

Management Of Smart Tourism Implementation And Creative Economy Collaboration As A Strategy For Sustainable Tourism Development In Yogyakarta

Nerys Lourensus L Tarigan^{1*}, Rian Larasati²

^{1,2}Department of Management, STIE IEU Yogyakarta, Indonesia

*Correspondence email: masnerys@gmail.com

Abstract– This study aims to analyse the role of smart tourism management and creative economy collaboration as strategies for sustainable tourism development in Yogyakarta. A quantitative method was used, involving 200 respondents consisting of tourism business operators, local communities, and tourists. Data was collected through questionnaires using a 1-5 Likert scale, then analysed using descriptive statistics and multiple linear regression to test the effect of the independent variables of smart tourism management and creative economy collaboration on the dependent variable of sustainable tourism. The results showed that the implementation of smart tourism, such as information technology, service digitalisation, and destination management systems, had a significant effect on tourism sustainability, while creative economy collaboration through local product development, community participation, and business innovation contributed more to supporting environmental preservation, improving the local economy, and strengthening cultural identity. These findings recommend the integration of technology-based policies and creative economic empowerment as key strategies for developing tourism in Yogyakarta, with a focus on improving human resource capacity and digital infrastructure. The implications of this research highlight the importance of multi-stakeholder collaboration to achieve holistic sustainability goals.

Keywords: *smart tourism, creative economy, sustainable tourism, quantitative analysis*

INTRODUCTION

Tourism in Yogyakarta has long been one of the leading sectors contributing significantly to the regional economy and local culture. However, rapid tourism growth faces various challenges, such as environmental degradation, loss of cultural identity, and dependence on mass tourism (Kusumawardhani et al., 2024). To overcome these challenges, the implementation of smart tourism and collaboration with the creative economy are seen as strategic solutions that can promote sustainable tourism development (Si-Tou, 2024). Smart tourism integrates digital technology, data analytics, and digital innovation in tourism destination management to make the tourist experience more personalised, efficient, and highly competitive (Gretzel, 2021). Meanwhile, the creative economy plays a role in utilising cultural wealth and local innovation to create unique and authentic tourism products, thereby increasing the attractiveness of destinations while empowering local communities (Martí-Parreño & Gómez-Calvet, 2020). The development of synergistic collaboration between smart tourism and the creative economy is expected to improve the efficiency of destination management, expand community participation, and strengthen regional cultural identity in a sustainable manner (Negara et al., 2025). However, the implementation of effective management in integrating these two aspects remains a challenge, particularly in terms of coordination, regulation, and digital resource management (Wu et al., 2024). Several recent studies show that the successful implementation of smart tourism and the creative economy together requires a holistic, innovative, and inclusive management strategy as well as policy support from local governments (Đurić et al., 2025). In addition, expertise in managing technology and local culture simultaneously is needed in order to create sustainable tourism that is globally competitive (Samancioglu et al., 2024).

In today's digital age, the concept of Smart Tourism has become a significant strategic approach to strengthening sustainable tourism development. Smart Tourism combines technology and digital innovation to create a more efficient, interactive, and environmentally friendly travel

experience. For example, research in Sumenep Regency shows that the implementation of digital-based Smart Tourism can provide a better tourist experience while increasing the effectiveness, competitiveness, and welfare of local communities, as well as steering destinations towards competitive sustainability (Anwar et al., 2023). On the other hand, collaboration in the creative economy has become a major driving force in creating added value and attracting tourists to destinations. Programs such as Wonderful Indonesia Co Branding demonstrate how partnerships between the government (Kemenparekraf/Baparekraf) and creative industry players encourage sustainable tourism growth through joint promotion and brand synergy (Kemenparekraf/Baparekraf, 2024). This type of collaboration not only increases visibility but also strengthens the creative infrastructure in the region.

