

UTILIZATION OF ARTIFICIAL INTELLIGENCE FOR TOURISM VILLAGE SOCIAL MEDIA OPTIMIZATION: CASE STUDY OF TOURISM VILLAGE IN YOGYAKARTA

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Abstract

Social media management is an essential element in promoting tourism villages in the digital era. This study aims to analyze the social media condition of tourist villages in Yogyakarta, identify opportunities, and explore the potential for utilizing artificial intelligence (AI) in preparing media content to support the optimization of digital marketing strategies. This research uses a qualitative approach through observation, in-depth interviews with tourism village managers, and analysis of digital content produced by tourism villages. The research sample involved several tourist villages in Yogyakarta with inactive social media activities that needed to be optimized. The results show that although social media has been actively utilized, the visualization and copywriting techniques still need to be improved. In addition, tourism village managers need to understand and use the opportunities offered by AI in social media content creation. This study reveals that AI has great potential in assisting the creation of social media content that is more engaging, efficient, and appropriate to the target audience, thereby increasing the overall attractiveness of tourist villages. Utilizing AI in copywriting, graphic design, audience trend analysis, and content scheduling automation can help tourist villages overcome limited human resources. Implementing this technology is expected to expand the reach of digital promotion, strengthen the branding of tourist villages, and increase competitiveness in the tourism market.

Keywords: Artificial intelligence, social media, tourism village, AI in Tourism

Introduction

The development of digital technology has brought significant changes in various sectors, including tourism. This transformation opens up great opportunities for tourist destinations to utilize technology to expand market reach, increase interaction with tourists, and create more exciting and personalized tourism experiences. Social media is one of the most effective marketing tools used in the digital era. This platform allows destinations to promote their uniqueness to a global audience, create a strong image, and build direct relationships with potential travellers.

A tourism village is a form of community-based tourism that utilizes local wisdom to offer a unique experience to tourists. As part of sustainable tourism, kampung wisata not only contributes to the preservation of local culture but also supports the surrounding community's economy through community empowerment (Suansri, 2003). Amid global tourism competition, social media optimization is critical to maximizing this potential. Social media not only serves as a promotional tool but also as a means to strengthen the narrative, increase audience engagement, and create a positive image of the destination.

Yogyakarta, known as the City of Culture, has a unique charm combining rich history, art, and local traditions. The city has various tourist villages that offer natural beauty and environment and authentic cultural experiences. Tourist villages such as Prenggan, Sosromenduran, Cokrodiningratan, Dipowinatan, and Dewa Bronto present a unique combination of arts, crafts, and culinary specialties. Each village has its charm, from cultural attractions such as traditional ceremonies to daily activities that engage tourists in the creative process, such as art *workshops* and traditional food making.


The diversity of these attractions is a strength for tourism villages in Yogyakarta to compete at the national and international levels. However, for these attractions to reach a wider audience, an effective marketing strategy is needed. A social media marketing strategy allows tourism villages to create engaging visual content, such as photos and videos, that illustrate the uniqueness of each destination. A study by Xiang and Gretzel (2010) showed that social media has become a significant source of information for tourists when planning their trips. Attractive visual content not only helps attract the attention of potential travelers but also plays a vital role in shaping their perception of the destination.

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




INDONESIA

OVERVIEW OF THE ADOPTION AND USE OF CONNECTED DEVICES AND SERVICES

NOTE: SIGNIFICANT REVISIONS TO SOURCE DATA MEANS THAT FIGURES SHOWN HERE ARE **NOT COMPATIBLE** WITH PREVIOUS REPORTS. SEE THE IMPORTANT NOTES AT THE START OF THIS REPORT FOR DETAILS.





