

Tourism Integration Model to Increase Economic Productivity of Coastal Communities Through Smart Villages: Tourism Perspective of Sinjai District, Indonesia

Amiruddin*, Batara Surya**, Syafri***, Mursal Manaf ****, Muhibuddin***** ,
Muh. Natsir Abduh*****, Agus Salim*****, Sutia Budi *****

Abstract *The purpose of this study is to find a tourism integration model to improve the welfare and economic productivity growth of coastal communities through a smart village approach by investigating the effect of tourism integration on smart villages and the effect of tourism integration on economic growth and examining the influence between smart villages and economic growth. This research uses a quantitative approach and is assisted by the Smart-PLS 3 application. Partial Least Squares Structural Equation Modeling (PLS-SEM) is intended to analyze data collected from 300 respondents. The results showed that (a) tourism integration has a significant and direct impact on smart villages; (b) tourism integration has a significant effect on the economic growth of coastal communities; (c) Smart villages directly affect the economic growth of coastal communities. The implications of this study present smart villages as capabilities in the use of information technology, implementation with good governance and active community participation to support tourism integration. The contribution of this research is the formation of a tourism integration model that can encourage increased economic growth of coastal communities.*

Keywords: *Tourism Integration, Economic Productivity, Coastal Communities, Smart Villages, Smart-PLS*

INTRODUCTION

Tourism is one of the important sectors that can drive the economy of coastal communities (Al-Smadi & Al-Saad, 2022; Hu & Blakely, 2013; Pafi et al., 2020; Pascoe et al., 2023; Unhasuta et al., 2021). Coastal areas often have

stunning natural beauty, such as white sandy beaches, coral reefs, mangroves, and diverse marine biodiversity (Sievers et al., 2020; Yamano et al., 2019). This beauty can be an attraction for tourists who want to enjoy a vacation in exotic places. With the development of the tourism sector, coastal communities have the opportunity to earn additional income

* Bosowa University, Makassar, Indonesia. Email: al.amir.islam@gmail.com;
ORCID: <https://orcid.org/0000-0001-6944-2059>.

** Bosowa University, Makassar, Indonesia. Email: batara.surya@universitasbosowa.ac.id;
ORCID: <https://orcid.org/0000-0003-0561-8312>

*** Bosowa University, Makassar, Indonesia. Email: syafri@universitasbosowa.ac.id

**** Bosowa University, Makassar, Indonesia. Email: uchalmm@gmail.com;
ORCID: <https://orcid.org/0000-0003-4660-681x>

***** Bosowa University, Makassar, Indonesia. Email: muhibuddin@universitasbosowa.ac.id

***** Bosowa University, Makassar, Indonesia. Email: muhnatsir.abduh@universitasbosowa.ac.id

***** Bosowa University, Makassar, Indonesia. Email: agus.salim@universitasbosowa.ac.id;
ORCID: <https://orcid.org/0000-0001-7868-5634>

***** Bosowa University, Makassar, Indonesia. Email: sutia.budi@universitasbosowa.ac.id;
ORCID: <https://orcid.org/0000-0001-8685-6392>

through businesses such as the provision of accommodation, restaurants, souvenir shops, and various other tourism activities (Fröcklin et al., 2018; Mashayekhi et al., 2016).

In addition to providing economic benefits, tourism can also promote environmental and cultural preservation in coastal areas (Fernández-Llamazares et al., 2020; Trogisch & Fletcher, 2022; Zhang et al., 2017). With the increase in tourist visits, coastal communities will be more aware of the importance of maintaining cleanliness and preservation of nature, because clean and sustainable environmental conditions will attract more tourists (Ejikeme & Okonkwo, 2022; Goffi et al., 2019; Perkumienė et al., 2020). In addition, tourism can also provide an impetus to preserve local traditions and culture (Hindersah et al., 2021; Stankova & Vassenska, 2015; Tan et al., 2018). Coastal communities can promote their culture through various tourism activities, such as traditional dance and music performances, as well as local art exhibitions. Thus, tourism can be one of the tools to advance the economy and preserve cultural heritage and natural environment in coastal areas.

Integrated tourism development supported by smart village components can have a positive impact on increasing the economic productivity of coastal communities. Tourism that is developed in an integrated manner can optimize the development and marketing of tourist destination attractions, complement each other, can increase the distribution of tourist visits at a destination, encourage synergy between tourism actors, satisfy visitors more, and increase non-agricultural income of rural residents (Dangi & Jamal, 2016; Filimonau & De Coteau, 2020; Jiang, 2022; F. Wang et al., 2022). This is because tourists can enjoy a variety of tourist attractions in one travel package. In addition, integrated tourism development can also increase the efficiency of operational costs and promotions carried out by tourism object managers.

