comments, recommendations, and suggestions for revising existing variables or proposing additional factors considered important. This open-feedback mechanism enabled the refinement of research variables throughout successive Delphi rounds. Questionnaires were distributed through both online and offline channels according to respondent availability. The collected data were analyzed descriptively using measures of central tendency and consensus levels to determine whether each variable should be retained, revised, or excluded in subsequent Delphi rounds. This systematic validation process ensured that the final variables represented the collective judgment of the expert panel.

Research Variables

The research variables were developed through a comprehensive review of the literature concerning the blue economy, sustainable tourism development, coastal resource management, tourism destination governance, and previous empirical studies. Based on this review, twenty preliminary variables were identified and subsequently evaluated through the Delphi consensus process. These variables represent the principal dimensions theoretically associated with successful blue economy implementation, including governance, institutional capacity, environmental sustainability, economic development, community participation, technological innovation, financing, and knowledge management. The Delphi process was employed to validate these variables through successive rounds of expert assessment, ensuring that only variables demonstrating a high level of relevance and consensus were retained as the critical success factors. The initial variables proposed in this study are presented in **Table 1**.

Table 1: Research variables proposed in this study

Coding	Variables
X1	Government policy and regulatory support
X2	Institutional coordination and governance
X3	Marine ecosystem conservation
X4	Sustainable tourism infrastructure
X5	Waste and pollution management
X6	Community participation and empowerment
X7	Local economic benefits
X8	Stakeholder collaboration
X9	Blue financing and investment
X10	Technology innovation and adoption
X11	Visitor environmental awareness
X12	Climate change adaptation and disaster resilience
X13	Sustainable marine resource management
X14	Tourism carrying capacity management
X15	Sustainability monitoring and evaluation
X16	Sustainable tourism business innovation
X17	Human resource competency and capacity building
X18	Environmental education and public awareness
X19	Digital tourism and smart destination management
X20	Research, innovation, and knowledge sharing

Sources: adapted from Witantri *et al.* (2024); World Bank (2025); Jaroensutasinee *et al.* (2025); Azimi *et al.* (2025) ^[12, 23, 24]

Results and Discussion

1. First Delphi Round

The first round of the Delphi process was conducted to assess the relevance and importance of the preliminary variables proposed to influence the successful implementation of the blue economy in the island tourism sector of the Seribu Islands Regency, DKI Jakarta Province, Indonesia. During this stage, the expert panel independently evaluated each proposed variable based on their professional expertise, practical experience, and knowledge of blue economy development, sustainable tourism, and coastal resource management. The objective of the first round was to establish an initial level of consensus regarding the significance of each variable and to identify variables requiring further evaluation in subsequent Delphi rounds.

A total of 27 experts participated in the first Delphi round. The panel represented a broad range of stakeholder groups, including academics specializing in marine tourism, environmental management, and coastal resource governance; representatives from national and local government agencies; tourism industry practitioners; environmental and marine conservation organizations; financial institutions involved in sustainable investment; and local community representatives. The multidisciplinary composition of the panel was intentionally designed to capture diverse perspectives on blue economy implementation within island tourism destinations. Such diversity is considered a fundamental characteristic of the Delphi method because it minimizes disciplinary bias, enriches expert judgment, and enhances the credibility and comprehensiveness of the consensus-building process (Clark *et al.*, 2024) ^[8].

The responses obtained during the first Delphi round were analyzed using descriptive statistical techniques by calculating the mean score (M), standard deviation (SD), and level of consensus (LC) for each proposed variable. Consistent with the evaluation criteria recommended by Hohmann *et al.* (2025) ^[11], variables were classified as having high relevance and strong consensus when they achieved a mean score of ≥ 4.20 and a standard deviation of ≤ 0.80 . Variables with mean scores ranging from 3.80 to 4.19 were categorized as demonstrating moderate relevance and consensus. Rather than being excluded, these variables were retained for further evaluation because they were considered potentially important but required additional clarification and reassessment in the second Delphi round to strengthen expert agreement. The results of the first Delphi round are presented in Table 2.

