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IMPROVING MATURITY LEVEL OF SMART TOURISM IN YOGYAKARTA CITY

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Abstract:
This study aims to evaluate the maturity level of smart tourism implementation in Yogyakarta City based on three main aspects, namely destination, amenities, and hospitality. This study used a mixed quantitative-qualitative approach. Data were collected through field observations and in-depth interviews with stakeholders from the Yogyakarta City Culture Office, Tourism Office, Development Planning Agency (BAPPEDA), Transportation Office, Fort Vredeburg Museum, and Sonobudoyo Museum. Eleven indicators across six sub-aspects were analyzed and scored on a scale of 1-5, and referring to the Ministry of Communication and Information Technology's smart city framework, to determine the maturity level into ad-hoc, initial, scattered, integrated, or smart. The results show that the overall maturity level of smart tourism in Yogyakarta City is at the scattered level with an aggregate score of 3.6 out of 5. The destination and amenities aspects each reached the integrated level (score of 4), while the hospitality aspect was at the scattered level (score of 3). The main strengths lie in cultural attractions, increased tourist visits, and the adoption of digital payments. The main challenges are fragmented system integration, particularly in public transportation services and tourism human resources.

Keywords: Amenities, Destination, Evaluation, Maturity Level, Smart Tourism

INTRODUCTION

Innovation in information and communication technology plays an important role in city management (EB et al., 2024). An extensive technology network facilitates the convergence of spatial elements such as location, people, and objects, which will become significant determinants in the formation of a city (Kolotouchkina & Seisdedos, 2018). The expansion of networks that shape the direction of urban development has led to the emergence of various concepts of digital technology-based urban development, one of which is the concept of a smart city. The concept of a smart city is part of a solution to the global problem of urbanization (Oktaria et al., 2017). According to Nijkamp (2014), the implementation of the smart city concept has become a key development agenda for numerous major cities worldwide. The implementation of smart cities represents a natural transformation that demonstrates the advancement of information and communication technology integrated into all aspects of sustainable urban development (Deakin, 2014). The Movement Towards 100 Smart Cities program, initiated by the Ministry of Communication and Digital Affairs in 2017, marked the beginning of smart city development in Indonesia.

This collaborative program between the Ministry of Communication and Digital Affairs, the Ministry of Home Affairs, the Ministry of Public Works and Public Housing, the National Development Planning Agency, and the Presidential Staff Office aims to guide local governments in developing a Smart City Master Plan to optimize the use of technology and local potential in regional development. In the guidebook for developing a Smart City Master Plan in Indonesia, the framework of a smart city consists of six dimensions that serve as a reference for districts and cities

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participating in the Movement Towards 100 Smart Cities. One of these six dimensions is smart branding, more commonly known as city branding (Rohman, 2020). Smart branding is a way of marketing a city to enhance its competitiveness by developing three elements: tourism, business, and the city's image. Yogyakarta City, as one of the national destinations known as the City of Tourism and Culture, has been joining the smart city movement since 2018.

According to Adminwarta (2021), Yogyakarta has attractions that lie in its rich culture, diverse tourism, and the creativity of its people in promoting its unique features to become something that is marketable or worth displaying to tourists visiting the city. Yogyakarta has become one of the national destinations because it is known as the City of Cultural Tourism. Smart tourism itself is an innovation in the tourism sector that utilizes information technology to integrate tourism activities (Bhinadi et al., 2021). Smart tourism is an evolution of the use of information and communication technology (ICT) in the tourism sector, which aims to create destinations that are efficient, sustainable, and capable of improving the quality of the tourist experience (Harmaen, 2024). As a sub-dimension of smart branding within the framework of Indonesia's smart city, smart tourism emphasizes the integration of data from various stakeholders, including infrastructure, government, and local communities (Gretzel et al., 2015).