The presence of smart village components as part of the community's ability to utilize information and communication technology can support integrated tourism development (Afnarius et al., 2020; Dembovska et al., 2023; Zavrtnik et al., 2018). In addition, smart village is a village development concept that adheres to the principles of governance and services that can increase transparency and accountability of village governments in managing tourism (Atkočiuniene & Vazoniene, 2019; Tita et al., 2022). Similarly, smart villages can encourage increased participation of coastal communities in serving and preserving the village environment (Komorowski & Stanny, 2020; Pérez-delHoyo & Mora, 2019).

This research is important and urgent to be carried out because there is still a lack of research related to tourism integration mediated by smart villages, besides that this research can provide new insights and deeper understanding

of the influence of smart villages in efforts to grow the economy of coastal communities. Thus, the purpose of this study is to find a tourism integration model that can increase tourist attraction, equitable distribution of tourist visits and synergy from the community so that the environment is maintained and can grow the economic productivity of coastal communities.

LITERATURE REVIEW

Tourism Integration

Integrated tourism is an approach that combines various aspects of tourism, such as transportation, accommodation, tourist attractions, and other services, to create a comprehensive and memorable tourist experience (Chen & Akita, 2021; Ghaderi et al., 2018; Liao & Chuang, 2020). One indicator of the success of tourism integration is the development of coastal tourism destinations that involve the active participation of local communities (Phelan et al., 2020; Porter et al., 2018; Towner, 2016). By involving coastal communities, tourism is not only a source of income but also provides broader social and economic benefits (A. Khan et al., 2020; MacNeill & Wozniak, 2018; Manzoor et al., 2019).

The importance of tourism integration is seen in increasing the economic growth of coastal communities. It can be done through tour packages that include not only tourist attractions, but also local culinary, handicrafts, and cultural activities (Pinto et al., 2022; Zielińska-szczepkowska, 2021). Through this integration, local communities can play an active role in providing various services needed by tourists, such as lodging, restaurants, and local transportation (Cheng et al., 2019; Su & Sun, 2020). The revenue generated from the tourism sector can then be used to improve infrastructure and the welfare of local communities.

In addition, tourism integration can also create new jobs (Ianioglo & Rissanen, 2020; Roy et al., 2018). So that by involving local communities in the tourism sector, they have the opportunity to work in various fields, ranging from tour guides, chefs, to homestay managers (Feriyanto et al., 2019; Sommit & Boonpaisarnsatit, 2020). This increase in employment will have a positive impact on unemployment rates and the overall well-being of coastal communities.

Furthermore, tourism integration can also have a positive impact on environmental preservation as part of smart village success indicators (Khan & Hou, 2021; Tang, 2015). By prioritizing the principle of sustainable tourism, tourism destinations that are developed in an integrated manner tend to be more concerned about preserving nature and local culture. This creates a good balance between economic

growth and environmental conservation, which in turn stimulates economic growth and improves the welfare of coastal communities in a sustainable manner.

Smart Village

Bonenberg et al. (2020) revealed that heritage in the form of tradition, culture, collective memory of local communities is an economic potential which has not been glimpsed and categorized as rural resources. These resources have existed since centuries ago, and can be converted into capital driving development, this can be the basis for the idea of smart villages.

The concept of smart village is a concept of how a village can solve its various problems intelligently. The supporting components of the smart village concept include the use of information technology, participation and cooperation, village governance and services, encouraging the sustainability of the village environment, and the availability of infrastructure (Despotović et al., 2020; Maja et al., 2022; Tita et al., 2022; Q. Wang et al., 2022) the concept of smart villages can be useful in facilitating sustainable rural development (Adamowicz & Zwolinska-Ligaj, 2020). In the context of coastal communities, one of the focuses is on how smart villages are implemented in the development of the tourism sector (Dembovska et al., 2023; Fatimah & Dewi, 2019; Li & Zhong, 2022). Starting with the use of information and communication technology to promote tourism destinations effectively, create better accessibility, and the existence of online reservations which are also part of good governance. Furthermore, by encouraging and providing opportunities for the community to actively participate in tourism management, making the responsibility of sustainability and balance of the environment and infrastructure part of the responsibility of local communities. Similarly, training and education for local communities on sustainability and tourism marketing can be an important step in improving service quality and attracting tourists (Jaafar et al., 2015; Saito & Ruhanen, 2017).