INDONESIA

TOTAL POPULATION	CELLULAR MOBILE CONNECTIONS	INDIVIDUALS USING THE INTERNET	SOCIAL MEDIA USER IDENTITIES
 <div style="display: flex; justify-content: center; align-items: center;"> <div style="margin-right: 10px;">we are social</div>  </div> <p style="font-size: 2em; font-weight: bold;">278.7</p> <p style="font-weight: bold;">MILLION</p> <p style="font-size: 0.8em;">YEAR-ON-YEAR CHANGE</p> <p style="font-weight: bold; color: #008000;">+0.8%</p> <p style="font-weight: bold; color: #008000;">+2.3 MILLION</p> <p style="font-size: 0.8em;">URBANISATION</p> <p style="font-weight: bold; color: #008000;">58.9%</p>	 <div style="display: flex; justify-content: center; align-items: center;"> <div style="margin-right: 10px;">Meltwater</div>  </div> <p style="font-size: 2em; font-weight: bold;">353.3</p> <p style="font-weight: bold;">MILLION</p> <p style="font-size: 0.8em;">YEAR-ON-YEAR CHANGE</p> <p style="font-weight: bold; color: #008000;">+0.7%</p> <p style="font-weight: bold; color: #008000;">+2.5 MILLION</p> <p style="font-size: 0.8em;">TOTAL vs. POPULATION</p> <p style="font-weight: bold; color: #008000;">126.8%</p>	 <div style="display: flex; justify-content: center; align-items: center;"> <div style="margin-right: 10px;">Meltwater</div>  </div> <p style="font-size: 2em; font-weight: bold;">185.3</p> <p style="font-weight: bold;">MILLION</p> <p style="font-size: 0.8em;">YEAR-ON-YEAR CHANGE</p> <p style="font-weight: bold; color: #008000;">+0.8%</p> <p style="font-weight: bold; color: #008000;">+1.5 MILLION</p> <p style="font-size: 0.8em;">TOTAL vs. POPULATION</p> <p style="font-weight: bold; color: #008000;">66.5%</p>	 <div style="display: flex; justify-content: center; align-items: center;"> <div style="margin-right: 10px;">we are social</div>  </div> <p style="font-size: 2em; font-weight: bold;">139.0</p> <p style="font-weight: bold;">MILLION</p> <p style="font-size: 0.8em;">YEAR-ON-YEAR CHANGE</p> <p style="font-weight: bold; color: #008000;">0%</p> <p style="font-weight: bold; color: #008000;">[UNCHANGED]</p> <p style="font-size: 0.8em;">TOTAL vs. POPULATION</p> <p style="font-weight: bold; color: #008000;">49.9%</p>

SOURCES: U.S. GOVERNMENT AUTHORITY; DATA INTELLIGENCE; ALL EUROPE; COUNTRY; HARVEST; ARIAN; EUROPEAN RESEARCH; SOCIAL MEDIA RESEARCH CENTER; ARIAN; ANALYSIS. **ADVISORY:** SOCIAL MEDIA USER IDENTITIES MAY NOT REPRESENT UNIQUE INDIVIDUALS. **COMPATIBILITY:** SOURCE CHANGES AND BASE REVISIONS. FIGURES ARE **NOT COMPATIBLE** WITH PREVIOUS REPORTS. SOCIAL SHARES MAY USE DIFFERENT SOURCES vs. COUNTRY AND REGIONAL DATA. SOURCE DATA, SOURCE DATA, SOURCE DATA. **IMPORTANT:** NEGATIVE VALUES MAY INDICATE SOURCE DATA CORRECTIONS AND MAY NOT REPRESENT REVISIONS IN THE RESEARCH. ANALYSIS, SOURCE DATA, SOURCE DATA. **COMPATIBILITY:** WITH PREVIOUS DATA. YOU WILL RECEIVE **COMPATIBLE** RESULTS. YOU WILL RECEIVE **COMPATIBLE** RESULTS.

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This study uses a qualitative approach with a focus on five tourist villages in Yogyakarta, namely Prenggan, Sosromenduran, Cokrodingratan, Dipowinatan, and Dewa Bronto, which were chosen because of their success in entering the top five of the Yogyakarta City Level Tourism Village Competition in 2023 (AMP, 2023) and the use of social media that has not been optimal in promotion.

This study aims to explore the utilization of artificial intelligence (AI) technology to overcome the obstacles faced in managing social media for tourism villages. Data were collected through observation of social media accounts of tourist villages, in-depth interviews with managers and tourist villages, and analysis of published digital content. The data collected is then thematically analyzed to identify challenges, opportunities, and potential for the application of AI in social media management. Data triangulation will be conducted to ensure the validity and reliability of the research results.

Results and Discussions

Social Media Condition of Tourism Villages in Yogyakarta

Social media has a significant role in promoting tourism (Setiawati & Pritalia, 2023). Social media management is one of the primary keys in promoting tourist villages in Yogyakarta, such as Prenggan, Sosromenduran, Cokrodingratan, Dipowinatan, and Dewa Bronto. Although all of these tourist villages actively use social media platforms such as Instagram, Facebook, and YouTube to promote their attractions and activities, their effectiveness can still be improved. Based on the analysis conducted, some fundamental issues related to content quality, consistency of uploads, and interaction with audiences need to be improved to maximize the potential of social media as an effective promotional tool.