The key principles of smart tourism include building a positive image, providing smart technology infrastructure, effective information management, optimizing resource distribution, and comprehensive integration to ensure efficiency in distributing economic benefits to local communities (Tukhliev & Muhamadiyev, 2015). The potential for an increase in the number of tourists in Yogyakarta City, but the low implementation of smart tourism, risks reducing competitiveness in the era of technology-based tourism. In this digital era, tourists rely on travel applications as an important means to facilitate their travels and make decisions in planning tourism activities. To overcome this challenge and ensure the effective and sustainable development of smart tourism, a deep understanding of the current level of maturity in smart tourism is necessary. The development of a smart city can be assessed using two main benchmarks, namely the quality of life benchmark and the maturity level in its development (Supangkat & Arman, 2018). Quality of life indicators serve to assess the results of various efforts made to improve the welfare of citizens, while maturity level indicators or benchmarks are used to assess a city's achievements in terms of efficiency, effectiveness, measurability, integration, and sustainability in providing services that can improve the quality of life of the community.

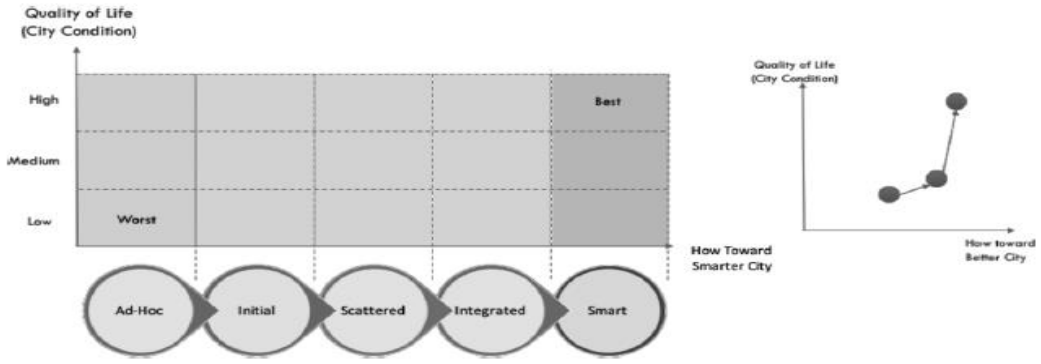

Figure 1. Graph showing the relationship between Smart City maturity level and quality of life (Supangkat & Arman, 2018)

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A maturity assessment will provide a clear picture of the level of maturity in the implementation of smart tourism, so that improvement strategies can be formulated appropriately. Yogyakarta, known as the City of Culture, has great tourism potential. However, to maintain its competitiveness in the digital age, the city needs to transform itself into a smart destination. A maturity level assessment is necessary to capture the current conditions and identify areas that require development. This study aims to measure the maturity of smart tourism in Yogyakarta, focusing on three key aspects: destination, amenities, and hospitality, as well as to provide recommendations for strategies to improve the maturity of smart tourism based on the findings of this study.

METHODS

This study employs a mixed quantitative-qualitative method. The quantitative method is used to answer the first research question, which is to measure the level of maturity of Smart Tourism. The qualitative method is utilized to answer the second question, which is to formulate strategies for improving the maturity of smart tourism in the context of a smart city in Yogyakarta. The indicators, variables, and operational definitions are employed to measure the level of smart tourism maturity in Yogyakarta, which can be seen in Table 1.

Table 1. Aspects, Sub-Aspects, Indicators, and Operational Definitions of Each Smart Tourism Variable

Aspect	Sub - Aspect	Indicators	Operational Definition
Destination	Tourist Attractions	Local cultural indicators (festivals, events) (Gilboa et al., 2014), (Atana, 2024), (Rohman, 2020)	Availability of local cultural activities, government support, and technology utilization
		Tourist visits (Imtiyas, 2022),(Atana, 2024), (Rohman, 2020), (Pramana, 2024)	Percentage increase in tourist visits compared to the previous year
		Layanan wisata yang dapat dipesan secara online (Imtiyas, 2022), (Atana, 2024), (Rohman, 2020)	Percentage of general recreational services that can be booked online
		Historical sites (Gilboa et al., 2014), (Rohman, 2020)	Availability of historical sites with government support and/or technology utilization
	Destination Viability	Clean tourist destinations (Gilboa et al., 2014), (Rohman, 2020)	Cleanliness of tourist destinations and/or the use of technology to support destination cleanliness
		Safe tourist destinations (Gilboa et al., 2014), (Rohman, 2020)	Safety of tourist destinations and/or the use of technology to support destination safety
Amenities	Accommodation	Hotel (Gilboa et al., 2014), (Rohman, 2020)	Availability of information supporting the existence of a hotel