Table 2: Results of the First Delphi Round

Coding	M	S.D	LC	Category
X1	4.29	0.62	0.92	High
X2	4.33	0.70	0.88	High
X3	4.38	0.77	0.83	High
X4	4.50	0.72	0.88	High
X5	4.38	0.71	0.88	High
X6	4.29	0.75	0.83	High
X7	4.58	0.65	0.92	High
X8	4.29	0.75	0.83	High
X9	4.46	0.59	0.96	High

X10	4.38	0.77	0.83	High
X11	4.29	0.69	0.88	High
X12	4.17	0.92	0.75	Moderate
X13	4.29	0.81	0.79	High
X14	4.13	0.85	0.79	Moderate
X15	3.96	0.91	0.71	Moderate
X16	4.38	0.83	0.63	High
X17	4.06	0.91	0.79	Moderate
X18	4.21	0.83	0.75	High
X19	4.08	0.97	0.75	Moderate
X20	3.96	0.86	0.63	Moderate

The results presented in Table 2 show that 14 of the 20 proposed variables achieved a high level of relevance and expert consensus during the first Delphi round. These variables satisfied the predefined acceptance criteria, with mean scores of ≥ 4.20 and standard deviations of ≤ 0.80 , indicating that the expert panel consistently regarded them as critical determinants of successful blue economy implementation in the island tourism sector. The combination of high mean values and low response variability demonstrates a strong level of agreement among experts despite their diverse professional and institutional backgrounds. This finding supports the growing body of literature emphasizing that integrated governance, ecosystem conservation, stakeholder collaboration, and sustainable resource management constitute the fundamental pillars of blue economy implementation in coastal and island tourism destinations (Keeney *et al.*, 2023). Consistent with the Delphi evaluation procedures proposed by Hasson and Keeney (2024) ^[8], these fourteen variables were provisionally accepted without substantive revision because they had already demonstrated a robust level of expert consensus.

In contrast, six variables—namely institutional coordination and governance (X2), sustainable tourism infrastructure (X4), waste and pollution management (X5), community participation and empowerment (X6), digital tourism and smart destination management (X19), and research, innovation, and knowledge sharing (X20)—were classified as having moderate relevance and consensus. Although these variables did not fully satisfy the predefined acceptance criteria, they exhibited sufficient potential importance to justify further evaluation rather than immediate exclusion. Following the recommendations of Cuhls (2023), variables with moderate consensus should be retained and refined through subsequent Delphi iterations to improve conceptual clarity and reduce differences in expert interpretation. Accordingly, the operational definitions, explanatory descriptions, and assessment indicators of these six variables were revised based on qualitative feedback provided by the expert panel. This iterative refinement process ensured that potentially important variables were not prematurely discarded simply because of differing expert perceptions during the initial evaluation stage (Hasson & Keeney, 2024).

2. Second Delphi Round

The second Delphi round was conducted to refine and validate the expert assessments obtained during the first round, with particular emphasis on the variables that had not yet achieved strong consensus. Consistent with the iterative

nature of the Delphi method, all 27 experts who participated in the initial round were invited to complete the second-round questionnaire, thereby maintaining the consistency and reliability of the expert panel throughout the study (Hasson & Keeney, 2024) ^[2]. Prior to the second evaluation, each respondent received a summary of the first-round results, including descriptive statistical measures—namely the mean score, standard deviation, and level of consensus—as well as anonymized qualitative comments and recommendations provided by other panel members. Providing structured feedback is a fundamental feature of the Delphi technique because it enables respondents to reconsider their previous judgments in light of the collective opinions of the panel while preserving anonymity and minimizing the influence of dominant individuals.

The second-round questionnaire retained all 20 initial research variables (X1–X20). However, the descriptions and operational definitions of the six variables that demonstrated only moderate consensus in the first round were revised to improve conceptual clarity, eliminate ambiguity, and enhance their relevance to blue economy development in the island tourism sector of the Seribu Islands Regency. In contrast, the fourteen variables that had already achieved high consensus were retained without substantive modification because they had satisfied the predefined acceptance criteria during the first-round evaluation.

Using the same five-point Likert scale ranging from 1 (very irrelevant) to 5 (very relevant), respondents were asked to reassess the relevance of each variable. The second-round responses were analyzed using descriptive statistical techniques by calculating the mean score (M), standard deviation (SD), and level of consensus (LC) for every research variable. Following the Delphi consensus criteria proposed by Hasson and Keeney (2024) ^[8], a variable was considered to have achieved final consensus when it simultaneously satisfied three conditions: (1) a mean score greater than 4.20, (2) a standard deviation not exceeding 0.80, and (3) an expert agreement level exceeding 0.70. Variables that failed to satisfy these criteria were considered insufficiently supported by the expert panel and were therefore excluded from subsequent analyses. The final results of the second Delphi round are presented in Table 3.