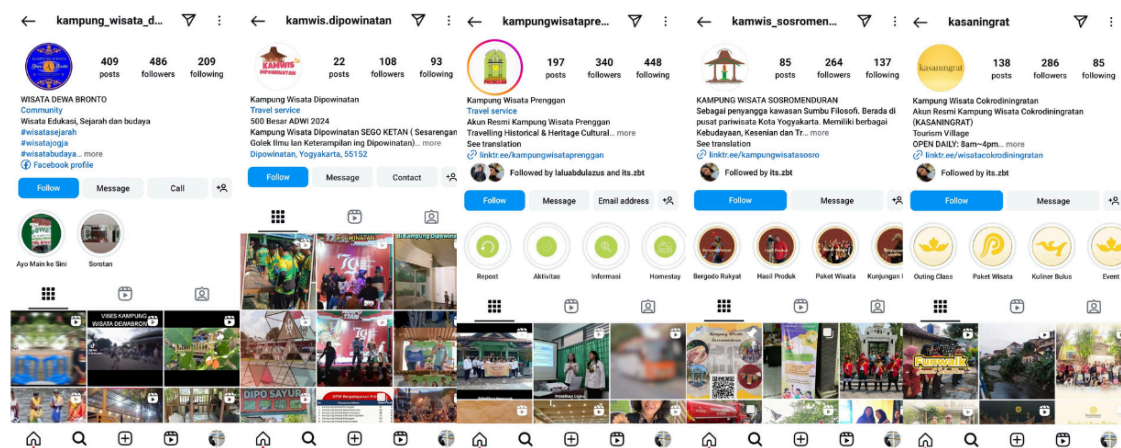


Figure 2
Instagram account of Dewa Bronto, Dipowinatan, Prenggan, Sosromenduran, Cokrodingratan tourist village

Prenggan Tourism Village has an attraction in the form of Kotagede's historical area, which is equipped with culinary specialties such as kipo and yangko, as well as cultural attractions and handicrafts that strengthen the village's identity. Despite having great potential to attract tourists, promotion on social media is still relatively static with content in the form of simple photos and videos that do not adequately illustrate the uniqueness of this village. The Instagram account created in August 2018 has a good bio, but the link needs to direct users to relevant information. The irregular frequency of uploads, unstructured feed layout, and non-interactive captions lead to low audience engagement. Monotonous and unplanned video editing is a major problem that reduces the effectiveness of promoting this tourism village on social media.

Sosromenduran Tourism Village is known as a village with urban appeal, utilizing its strategic location near Malioboro and Tugu Station. The village also offers a diversity of attractions, such as art and cultural events, as well as culinary specialties. However, despite actively posting content, the village needs help with consistency of uploads and the quality of narratives that lack depth. The Instagram account created in October 2022 shows a poorly organized feed layout and a need for highlights on the culinary specialties that are one of the main attractions. Although the account highlights are adequate, audience engagement through captions still needs to be improved, so promoting local cuisine and culture cannot be maximized, making Sosromenduran's potential less explored on social media.

Cokrodingratan Tourism Village highlights the uniqueness of traditional architecture and cultural arts, including the waste management program into creative products. However, the village's identity as a tourist destination still needs to be well-established on social media. The Instagram account created in September 2022 has a good bio and informative link. Still, the disorganized feed layout, uninteresting captions, and lack of interaction with the audience reduce the village's promotional potential. The

inconsistent frequency of uploads also hinders the village from building more substantial visibility in the digital world.

Dipowinatan Tourism Village has a rich history with essential sites such as Ndalem Jayadipuran and the former Purawisata. However, the content on social media needs to explore the depth of historical and cultural values. The Instagram account created in March 2024 has an uninformative bio and needs to be equipped with adequate highlights. Although the video quality is quite good, the excessive editing effects and inappropriate background detract from the content. The unattractive feed layout and lack of in-depth captions make it difficult for audiences to connect with the village's rich history. The inconsistent frequency of uploads is a significant problem that must be addressed to improve promotion effectiveness through social media.

Dewa Bronto Tourism Village blends history, culture and local cuisine—historical relics such as the Tomb of KH. Ahmad Dahlan and the Ndalem Pugeran Museum are essential assets. However, despite efforts to promote culinary specialties through photos and videos, content on social media is still lacking in terms of modern visualization and attractive copywriting. The Instagram account created in June 2021 has an uninformative bio and limited and uninteresting highlights. Disorganized feed layouts and captions that need to show more engagement with the audience detract from the village's social media appeal. The monotonous and uncreative editing of photos and videos is also a significant problem that must be fixed so that Dewa Bronto's social media can be more effective in attracting tourists.