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		Restaurant/eateries (Gilboa et al., 2014), (Rohman, 2020)	Availability of information supporting the existence of eateries
	Transportation	Public transportation (Gilboa et al., 2014), (Rohman, 2020)	The existence of public transportation that can reach tourist attractions and utilize technology
	Public Facilities	Financial facilities (Gilboa et al., 2014), (Rohman, 2020)	Financial services, particularly ATMs, are located within or around tourist areas.
Hospitality	Ease of communication with residents	Availability of tour guides and foreign language skills (Duman et al., 2017), (Rohman, 2020)	Availability of tour guides and the existence of an integrated service system and government support, as well as the use of technology to strengthen access to tourist information

Source: Literature Study, 2025

Table 2. Operational Definitions and Assessment Scores

Operational Definitions	Skor				
	1	2	3	4	5
Availability of local cultural activities, government support, and use of technology	Local cultural activities are very few (fewer than 2 events/year).	Cultural activities are available, but limited in number, although of reasonably good quality (3–11 events/year).	High frequency of cultural events (≥12 events/year) with government budget support	Regular cultural events (≥ 12 events/year) and the majority already utilize digital platforms for implementation and promotion.	Regular cultural events, integrated with digital technology, and accompanied by periodic evaluation and follow-up
Percentage increase in tourist visits compared to the previous year	No increase in tourist visits	Increase in visits <2%	Moderate increase in visitor numbers ≥2% - 6%	High increase in visitor numbers ≥6% - 10%	Very high increase in visits ≥10%
Percentage of general recreational services that can be booked online	≤20%	21 - 40%	41 – 60%	61 – 80%	≥ 81%
Availability of historical sites with	Historic sites are available	There are many historical sites, but the quality	The government or technology	Historical sites are managed with	The government, technology,

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government support and/or use of technology	but in limited numbers.	of their management is low.	supports historical sites.	government support and the use of technology.	and periodic evaluations support the management of historical sites.
The cleanliness of tourist destinations and/or the use of technology to support the cleanliness of tourist destinations	Only a few destinations have good cleanliness and basic facilities (e.g., trash bins).	Many destinations are clean.	Many destinations are clean with government support.	Many destinations are clean, supported by the government, and are beginning to utilize cleanliness technology.	Destination cleanliness is maintained, supported by the government and technology, and evaluated regularly.
Safety of tourist destinations and/or use of technology to support destination safety	Most destinations are unsafe (minimal CCTV or security personnel).	Many destinations have good safety levels.	Destinations are generally safe, and there is government support for safety.	The government and technology support destination safety, and evaluations are conducted.	Destinations are safe, utilize security technology, are supported by the government, and undergo continuous improvement.
Availability of information supporting the existence of lodging	The number of accommodations is very limited.	There are many accommodations.	There are many lodgings and government support for their existence.	There are many lodgings, supported by the government, and utilizing technology (e.g., lodging information applications).	Accommodations are growing rapidly, supported by the government, using technology, and there is continuous improvement in quality.
Availability of information supporting the existence of restaurants	The number of restaurants is small.	There are many restaurants.	Many restaurants rely on government support for their existence.	Many restaurants, supported by the government, and utilizing	Restaurants are growing rapidly, supported by the government,

