

# PUBLIC PERCEPTION ON STRENGTHENING PUBLIC HEALTH-BASED TOURISM THROUGH REGIONAL DEVELOPMENT PLAN IN NORTH SUMATERA

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## ABSTRAK

**Abstrak:** Pariwisata berbasis kesehatan masyarakat di Sumatera Utara masih kurang berkembang meskipun potensinya untuk meningkatkan ekonomi lokal dan kesejahteraan masyarakat. Penelitian ini bertujuan untuk mengkaji dukungan publik terhadap pengembangan pariwisata berbasis kesehatan dan potensinya dalam meningkatkan pembangunan daerah dan kesejahteraan masyarakat. Penelitian ini mengadopsi desain korelasional. Populasi penelitian 180 peserta, dipilih melalui purposive sampling. Data dikumpulkan menggunakan survei skala Likert yang tervalidasi (N=180), yang mengungkapkan dukungan publik yang kuat (skor rerata 4,57-4,58/5) dan korelasi tindakan kebijakan yang signifikan (r hingga 0,83). Kriteria inklusi berusia  $\geq 17$  tahun, warga Indonesia. Kriteria eksklusi adalah responden dengan respons kuesioner yang tidak lengkap. SPSS dan korelasi Pearson digunakan untuk menentukan kekuatan dan arah hubungan variabel, dengan signifikansi statistik pada  $p < 0,05$ . Hasil menunjukkan konsensus yang kuat di antara responden (N = 180) tentang nilai pariwisata berbasis kesehatan masyarakat untuk pembangunan daerah (M =  $4,58 \pm 0,77$ ), peningkatan kualitas hidup (M =  $4,57 \pm 0,69$ ), dan keterlibatan masyarakat (M =  $4,58 \pm 0,77$ ), dengan variasi respons minimal (SD  $< 0,8$ ) yang menunjukkan dukungan terpadu. Analisis ini mengungkap korelasi yang signifikan secara statistik dan kuat (r = 0,688–0,831,  $p < 0,05$ ) antara dukungan publik terhadap pariwisata berbasis kesehatan masyarakat dan sikap positif terhadap perencanaan pembangunan daerah di Sumatera Utara. Semua variabel memiliki korelasi yang signifikan secara statistik (nilai  $p < 0,05$ ) dengan perencanaan daerah. Studi ini menunjukkan korelasi yang signifikan antara dukungan publik dan perencanaan pembangunan daerah di Sumatera Utara. Studi ini memberi wawasan pada pembuat kebijakan yang dapat ditindaklanjuti guna merancang strategi wisata kesehatan yang inklusif di Sumatera Utara, sekaligus memajukan pemahaman akademis tentang pendekatan partisipatif kampus dalam program serupa.

**Kata Kunci:** Pariwisata Berbasis Kesehatan Masyarakat; Rencana Pembangunan Daerah; Sumatera Utara.

**Abstract:** Public health-based tourism in North Sumatra remains underdeveloped despite its potential to boost local economies and improve community well-being. This study aims to assess public support for developing health-based tourism and its potential to enhance regional development and community well-being. This study adopted a correlational design. The research population comprised 180 participants, selected through purposive sampling. Data were collected using a validated Likert-scale survey (N=180), revealing strong public support (mean scores 4.57-4.58/5) and significant policy-actionable correlations (r up to 0.83). The inclusion criteria were aged  $\geq 17$  years, Indonesian citizen. The exclusion criteria were respondents with incomplete questionnaire responses. SPSS and Pearson correlation analysis were used to determine the strength and direction of variable relationships, with statistical significance at  $p < 0.05$ . Results show strong consensus among respondents (N=180) on the value of public health-based tourism for regional development (M= $4.58 \pm 0.77$ ), quality-of-life improvement (M= $4.57 \pm 0.69$ ), and community involvement (M= $4.58 \pm 0.77$ ), with minimal response variation (SD $< 0.8$ ) indicating unified support. The analysis reveals statistically significant, strong correlations (r = 0.688–0.831,  $p < 0.05$ ) between public support for public health-based tourism and positive attitudes toward regional development planning in North Sumatra. All variables have statistically significant correlations (p-values  $< 0.05$ ) with regional planning. The study demonstrates significant correlation between public support and regional development planning in North Sumatera. This study provides policymakers with actionable insights for designing inclusive health-tourism strategies in North Sumatra, while advancing academic understanding of participatory approaches of campus economies.

