Leveraging TikTok for Digital Literacy in Information Systems to Support Smart Village Initiatives in Indonesia

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Abstract. The development of smart villages in Indonesia requires innovative strategies to enhance digital literacy among rural communities. TikTok, as one of the fastest-growing social media platforms worldwide, holds significant potential as an educational medium in the field of information technology. This study analyzes keyword trends related to the Information Systems program on TikTok to identify opportunities for supporting the smart campus concept within the smart village ecosystem. A mixed-methods approach was applied, combining qualitative techniques for content design and quantitative analysis to measure audience reach and user engagement. The findings reveal that certain keywords can attract substantial audience attention and stimulate greater interest in Information Systems topics. These insights suggest that strategic keyword selection on TikTok can serve as a catalyst for digital literacy, broaden access to higher education information, and accelerate rural digital transformation in Indonesia.

Keywords: digital literacy, information systems, TikTok, smart village, Indonesia

Introduction

Indonesia, as an archipelagic nation with abundant cultural diversity and natural resources, faces significant challenges in ensuring equitable access to technology and information in rural areas. The digital transformation occurring in urban areas often has not fully reached rural areas, thus the digital divide remains significant (Hombone, E. 2025; Onitsuka, K., Hidayat, A. R. T., & Huang, W. 2018). Efforts to build smart villages require not only the availability of infrastructure but also community empowerment through increased digital literacy relevant to local needs. In this context, social media platforms such as TikTok can be an innovative means of bridging the information gap, while simultaneously opening up opportunities for creative and accessible technology utilization by rural communities.

The development of smart villages in Indonesia requires innovative strategies to enhance digital literacy among rural communities (Yuliana, R. A., & Natalia, N., 2025). Many villages currently lack the capacity to optimally explore their local potential. TikTok, as one of the fastest-growing social media platforms worldwide, holds significant potential as an educational medium in the field of information technology (Feiyue, X., & Ali, A. Z. M. 2025). Meanwhile, TikTok content is widely viewed as having a negative impact on Indonesian citizens (Muslimin, M., Datunggu, S. A., & Lamakaraka, A. 2023). This study analyzes keyword trends related to the Information Systems program on TikTok to identify opportunities for supporting the smart campus concept within the smart village ecosystem.

Methods

A qualitative approach was used to create @katabahcom TikTok content and develop smart village architecture recommendations, while a quantitative approach was used to see the number of viewers and content link accessors as shown in Figure 1.

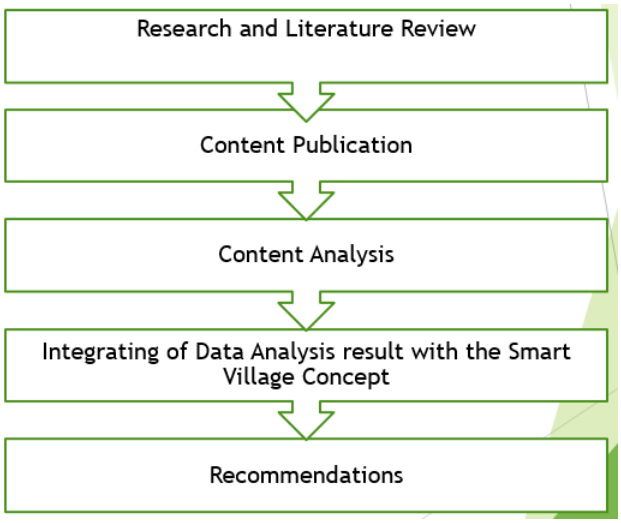

Figure 1. Research stages

Result and Discussion

The findings reveal that certain keywords can attract substantial audience attention and stimulate greater interest in Information Systems topics. The most searched keyword was "Data Analysis & Python," with 217 clicks. Figure 2 shows that the most watched keyword was "Information Systems Major," with 7,640 views. Based on these viewership figures, there is an opportunity for prospective students from rural areas far from urban campuses who want to continue their studies without having to visit a physical campus just to obtain registration information or consultations about study programs, but can simply explore online media.