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				information technology.	using technology, and continuously improving their quality.
The availability of public transportation that can reach tourist attractions and utilize technology	Public transportation that reaches tourist attractions is very limited	There is a considerable amount of public transportation that reaches tourist attractions	Public transportation that reaches tourist destinations is relatively abundant, and there is government support for the existence of public transportation that reaches tourist destinations	The government supports transportation to tourist destinations and utilizes information technology.	Public transportation access is very good, supported by technology, the government, and there is continuous improvement.
Financial services, particularly ATMs, are located within or around tourist areas.	There are relatively few financial facilities around tourist attractions	The number of financial facilities around tourist attractions is relatively high (presence of ATMs at tourist destinations)	There are many financial facilities, and they are supported by the government.	Financial facilities are plentiful, supported by the government, and utilize technology.	Financial facilities are comprehensive, supported by the government and technology, and continuously improved.
The availability of tour guides and the existence of an integrated service system and government support, as well as the use of technology to strengthen access to tourist information	Tourist attractions that provide tour guides are very few	Tourist attractions that provide tour guides are relatively numerous	The local government supports the availability of tour guides.	Tour guides are available, supported by the government, and service information utilizes technology.	Tour guides are widely available, supported by the government, utilize technology, and are continuously evaluated and improved.

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The next step after obtaining the data collection results is to obtain the data collection scoring results according to the classification in the indicator, and then calculate the smart tourism maturity level value using the following Smart Tourism Maturity Level Formula.

$$\Sigma \frac{(score\ 1 + score\ 2 + \ score\ 3 + \cdots + score\ n}{number\ of\ indicators\ in\ the\ sub - dimension}$$

After determining the smart tourism maturity level score, classification is performed based on the smart tourism maturity level score. The maturity level score is obtained from the Smart Tourism Maturity Level Score:

$$\text{percentage score of smart tourism indicator maturity level} * \text{the maximum maturity score of the smart tourism sub} - \text{dimension}$$

The percentage value for each level of smart city maturity in the above formula uses the theory of percentage maturity values achieved at each level as proposed by Zuhri & Nurhikmah (2015), while the maximum maturity level value per smart city dimension is obtained from the maximum value calculation from the previous formula (the formula for the maturity level smart city dimension).

Table 3. Maturity Level Scoring for Smart Tourism

Maturity Level	Score
Ad – hoc	1
Initial	1,05 – 2
Scattered	2,05 – 3
Integrated	3,05 4
Smart	4,05

After obtaining the results of the analysis of the maturity level of smart tourism in Yogyakarta City, a strategy was formulated to increase the maturity level of smart tourism in Yogyakarta City.

RESULT AND DISCUSSION

Maturity Level of Smart Tourism in Yogyakarta City. Based on the variables and indicators of smart tourism, each indicator was scored, and its maturity level was calculated, as shown in the following table.

Table 4. Indicators and Parameters of Smart Tourism Maturity Level in Yogyakarta City

Indicators	Parameters	Results	Score	Maturity Level
Local Cultural Activities	Availability of cultural activities and government support	Local cultural activities, whether in the form of festivals or events, receive support from the government, including the Yogyakarta City Tourism Office and the	4	*Integrated*

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		Yogyakarta City Culture Office. Utilization of technology in the form of social media promotion on Instagram, accessible at instagram.pariwisata.jogjakota and dinaskebudayankotajogja Collaboration in planning and innovation for the sustainability of activities		
Tourist Visits	Increase in the number of tourists	In 2024, there was an increase in the number of tourists at these 5 tourist attractions by 12%	5	*Smart*
Online bookable tourist services	The existence of technology and online booking services	4 out of 5 or 80% of tourist attractions have online booking services that can be accessed through applications and websites	4	*Integrated*
Historical Sites	Historical sites and the role of government, or the use of technology	The Yogyakarta Palace and Sonobudoyo Museum have utilized technology in the form of cashless payments and active use of social media. The Sonobudoyo Museum also has digital facilities and uses QR codes and computers to convey information and experiences to visitors.	4	*Integrated*
Clean Tourist Destinations	Cleanliness of tourist destinations	The five tourist destinations that were the subject of this study were well-maintained, with cleaning staff present.	3	*Scattered*
Safe Tourist Destinations	Tourist destination security	The five tourist destinations that were the subject of this study have CCTV and security personnel.	4	*Scattered*
Hotels	Use of technology and government support	Government support from the City of Yogyakarta in the form of training/certification programs for the tourism industry in Yogyakarta. The existence of Putri Jogja, a website related to the tourism industry center in Yogyakarta, that provides information	4	*Integrated*