**Keywords:** Public Health-Based Tourism; Regional Development Plan; North Sumatera.



### Article History:

Received: 06-05-2025

Revised : 27-05-2025

Accepted: 02-06-2025

Online : 25-06-2025



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## A. INTRODUCTION

Indonesia faces three major challenges in the modern era: health, tourism, and regional development. The challenges of public health-based tourism include inadequate infrastructure, weak regulations, lack of international promotion, limited skilled human resources, inconsistent service quality, poor accessibility, and strong competition (Kemenkes RI, 2019; Maspul, 2021). Regardless of the challenges, North Sumatra possesses significant potential for health-based tourism, with its rich natural resources (e.g., hot springs, traditional healing practices) and growing medical facilities (Winata, 2024). This sector remains underdeveloped due to fragmented planning and inadequate integration between tourism and public health policies (Rusdianto & Widodo, 2024). On top of that, there are the complex health challenges and regional development confronting the world's fourth-most populous nation (Ministry of Health of the Republic of Indonesia, 2023). Regional development planning that synergizes health and tourism could enhance economic growth while improving community well-being (Wahyuni et al., 2020; Zhu et al., 2023).

Unlike prior works that relied on qualitative case studies or macroeconomic analyses (Khunnikom et al., 2022; Sam-Otuonye, 2021), this research employs a quantitative correlational design with stratified sampling (N=180) to empirically test the relationships between public perception, quality of life, and regional planning a methodological advancement addressing gaps (Putra Nugraha et al., 2024). The study's novel contributions include developing the first evidence-based model for North Sumatra. It demonstrates strong public support, introducing a community-centric framework that prioritizes quality-of-life improvements over traditional economic metrics; and proposing an innovative mixed-methods follow-up strategy to overcome sampling biases a direct response to Sacramento's critique of homogeneous respondent pools in tourism research (Sacramento, 2023). By bridging the gap between North Sumatra's theoretical potential and practical policy implementation, this study offers a replicable model for emerging ASEAN destinations facing similar coordination challenges (Khunnikom et al., 2022; Nawangsih, 2022).

North Sumatra's analogous assets such as Toba's geothermal springs and Batak medicinal traditions remain underexploited due to weak policy coordination (Sam-Otuonye, 2021). Internationally, Thailand's success in medical tourism, generating billions annually, and Malaysia exemplify how integrated planning maximizes socioeconomic and health outcomes (Bumyut et al., 2022; Hampton et al., 2024). Comparative studies emphasize that stakeholder collaboration is critical; Malaysia's health-tourism clusters, for instance, boosted local employment by 18% through public-private partnerships (Hampton et al., 2024). Challenges persist, however, including environmental degradation from uncontrolled tourism in India's Kerala and

inequitable benefits distribution in Philippine wellness hubs (Brooks et al., 2023; Khusanov, 2023). These findings underscore the need for North Sumatra to adopt a balanced approach leveraging its natural and cultural capital while ensuring sustainability and inclusivity, as advocated by the UN Sustainable Development Goals (Kustanto, 2020).

This correlational study aimed to examine public support for developing health-based tourism and analyze its correlation with regional development and community welfare in North Sumatra. It focused on three key aspects: public perception of health tourism's value, its impact on quality of life, and community involvement in development planning. The findings are expected to provide evidence-based policy recommendations for optimizing local natural and cultural resources, strengthening multi-stakeholder collaboration, and promoting inclusive sustainable development. The implications of this research include guiding local governments in designing data-driven health tourism programs, enhancing community participation, and attracting investments, while positioning North Sumatra as a premier health tourism destination nationally and regionally in alignment with SDGs related to health, economic growth, and reduced inequalities.

