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RESEARCH ARTICLE

Community Perception and Digital Accountability in Village Governance: The Case of JALANTOL Application in Jatirenggo Village

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Abstract: This study analyzes public perception and digital accountability in the implementation of the JALANTOL application as a village e-governance innovation. Using a mixed method of sequential explanatory with 95 respondents and non-participatory observation, this study integrates the Technology Acceptance Model (TAM) and the UTAUT framework to measure affective, cognitive, and conative responses. The results showed good perceptions of the application's digital accountability, perceived usefulness (mean = 3.02), ease of use (mean = 2.78), and service relevance (mean = 3.05). Younger respondents showed stronger acceptance, while older groups faced usability barriers. This study also found that JALANTOL's real-time complaint feature enables participatory digital accountability by encouraging transparency and traceable public monitoring. These findings suggest that effective village e-services are not only based on a sophisticated set of technologies, but also community alignment, inclusive design, and trust-based participation. This study contributes to the understanding of micro-level e-government adoption and highlights the need to embed digital accountability in the user experience.

Keywords:
E-government, Public Perception, Digital Accountability, Technology Acceptance.

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Annisa Miftahul Jannah, has been interested in social science since high school and majored in Public Administration. With plans to graduate in 2025. In addition, she is active in on- and off-campus activities. Apart from being a student, she does work activities as a freelancer model which makes her have to be good at managing time.

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1. Introduction

Digital transformation has become a strategic priority for the Indonesian government, especially after the issuance of Presidential Regulation Number 95 of 2018 concerning the Electronic-Based Government System (SPBE) which mandates all public institutions, including village governments, to consolidate public services into one integrated digital platform to encourage transparency, efficiency, and accountability (Admin, 2019). SPBE is not limited to digital applications alone, but includes electronic data management, cross-sector interactions (G2G, G2C, G2B, G2E), and an integrated governance framework (Jumhur et al., 2023). The need for digitalization at the village level has grown stronger after the enactment of Law Number 3 of 2024 which emphasizes the provision of services and accountability through online-based mechanisms, including transparent reporting, traceable financial records, and easily accessible service documentation. Globally, the UNDP Digital Strategy 2022–2025 is reflected in an inclusive and accountable digital ecosystem as the basis for digital governance ethics that emphasizes the importance of auditability, citizen participation, and integrity in local administration (Solomon, 2023; Muhaimin et al., 2024).

Seeing this paradigm shift, Jatirenggo Village in Lamongan Regency launched the JALANTOL (Jatirenggo Integrated Online Service) application on September 4, 2022. This digital-based platform in the form of a web and Android makes it easier for the public to access population administration, submit complaints, register MSMEs and access village information without using conventional mechanisms. This reflects the implementation of SPBE at the local level and is a pioneer in grassroots-driven digital reform efforts. Among the 29 villages in Glagah District, Jatirenggo is the only village government that has adopted a digital-based service mechanism (Agustina & Widiyarta, 2023). The application developed by the Jatirenggo village government is a real implication of how digital innovation can help to untangle bureaucratic complexity, provide efficiency in transaction costs and expand public oversight if it is in line with citizen needs and institutional capacity (Kartika & Oktariyanda, 2022; Afrilia et al., 2024).

Although it has been empirically developed, the trajectory of research on scholarly work on scientific literature of digital innovation at the village level is extremely limited. Research in e-government in Indonesia is more focused on the development of city and district governments. Meanwhile, in the rural setting with complexity of problems such as the digital divide, outdated culture of communications, and weaker institutional setup, it has not been a place for the majority of researchers (Muliawaty & Framesthi, 2020; Jumhur et al., 2023). While prior studies such as Agustina & Widiyarta (2023) have already examined the adoption of JALANTOL with reference to the innovation characteristics (i.e., relative advantage and observability), such implementations in public perception are limited within the framework of a psychometric approach with affective satisfaction and behavioral intentions. The author recognizes a trend towards technical level research of utility in a vacuum but fewer enablers of digital accountability. As noted by Mahmud et al. (2024) that computer systems are more transparent but need to be looked at in terms of perceived access and even how they are going to make audits at the community level.