Yogyakarta, as a tourist destination with a diversity of unique places that are still well preserved, has great potential to implement both strategies. Yogyakarta needs to develop sustainable tourism management that combines smart technology and the creative economy, so that it not only preserves the environment but also provides economic and social benefits to the local community. In the local context, research by (Sulisyati et al., 2025) emphasises the importance of collaboration between the government, communities, and tourism stakeholders in implementing tourism strategies that take into account environmental capacity, infrastructure, socio-cultural aspects, and community participation. Meanwhile, the Blue Economy approach, which combines marine tourism with community welfare, suggests reformulating pentahelix-based tourism development (government, business, community, academia, and NGOs) in Karimunjawa (Pavliuk, 2023). The purpose of this study is to analyze and develop strategies for implementing smart tourism and creative economic cooperation as efforts to enhance sustainable tourism development in Yogyakarta, thereby providing clear and focused guidance on managing environmentally friendly and innovative tourist destinations that support the social, economic, and ecological sustainability of the region.

LITERATURE REVIEW

Smart Tourism

Smart tourism refers to the application of information and communication technology (ICT) in the development and management of tourist destinations to enhance the tourist experience and improve the operational efficiency of the tourism industry. This concept integrates the internet of things (IoT), big data, artificial intelligence (AI), and mobile technology to create a smart, efficient, and sustainable tourism ecosystem (Gretzel, 2021). Key technologies that support smart tourism include the use of mobile applications for reservations and destination information, RFID and QR codes for quick access, and IoT sensors for real-time management of tourism assets (Adie et al., 2025). In addition, big data analysis allows destination managers to understand tourist behaviour and tailor services accordingly (Buhalis & Amaranggana, 2015). Smart tourism provides benefits in the form of enhanced tourist experiences through personalised services, reduced queues and waiting times, and increased destination sustainability through efficient resource management (Gretzel et al., 2015). The use of technology also strengthens digital marketing and increases the competitiveness of tourist destinations at the global level (Wu et al., 2024). Despite its great potential, the implementation of smart tourism faces a number of challenges, including high investment requirements, data privacy and security issues, and technological access disparities in certain areas (Yu & Lorwerth, 2022). In addition, the importance of training and human resource capacity in managing the latest technology is a key factor for success (Gretzel, 2021).

Creative Economy in Tourism Development

The creative economy refers to the economic sector based on creativity, skills, and individual talents to produce goods and services that have high economic value and cultural appeal (UNCTAD, 2021). In the context of tourism development, the creative economy offers opportunities to enhance the appeal of destinations through product innovation, handicrafts, arts, culture, and unique experiences that can attract new tourists and extend their length of stay (Richards, 2020). The creative economy plays an important role in creating differentiation between tourist destinations while strengthening local cultural identity. Creative products such as handicrafts, culinary specialties, cultural festivals, and performing arts can be key attractions that support strategic destination marketing (Richards & Wilson, 2017). In addition, the creative industry contributes to the development of the local community economy, increases community income, and strengthens cultural and environmental sustainability (UNCTAD, 2021). The implementation of the creative economy in tourism requires collaboration between the government, industry players, and local communities. Policy support, training, access to digital marketing, and copyright protection are important factors for the successful development of the creative economy in tourist destinations (Richards, 2017). However, the main challenges include a lack of innovation, a lack of access to capital, and weak intellectual property protection (Rahnama&Saudale, 2022). The application of the creative economy in tourism can enhance the global competitiveness of destinations, strengthen cultural identity, and promote sustainable development (Richards, 2017). This opportunity is particularly relevant in the digital age, where unique experiences and distinctive products are key to attracting today's tourists (UNCTAD, 2021).