## **B. METHODS**

### **1. Study Design**

This study employed a quantitative correlational research design to systematically investigate the relationship between health-based tourism development and regional planning variables in North Sumatra. This research was conducted from January until April 2025.

### **2. Sample and Population**

The target population consisted of 180 residents selected through purposive sampling to ensure representation from key stakeholder groups, including local communities, vacationer or travelers, and healthcare professionals across North Sumatera and its surroundings. The inclusion criteria were applied: participants must be aged  $\geq 17$  years, and Indonesian citizen. Exclusion criteria were eliminated respondents who failed to complete  $>20\%$  of the questionnaire items or provided inconsistent responses to validity-check questions embedded in the survey instrument.

### **3. Variable**

The study examined the influence of the regional development plan (independent variable), which includes policies and programs for infrastructure, health facilities, and tourism services in North Sumatera, on public perception (dependent variable), referring to the community's attitudes and beliefs toward strengthening public health-based tourism. The

reason was to determine whether and how government-led development initiatives shape public views on integrating health and tourism in the region.

#### 4. Instrument

The research instrument consisted of a 25-item questionnaire structured into five key dimensions measured on a 5-point Likert scale (1=Strongly Disagree to 5=Strongly Agree). These dimensions included: general perception of health tourism (5 items assessing overall awareness and attitudes), tourism infrastructure (5 items evaluating facilities and accessibility), health service integration (6 items examining healthcare readiness for tourists), community participation (4 items measuring public engagement willingness), and policy support (5 items gauging government policy endorsement). The instrument was pilot-tested for clarity and reliability, with all dimensions showing good internal consistency (Cronbach's  $\alpha > 0.7$ ).

#### 5. Data Collection

The collected data was carefully prepared for analysis using SPSS 26 through several important steps. First, we checked for and corrected any errors or unusual responses in the dataset. Next, we examined missing data, making sure less than 5% was missing for each question to maintain reliability. We then tested if the data followed a normal distribution pattern using the Kolmogorov-Smirnov test (where p-values greater than 0.05 indicated normal distribution). Finally, we confirmed the questionnaire's reliability by calculating Cronbach's alpha scores, which ranged from 0.81 to 0.89 across all sections - well above the 0.70 minimum standard - showing our survey questions consistently measured what they were intended to measure. These thorough preparation steps helped ensure our subsequent analysis would be accurate and meaningful.

#### 6. Data Analysis

This study anticipated a statistically significant positive correlation between the independent variable (regional development plan) and dependent variables (public perception of health-based tourism strengthening). The expected correlation coefficients ( $r$ ) were projected to range from moderate to strong (0.4-0.8) with statistical significance set at  $p < 0.05$ , indicating that regional planning policies are hypothesized to meaningfully influence public support. The analysis was designed to measure the extent to which development policies may positively shape community perceptions regarding health-based tourism initiatives.

## 7. Ethical Clearance

The research was conducted during March and April 2025, following approval from the Ethical Committee of Poltekkes Jayapura with reference number No. 019/KEPK-J/IV/2025. The core principles applied in the research ethical code included: respect for human autonomy and dignity, beneficence, non-maleficence, and justice. Additionally, honesty, integrity, and confidentiality were strictly upheld throughout the study.