In the future, the success of smart villages in increasing the economic growth of coastal communities through tourism activities can be measured by increasing community income, improving infrastructure, awareness of sustainability and efforts to preserve the coastal environment.

Economic Growth of Coastal Communities

Economic growth of coastal communities through tourism activities supported by smart village components by utilizing technology to provide easier and affordable access to capital

to tourism actors because with sufficient capital can be used to develop tourism infrastructure such as homestays, places to eat, tourist attractions, facilities, and promotion of tourist destinations. This capital can come from governments, the private sector, or even international financial institutions (Clark et al., 2018; Taghizadeh-Hesary & Yoshino, 2020; Williams et al., 2015).

Innovation and marketing are key in driving the economic growth of coastal communities (Brandão et al., 2019; Ding et al., 2022). By utilizing information and communication technology can facilitate the management of tourist destinations, such as mobile applications for local tourist guides, sensors for environmental monitoring, or the use of artificial intelligence in designing unique tourist experiences (Chege et al., 2020; Ivars-Baidal et al., 2019; Wang et al., 2016). In addition, careful marketing efforts can increase the visibility of the destination, attract more tourists, and create a positive image. The use of social media, websites, and digital marketing campaigns can be effective tools to promote the attractiveness of coastal tourism (Dolan et al., 2019; Tuclea et al., 2020).

Li et al. (2021) revealed that the need for a partnership pattern between the government, the private sector, and local communities is the main foundation in realizing joint efforts to improve the economy of coastal communities through smart and sustainable tourism.

From this explanation, the author conceptualizes three hypotheses as models proposed in this article.

H1: Tourism integration has a significant and direct impact on smart villages.

H2: Tourism integration has a significant influence on economic growth.

H3: Smart villages directly affect economic growth.

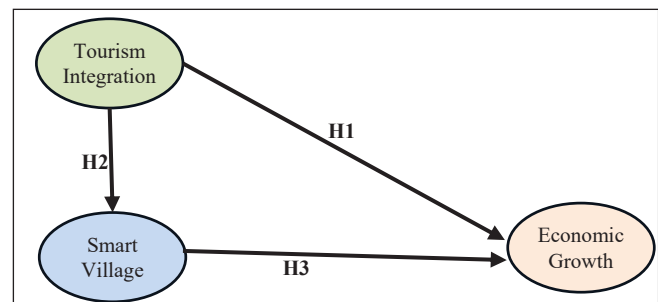


Fig. 1: Proposed Model

RESEARCH METHODS

This research uses a quantitative approach, where the respondents involved in this research are 300 people,

namely tourism offices (15 people), tourism awareness groups (12 people), community leaders (17 people), visitors (120 people), coastal communities (136 people) in Tongke-Tongke Village, South Sulawesi Province, Indonesia. The data collection is carried out through surveys, documentation, and questionnaire distribution. The questionnaire begins with information related to respondents' rights, research objectives and confidentiality of personal information. Data analysis used in this study using SEM Smart PLS 3.2.9.0

RESULTS AND DISCUSSION

Table 1: Demographic Respondent (N= 300 Responds)

Demographic Profile	Variable	Frequency	Percentage
Gender	Male	142	39.23%
	Female	220	60.77%
Education	Bachelor	48	13.26%
	SD - SMA	284	78.45%
	No School	30	8.29%

Demographic Profile	Variable	Frequency	Percentage
Age	16 - 35	164	45.30%
	36 - 60	198	54.70%
Work	Civil Servants	32	8.84%
	Self-employed	58	16.02%
	Fishermen	221	61.05%
	Students	51	14.09%

Source: Results of calculations and author collaboration.

Measurement Model Evaluation

The measurement model used in this study is a reflective type, where the variables of tourism integration, smart villages and economic growth are measured reflectively. The evaluation of the reflective measurement model can be measured through the value of loading factor ≥ 0.70 composite reliability ≥ 0.70 , Cronbach alpha and average variance extracted (AVE ≥ 0.50) (Hair Jr et al., 2021). As well as discriminant evaluation measurements, namely fornell and lacker criteria and HTMT (Heterotrait Monotrait Ratio) below 0.90.

