

DIGITAL ASPIRATIONS IN THE DYNAMICS OF INFRASTRUCTURE DEVELOPMENT PLANNING AND IMPLEMENTATION: A DEVELOPMENT SOCIOLOGY STUDY IN HADUYANG RATU VILLAGE, CENTRAL LAMPUNG, INDONESIA

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Abstract

Keywords:

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Digital technological development has created new opportunities for communities to express their aspirations and participate in infrastructure development. From a development sociology perspective, digital participation is associated with information transparency, power relations, social representation, and the distribution of development benefits. This study aims to analyze the role of digital aspirations in road infrastructure planning and implementation, using Haduyang Ratu Village, Central Lampung, as its analytical context. The study employs a qualitative library research approach and thematic content analysis of scholarly journal articles published between 2021 and 2026 concerning community participation, digital governance, and rural development. The literature synthesis indicates that digital technology can expand communication between communities and government, facilitate the communication of infrastructure needs, and strengthen opportunities for public oversight. However, its effectiveness depends on institutional capacity, digital literacy, information transparency, and mechanisms for responding to public input. Digitalization may also create representation problems when people with limited technological access lack alternative participation channels. This article proposes a conceptual framework linking public aspirations, priority setting, infrastructure implementation, and accountability. As the study relies on secondary sources, it does not present empirical findings about actual practices in Haduyang Ratu Village.

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INTRODUCTION

Road infrastructure development is a crucial component of rural development because it is closely associated with population mobility, the distribution of agricultural and other productive outputs, access to essential services, and the expansion of economic activities. Adequate road infrastructure facilitates connectivity between residential areas and community activity centres. Conversely, inadequate infrastructure can constrain social and economic activities. Road development should therefore be understood not merely as a physical construction project but also as a social process shaped by community needs, competing interests, and societal well-being (Mayora et al. 2025).

From the perspective of development sociology, development processes are closely related to changes in social structures, resource distribution, power relations, and community involvement in decision-making. Development should not be assessed solely in terms of its physical outputs but also in terms of how priorities are established and benefits are distributed. Community participation is essential because local residents possess contextual knowledge of their environmental needs and the constraints they encounter in their everyday lives (Thamrin et al. 2026).

Advances in information and communication technologies have transformed patterns of interaction between communities and government institutions. The expression of public aspirations, which was traditionally conveyed primarily through deliberative forums and direct communication, can now be complemented by social media, digital messaging groups, and online complaint platforms. These technologies enable communities to submit proposals, exchange information about infrastructure needs, and monitor developments in public policy (Azizah et al. 2025).

Manoby et al. (2021) argue that the development of digital villages requires strengthened human resource capacity and institutional capabilities to ensure that technology contributes to rural resilience. Digitalisation, therefore, should not be understood merely as the provision of technological devices and network infrastructure. Rather, it must also account for the capacity of communities and local governments to use technology to improve the quality of governance (Manoby et al. 2021).

In the context of public participation, Abas et al. (2023) identify three key dimensions of participation in local government planning and decision-making: access to information, consultation, and active participation. These dimensions demonstrate that public participation extends beyond the opportunity to express opinions; it also involves meaningful engagement in decision-making processes (Abas et al. 2023).

Nevertheless, digital participation does not automatically lead to more democratic decision-making. Digital literacy, internet access, educational attainment, and social position can influence individuals' opportunities to articulate their aspirations. Groups that are more active in digital spaces may become more visible, whereas community members with limited access may encounter barriers to expressing their needs and concerns.

Sharma, Kar, and Gupta (2024) highlight the importance of the relationship between digital citizen empowerment, the quality of participation, and accountability mechanisms in e-government. Their perspective reinforces the argument that technological solutions must be supported by institutional mechanisms that enable

citizens to understand how their aspirations are received, considered, and addressed (Sharma, Kar, and Gupta 2024).

These issues are particularly significant in road infrastructure development because the determination of priorities involves diverse and sometimes competing community needs. Digital channels can facilitate the communication of information about road conditions and infrastructure deficiencies. However, development decisions must still take into account the urgency of identified needs, access to essential services, public benefits, and resource availability (Harsono et al. 2025).

Haduyang Ratu Village in Central Lampung, Indonesia, serves as the contextual setting for this article's conceptual examination of the relationship between digital aspirations and road infrastructure development. The article does not assume that residents of the village have already adopted particular digital communication channels or that the local government has implemented specific participatory mechanisms. Instead, the discussion draws on the scientific literature to develop an analytical framework that can inform subsequent empirical research.