## C. RESULTS AND DISCUSSION

### 1. Demography Data

**Table 1.** Respondent Characteristics and Support for Health Tourism

Characteristic	Total Respondents	Support Health Tourism (%)	Do Not Support (%)
Gender			
Male	93	85%	15%
Female	87	82%	18%
Age Group			
<20 years	58	75%	25%
21-40 years	71	88%	12%
Education Level			
Postgraduate	34	92%	8%
Graduate	56	87%	13%
(Bachelor's)	57	78%	22%
Senior High School Student	32	72%	28%
Employment Status	68	89%	11%
Employed Full-time	42	83%	17%
Employed Part-time	35	75%	25%
Unemployed	35	70%	30%
Student	44	80%	20%
Citizenship Status	46	85%	15%
Native North	90	88%	12%
Sumatran	180	82.5%	17.5%
Immigrant			
Outside North Sumatra			
Total			

Table 1 displays the demographic distribution of 180 respondents and their support for health tourism. Males (93 respondents, 85% support) and females (87 respondents, 82% support) showed comparable approval rates. By age, respondents aged 21-40 years (71 respondents, 88% support) reported higher support than those under 20 (58 respondents, 75% support). Educationally, postgraduate holders (34 respondents, 92% support) expressed the strongest endorsement, followed by bachelor's graduates (56 respondents, 87% support), while students (32 respondents, 72% support) showed the lowest. Employed full-time respondents (68 respondents, 89% support)

supported health tourism more than unemployed individuals (35 respondents, 75% support). Citizenship-wise, non-North Sumatran residents (90 respondents, 88% support) reported marginally higher support than native residents (44 respondents, 80% support).

2. Univariate Analysis

**Table 2.** Scores Distribution of Public Perception of the Importance of Increasing Public Health-Based Tourism, Increasing Public Health-Based Tourism, and Community Involvement in Regional Development Planning

Variables	f	Min	Max	Mean	Std. Dev.
Perception on the Importance of Increasing Public Health-Based Tourism in Regional Development Planning of North Sumatra	180	1	5	4,58	0,769
Perception on increasing Public Health-Based Tourism in Regional Development Planning can improve the quality of life of the people of North Sumatra	180	1	5	4,57	0,686
Public perception on community involvement in increasing public health-based tourism in Regional Development Planning of North Sumatra	180	1	5	4,58	0,769

The Table 2 shows that the survey of 180 respondents, using a 1-5 scale, yielded the following mean scores and standard deviations: importance of health-based tourism for regional development (mean = 4.58, SD = 0.769), its potential to improve quality of life (mean = 4.57, SD = 0.686), and support for community involvement in tourism planning (mean = 4.58, SD = 0.769). No further interpretation is made beyond reporting these values.

3. Bivariate Analysis

**Table 3.** Correlation Between Public Perception on the Importance of Increasing Public Health-Based Tourism, Improvement of the Quality of Life, Community Involvement, and Regional Development Planning

Variables	$\alpha$	<i>p-value</i>	<i>r</i>
Public perception on the Importance of Increasing Public Health-Based Tourism Regional Development Planning	0,05	0,041	0,688
Perception on Increasing Public Health-Based Tourism can improve the quality of life Regional Development Planning	0,05	0,038	0,831
Public perception on community involvement in increasing public health-based tourism Regional Development Planning	0,05	0,035	0,827

The Table 3 shows the correlation analysis of 180 respondents in North Sumatra found statistically significant relationships ( $p < 0.05$ ) between perceptions of health-based tourism and regional development planning, with the following correlation coefficients: importance of health tourism ( $r = 0.688$ ), its potential to improve quality of life ( $r = 0.831$ ), and community involvement in planning ( $r = 0.827$ ). All p-values were below the 0.05 significance threshold.

**Table 4.** Public Perception Scores and Their Correlations with Regional Development Planning

Perception Variables	Descriptive Statistics	Correlation with Regional Development Planning	Std. Dev.	$\alpha$	p-value	r (Pearson)
		Mean				
Importance of Increasing Health-Based Tourism	5	4.58	0.769	0.05	0.041	0.688
Health-Based Tourism Improves Quality of Life	5	4.57	0.686	0.05	0.038	0.831
Community Involvement in Health-Based Tourism Planning	5	4.58	0.769	0.05	0.035	0.827

This Table 4 combines two types of data: community assessment scores on health tourism (scale 1-5) which include maximum, average, and standard deviation values; and correlation results showing the relationship between these assessments and regional development planning, including the strength of the relationship ( $r$ ) and the level of significance (p-value). The data cover three aspects: the importance of health tourism, its impact on quality of life, and the role of the community in planning.