Sustainable Tourism

Sustainable tourism is a concept of tourism development that prioritises a balance between economic growth, environmental conservation, and local community empowerment. The aim is to ensure that tourism activities provide long-term benefits without damaging the natural and cultural resources that attract visitors to a destination (Weaver, 2020). Sustainable tourism emphasises the importance of harmoniously integrating environmental, social, and economic aspects. Key principles include resource conservation, social justice, and equitable economic benefits for local communities (Gössling et al., 2020). In practice, this involves waste management, cultural preservation, community empowerment, and environmentally friendly infrastructure development. The implementation of sustainable tourism can improve the quality of the tourist experience and strengthen the global competitiveness of destinations. In addition, it can help reduce the negative impacts of mass tourism, such as environmental damage and loss of cultural identity. This approach also supports local economic development and generates widespread employment (Bramwell & Lane, 2021). Despite its many benefits, the implementation of sustainable tourism faces challenges such as imbalances between the interests of various stakeholders, a lack of knowledge and capacity, and economic pressures that encourage exploitative actions (Lopez & Rodriguez, 2022). Therefore, firm and collaborative policies are needed to integrate sustainable principles into all aspects of tourism destination management. Sustainable tourism is an important approach to ensuring the sustainability of the tourism industry in the future. Through wise and participatory management, destinations can maintain their appeal while preserving the balance of the ecosystem and ensuring that local communities benefit fairly.

Synergy between Smart Tourism and the Creative Economy

In today's digital age, the integration of smart tourism and the creative economy has become a key topic in the development of sustainable tourism destinations. Smart tourism emphasises the use of digital technology to enhance the tourist experience, while the creative

11

economy emphasises innovation and sustainability through cultural and artistic creation (Gretzel, 2021). These two fields complement each other in creating a dynamic and innovative tourism ecosystem. According to (Liu et al., 2022) the synergy between smart tourism and the creative economy can increase the competitiveness of tourist destinations by offering personalised and authentic technology-based experiences. Innovations in the creative economy sector, such as digital handicrafts, performing arts, and visual technology, provide opportunities to expand the global market efficiently. This supports previous literature stating that this collaboration accelerates local economic growth while strengthening cultural identity (Perez et al,2022). Furthermore, a study by (Zhang & Wang, 2023) shows that the integration of advanced technologies such as augmented reality and virtual reality in tourism destination development enriches the tourist experience and supports the creative economy through the provision of innovative digital content. The readiness of digital infrastructure and collaboration between creative economy actors and policymakers are key factors for successful implementation. Furthermore, research by Santos et al (2023) highlights the importance of community-based digital platforms that connect creative economy actors with tourists, thereby creating a sustainable collaborative ecosystem. These platforms not only expand marketing reach but also strengthen local communities' sense of ownership in tourism destination development.

Meanwhile, a study by Kim & Lee (2024) emphasises that government policies supporting technological innovation and creativity are crucial in building effective synergies between smart tourism and the creative economy. Investment in digital training and creative content development is the main pillar of this strategy's success. Research by Moreno et al (2024) suggests that the success of this synergy depends on the active involvement of all stakeholders, including the government, industry players, and local communities, in creating an innovative and inclusive ecosystem. This collaborative approach is believed to bring positive changes to the management of sustainable and highly competitive tourist destinations. The literature shows that the application of smart tourism not only supports sustainability through technology but also opens up opportunities for creative economy actors to become actively involved (Xiang & Fesenmaier, 2017). Digitalisation of marketing allows local creative economy products to reach global markets, while destination information systems can showcase the potential of the creative economy as an additional attraction. In Karimun Jawa, this synergy can be realised through: An integrated digital platform showcasing tourism packages, SME products, and cultural events; The use of big data to understand tourist behaviour and guide the promotion of creative products; and Collaboration between local government, local communities, and the private sector in providing digital services.

The following is a diagram of the research model (conceptual framework):

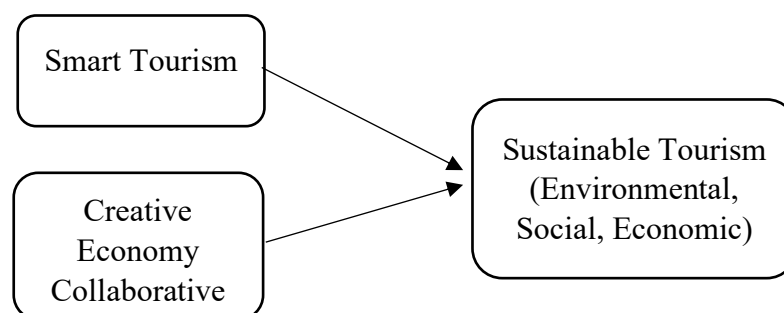


Figure 1. Research Conceptual Framework

- Smart Tourism (X1) → influences Sustainable Tourism (Y)
- Creative Economy Collaboration (X2) → influences Sustainable Tourism (Y)

METHODOLOGY

Research Design

This study employed quantitative research methods. The research was conducted in Yogyakarta, one of Indonesia's tourist cities. The location was chosen based on Yogyakarta's characteristics, which face sustainability challenges due to high tourist visitation and the need for technology-based management innovation and creative economic empowerment.