Table 2: Measurement Model Results

Constructs	Measurement Items	Indicators	Loadings	Cronbach's Alpha	Rho_A	Composite Reliability (CR)	Average Variance Extracted (AVE)
Tourism Integration	TI1	Geographical position	0.803	0.826	0.829	0.884	0.656
	TI2	Tourism promotions and information	0.817				
	TI3	Tourism Attraction Object	0.796				
	TI4	Transportation	0.825				
Smart Village	SV1	Utilization of information technology	0.767	0.831	0.834	0.881	0.597
	SV2	Participation and cooperation	0.740				
	SV3	Village Governance and Services	0.811				
	SV4	Encouragement of village environmental sustainability	0.794				
	SV5	Infrastructure availability	0.748				
Economic Growth	EP1	Innovation	0.836	0.833	0.846	0.889	0.667
	EP2	Partnership	0.747				
	EP3	Capital	0.867				
	EP4	Marketing	0.812				

Source: Results of calculations and author collaboration.

From Table 2, information is obtained that the tourism integration variable is measured using 4 (four) valid measurement items where the outer loading value is between 0.796-0.825 which shows that the four measurement items have a strong correlation in explaining tourism integration. The level of reliability of tourism integration can be accepted with Cronbach's alpha value of 0.826, Rho_A 0.829, Composite reliability (CR) 0.884 and average variance extracted (AVE) 0.656 > 0.50. Among the four valid measurements, tourism integration was stronger in TI4 (LF = 0.825) namely transportation and TI2 (LF = 0.817) namely promotion. Transportation has an impact in supporting the growth and development of the tourism industry (Kanwal et al., 2020; Rehman Khan et al., 2017; Spasojevic et al., 2018), good transportation availability and accessibility allow tourists to explore tourist destinations (Vu et al., 2015), both remote and urban. In addition, through environmentally friendly and sustainable transportation, it can protect the natural environment and ensure that tourism destinations are maintained their beauty for future generations. While tourism promotion has an impact on the number of visits (Adie et al., 2018; Klein & Dodds, 2018; Lee & Bai, 2016) because it can introduce destinations widely and encourage interest in exploring new places. In addition, tourism promotion plays an important role to build a positive image of a destination (Manhas et al., 2016; Widayati et al., 2020).

The smart village variable is measured using 5 (five) valid measurement items where the outer loading value is between 0.740-0.811 which shows that the five measurement items have a strong correlation in explaining the smart village. The reliability level of smart village can be accepted with Cronbach's alpha value of 0.813, Rho_A 0.834, Composite reliability (CR) 0.881 and Average variance extracted (AVE) 0.597 > 0.50. Among the five valid measurements, smart villages were stronger in SV3 (LF = 0.811) namely

village governance and services and SV2 (LF = 0.740) namely participation and cooperation. Villages that have good governance can present memorable experiences and are able to showcase their unique culture to attract visitors, creating positive relationships between tourists and the local community. In addition, village services that are responsive to the needs of tourists will have a strong influence on the positive image of the destination, help increase the potential of the local economy through the tourism sector, and in turn, have a positive impact on sustainable development for the village. (Chen & Akita, 2021; Dembovska et al., 2023).

The economic growth variable is measured using 4 (four) valid measurement items where the outer loading value is between 0.747-0.867 which shows that the four measurement items have a strong correlation in explaining economic growth. The level of reliability of economic growth can be accepted with Cronbach's alpha value of 0.833, Rho_A 0.840, Composite reliability (CR) 0.889 and Average variance extracted (AVE) 0.667 > 0.50. Among the four valid measurements, economic growth was stronger at EP3 (LF = 0.863) which is capital and EP1 (LF = 0.839) which is innovation. This illustrates that the economic growth of coastal communities is closely related to capital and innovation in developing tourism potential. Through increasing capital, the government, private sector or financial institutions can provide financial support to coastal tourism businesses (Clark et al., 2018; Taghizadeh-Hesary & Yoshino, 2020; Williams et al., 2015). In addition, capital will drive innovation in tourism management and is not only limited to technology, but also includes the development of unique and compelling products and services for tourists. With government support, active participation of local communities, and partnerships between the public and private sectors will create a strong foundation in building an inclusive and sustainable economy in coastal areas (Li et al., 2021).

Table 3: Discriminant Validity of Constructs

Variables	Economic Growth	Smart Village	Tourism Integration
Discriminant Validity: Fornell-Lacker Criterion			
Economic Growth	0.816		
Smart Village	0.359	0.773	
Tourism Integration	0.354	0.388	0.81
Heterotrait-Monotrait Criterion			
Economic Growth			
Smart Village	0.415		
Tourism Integration	0.421	0.462	

Source : Results of calculations and author collaboration.