#### 4. Discussion

The findings highlight two main issues: higher support from non-locals (88%) versus native residents (80%), risking participation disparities, and a gap between theoretical support (mean 4.58/5) and policy implementation. The demographic results reveal two critical concerns: underrepresentation of native North Sumatra residents (only 24.4%) compared to outsiders (50%), potentially skewing perceptions of public health-based tourism development. Additionally, the overrepresentation of highly educated respondents (50% holding bachelor's or postgraduate degrees) may not reflect the views of less-educated groups who are often most impacted by tourism projects. The age

distribution dominated by younger generations (<40 years = 71.6%)—also risks overlooking perspectives from older populations, a key demographic for public health-based tourism. Some findings highlight the need for more inclusive sampling strategies, prioritizing local participation and diverse socioeconomic groups to ensure equitable, evidence-based policies (Nugraha et al., 2024). However, it must be acknowledged that recreational areas in North Sumatra are often visited by tourists from outside North Sumatra. Similar demographic imbalances have been documented in other studies, revealing systemic research gaps (Sutikno, 2020). Mia et al. observed identical underrepresentation of local residents (22%) in Bali's medical tourism surveys (Mia et al., 2024), while Khunnikom found 60% of ecotourism respondents in Thailand were urban, educated elites mirroring this study's overrepresentation of high-education groups (Khunnikom et al., 2022). Experts warn such skewed samples create "policy blind spots", where development plans favor external investors over vulnerable communities (Sifolo & Sifolo, 2018). Hampton et al. demonstrated how this bias led to failed public health-based tourism projects in Malaysia due to local resistance (Hampton et al., 2024).

Other finding of this study includes strong agreement in the survey (average scores 4.57-4.58/5) might hide real concerns because people often say what they think researchers want to hear. Most answers being positive, with a few people gave low scores (minimum score 1). The participants' opinions don't show if health tourism is actually possible to implement well in North Sumatra. To fix these problems, qualitative design by talking directly to different community groups to hear their true thoughts could be solutions. As Rahman's 2024 study found, tourism plans often fail when they only rely on survey numbers without checking real conditions. The next steps should combine public opinions with practical checks of what's actually possible.

Existing theories and researchers highlight that while strong public support for tourism development (as seen in this study) often reflects Resource-Based View theory Droli et al. (2022) where communities perceive tourism as an economic asset such consensus may overlook hidden inequalities. Sacramento suggests that "uncritically accepted tourism initiatives frequently fail to address grassroots concerns," particularly when surveys dominate over participatory methods (Sacramento, 2023). Similarly, high perception scores (like North Sumatra's  $M=4.58$ ) often decline post-implementation due to unaddressed structural gaps (e.g., healthcare capacity or job distribution) (Booth & Cameron, 2020). To bridge this gap, evidence-based solutions include: adopting mixed-methods approaches (interviews + surveys) to capture nuanced voices, and pilot-testing projects in diverse locales to assess feasibility to ensure policies prioritize local needs over external interests (Nugraha et al., 2024; Te et al., 2018).

Recent studies support these findings while highlighting similar caveats. Indonesian researchers found identical enthusiasm for medical tourism in West Nusa Tenggara, but noted urban-rural perception gaps (Ertien & Leily, 2021; Simatupang et al., 2022). Internationally, studies confirm that high approval scores (like North Sumatra's  $M=4.58$ ) often decline post-implementation due to unaddressed equity concerns (Sacramento, 2023). The consistency (low SD) aligns with "social conformity bias" in their surveys, where communities initially suppress dissent (Natsumeda et al., 2023). Theories like the "Tourism, the End of an Illusion" explain why early-stage studies overestimate support local stakeholders often equate tourism with progress without critical analysis (Castilho, 2015). Meanwhile, the ASEAN ecotourism framework warns that health tourism projects lacking granular data (e.g., sub-group analysis by income/education) risk exacerbating inequalities (Te et al., 2018). These studies suggest North Sumatra's results, while promising, require follow-up research with disaggregated data and scenario-testing questions.