Population and Sample

In a study entitled “Smart Tourism Implementation Management and Creative Economy Cooperation as Strategies for Sustainable Tourism Development in Yogyakarta,” random sampling techniques were chosen to ensure that every member of the target population, such as tourists, MSME actors, and the community, had an equal chance of being selected as respondents. This method was chosen because it produces a representative sample and reduces the risk of bias, so that the research results are more accurate and can be generalized to a wider population in Yogyakarta. The distribution of respondents per group is usually designed proportionally according to the size of each population. For example, if the number of tourists, MSME players, and the community in the area is known, sampling is carried out on a percentage basis so that each group is represented proportionally. For example, if tourists make up 50% of the population, MSME actors 30%, and the community 20%, then the sample will be taken in equal proportions, for example, 120 tourists, 50 MSME actors, and 30 community members to obtain a comprehensive picture of all parties involved in the development of sustainable tourism in Yogyakarta. The use of random sampling techniques and proportional distribution of respondents aims to ensure that the data obtained truly reflects the actual conditions and various perspectives of all stakeholders involved in the management and development of sustainable tourism in the region.

Table 1. Population and Sample

No	Population	Sampling Technique	Sample Size (Target)
1	Tourist (domestic & foreign), MSME actors	Accidental sampling	200 respondents

Research Variables

Table 2. Research Variables

Variables	Operational Definition	Indicators	Measurement Scale
Smart Tourism (X1)	The use of digital technology and smart systems in destination management aims to improve visitor experience and increase the effectiveness of tourism sector management.	<ol style="list-style-type: none"> 1. Digital infrastructure (-access internet, destination applications) 2. Digital services (online ticketing, digital payments, real-time information) 3. Capacity monitoring systems (sensors, visitor dashboards) 	Likert 1-5

II

		4. Environmentally friendly technology (digital-based waste/energy management)	
Creative Economy Collaboration (X2)	The involvement of creative economy actors in supporting tourism product diversification, extending tourist stays, and strengthening local identity.	1. Local product innovation (culinary, crafts, arts, digital content) 2. Digitalization of SME marketing (marketplaces, social media) 3. Creative events and festivals 4. Collaboration networks among stakeholders (co-branding, incubation)	Likert 1–5
Sustainable Tourism (Y)	A destination management model that maintains a balance between environmental, social, and economic aspects for current and future generations.	1. Environment: ecosystem conservation, waste reduction, compliance with carrying capacity regulations. 2. Social: local community involvement, cultural preservation, community perception. 3. Economy: increased local income, tourist length of stay, tourist spending at SMEs.	Likert 1–5

Data Collection Techniques

1. Questionnaire: using a Likert scale 1–5 to measure research variables.
2. In-depth interviews: tourists and SMEs
3. FGD: with creative entrepreneurs and local communities.
4. Participatory observation: directly observing the implementation of smart tourism practices and creative economic activities.

RESULT

Validity and Reliability Testing

Validity Test

The validity test in this study used the *Product-Moment Pearson* correlation method with a significance level of 5% and validity test criteria. If $r_{\text{calculated}} > r_{\text{table}}$, then the questionnaire item can be said to be valid; if $r_{\text{calculated}} < r_{\text{table}}$, then the questionnaire item can be said to be invalid. This test was conducted using SPSS version 30 software. To find $r_{(\text{table})}$ (*Degree of Freedom*) $df = N-2$, with a sample of 200 respondents, $r_{(\text{table})}$ was obtained as 0.1388. The validity test results obtained from SPSS version 30 are as follows:

Table 3. Smart Tourism Validity Test Results

Variable	Question Item	Calculated r	r-table	Description
Smart Tourism	1	0.874	0.1388	Valid
	2	0.875	0.1388	Valid
	3	0.833	0.1388	Valid
	4	0.872	0.1388	Valid
	5	0.841	0.1388	Valid
	6	0.844	0.1388	Valid
	7	0.788	0.1388	Valid
	8	0.873	0.1388	Valid
	9	0.874	0.1388	Valid
	10	0.861	0.1388	Valid

Source: Authors

The calculated r values for all Smart Tourism variable questions ranged from 0.788 to 0.875, indicating a fairly strong relationship between the questions and the main variables measured. A table R value of 0.1388 was used as the validity assessment threshold. Since all calculated r values for each item were greater than the table r value, all questions were declared valid. All questionnaire items on the Smart Tourism variable have a significant and fairly strong relationship with the main variable. Thus, all of these questions can be relied upon to measure aspects of Smart Tourism. The existence of this data supports the use of all questions in the study, as they all meet the validity requirements based on the criteria used.

Table 4. Results of the Creative Economy Collaboration Validity Test

Variable	Question Item	Calculated r	Table r	Description
Creative economic collaboration	1	0.667	0.138	Valid
	2	0.549	0.1388	Valid
	3	0.705	0.1388	Valid
	4	0.572	0.1388	Valid
	5	0.557	0.1388	Valid
	6	0.537	0.1388	Valid
	7	0.534	0.1388	Valid
	8	0.641	0.1388	Valid
	9	0.632	0.1388	Valid

Source: Authors

The calculated r values for all items in this variable range from 0.534 to 0.705, indicating a fairly strong relationship between each item and the variable being measured. The table R value of 0.138 indicates the minimum limit for determining validity. Since all calculated r values for each question are greater than the table r value, all questions are declared valid. All questions in the Creative Economic Collaboration variable have a significant and adequate relationship with the main variable. Each question is able to represent aspects of Creative Economic Collaboration validly and can be used for further measurement. This validity strengthens confidence in the measurement instrument in this study. Overall, these results indicate that the question instrument for the Creative Economic Collaboration variable is quite suitable for use in research analysis.

Table 5. Results of the Sustainable Tourism Validity Test

Variable	Question Item	Calculated r	Table r	Description
Sustainable Tourism	1	0.603	0.1388	Valid
	2	0.632	0.1388	Valid
	3	0.668	0.1388	Valid
	4	0.636	0.1388	Valid
	5	0.606	0.1388	Valid
	6	0.692	0.1388	Valid
	7	0.638	0.1388	Valid
	8	0.654	0.1388	Valid
	9	0.621	0.1388	Valid
	10	0.724	0.1388	Valid

Source: Authors

Of the 10 items, all had a calculated r higher than Table r (0.1388), so the entire instrument for the Sustainable Tourism variable was considered valid overall. This means that the items were statistically significantly correlated with the construct of sustainable tourism and could be relied upon for measurement in research or surveys. The calculated r values range from 0.603 to 0.724, indicating a moderate to strong correlation (according to Cohen's scale, $r > 0.5$ is considered strong). Items with the highest r (such as Items 10 and 6) may be more representative of the main aspects of the variable.

Reliability Test

The reliability test in this study used the *Cronbach's Alpha* method. If the *Cronbach's Alpha* value is greater than 0.60, the questionnaire or survey is considered reliable or consistent. If the *Cronbach's Alpha* value is less than 0.60, the questionnaire or survey is considered unreliable or inconsistent. This test was conducted using SPSS version 30 *software* with a sample size of 200 respondents. The results of the reliability test using SPSS version 30 are as follows:

Table 6. Reliability Test Results

Variable	<i>Cronbach's Alpha</i>	Minimum Reliability	Description
Smart Tourism (X1)	0.958	0.60	Reliable
Creative Economy Collaboration (X2)	0.777	0.60	Reliable
Sustainable Tourism (Y)	0.844	0.60	Reliable

Source: Authors

The reliability test results for each research variable that was declared valid, namely *Smart Tourism* (X1), *Creative Economy Collaboration* (X2), and *Sustainable Tourism* (Y), had a *Cronbach's alpha* > 0.60 , so all variables declared valid in this study were declared reliable.