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		about lodging locations in Yogyakarta		
Restaurant or Eatery	Use of technology and government support	The existence of Putri Jogja innovation, which is a website related to the tourism industry center in Yogyakarta, provides information about the locations of restaurants in Yogyakarta	4	*Integrated*
Public transport	The existence of public transportation	The Vredeburg Fortress Museum, Taman Pintar, and Gembira Loka are accessible by Trans Jogja, which is public transportation in Yogyakarta. Access to tourist attractions is also very good and easily accessible for visitors.	3	*Scattered*
Public Transportation	The existence of public transportation	Trans Jogja has an app that provides real-time information to visitors. Only Taman Pintar has an ATM in the tourist area. However, all tourist locations that are the subject of this study are covered by financial services in the form of ATMs (spatial analysis). In addition, both cash and non-cash payment systems are used in Yogyakarta.	5	*Smart*
Availability of tour guides	Availability of tour guides and government support	The five tourist destinations that were the subject of this study have tour guides. The availability of tour guides can guide both domestic and foreign tourists. The availability of guides who can guide tourists or guides who are on duty at each attraction, such as at Taman Pintar Yogyakarta.	3	*Scattered*
SMART TOURISM MATURITY LEVEL OF YOGYAKARTA CITY			**3,6**	***Scattered***

Source: Analysis Results, 2025

Based on an analysis of 11 indicators, the maturity level of smart tourism in Yogyakarta City is at the scattered level with an aggregate score of 3.6 on a scale of 5. It indicates that smart tourism

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initiatives are progressing reasonably well, but remain partial, not yet fully integrated across sectors, and heavily reliant on individual or institutional initiatives.

Evaluation of Each Aspect.

a. Destination Aspect. The destination aspect assesses the attractiveness and suitability of destinations. Local cultural activities (festivals and events) receive government support and good digital promotion (score 4). Tourist visits show a significant upward trend (average increase of 12% in 2024), driven by digital innovations such as virtual rides at the Sonobudoyo Museum (score 5). Most destinations (80%) have provided online ticket booking services (score 4). Challenges in the destination aspect include the uneven application of technology in historical destinations, cleanliness (score 3), and security (score 4), which still need to be better integrated into the centralized city system. Regulations pose a challenge in developing an integrated online ticket booking system.
b. Amenities Aspect. The amenities aspect assesses supporting facilities such as accommodation, transportation, and public facilities (ATMs). The accommodation sector (hotels and restaurants) has been highly adaptive to digital platforms and is supported by government innovation in the form of the "Putri Jogja" website as a tourism data center (score 4). Digital financial services (QRIS, e-wallet) have been widely adopted, making it the indicator with the highest score (5 - Smart). Public transportation (TransJogja) remains a weak point (score 3 - scattered). Although it has an app with real-time tracking, its integration with the overall tourism information system is still limited and has not become an effective solution for traffic congestion during peak season.
c. Hospitality Aspect. The hospitality aspect focuses on service quality and human resources. The availability of tour guides at each destination is adequate, but the digitization of services is still limited, and foreign language skills are uneven (score 3). The government has provided guidance and training, but these efforts need to be improved and integrated into digital platforms to reach more businesses.

Integrated Discussion of Findings. The findings confirm that the strength of Yogyakarta's tourism still relies on its strong cultural substance and physical assets, as reflected in the high score for the destination aspect. The adoption of technology, particularly by the private sector (amenities), also shows significant progress. However, the imbalance in development, especially in the hospitality and transportation aspects, indicates the fragmentation of the smart tourism ecosystem. Based on the perspective of Gretzel et al. (2015), smart tourism requires synergy between technology, experience, and governance. The current conditions in Yogyakarta show that the tourism experience is already strong, but technology and governance remain fragmented. Without mature digital system integration and strong inter-agency coordination, the city risks overtourism, which can reduce the quality of the tourism experience and threaten the sustainability of its branding as a comfortable cultural city (Heykal et al., 2024). Therefore, smart tourism is not only about digital innovation but also a crucial instrument for maintaining the sustainability of cultural destinations (Weltman et al., 2024). Based on the evaluation of all aspects, the development of smart tourism in Yogyakarta has reached a scattered level of maturity, with its main strengths in the destination and amenities aspects and relative weaknesses in the hospitality aspect. Therefore, the strategy to increase maturity in the next section will focus on strengthening collaboration, digitizing human resources, and integrating between sectors to support the city's image as a smart and sustainable cultural destination.