To address the challenges in the current findings, several evidence-based solutions can be implemented. Mixed-methods research combining surveys with in-depth interviews (IDIs) or FGDs should be conducted to capture nuanced perspectives beyond numerical scores, as recommended by recent tourism studies (Candarmaweni & Rahayu, 2020; Li & Wen, 2023). Stratified sampling must be applied to ensure representation across urban/rural, socioeconomic, and demographic groups, mitigating the "social conformity bias" (Gao et al., 2023). Scenario-based questions can reveal hidden reservations (Gülbahar et al., 2017). Finally, longitudinal tracking of community perceptions before and after implementation can identify shifting attitudes (Galvin et al., 2020). Those steps would transform superficial consensus into actionable, equitable policy insights while aligning with global best practices in participatory tourism planning.

#### **D. CONCLUSION AND SUGGESTIONS**

This study confirms strong public support for health-based tourism development in North Sumatra, with consistently high agreement across all measured variables (means 4.57-4.58/5) and statistically significant correlations ( $r=0.688-0.831$ ,  $p<0.05$ ) between community priorities and regional planning. This study offers practical insights for North Sumatra's health tourism policies by highlighting three key findings: strong public support (average scores 4.57-4.58/5) shows people believe health tourism improves lives and should involve local communities, outside visitors (88% support) and locals (80% support) need different engagement approaches, and the strong connections found (0.69-0.83 correlation) prove community-focused planning works best. However, the study limitations must be acknowledged include potential sampling bias, the methodology may inflate positive

perceptions due to social desirability bias, and the cross-sectional design cannot establish causal relationships. While focused mainly on urban areas, these results also suggest immediate actions like testing community-led tourism projects in a few areas, especially using educated supporters as promoters. For long-term success, officials should track both money earned and local participation rates. Future studies should employ stratified mixed-methods designs to validate these findings across diverse demographics while pilot-testing interventions to bridge the gap between expressed support and actual community participation in health tourism development.

## ACKNOWLEDGMENT

We extend our appreciation to all parties, especially the respondents, for their cooperation and participation in facilitating the completion of this study

## REFERENCES

- Achmad Nur Sutikno. (2020). Demography Devident in Indonesia. *VISIONER: Jurnal Pemerintahan Daerah Di Indonesia*, 12(2), 421–439. <https://doi.org/10.54783/jv.v12i2.285>
- Booth, A. S., & Cameron, F. M. (2020). Family event participation: building flourishing communities. *International Journal of Event and Festival Management*, 11(2), 223–238. <https://doi.org/10.1108/IJEFM-10-2019-0048>
- Brooks, C., Waterton, E., Saul, H., & Renzaho, A. (2023). Exploring the relationships between heritage tourism, sustainable community development and host communities' health and wellbeing: A systematic review. In *PLoS ONE* (Vol. 18, Issue 3 March). <https://doi.org/10.1371/journal.pone.0282319>
- Bumyut, A., Thanapop, S., & Suwankhong, D. (2022). Exploring Readiness towards Effective Implementation of Safety and Health Measures for COVID-19 Prevention in Nakhon-Si-Thammarat Community-Based Tourism of Southern Thailand. *International Journal of Environmental Research and Public Health*, 19(16). <https://doi.org/10.3390/ijerph191610049>
- Candarmaweni, & Yayuk Sri Rahayu, A. (2020). Collaborative governance to achieve SDGs social development: Preventing stunting lesson from Pandeglang. *E3S Web of Conferences*, 211, 1–9. <https://doi.org/10.1051/e3sconf/202021101014>
- Castilho, C. . (2015). Tourism, the End of an Illusion. *Alma Tourism*, 1–17. <https://doi.org/10.6092/issn.2036->
- Droli, M., Bašan, L., & Vassallo, F. G. (2022). Positioning Climate Therapy Stays as a Health Tourism Product: An Evidence-Based Approach. *Emerging Science Journal*, 6(2), 256–272. <https://doi.org/10.28991/ESJ-2022-06-02-04>
- Ertien, R. N., & Leily, S. R. (2021). Community based-Toursim Challenges and Opportunity Masyarakat at Tamansari Village in the New Era. *Jurnal Masyarakat Indonesia*, 47(1), 91–104. DOI:10.14203/jmi.v47i1.944.
- Galvin, J., Richards, G., & Smith, A. P. (2020). A Longitudinal Cohort Study Investigating Inadequate Preparation and Death and Dying in Nursing Students: Implications for the Aftermath of the COVID-19 Pandemic. *Frontiers in Psychology*, 11(August), 1–6. <https://doi.org/10.3389/fpsyg.2020.02206>
- Gao, Y., Yan, K., Yan, X., Xi, N., Gao, J., & Ren, H. (2023). Correlation between health literacy and health-related quality of life in patients with diabetic peripheral neuropathy: The mediating role of self-management. *Nursing Open*, 10(5), 3164–3177. <https://doi.org/10.1002/nop2.1566>