Quantitative Analysis Data

F-Test

In this study, the F analysis was applied to evaluate the research model. If the F analysis results showed significance, then the model used was declared valid, and the research could be continued. The following are the F analysis results obtained using SPSS version 30:

Table 7. Summary of F-Test Results

No	Regression	F Test Results	Description
1	X1 on Y	0.001	Significant
2	X2 against Y	0.001	Significant
3	X1, X2 on Y	0.001	Significant

Source: Authors

Based on the F-test results, all results are simultaneously significant. As stated, if the F-test results are significant, this research is deemed valid and can be continued.

T-Test

Table 8. Results of the t-test for Smart Tourism on Sustainable Tourism

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	31,231	1,071	29,173	<,001
	TOTALXP	,182	,027	,434	<,001

a. Dependent Variable: TOTAL.YP

Source: Authors

Based on the table above, it shows that the significance value of *the smart tourism* (X) = $0.001 < 0.05$, which means H_0 is rejected, and H_a is accepted. So it can be concluded that the *smart tourism* variable (X1) has an effect on the sustainable tourism variable partially; thus, H_1 *smart tourism* affects sustainable tourism is accepted.

Coefficient of Determination

The coefficient of determination test aims to measure the extent to which the model is able to explain or describe the variation in the dependent variable, as explained in the previous chapter. If the coefficient of determination value is between 0 and 1. If the value is close to 1, it means that the independent variable provides almost all the information needed by the model to predict the dependent variable. The coefficient of determination analysis was performed using SPSS version 30 as follows:

Table 9. Summary of Coefficient of Determination Test Results

No	Regression	Adjusted R-Square
1	X1 against Y	0.181
2	X2 against Y	0.566
3	X1, X2 on Y	0.578

Source: Authors

11

Based on the table above, it is known that the value of the X1 test against Y is 0.181, which means that the dependent variable can be explained by the independent variable by 18.1%, while the rest ($100\% - 18.1\% = 81.9\%$) is explained by other variables. The value of $R^{(2)}$ for testing X2 against Y is 0.566%, which means that the dependent variable can be explained by the independent variable by 56.6%, while the rest ($100\% - 56.6\% = 43.4\%$) is explained by other variables. In the third test, the $R^{(2)}$ value of the X1, X2 test against Y is 0.578%. This means that the dependent variable can be explained by the independent variable by 57.8%, while the rest ($100\% - 57.8\% = 42.2\%$) is explained by other variables.

DISCUSSION

The results show that Smart Tourism has a positive and significant effect on Sustainable Tourism

This finding indicates that the application of the *smart tourism* concept in Yogyakarta can improve tourism sustainability, both from environmental, social, and economic aspects. Tourists benefit from digital-based services, such as homestay reservations and cashless transactions. This is in line with previous research confirming that the digitization of tourism destinations can enhance the tourist experience while reducing excessive use of resources. However, limited internet infrastructure and a lack of digital destination applications remain major obstacles. Therefore, the management of *smart tourism* implementation in Yogyakarta requires a strategy to strengthen information technology infrastructure and improve digital literacy among the local community.

The Impact of Creative Economy Collaboration on Sustainable Tourism

The analysis also shows that Creative Economy Collaboration has a significant positive impact on Sustainable Tourism. This means that the stronger the role of MSMEs and the creative economy sector in developing products and services based on local wisdom, the greater their contribution to the sustainability of tourism in Yogyakarta. Local MSMEs, such as providers of local cuisine, souvenir craftsmen, homestays, and tour guides, provide economic added value and create new jobs. However, qualitative results show that the main challenges are limited digital marketing and weak integration between creative economy actors. This emphasizes the need for collaborative management involving local governments, local communities, and the private sector to build an integrated creative economy ecosystem.