The novelty of this article lies in its integration of digital aspirations with development sociology, particularly through an examination of power relations, social representation, priority-setting processes, and accountability in road infrastructure development. Accordingly, the analysis goes beyond viewing technology merely as a communication tool and instead examines the social processes that determine whether community aspirations are meaningfully considered in development decisions.

This article aims to analyse the role of digital aspirations in road infrastructure planning and implementation, identify the social and institutional factors influencing digital participation, and develop a conceptual framework for promoting more inclusive and accountable development.

LITERATURE REVIEW

Development Sociology and Road Infrastructure

Development sociology conceptualises development as a process of social change involving interactions among communities, governments, institutions, and the distribution of resources. From this perspective, road infrastructure is not merely a means of transportation but also a structural component that shapes mobility, access to public services, economic opportunities, and social relations within communities (Iskandar et al. 2024).

Road development has a distributive dimension because the benefits of infrastructure may vary according to geographical location and community needs. Consequently, the prioritisation of road development requires not only technical assessments but also social considerations. Governments need to take residents' needs into account, while communities can provide information about road conditions and the functions that roads serve in their everyday lives (Putri et al. 2026).

Participation is essential because development processes that rely exclusively on administrative decisions risk overlooking people's lived experiences. Within the framework of development sociology, the quality of development can be assessed in terms of procedural transparency, opportunities for citizens to influence decisions, the equitable distribution of benefits, and government accountability (Nasyirudin 2025).

Digital Aspirations and Community Participation

Digital aspirations are defined as the expression of community proposals, needs, criticisms, complaints, or expectations through technology-based digital channels. In the context of road development, these may conceptually take the form of reports on road conditions, requests for repairs, proposals for infrastructure development, or feedback on the implementation of construction projects (Ramdhaniawan and Gunawan 2026).

Shin et al. explain that digital participation tools can strengthen information flows from communities to government institutions. However, insufficient dissemination of information regarding monitoring and evaluation may constrain the accountability of these participatory processes. Accordingly, technology should support two-way communication rather than merely facilitate the submission of public aspirations (Zein and Septiani 2024). Digital aspirations can serve communicative, documentary, and social oversight functions. Nevertheless, the effectiveness of participation cannot be assessed solely by the number of messages or proposals received. Mechanisms are needed to record, verify, consider, and follow up on the aspirations expressed by community members.

Digital Governance and Accountability

Digital governance refers to the use of information technology to support public services, information provision, and interactions between government institutions and communities. In village governance, technology has the potential to broaden residents' access to development-related information and provide additional channels of communication. Research on local governments' adoption of open government technologies in Indonesia indicates that the use of digital platforms is influenced by technological, organisational, managerial, and institutional environmental factors. Therefore, the availability of technology alone is insufficient to guarantee effective participation (Adnan, Hidayanto, and Kurnia 2021).

Accountability in road development encompasses information transparency, clearly defined responsibilities, explanations of priority-setting decisions, and feedback on community aspirations. These mechanisms help connect digital communication with formal processes of development planning and implementation.

The Digital Divide and Equitable Representation

The digital divide refers to disparities in access to, capabilities for, and opportunities to use digital technologies. Such disparities may be associated with network availability, device ownership, digital literacy, economic circumstances, and social characteristics. Reissig, Stoinescu, and Mack demonstrate that information technology competencies, user characteristics, external support, and technological infrastructure influence the successful adoption of e-government services among farmers. This perspective is relevant to understanding why technological access must be considered alongside people's capacity to use digital services effectively (Redhana 2024).

In road development participation, digital inequalities may influence which groups can express their aspirations more readily than others. Consequently, digital channels should be complemented by conventional mechanisms, such as community deliberative forums and direct communication with village authorities. Equitable representation does

not mean that every aspiration must be accepted; rather, every social group should have a reasonable opportunity to articulate its needs. Priority-setting should be based on transparent criteria rather than solely on the popularity of particular proposals or the intensity of digital communication (Rusmanto et al. 2025).

Participation and Rural Development

Community participation is a fundamental component of rural development because residents possess local knowledge and have a direct stake in development outcomes. Participation can strengthen the legitimacy of decisions, improve understanding of public needs, and create opportunities for communities to exercise oversight (Kaseng 2023).

Studies examining the relationship between community participation, good governance, and village service performance in Indonesia indicate that participation and governance quality are relevant dimensions of village administration. Accordingly, digital aspirations should be analysed as one of the mechanisms that can complement and strengthen interactions between government institutions and residents (Tohawi 2025).