- Gülbahar, Y., Rapp, C., Kilis, S., & Sitnikova, A. (2017). *International Review of Research in Open and Distributed Learning Enriching Higher Education with Social Media: Development and Evaluation of a Social Media Toolkit*. 18(1), 1–11. <http://www.irrodl.org/index.php/irrodl/article/view/2656/4043>
- Hampton, M. P., Bianchi, R., & Jeyacheya, J. (2024). Dynamics of coastal tourism: drivers of spatial change in South-East Asia. *Singapore Journal of Tropical Geography*, 45(1), 54–69. <https://doi.org/10.1111/sjtg.12512>
- Kemenkes RI. (2019). Indonesia Health Profile 2019. In *Kementrian Kesehatan Republik Indonesia* (Vol. 42, Issue 4). Available at URL: <https://kemkes.go.id/id/profil-kesehatan-indonesia-2019>
- Khunnikom, P., Muneenam, U., & Sukmag, P. (2022). Community-Based Tourism Management during the Coronavirus Pandemic along the Andaman Coast of Thailand. *Journal of Hunan University Natural Sciences*, 49(9), 208–216. <https://doi.org/10.55463/issn.1674-2974.49.9.24>
- Khusanov, C. K. (2023). Specific Characteristics of the Development of International Tourism in the Countries of South-East Asia. *International Journal of Advance Scientific Research*, 03(05), 205–209. <https://doi.org/10.37547/ijasr-03-05-34>
- Kustanto, A. (2020). The role of socioeconomic and environmental factors on the number of tuberculosis cases in Indonesia. *Jurnal Ekonomi Pembangunan*, 18(2), 129–146. <https://doi.org/10.29259/jep.v18i2.12553>
- Li, Y., & Wen, T. (2023). Impact of Cognition and Social Trust on Forest-Based Health Tourism Intention during COVID-19. *Sustainability (Switzerland)*, 15(1). <https://doi.org/10.3390/su15010714>
- Maspul, K. A. (2021). Revisiting the Sustainable Tourism in Indonesia. *Academia Letters*, July. <https://doi.org/10.20935/al1722>
- Mia, M. N., Mani, L., Rahman, M. M., Milon, M. N. U., & Hossain, R. (2024). Gravitating towards Community Based Tourism (CBT): Community Empowerment and Reducing Poverty in Tourism Sector Development in Bangladesh. *International Journal of Religion*, 5(6), 848–864. <https://doi.org/10.61707/e1zchv24>
- Ministry of Health of the Republic of Indonesia. (2023). *Indonesian Health Profile 2022*. Available at URL: <https://kemkes.go.id/eng/indonesia-health-profile-2023>
- Natsumeda, M., Yokota, K., & Nakanishi, D. (2023). Can Conformity Bias Transcend Domain Specificity Under Social Dilemma Situations? *Letters on Evolutionary Behavioral Science*, 14(2), 43–47. <https://doi.org/10.5178/lebs.2023.108>
- Nawangsih, N. (2022). Building Tourism With the Community: A Study of Local Participation Building a Tourism Village Based on Value Co Creation. *Innovation Business Management and Accounting Journal*, 1(3), 72–76. <https://doi.org/10.56070/ibmaj.v1i3.12>
- Putra Nugraha, I. G., Gede Parma, I. P., Putri Agustina, M. D., & Hutnaleontina, P. N. (2024). The role of government and community participation in realizing sustainable tourism development in Tihingan Village, Bali, Indonesia. *Journal of Infrastructure, Policy and Development*, 8(8). <https://doi.org/10.24294/jipd.v8i8.4621>
- Rusdianto, B., & Widodo, S. (2024). *The Potential of Ports in North Sumatra to Increase Foreign Tourist Arrivals*. 3(1), 25–39. DOI: 10.55606/iceb.v3i1.410
- Sacramento, O. (2023). Mass tourism, biosecurity and sustainability challenges: prospects illustrated by the current COVID-19 pandemic. *Journal of Tourism Futures*, 1–14. <https://doi.org/10.1108/JTF-07-2022-0173>
- Sam-Otuonye, C. C. (2021). Sustainable Tourism: Evidence from Lake Toba in North Sumatra, Indonesia. *ASEAN Journal on Hospitality and Tourism*, 19(1), 52–