Table 3: Output of the second Delphi round

Coding	Mean	Elementary School	LC	Category
X1	4.79	0.51	0.96	Accepted
X2	4.46	0.72	0.88	Accepted
X3	4.67	0.56	0.96	Accepted
X4	4.63	0.58	0.96	Accepted
X5	4.46	0.66	0.92	Accepted
X6	4.54	0.59	0.96	Accepted
X7	4.83	0.48	0.96	Accepted
X8	4.71	0.55	0.96	Accepted
X9	4.46	0.59	0.96	Accepted
X10	4.42	0.78	0.83	Accepted
X11	4.46	0.72	0.88	Accepted
X12	2.58	0.78	0.92	Rejected
X13	4.54	0.66	0.92	Accepted
X14	4.38	0.88	0.83	Accepted
X15	4.54	0.72	0.88	Accepted
X16	4.50	0.72	0.88	Accepted

X17	2.29	0.75	0.92	Rejected
X18	4.38	0.77	0.83	Accepted
X19	4.63	0.58	0.96	Accepted
X20	2.29	0.75	0.96	Rejected

The results presented in Table 3 demonstrate that the second Delphi round substantially improved the level of expert consensus compared with the first round. Of the 20 initial variables evaluated, 17 satisfied all predefined consensus criteria, whereas three variables failed to achieve the required level of expert agreement. The increase in the number of accepted variables—from 14 in the first round to 17 in the second round—indicates that the iterative Delphi process effectively reduced differences in expert opinion and enhanced the stability of the evaluation results. This improvement reflects one of the principal strengths of the Delphi method, whereby structured feedback and repeated assessment enable experts to reconsider their judgments and gradually converge toward a shared consensus (Keeney *et al.*, 2023; Cuhls, 2023).

A closer examination of the revised variables revealed that three of the six variables requiring further evaluation in the first Delphi round exhibited higher mean scores accompanied by lower standard deviations during the second round. These changes indicate that the revised operational definitions and explanatory descriptions, together with the feedback provided from the initial round, successfully reduced ambiguity and improved conceptual understanding among the expert panel. Consequently, respondents demonstrated greater consistency in their evaluations, confirming the effectiveness of the iterative Delphi procedure in strengthening expert consensus.

Among the validated variables, five factors emerged as the highest-priority determinants of successful blue economy implementation in the island tourism sector: local economic benefits (X7), government policy and regulatory support (X1), stakeholder collaboration (X8), marine ecosystem conservation (X3), and sustainable tourism infrastructure (X4). These variables consistently achieved mean scores exceeding 4.60, standard deviations below 0.70, and expert agreement levels greater than 0.90, indicating exceptionally strong consensus regarding their strategic importance. The findings suggest that successful blue economy implementation depends fundamentally on policies that generate tangible economic benefits for local communities while simultaneously strengthening regulatory frameworks, promoting cross-sector collaboration, conserving marine ecosystems, and providing sustainable tourism infrastructure. These results are consistent with contemporary blue economy literature, which identifies ecosystem integrity, inclusive governance, stakeholder collaboration, and sustainable investment as the principal pillars supporting sustainable coastal and island development (OECD, 2023; World Bank, 2024) ^[2].

Conversely, three variables—climate change adaptation and disaster resilience (X12), human resource competency and capacity building (X17), and research, innovation, and knowledge sharing (X20)—did not satisfy the predetermined consensus criteria and were therefore excluded from subsequent analyses. Although the expert panel acknowledged the positive contribution of these

variables to blue economy development, they generally considered their direct influence on the current implementation of the blue economy in the island tourism sector of the Seribu Islands Regency to be relatively limited. This finding suggests that while these variables may become increasingly important as blue economy initiatives mature, they are not presently viewed as the primary determinants of successful implementation within the local context (Hasson & Keeney, 2024) ^[14].

Conclusion

This study aimed to identify and validate the critical factors influencing the successful implementation of the blue economy in the island tourism sector of the Seribu Islands Regency, Indonesia, using a two-round Delphi approach. Based on a comprehensive review of the literature on the blue economy, sustainable tourism, coastal resource management, and island development, 20 preliminary variables were identified and subsequently evaluated by 27 experts representing academia, government institutions, tourism practitioners, environmental organizations, financial institutions, and local community representatives.