Nevertheless, digital participation must be situated within a broader institutional framework. Aspirations submitted through digital channels need to be connected to planning, budgeting, implementation, and evaluation processes. Without such linkages, participation risks remaining an informal form of communication without meaningful influence on development decisions.

RESEARCH METHODS

This study adopts a qualitative approach using a literature review (*library research*) design. This method was selected because the study aims to develop a conceptual analysis based on written sources rather than to assess the actual conditions of the community through field data collection.

The primary sources consist of scholarly journal articles published between 2021 and 2026 that are relevant to digital aspirations, community participation, governance, rural development, and infrastructure planning. Additional sources, including relevant legislation concerning villages and community participation, may be used to establish the normative framework of the study.

The literature was selected based on thematic relevance, the verifiability of publication details, year of publication, and the availability of bibliographic information. SINTA accreditation status and Scopus indexing were checked against official journal information or relevant databases. Articles whose indexing status could not be verified were not classified as indexed publications.

The analysis employed thematic content analysis through four stages. *First*, the principal ideas presented in each source were identified. *Second*, these ideas were organised into five thematic categories: digital participation, governance, the digital divide, power relations, and accountability. *Third*, similarities and differences in the arguments presented across the sources were compared. *Fourth*, a conceptual synthesis was developed to examine the implications of these themes for road development planning and implementation.

This study did not involve interviews, observations, or the collection of field documentation. Accordingly, Haduyang Ratu Village was used as an analytical context rather than as a research site with empirically verified findings. The findings are

therefore limited to the synthesis of the literature and its associated conceptual implications.

RESULTS AND DISCUSSION

Digital Aspirations as an Expansion of Participatory Spaces

The synthesis of the literature indicates that digital technologies can expand communication channels between communities and government institutions. Conceptually, community members can submit proposals, lodge complaints, and share information about infrastructure needs through digital media. Manoby et al. (2021) emphasise the importance of human resource capacity and institutional capabilities in the development of digital villages. This perspective highlights the need to strengthen the capacities of both communities and local governments to ensure that technology contributes meaningfully to village governance.

In road infrastructure development, digital aspirations have the potential to provide government institutions with an additional source of information. However, the information submitted must still be verified and assessed in light of technical requirements and the broader interests of the community.

From the perspective of development sociology, the expansion of communication channels does not automatically eliminate power inequalities. The extent to which public aspirations influence decisions continues to depend on opportunities for community participation, government transparency, and the mechanisms linking public proposals to decision-making processes (Djafar and AP 2024).

The Relationship Between Digital Aspirations and Road Development Planning

Development planning involves identifying needs, establishing priorities, formulating programmes, and adjusting plans to available resources. Community aspirations can provide important input into this process, but they should not constitute the sole basis for decision-making (Diatmika and Rahayu 2022).

The study by Abas et al. (2023) identifies access to information, consultation, and active participation as important dimensions of public planning. These three dimensions demonstrate that participatory processes should enable communities to understand development plans, articulate their needs, and influence decision-making (Abas et al. 2023).

In the context of Haduyang Ratu Village, this framework can be used to conceptually examine how digital aspirations should be connected to community deliberations and development planning. Proposals submitted through digital channels require clear procedures for documentation and follow-up. Road development priorities should also take into account the severity of identified needs, infrastructure conditions, access to essential services, public benefits, and the equitable distribution of resources. Consequently, the volume of digital submissions cannot serve as the sole indicator of development urgency.

Digital Aspirations in Development Implementation and Oversight

Community aspirations remain relevant even after the planning stage has been completed. During road construction, transparent information concerning development programmes, implementation schedules, project locations, and complaint mechanisms can help residents understand the progress of ongoing activities. Shin et al. emphasise the importance of digital participation tools that facilitate information flows while also supporting the dissemination of monitoring and evaluation information. This perspective suggests that digital participation should not merely provide channels for submitting proposals but should also enable communities to obtain information about how their submissions are addressed (Sari and Sh 2024).

Community oversight can help identify implementation-related problems and provide input for subsequent evaluation. Nevertheless, digitally submitted aspirations still require verification and appropriate action by the responsible authorities. From a development sociology perspective, interactions between communities and government institutions during implementation constitute an integral component of social accountability. Clear procedures and accessible information can strengthen public trust, whereas the absence of follow-up mechanisms can undermine the substantive value of participation.