The synergy between Smart Tourism and the Creative Economy impacts Sustainable Tourism

The data shows that the integration of *Smart Tourism* and Creative Economy Collaboration can strengthen sustainable tourism development strategies in Karimunjawa. *Smart Tourism* promotes efficiency, transparency, and ease of access to information for tourists, while the creative economy ensures the economic sustainability of local communities through innovation in culture-based products and services and local wisdom.

CONCLUSION

This study shows that *Smart Tourism* and Creative Economy Collaboration have a positive and significant impact on Sustainable Tourism in Yogyakarta. Quantitatively, both variables influence tourism sustainability. The Creative Economy has a real impact on increasing community income through culinary specialties, handicrafts, homestays, and tourism services, but still faces obstacles in digital marketing and a lack of collaboration between actors. Sustainable Tourism is supported by increased community awareness of conservation and economic

11

contributions, but still faces challenges related to tourism waste management. Overall, the integration of *Smart Tourism* and the Creative Economy is an effective strategy to strengthen competitiveness and maintain the sustainability of tourism in Yogyakarta.

For the Government and Destination Managers: Strengthen digital infrastructure (internet access, destination applications, integrated tourism information systems). Establish a permanent coordination forum between the government, community, academics, and the private sector to strengthen synergies in sustainable tourism development. Encourage *green tourism-based* policies that balance economic growth with environmental conservation.

For MSME and Creative Economy Actors: Optimize digital marketing through *e-commerce*, social media, and online tourism platforms. Develop creative products based on local wisdom (unique cuisine, environmentally friendly crafts, cultural tour packages) that have a unique appeal for tourists. Increase business management capacity through training in digital literacy, branding, and collaboration between actors.

For Local Communities and *Stakeholders*: Strengthen participatory conservation programs such as integrated waste management, coral reef protection, and tourist education. Build collaborative networks among stakeholders to improve the integration of smart tourism and creative economy programs. Encourage the involvement of the younger generation as agents of change in the development of digital-based and sustainable tourism.

Further research could compare the success of implementing smart tourism management and creative economic cooperation in various other tourist destinations in Indonesia and internationally to identify best practices that can be applied in Yogyakarta. Future research could explore tourists' perceptions of smart tourism innovations and creative economic collaboration, as well as measure their satisfaction levels, to tailor more effective development strategies and ensure greater tourist satisfaction. Conduct studies on the social and economic impacts of smart tourism and creative economic cooperation on local communities, MSME actors, and the tourism sector as a whole to ensure sustainability and a balance of benefits. Develop a more detailed and adaptive implementation strategy model based on the initial research results, including aspects of technology, partnerships, and human resource management. Further research could explore the role of the latest technologies, such as AI, AR/VR, and blockchain, in improving the effectiveness of smart tourism management and creative economic collaboration to support sustainable tourism development. Analyze policies and regulations that support or hinder the implementation of these innovations, and provide policy recommendations that can strengthen the sustainability of tourism management in Yogyakarta.

LIMITATION

1. This study is limited to the observation and analysis of the implementation of smart tourism and creative economy collaboration in major tourist destinations in Yogyakarta.
2. The data used comes from interviews, direct observations, and official documents during the 2023-2024 period.
3. The main focus is on tourism industry players, local governments, and creative economy players in Yogyakarta.
4. This study does not cover the direct influence of global external factors such as the international economic situation or pandemic conditions.
5. The analysis is limited to management and collaboration aspects, without discussing policy aspects in depth.

IMPLEMENTATIONS

1. Development of a digital platform that contains complete information about smart tourism-based tourist destinations in Yogyakarta, including interactive features and digital payments.
2. Training and capacity building of human resources in the tourism and creative economy sectors to be able to manage and utilise digital technology optimally.
3. Building a collaborative ecosystem between creative economy actors, the government, and the community to create culture and technology-based tourism innovations.
4. Implementing digital marketing programmes targeting domestic and international tourists through social media, websites, and online travel platforms.
5. Regular monitoring and evaluation of the effectiveness of smart tourism implementation and creative economy collaboration to ensure sustainability and improvement in tourism quality.