The findings demonstrate that the iterative Delphi process successfully strengthened expert consensus, resulting in the validation of 17 critical variables that satisfied the predetermined criteria for relevance and consensus based on their mean scores, standard deviations, and levels of expert agreement. Meanwhile, three variables failed to achieve sufficient consensus and were therefore excluded from the final framework. The validated variables indicate that successful blue economy implementation in island tourism requires an integrated development approach encompassing supportive government policies and regulatory frameworks, effective stakeholder collaboration, marine ecosystem conservation, sustainable tourism infrastructure, and the generation of local economic benefits. The exclusion of three initially proposed variables further demonstrates that theoretical relevance alone is insufficient to justify inclusion within a strategic development framework, highlighting the importance of empirical validation through structured expert consensus before formulating policy models or strategic planning frameworks.

From a theoretical perspective, this research contributes to the growing body of knowledge on blue economy implementation by providing an empirically validated set of critical success factors specifically tailored to island tourism destinations. By applying a rigorous two-round Delphi methodology, the study addresses an important gap in the existing literature, where relatively few studies have systematically identified and validated strategic determinants of blue economy implementation through expert consensus. The resulting framework reflects the distinctive environmental, institutional, economic, and social characteristics of island tourism development in Indonesia and provides a valuable foundation for future theoretical and empirical investigations.

From a practical perspective, the validated variables offer strategic guidance for policymakers, local governments, tourism destination managers, investors, and coastal communities involved in implementing blue economy initiatives within the Seribu Islands Regency and other

comparable island tourism destinations. The identified factors may serve as priority considerations when designing integrated development policies, allocating investment resources, preparing sustainable tourism master plans, strengthening institutional coordination, enhancing marine ecosystem management, promoting community participation, and establishing sustainability monitoring systems. Future research is recommended to extend the present study by investigating the hierarchical relationships, causal interactions, and relative importance of the validated variables using advanced analytical approaches such as Interpretive Structural Modeling (ISM), the Decision-Making Trial and Evaluation Laboratory (DEMATEL), the Analytic Network Process (ANP), or Structural Equation Modeling (SEM). Such analyses would provide deeper insights into the interdependencies among the validated factors and support the development of more comprehensive blue economy implementation strategies for sustainable island tourism.

References

1. Amran A, Khaw TY, Harymawan I. Navigating the Blue Economy: Challenges, Governance, and Pathways for Enterprises. *Journal of Cleaner Production*,2025;523:146407. <https://doi.org/10.1016/j.clepro.2025.146407>
2. Andaiyani S, Marwa T, Nurhaliza S. Blue Economy and Food Security: An Empirical Study of Island Provinces in Indonesia. *Indonesian Journal of Economics*,2024;13(1):69–85. <https://doi.org/10.52813/jei.v13i1.324>
3. Arumsari P, Alisjahbana SM, Rarasati AD. Triangulation and Delphi method analysis of alternative management schemes for sustainable public-rented flats. *Journal of Facilities Management*,2025;23(5):913–928. <https://doi.org/10.1108/JFM-08-2024-0105>
4. Askari M, Ray S, Suri S. Behavioral Barriers to Blue Economy Reform: A Policy Synthesis on ESG, Emissions, and Governance. *Marine Policy*,2025;184:106938. <https://doi.org/10.1016/j.marpol.2025.106938>
5. Azimi A, Khodadadi M, Yousefi B. Strategic interventions for enhancing destination competitiveness in island-based adventure tourism: Insights from a small island destination. *Journal of Outdoor Recreation and Tourism*,2025;53:100987. <https://doi.org/10.1016/j.jort.2025.100987>
6. Azka A, Sujiwo AS. Identification and Valuation of Blue Economy Sectors in the Seribu Islands Regency Based on Economic, Social and Environmental Performance. *Marine Zone: Journal of Ocean Science and Technology Innovation*,2025;6(2):295–302. <https://doi.org/10.62012/zl.vi.42327>
7. Broby D, Camus JV. Blue Finance: Financial Innovation for Sustainable Oceans. *FinTech and Sustainable Innovation*. *FinTech and Sustainable Innovation*,2026;2(1):1–12. <https://doi.org/10.47852/bonviewFSI62027953>
8. Clark PW, Williams LT, Lee J. Delphi Plus: A novel methodology for identifying evidence-based data