The results of the smart tourism evaluation of Yogyakarta City show that the development of smart tourism has not been balanced across all indicators. Indicators representing culture or culture-

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based activities have the highest scores. It may indicate that Yogyakarta City has long had a strong branding as a City of Culture. It is in line with the character of Yogyakarta City as a City of Culture. It indicates that Yogyakarta City's tourism is indeed strong in terms of branding, regardless of the digitalization that has been carried out. However, indicators related to public transportation and hospitality show lower values. Overall, the evaluation results indicate that the strength of Yogyakarta's tourism lies in its cultural substance and physical assets, while its main weaknesses lie in digital integration, technology-based tourism services, and human resource readiness. From the perspective of the smart tourism framework (Gretzel et al., 2015), smart tourism requires synergy between technology, experience, governance, and system integration. Yogyakarta's current condition shows that it has a strong experience, but technology and governance are still fragmented, so the smart tourism ecosystem is not yet complete.

Strategy for Increasing the Maturity Level of Smart Tourism in Yogyakarta. Based on these findings, the following strategic recommendations can be made:

1. Strengthening system integration by building an integrated platform that integrates ticket booking, event information, transportation, and accommodation, involving collaboration between the Yogyakarta City government, including the Tourism Office, Culture Office, Bappeda, Diskominfo, and Transportation Office.
2. Enhancing human resource capacity and hospitality by increasing training and certification for tour guides, including foreign language skills and digital utilization. Developing an online platform to connect tour guides with tourists.
3. Focus on smart mobility by improving the integration of TransJogja information with major tourism applications and developing smart parking solutions and real-time traffic management to overcome congestion in tourist areas.
4. Deepening Cultural Digitalization by not only promoting cultural events, but also developing technology-based (AR/VR) immersive cultural content and experiences to enrich tourism narratives.

CONCLUSION

The evaluation results of smart tourism in Yogyakarta show that the development of smart tourism has not been balanced across all indicators. Indicators representing culture or culture-based indicators have the highest scores. It may indicate that Yogyakarta has long had a strong branding as a City of Culture. It is in line with the character of Yogyakarta as a City of Culture. It indicates that Yogyakarta's tourism is indeed strong in terms of branding, regardless of the digitalization that has been carried out. The maturity level of smart tourism in Yogyakarta City is at the scattered stage. It is characterized by strengths in cultural attractions, increased tourist visits, and massive adoption of digital payments; weaknesses in the integration of the public transportation system with the tourism ecosystem and the capacity of tourism players that is not yet supported by uniform digitalization; and a gap between the strength of established cultural branding and an immature and unintegrated digital system, which requires a strategy to strengthen system integration that can be done by building an integrated platform to integrate ticket booking, event information, transportation, and accommodation involving collaboration between stakeholders.

To advance the proposed smart tourism strategy, it is recommended that Yogyakarta establish a dedicated cross-agency task force to coordinate and drive implementation. It should be accompanied by a detailed, phased roadmap that breaks down strategic goals into specific projects

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with clear timelines and performance indicators. Initiating pilot programs, such as an integrated booking platform or a smart parking system in key tourist zones, would allow for practical testing and refinement. Furthermore, success will depend on strengthening collaboration with private sector partners, including technology firms and tourism businesses, to co-develop innovative solutions like AR/VR cultural experiences. Securing sustainable funding through regional budgets and external grants will be essential, as will an ongoing commitment to training and capacity building for local guides and service providers. Finally, establishing a robust monitoring and evaluation framework using real-time tourism data will enable evidence-based adjustments and ensure the strategy remains responsive to visitor needs and technological opportunities.

REFERENCES

Adminwarta. (2021). Gencarkan Wisata Kota Yogya Melalui Table Top. https://warta.jogjakota.go.id/detail/index/14427

Atana, T. (2024). Peningkatan Maturitas Kota Kediri sebagai Kota Cerdas. Universitas Gadjah Mada.