REFERENCES

- Bramwell, B., & Lane, B. (2021). Sustainable Tourism: An Evolving Concept. *Journal of Sustainable Tourism*, 29(1), 1-11.
- Buhalis, D., & Amaranggana, A. (2020). Smart tourism destinations. In *Tourism Management Perspectives*, 34, 100675.
- Chen, S., & Lee, J. (2023). Smart tourism and sustainable development: Innovations and challenges. *Journal of Sustainable Tourism*.
- Gossling, S., Scott, D., & Hall, C. M. (2021). Pandemics, tourism, and the sustainable development goals. *Tourism Geographies*, 23(2), 332-346.
- Gretzel, U., Sigala, M., & Xiang, Z. (2021). Evolution of Smart Tourism and the Creative Economy. *Journal of Travel Research*.
- Gretzel, U., Sigala, M., Xiang, Z., & Koo, C. (2020). Smart tourism: Foundations and developments. *Journal of Travel Research*, 59(1), 3-16.
- Hjalager, A. M., & Richards, G. (2020). Creative Tourism: A Global Perspective. *Annals of Tourism Research*, 81, 102880.
- Kim, S., & Lee, J. (2024). Policy strategies for smart tourism and creative economy integration. *International Journal of Tourism Policy*.
- Kusuma, P., Fitriani, A., & Mahendra, D. (2022). Environmental challenges and tourism growth in Yogyakarta. *Tourism Environmental Journal*.
- Li, X., Leung, X., & Law, R. (2019). The future of smart tourism: A review and research agenda. *Tourism Review*, 74(3), 610-628.
- Liu, Y., Wang, X., & Zhang, H. (2022). Digital innovation in smart tourism for creative economy growth. *Tourism Management Perspectives*.
- López, R., & Rodríguez, D. (2022). Challenges in Implementing Sustainable Tourism: A Systematic Review. *Sustainable Development*, 30(3), 456-469.
- Moreno, R., Santos, R., & Oliveira, L. (2024). Managing digital ecosystems for sustainable tourism. *Journal of Tourism Innovation*.
- Park, E., & Jang, J. (2021). IoT-enabled smart tourism ecosystem: Current status and future challenges. *Journal of Hospitality and Tourism Management*, 48, 153-164.
- Pérez, J., Sánchez, M., & Rivera, A. (2022). Tourism, Creativity, and Digital Transformation: New Opportunities. *Journal of Sustainable Tourism*.
- Purwanto, E., & Hidayat, R. (2023). Government roles in tourism management and digital transformation. *Government and Tourism Journal*.
- Putra, I. K., & Aryani, N. (2023). Community participation in digital tourism development. *Journal of Community Tourism*.
- Rahnama, M., & Saudale, F. (2022). Challenges and Opportunities of the Creative Economy in Tourism Development. *Journal of Tourism and Cultural Change*, 20(1), 1-18.

II

- Richards, G., & Wilson, J. (2020). Tourism, Creativity and Development. *Journal of Sustainable Tourism*, 28(4), 558-573.
- Santoro, G., & Coles, T. (2022). The role of creative industries in tourism development. *Journal of Cultural Economics*.
- Santos, R., Oliveira, L., & Costa, A. (2023). Digital Platforms and Community Engagement in Creative Tourism. *Journal of Cultural Economics*.
- Sigala, M. (2021). Social media and smart tourism: Towards sustainable tourism development. *Sustainability*, 13(3), 1234.
- UNCTAD. (2021). Creative Economy Outlook and Country Profiles. United Nations Conference on Trade and Development.
- Weaver, D. (2020). Sustainable Tourism: Theory and Practice. *Journal of Travel Research*, 59(1), 3-16.
- Yu, J., & Iorwerth, A. (2022). Challenges in implementing smart tourism technology: A systematic review. *Tourism Management Perspectives*, 47, 101119.
- Zhang, D., & Wang, H. (2023). AR and VR in tourism and creative industries: Opportunities and challenges. *Tourism Technology*.
- Zhang, D., & Wang, H. (2023). Augmented Reality and Virtual Reality in Tourism and Creative Industries. *Tourism Technology*.