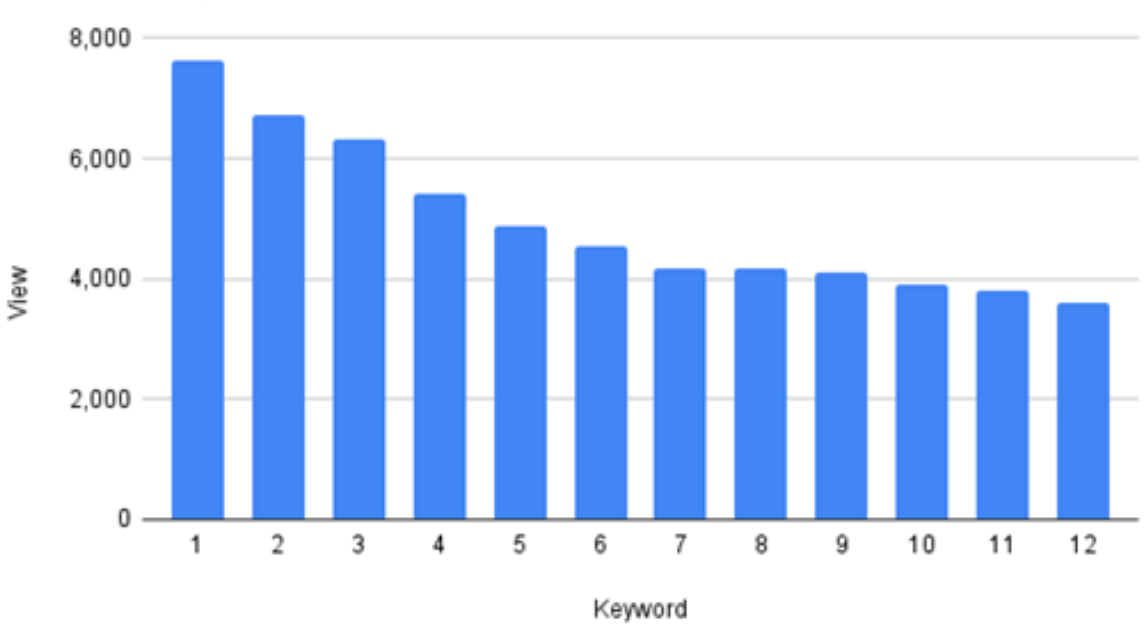

Figure 2. Top keywords

In implementing smart villages, residents can promote businesses based on local potential, such as bala-bala, wheat, or other foods. They must analyze food data (Rahmatillah, F., & Saefuloh, D. 2022, August) to determine which foods are most searched for/liked in their TikTok content. For example, if bala-bala is ranked first in searches, they can focus more on promoting bala-bala businesses. This top keyword analysis is one of three data analysis recommendations in this study.

Table 1 shows 6 of the 13 layers of smart village architecture (Alhari, M. I., & Fajrillah, A. A. N. 2022; Alim, F. F., Dewi, F., & Gumilang, S. F. S. 2024) proposed to support the successful implementation of smart villages, especially from the perspective of the Information Systems study program.

Table 1: Proposed smart village architecture

Network	Stable and fast internet connectivity is essential. This can take the form of wireless signal transmitter towers and Wi-Fi antennas that cover the entire village.
Social Media Platform	TikTok has been identified as a potential digital education platform. The platform is used to disseminate educational content related to information systems.
Educational Content	This content should be strategically designed using relevant keywords to attract the audience's attention and interest in the Information Systems topic.
Data & Analytics Layer	Data collection and analysis to measure the effectiveness of initiatives.
Smart Campus	This concept is integrated into the smart village ecosystem, where universities play a role in providing education and research. This concept supports expanding access to higher education information.
Rural Digital Transformation	The main goal of the initiative is to accelerate the strategic use of TikTok to improve digital literacy.

By implementing this architecture, villages can effectively utilize digital technology and social media platforms to improve digital literacy and accelerate digital transformation, in line with the vision of a "Smart Village" in Indonesia as illustrated in Figure 3.

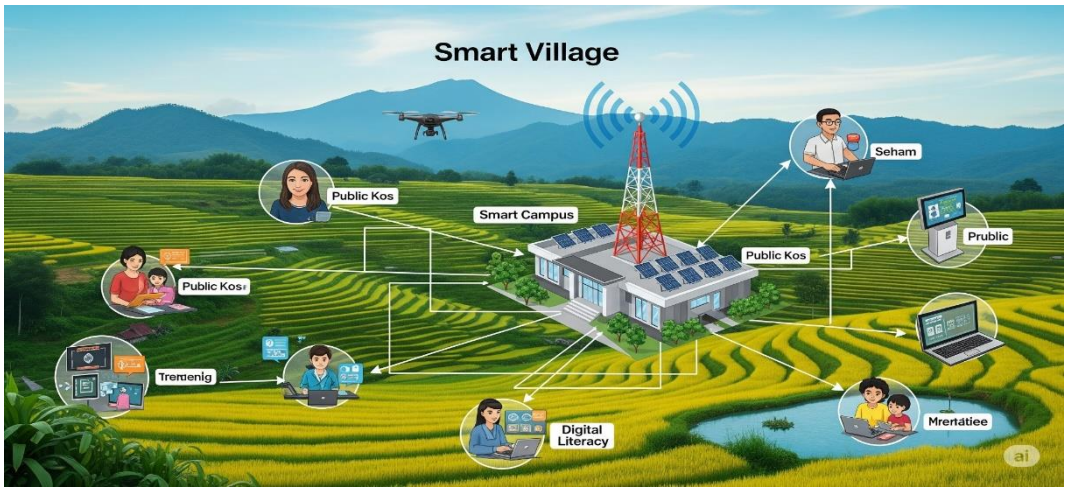

Figure 3. Illustration of Smart Village architecture
(Picture Created by Gemini)

Figure 3 shows an illustration of Smart Village recommendations in Cisewu Village, Garut Regency, and Pasirnanjung Village, Cimanggung District, Sumedang Regency, West Java. These two villages were prioritized for Smart Village research in this study, with the hope that they can serve as models for other villages.

In short, the implementation of smart villages can be described as students being able to access information via TikTok about information systems study programs, scholarships, and course materials. Villagers enjoy excellent digital facilities, work in a natural rural setting, access Wi-Fi from garden huts, access Wi-Fi from rice field huts. Villagers do not need to go to big cities to earn a good income and career because they can build businesses in their respective villages while enjoying the natural rural atmosphere. In this way, it can reduce urbanization to big cities because villagers can enjoy a prosperous life in their respective villages.

Conclusion

This research shows that utilizing TikTok as a promotional and educational medium has significant potential to support digital literacy in the Information Systems Study Program while accelerating the implementation of the smart village concept in Indonesia. Keyword trend analysis revealed that "Information Systems Department" and "Data Analysis & Python" were the topics with the highest audience reach and engagement, opening up strategic opportunities to reach prospective students, particularly those from rural areas with limited access to higher education information.

A combined qualitative and quantitative approach to content creation and evaluation proved effective in identifying audience interests based on demographics, age, region, and topic interests. These results confirm that selecting the right keywords not only increases content visibility but can also be a catalyst for expanding educational access, strengthening the role of smart campuses in the smart village ecosystem, and driving digital transformation in remote areas.

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