Bhinadi, A., Nurwitasari, R., Shaumarli, A., & Astyka, G. (2021). Tourism Recovery Strategy Towards a New Normal in Yogyakarta 2020. 175, 242–247.

Deakin, M. (2014). Smart cities: the state-of-the-art and governance challenge. 1–16.

Duman, T., Ozbal, O., & Duerod, M. (2017). Journal of Destination Marketing & Management The role of a ff ective factors on brand resonance: Measuring customer-based brand equity for the Sarajevo brand. *Journal of Destination Marketing & Management, August*, 1–14. https://doi.org/10.1016/j.jdmm.2017.08.001

EB, G. A., Triajeng, P., & Handayani, T. (2024). Strategi Smart Branding dalam Pembangunan Smart City di Kabupaten Demak. *Interaksi: Jurnal Ilmu Komunikasi, 13*(2), 320–335. https://ejournal.undip.ac.id/index.php/interaksi

Gilboa, S., Jaffe, E. D., Vianelli, D., Pastore, A., & Herstein, R. (2014). A Summated Rating Scale for Measuring City Image. A summated rating scale for measuring city image. *CITIES, 44*(January), 50–59. https://doi.org/10.1016/j.cities.2015.01.002

Gretzel, U., Sigala, M., Xiang, Z., & Koo, C. (2015). Smart Tourism: Foundations and Developments. August. https://doi.org/10.1007/s12525-015-0196-8

Harmaen. (2024). Membangun Kota yang Berkelanjutan Kontribusi Smart Tourism terhadap Pertumbuhan Ekonomi Kota: Literature Review (Building a Sustainable City the Contribution of Smart Tourism to City Economic Growth: Literature Review). *Jurnal IPTEK, 8*(2), 25–35.

Heykal, M., Prasetya, S., & Harsanti, P. S. (2024). Pengaruh Kualitas Pelayanan terhadap Kepuasan Pelanggan pada Jasa Wisata (Open Trip) CV Tidung Island. *Jurnal Ekonomi Manajemen Akuntansi, 30*(1), 250-265. https://doi.org/10.59725/ema.v30i1.226

Imtiyas, S. (2022). Evaluasi Perkembangan Tingkat Maturitas Tiap Dimensi Smart City di Kota Surakarta Tahun 2018-2020.

Kolotouchkina, O., & Seisdedos, G. (2018). Place branding strategies in the context of new smart cities: Songdo IBD, Masdar and Skolkovo. In Place Branding and Public Diplomacy (pp. 115–124). Springer International Publishing. https://doi.org/https://doi.org/10.1057/s41254-017-0078-2

Oktaria, D., Suhardi, & Kurniawan, N. B. (2017). Smart City Services: A Systematic Literature Review. https://doi.org/10.1109/ICITSI.2017.8267944

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Pramana, S. (2024). *Model Kematangan Smart City Berbasis Kerangka CCSN*. Universitas Gadjah Mada.

Rohman, T. (2020). Penyusunan Model Pengukuran Dimensi Smart Branding pada Smart City di Indonesia.

Supangkat, S. H., & Arman, A. A. (2018). The Implementation of the Garuda Smart City Framework for Smart City Readiness Mapping in Indonesia. 4, 169–176.

Tukhliev, I. S., & Muhamadiyev, A. N. (2015). Smart Tourism Experience in Geo Information Systems. 501–504. https://doi.org/10.15863/TAS

Weltman, T., Sciacca, A., Hwang, Y.-H., & Schipani, S. (2024). Smart Tourism Ecosystem Development Readiness in Southeast Asia. 5(296). https://www.adb.org/publications/smart-tourism-ecosystem-southeast-asia

Zuhri, & Nurhikmah. (2015). Penyusunan Model Tingkat Kematangan (Maturity) Pada Smart City di Kota Besar di Indonesia dalam Bunga Rampai Infrastruktur TIK, Layanan Informasi dan Dinamika Sosial. Puslitbang Penyelenggaran Pos dan Informatika Kementrian Komunikasi dan Informatika.