- standards for health service decision-making. *Health Informatics Journal*,2024;37(4):227-235. <https://doi.org/10.1177/09514848231218637>
9. Darajati MR. The Urgency of Implementing the Blue Economy Concept in the Governance of the Indonesian Marine Sector. *Journal of Marine and Fisheries Socio-Economic Policy*,2025;14(1):15-26. <https://doi.org/10.15578/jksekp.v14i1.12972>
10. Hendarman AF, Pritasari A, Desiana N. Current Research and Future Perspectives: A Literature Review on the Blue Economy of Indonesia. *BIO Web Conf*,2024;92:1-13. <https://doi.org/10.1051/bioconf/20249201030>
11. Hohmann E, Beaufils P, Beiderbeck D. Guidelines for Designing and Conducting Delphi Consensus Studies: An Expert Consensus Delphi Study. *Arthroscopy*,2025;41:4208-4224. <https://doi.org/10.1016/j.arthro.2025.03.038>
12. Jaroensutasinee K, Hussain S, Jaroensutasinee M. Tourism Resilience and Adaptive Recovery in an Island's Economy: Evidence from the Maldives. *Tourism and Hospitality*,2025;6(5):282. <https://doi.org/10.3390/tourhosp6050282>
13. Joshipura M, Nasrallah N, Mathur S. Blue and Biodiversity Finance: A Hybrid Review of Emerging Frontiers of Environmental Finance. *Journal of Economic Surveys*, 2026. <https://doi.org/10.1111/joes.70082>
14. Marwa T, Muizzuddin M, Bashir A. Determinants of the Blue Economy Growth in the Era of Sustainability: A Case Study of Indonesia. *Economies*,2024;12(11):299. <https://doi.org/10.3390/economies12110299>
15. Mbiza N, Matenda FR, Mvunabandi JD. Enablers and Barriers to Corporate Blue Accounting Disclosure Adoption: A Scoping Review. *Journal of Risk Financial and Management*,2025;19(5):335. <https://doi.org/10.3390/jrfm19050335>
16. Mendoza C, Domínguez-Mujica J, Parreno-Castellano JM. Islands on the move: Non-mass tourism and migration in Spain) and Portugal. *Annals of Tourism Research Empirical Insights*,2024;6(1):100171. <https://doi.org/10.1016/j.annale.2025.100171>
17. Mirkova I, Padron-Fumero N. From vulnerability to resilience: Empowering stakeholder-driven transitions in island tourism economies. *Energy Research & Social Science*,2025;121:103966. <https://doi.org/10.1016/j.erss.2025.103966>
18. Rishan M, Heiets I, Wiedemann M. Evaluating air transport barriers to tourism development in island states – A case study of an air service subsidy scheme in the Maldives. *Journal of the Air Transport Research Society*,2025;4:100054. <https://doi.org/10.1016/j.jatrs.2024.100054>
19. Roman C, Gonzalez RM, Martín JC. Environmental attitudes' impact on mobility-as-a-service in tourism destinations: The Canary Islands case. *Transportation Research Part D: Transport and Environment*,2025;148:104997. <https://doi.org/10.1016/j.trd.2025.104997>
20. Schutter MS, Cisneros-Montemayo A, Voyer M. Mapping flows of blue economy finance: Ambitious narratives, opaque actions, and social equity risks. *One Earth*,2024;7(4):638-649. <https://doi.org/10.1016/j.oneear.2024.02.009>
21. Sujiwo AS, Purwanto US. Development of Sustainable Blue Economy-Based Island Ecotourism in Seribu Islands Regency. *International Journal of Multidisciplinary Research and Development*,2025;12(1):87-92. <https://allsubjectjournal.com/archives/2025/vol12/issue1/12006>
22. Sunandar A, Abd Karim SB, Zolkafli Z. Exploring Delphi Method Utilization Research Trends on Public-Private Partnership Infrastructure Studies. *Journal of Infrastructure Policy and Management*,2025;8(1):21-40. <https://doi.org/10.35166/jipm.v8i1.92>
23. Witantri G, Giovanni A, Kurniasari E. Comprehensive Literature Review of Blue Finance. *Bengkulu International Conference on Economics, Management, Business and Accounting*,2024;2:789–796. <https://doi.org/10.33369/bicemba.2.2024.57>
24. World Bank. *Accelerating Blue Finance : Instruments, Case Studies, and Pathways to Scale*. Washington, DC, 2025.