The observations and analysis above can be classified into two essential elements in marketing/promotion using social media: visuals and copywriting. The combination of both can increase engagement and promotional effectiveness. The visual element relates to the visible aspects of the content and aims to attract attention instantly. Visuals are often the first attraction because the human brain processes images faster than text. These visual elements include pictures and photos, videos, graphics and illustrations, colours and layouts. The next element is copywriting, which deals with writing text to influence the audience, explain information, and encourage action from the audience. Elements in copywriting include headlines, captions, Call-to-Action, hashtags and storytelling. The social media of the five tourist villages above show that the visual elements still need to be improved. This can be seen from the lack of quality photos and videos and the feed layout, which still needs to be conceptualized in an attractive manner. Meanwhile, the copywriting element also appears to be not optimal, as seen from the choice of captions and narratives, which cannot increase audience engagement. In addition, the content management strategy also needs to be improved, one of which is by setting the frequency of uploads on social media so that later, it can maintain audience engagement.

The Potential of Artificial Intelligence in Social Media Optimization

Artificial intelligence (AI) is increasingly being applied in the tourism industry, particularly in marketing and customer service (Siddhi, 2021). It's potential to contribute to various tourism-related sectors, including travel, transportation, accommodation, and entertainment (Erul & Işın, 2023). The utilization of Artificial Intelligence (AI) in the social media management of tourist villages in Yogyakarta has excellent potential to increase promotional effectiveness, expand audience reach, and improve the quality of uploaded content. AI can be used to overcome some of the problems faced by tourist villages, such as inconsistency in uploads, lack of audience engagement, and lack of visual quality and exciting narratives. The following are some of the central potentials of AI that can be utilized to optimize the social media of tourist villages.

a. Content Creation Automation

AI can help tourism village managers **automate content creation**, especially in **copywriting**. By using **Natural Language Processing (NLP)**-based tools such as **Copy.ai**, **Jasper**, or **ChatGPT**, tourism village managers can produce promotional texts that are more persuasive, creative, and relevant to the target audience. **ChatGPT**, in particular, can be used to **write exciting captions**, **product or attraction descriptions**, and even **compose blog articles** or **story content** that introduces tourist villages' various attractions and culture in an appropriate and exciting language style. In addition, AI can also be used for **automated graphic design**. Tools such as **Canva** and **Adobe Sensei** allow tourism village managers to create attractive and professional visual designs without requiring advanced design skills. By utilizing this technology, tourist villages can optimize their visual promotions to attract audience attention with better design quality, which is an essential element in attracting visitors on social media. Using **ChatGPT** in text content creation and **Canva** in graphic design will create a **more efficient** and **organized** content **creation process**, allowing managers to produce more consistent and attractive content.

b. Content Scheduling Automation

AI can automate the content scheduling process, which is especially beneficial for tourist villages with limited human resources. Platforms such as Hootsuite or Buffer can be used to plan social media posts at the most practical times, even when managers are not directly active. For example, villages can schedule posts to be published at the most practical times, according to the habits of their audience. By automating content scheduling, villages can save time and effort, maintain consistency of posts, and ensure that content remains well-distributed despite time constraints.

c. Hashtag and Keyword Optimization

AI can also help tourism villages optimize appropriate hashtags and keywords to attract a wider audience. AI-based tools such as Hashtagify or RiteTag allow tourism village managers to find the most relevant and popular hashtags to use in their posts. Using the right hashtags can increase the reach of content on social media platforms, helping the kampung to be more easily found by audiences interested in similar themes.

d. Content Performance Measurement and Evaluation

One of the most significant advantages of AI is its ability to measure and evaluate content performance in a more in-depth and automated manner. Using AI-based analytics tools such as Google Analytics and Instagram Insights, tourism village managers can find metrics such as the number of clicks, interactions (likes, comments, shares), and conversion rates of each post. This allows them to know which content is most effective and why and adjust marketing strategies to achieve better results.

AI Implementation Strategy in Social Media Management of Tourism Village

To utilize the full potential of **Artificial Intelligence (AI)** in social media management of tourist villages in Yogyakarta, managers need to design and implement a structured and well-planned strategy. AI technology can improve efficiency in information provision, customer service, and travel planning (Harahap et al., 2023; Sudirjo et al., 2023). Effective implementation of AI can help overcome challenges faced by tourism villages, such as lack of audience engagement, consistency of posts, and low content quality. The following are strategic steps that can be taken to integrate AI in the social media promotion of tourism villages.