The Digital Divide and Community Representation

Digital participation faces challenges arising from disparities in technological access and users' digital capabilities. Residents with internet access and adequate digital skills may find it easier to communicate their aspirations, whereas other groups may require alternative channels. Reissig demonstrate that technological competencies and enabling conditions influence the use of e-government services. This perspective underscores the importance of considering users' capabilities rather than focusing exclusively on platform availability (Fazil and Maryam 2026).

In road infrastructure development, the digital divide may affect the representation of community needs. Accordingly, local governments should provide diverse participation mechanisms, including face-to-face deliberations and direct submissions of public aspirations. Equitable representation requires development decisions to take the needs of the broader community into account. Government institutions should not prioritise proposals solely because they are expressed more frequently in digital spaces; instead, priorities should be determined through transparent criteria based on demonstrated needs and anticipated public benefits (Sentanu, Tirani, and Pradono 2023).

Accountability and the Integration of Digital Aspirations into Village Governance

Digital aspirations become more meaningful when they are connected to institutional mechanisms. Government institutions need procedures for receiving proposals, verifying information, assessing priorities, and providing feedback to the community. Sharma et al. (2024) highlight the importance of accountability in the relationship between digital empowerment and the quality of participation. Meanwhile, research on the adoption of open government technologies in Indonesia emphasises the role of organisational and managerial factors in using technology to improve access to information and public participation (Wibawa, AP, and Wibawa 2026).

Drawing on these perspectives, the governance of digital aspirations can be structured around the documentation of proposals, verification of needs, explanation of development priorities, transparency during implementation, and evaluation of development outcomes. These mechanisms help connect community communication with formal governmental processes. In Haduyang Ratu Village, this framework can provide a conceptual basis for examining how digital aspirations might be incorporated into road development governance. However, the effectiveness of such mechanisms in this particular setting cannot be established without empirical evidence.

A Conceptual Model of Digital Aspirations in Road Infrastructure Development

Based on the literature synthesis, the relationship between digital aspirations and road infrastructure development can be formulated as a five-stage process.

1. First, the articulation of aspirations involves providing community members with opportunities to express their needs through both digital and conventional channels.
2. Second, documentation and verification involve recording the information submitted and assessing the needs identified.
3. Third, integration into development planning involves considering community aspirations in relation to the urgency of identified needs, infrastructure conditions, public benefits, and resource availability.
4. Fourth, implementation and oversight involve providing information about development activities and enabling community members to offer feedback throughout the implementation process.
5. Fifth, evaluation and feedback involve communicating the status of proposals, subsequent actions, and development outcomes to the community.

This model demonstrates that the effectiveness of digital participation depends on the connections between community communication, institutional arrangements, and decision-making processes. Technology constitutes only one of the elements supporting this broader process. Theoretically, this model extends the discussion of development sociology by positioning digital aspirations within the social relations and power dynamics that shape the distribution of public resources. Participatory road development should not be defined merely by the number of proposals received. Rather, it requires transparent decision-making processes, equitable opportunities for participation, and clear accountability mechanisms.

CONCLUSION

Based on the literature review, digital aspirations have the potential to expand communication between communities and government institutions, promote information transparency, and strengthen opportunities for public oversight in road infrastructure development. From the perspective of development sociology, digital aspirations are closely associated with power relations, social representation, the distribution of benefits, and the quality of governance. The effectiveness of digital aspirations depends not only on the availability of technology but also on digital literacy, institutional capacity, follow-up mechanisms, and transparency in decision-making processes. Therefore, digital participation should be complemented by conventional channels to ensure that community members with varying levels of technological access have equitable

opportunities to participate. This article develops a conceptual framework linking the articulation of public aspirations, priority-setting, development implementation, oversight, and evaluation. In the context of Haduyang Ratu Village, Central Lampung, this framework can provide an analytical foundation for subsequent research. However, because the study relies exclusively on the literature, it does not establish that any particular practices or impacts have been empirically demonstrated to occur in the village.

Village governments should generally develop mechanisms for managing public aspirations that connect digital channels with formal planning processes. Each submission should be documented, verified, and followed by information regarding the actions taken in response. The criteria used to determine road development priorities should also be communicated transparently. Digital participation should be complemented by face-to-face deliberations and alternative channels for submitting aspirations to ensure that community members with limited access to technology remain adequately represented. For future researchers, this conceptual framework can serve as a basis for empirical investigations into digital participation practices in road infrastructure development in Haduyang Ratu Village. Further research could examine the communication channels used, the relationship between public aspirations and development planning, and the responsiveness and accountability of village government.

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