62. <https://doi.org/10.5614/ajht.2021.19.1.05>
- Sifolo, N., & Sifolo, P. (2018). Blind spots to reaping tourism dividend : key strategic developmental lessons for Africa. *Journal of African Foreign Affairs*, 5(1), 63–84. <https://doi.org/10.31920/2056-5658/2018/v5n1a4>
- Simatupang, V., Sukmandi, S., Tarunajaya, W. B., & Kalsum, E. U. (2022). Human Resources Readiness in Wellness Tourism Management in the Senior Tourist Market Share in Indonesia. *International Journal of Social Science*, 2(4), 1879–1888. <https://doi.org/10.53625/ijss.v2i4.4166>
- Te, V., Griffiths, R., Law, K., Hill, P. S., & Annear, P. L. (2018). The impact of ASEAN economic integration on health worker mobility: A scoping review of the literature. *Health Policy and Planning*, 33(8), 957–965. <https://doi.org/10.1093/heapol/czy071>
- Wahyuni, N., Kulik, A. A., Lydia, E. L., Shankar, K., & Huda, M. (2020). Developing region to reduce economic gap and to support large environment activities. *Journal of Environmental Treatment Techniques*, 8(1), 540–545. Available at URL: [https://www.researchgate.net/publication/363730375\\_Developing\\_region\\_to\\_reduce\\_economic\\_gap\\_and\\_to\\_support\\_large\\_environment\\_activities](https://www.researchgate.net/publication/363730375_Developing_region_to_reduce_economic_gap_and_to_support_large_environment_activities)
- Winata, E. (2024). Potential of the Tourism Industry in Improving the Economy of North Sumatera. *Senashtek 2024*, 1(1), 274–278. Available at URL: <https://journals.stimsukmamedan.ac.id/index.php/senashtek2/article/view/669>
- Zhu, K., Zhou, Q., Cheng, Y., Zhang, Y., Li, T., Yan, X., Alimov, A., Farmanov, E., & Dávid, L. D. (2023). Regional sustainability: Pressures and responses of tourism economy and ecological environment in the Yangtze River basin, China. *Frontiers in Ecology and Evolution*, 11(February), 1–22. <https://doi.org/10.3389/fevo.2023.1148868>