The use of the Fornell and Lacker criteria method and HTMT in the evaluation of discriminant validity is carried out to ensure that variables theoretically have differences

and are empirically tested as in Table 3. Fornell and Lacker's criteria state that the root AVE of a variable is greater than the correlation between variables. The economic growth

variable has a greater AVE root (0.816) correlation with smart villages (0.359) and greater correlation with tourism integration (0.354). This illustrates that the discriminatory validity of economic growth variables is also the validity of smart villages and economic growth where the roots of AVE are greater than the correlation between variables. (Hair et al., 2019) provide recommendations related to HTMT because the measure of discriminatory validity is considered more accurate, with a recommendation value below 0.90. The test results show HTMT values below 0.90 for variable pairs, then it can be declared discriminant validity is achieved.

Structural Model Evaluation

Structural model evaluation is intended to see hypothesis testing related to the influence between research variables. Starting with examining the absence of multicollinearity between variables with the size of the Inner VIF (Variance Inflated Factor) below 5, estimating the path coefficient parameter with a confidence interval of 95%, the influence of direct variables at the structural level is a direct influence through f square, where f square is 0.02 in the low category, 0.15 medium and 0.35 high (Hair et al., 2021). Other opinions criterion 0.19 weak influence, 0.33 moderate influence, and 0.67 high influence, (Chin, 1998) in (Henseler et al., 2009).

In addition, Q Square is used to determine the magnitude of the prediction accuracy of the model with criteria 0 means low, 0.25 moderate and 0.50 high category (Hair et al., 2019). The criteria for SRMR values below 0.08 (Hair et al., 2021), and PLS Predict can be seen through RMSE and MAE PLS models are lower than linear regression models (LM) (Hair et al., 2019) while Robustness Check can be seen through linearity (Sarstedt et al., 2019)

After evaluating the structural model, the results of the evaluation of the structural model show that the model is acceptable, that is, there is no multicollinearity between variables shown by the inner VIF below 5, the results of the estimated robust parameters. From the next result, the R square value based on the measurement results can be explained that the magnitude of the joint influence of tourism and smart village integration is 18.3%. The magnitude of the influence of tourism integration on smart villages is 15%. The Q square value is a measure of validity in PLS to express the suitability of the model's predictions. The value of q square model above 0 means that the model has predictive relevance (Hair et al., 2019). The SRMR value of the model is 0.077, the value is still acceptable fit according to Schermelleh-Engel et al. (2003). Robustness Check from the measurement results seen from the p-value which is 0.000.

Table 4: Result of Structural Model Examination

Hypotheses	Path Coefficients	P Values	T Statistics (O/STDEV)	95 % Confidence Interval of Path Coefficients		Measurement Results	VIF	F Square/ Upsilon V	R Square	Q Square
				Lower limit	Upper limit					
Direct effect										
TI -> EG	0.252	0.000	4.662	0.148	0.349	Support	1.180	0.066	0.183	0.129
TI -> SV	0.388	0.000	7.993	0.302	0.489	Support	1.000	0.177	0.150	0.024
SV -> EG	0.261	0.000	4.550	0.148	0.381	Support	1.180	0.071	0.183	0.129
Indirect effect / Mediasi										
TI -> SV -> EG	0.101	0.000	4.031	0.058	0.157	Support	-	0.010	-	-

Source: Results of calculations and author collaboration.

From the test results in Table 4 above, it can be seen that:

- The first hypothesis (H1) is accepted, this can be seen by the significant influence of tourism integration on economic growth with path coefficient (0.252) and p-value ($0.000 < 0.05$). With changes in tourism integration, it tends to increase the economic growth of coastal communities. Through a 95% confidence interval, the magnitude of the influence of tourism integration in increasing the economic growth of coastal communities lies between 0.148 to 0.349. However, the existence of tourism integration is still low in effect (f square 0.066). Therefore, it is