1. Training and Capacity Building for Managers

The first step in AI implementation was to provide basic training to the tourism village managers on using relevant AI tools and applications. This training includes an understanding of automated copywriting, AI-based graphic design, and how to use tools for audience analysis and content scheduling. This training can be done in stages, starting with introducing the most basic and easy-to-use AI tools such as ChatGPT. ChatGPT's impact on tourism is multifaceted, affecting content creation, visitor motivation, and cultural perception (Alyasiri et al., 2024) and Canva for graphic design or Copy.ai for automated promotional text generation. Once maintainers are familiar with these tools, they can be trained to use more complex technologies, such as audience analysis tools and AI-based hashtag optimization. Ongoing mentoring is also required to ensure stewards can maximize the optimal use of these tools.

2. Proper AI Tool Selection

After the training, managers need to choose AI-based tools that suit their needs. A wide selection of tools can help improve the effectiveness of kampung wisata social media, ranging from tools for content creation to scheduling and analytics. Some suggested tools include:

- a. ChatGPT is a content creation automation tool for articles, descriptions, or even interaction with audiences through chatbots. It can be used to write interesting captions, create blog content or articles relevant to the theme of the tourist village, and provide automatic responses to audiences who interact via DM or comments. ChatGPT can also help write more persuasive promotional texts matching the desired tone, increasing audience engagement.
- b. Copy.ai or Jasper are good options for copywriting automation, which allows managers to create attractive and persuasive promotional texts quickly.
- c. Canva Pro or Adobe Sensei for automated graphic design creation that can be used to create attractive and professional visual content without requiring high design skills.
- d. Hootsuite or Buffer for content scheduling automation and audience analysis allows managers to efficiently plan posts and ensure content is published at the optimal time.
- e. Hashtagify or RiteTag to optimize relevant hashtags, extend content reach, and increase visibility on social media.

The selection of the right tools is crucial to ensure that AI can be used efficiently without burdening the tourism village managers with too complex or inappropriate tools for their needs.

3. Integrating AI into the Content Creation Process

Once the right tool is selected, the next step is integrating AI into the content creation process. Tourism village managers can utilize AI-based tools to create engaging promotional text, generate graphic designs for social media posts, and automatically plan and schedule posts. For example, Dewa Bronto Tourism Village can use Copy.ai to write evocative descriptions of their culinary specialties and Canva to design images highlighting the dishes, making the visual and text content more engaging and professional. In addition to the tools mentioned, ChatGPT can be integrated into content creation to write engaging captions, create product or attraction descriptions, or even respond to audiences through comments or private messages (DMs). With ChatGPT's natural language generation capabilities, tourism village managers can more efficiently create text content that matches the desired style and tone and increase interaction with audiences more personalised and responsively. Tourism villages need to adjust the type of content created with audience preferences that have been analyzed using AI. Thus, each uploaded content will be more relevant and interesting to the intended audience, which in turn can increase engagement and interaction with their followers. AI enables more targeted, personalized, and consistent content, which is crucial in strengthening the presence of a tourism village on social media.

4. Collaboration with Technology Providers

Mentoring and training must involve various parties (Azus & Titi, 2024). To maximize the application of AI, tourist villages can collaborate with technology providers or agencies with expertise in digital marketing and AI. This collaboration can provide better technical support and accelerate the technology adoption process. Technology service providers can assist village managers in selecting the right tools, integrate them into existing systems, and provide more in-depth training on AI-based tools.

The use of Artificial Intelligence (AI) in the management of social media of tourist villages in Yogyakarta can have a significant impact in various aspects, such as Expanding the Reach of Digital Promotion, Strengthening the Branding and Image of Tourism Villages, Increasing Engagement and Interaction with Audiences, Operational Efficiency and Reducing Workload, Increasing Competitiveness in the Tourism Market, Personalizing the Tourist Experience.

Conclusions

This research shows that social media has a significant role in promoting tourism villages in Yogyakarta. However, the social media management of the analyzed tourism villages still needs various challenges, such as inconsistent uploads, suboptimal visual content quality, and low audience engagement. The utilization of artificial intelligence (AI) technology offers an innovative solution to overcome these challenges. AI can be used to improve visual and copywriting quality, automate content scheduling, and analyze audience data to maximize promotional effectiveness. AI implementation can improve operational efficiency and expand the reach of tourism villages. AI implementation strategies require a planned approach, including training social media managers to understand the effective use of this technology. This research provides a practical contribution to tourism village managers' design of AI-based digital marketing strategies. The next step is to provide intensive training and mentoring to ensure managers can optimally integrate this technology into social media management.

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