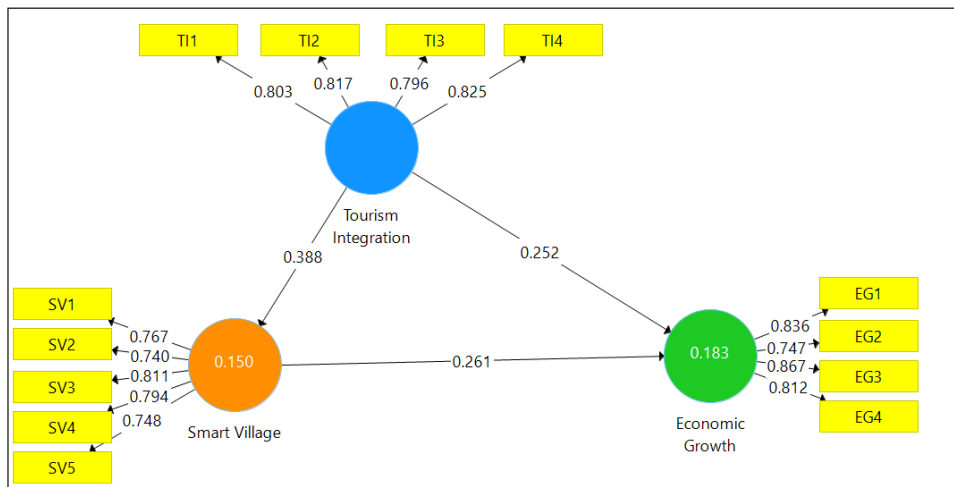
necessary to strengthen promotional activities, provide transportation and develop attractiveness, to attract tourist visits so that the economic growth of coastal communities can increase to 0.349.

- The second hypothesis (H2) is accepted, this can be seen by the significant influence of tourism integration on smart villages with path coefficient (0.388) and p-value ($0.000 < 0.05$). Changes to tourism integration can improve smart villages. Through a 95% confidence interval, the influence of tourism integration in improving smart villages lies between 0.302 to 0.489. However, the existence of tourism

integration has had a moderate effect (f square 0.177). Therefore, strengthening smart villages can be done through improved promotion, special transportation and attraction development, so that the economic growth of coastal communities can increase to 0.489.

- The third hypothesis (H3) is accepted, this can be seen by the influence of smart villages as a mediating variable, namely being the indirect influence of

tourism integration on economic growth with a path coefficient of mediation (0.101) and p-value (0.000 < 0.05). However, at the structural level, the role of smart villages is classified as a low influence category (upsilon v = 0.010) according to Ogbeibu et al. (2021). Within a 95% confidence interval by increasing tourism integration, the role of smart villages as mediation will increase to 0.157.



Source: Results of calculations and author collaboration.

Fig. 2: Structural Model, Tourism Integration to Increase the Economic Productivity of Coastal Communities Through Smart Villages

Table 5: Predictive Accuracy and Predictive Relevance

Item	Model PLS			Model LM		
	Q ² _predict	RMSE	MAE	Q ² _predict	RMSE	MAE
EG2	0.062	0.838	0.622	0.036	0.850	0.631
EG1	0.054	0.780	0.581	0.032	0.789	0.582
EG3	0.112	0.813	0.612	0.081	0.827	0.626
EG4	0.070	0.815	0.585	0.044	0.827	0.586
SV5	0.081	0.786	0.587	0.056	0.797	0.593
SV1	0.058	0.838	0.618	0.051	0.841	0.621
SV4	0.100	0.860	0.645	0.076	0.871	0.653
SV3	0.102	0.752	0.561	0.096	0.754	0.559
SV2	0.069	0.694	0.492	0.057	0.699	0.491

Source: Results of calculations and author collaboration.

Hair et al. (2019) revealed that PLS is an SEM analysis with the aim of prediction. Therefore, model validation is needed to show how good the prediction power of the proposed model is. To find out, it can be done by comparing the PLS model and the LM model, if the value of the measurement results of all RMSE and MAE in PLS is lower than in LM then it can be said that the model has a high prediction,

but if most of it is said to be medium prediction. Based on the results of the measurements mentioned above, it can be seen that most of the RMSE and MAE values in PLS are lower than LM, so it can be said that the tourism integration model to increase the economic productivity of coastal communities through smart villages proposed has medium predictions.

CONCLUSION AND IMPLICATIONS

The conclusion of this study confirms that the integration of tourism with a smart village approach supported by information technology has great potential to improve community welfare and economic growth of coastal communities. With targeted tourism promotion, effective village governance, active community participation, capital support, innovation, and synergistic cooperation, tourism destinations can become a driving force for sustainable economic growth. Therefore, the implementation of this model requires full support from the government, the private sector, and local communities to create a highly competitive tourism ecosystem and provide maximum benefits for all parties involved.

A significant implication of this study is the use of information technology both by destination managers and coastal communities to carry out tourism promotion activities so as to create a positive impact on the number of tourist visits and expand market reach. In addition, smart villages with efficient village governance can also increase destination attractiveness, provide a better experience for tourists, and encourage active community participation in the management of tourist destinations.

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