This study addresses this gap by integrating two main concerns: (1) public perception of JALANTOL in terms of usability, benefits, and relevance, and (2) the application's contribution to strengthening digital accountability at the village level. Based on the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), this study investigates how user expectations, efforts, and social influences shape perceptions and use of sustainable village e-government platforms (Rogers et al., 2014; Yuhefizar et al., 2024). In addition to assessing user attitudes, this study also examines the existence of participatory accountability mechanisms in the application, such as complaint submission, feedback, and traceable administrative workflows.

Based on the above research, this study aims to (1) analyze the perceptions of Jatirenggo residents towards the JALANTOL application in terms of ease of use, usefulness, and suitability for their administrative needs, and (2) evaluate the extent to which the JALANTOL application promotes digital accountability. This

study seeks to contribute empirically and conceptually to the discourse on village-level digital governance by offering a nuanced understanding of how technology is experienced, interpreted, and institutionalized at the grassroots level. This study also aims to inform the replication of inclusive and responsive digital service models for communities in rural areas.

2. Methods

This study uses a mixed methods approach with an explanatory sequential design as explained by Creswell & Plano Clark (2018). Data collection and analysis were carried out in stages, starting from quantitative data, then continued with qualitative data, which functioned to strengthen and deepen understanding of the initial findings. This approach allows a more extended vision for opinions of the community concerning JALANTOL Application in the context of utilizing village digital services.

Quantitative data were obtained using a closed-ended questionnaire on a 4-point Likert scale derived from Diffusion of Innovation theory constructs (Rogers et al., 2014) and Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003). This instrument measures dimensions of user attitudes such as affective (emotional satisfaction), cognitive (perceived ease and usefulness), and conative (continued use intention). Meanwhile, qualitative data were obtained through systematic non-participatory observation, an observation technique in which researchers are not directly involved in user activities, but passively and objectively observe the interaction between the community and the JALANTOL Application. This observation was directed at several areas, including: the interface and flow of usage of the application, as well as the reactivity of the application's response to administrative questions. This observation was intended to complement and explain the questionnaire results, and also to cover aspects of behavior that were beyond the scope of the written questionnaire. The integration of the two types of data was carried out using a methodological triangulation approach, where the results of the observations were used to confirm, expand, or clarify the findings from the quantitative data. This model allows for comprehensive analysis in terms of both general patterns (quantitative) and depth of social meaning (qualitative).

The study population was all members of Jatirenggo Village, totaling approximately 2,026 individuals. The sampling method was done by simple random sampling, a simple random sampling method that gives an equal chance for every member of the population to be included in the sample. Sample selection was based on a list of residents who were ≥17 years old and had used or interacted directly with the JALANTOL Application, as an inclusion criterion. The selection of respondents was carried out with the help of a list of application users and randomization using the random number generator feature in Excel. The number of samples was determined as many as 95 respondents, using the Frank Lynch formula (1974):

$$n = \frac{N}{1 + N(e)^2}$$

n: Sample size
N: population size
e: margin of error

Although the Slovin or Cochran formulas are more popular in international publications, the use of the Frank Lynch formula is still methodologically acceptable in local-scale social research, because the results are mathematically similar in the context of a large population and a small margin of error. The margin of error of 1% was chosen to increase the precision of the results, considering that this topic concerns public attitudes towards public service innovations that have the potential to be a reference for replication policies. Thus, this mixed method design allows for measurements that are not only statistically accurate, but also contextually rich and are able to provide more applicable policy recommendations for village governments in developing citizen-based digital services.

3. Results and Discussion

JALANTOL – Jatirenggo Application

Digitalization of Indonesia's digital village is now part of the national agenda through the Smart Village program, according to the Minister of Villages, Disadvantaged Regions and Transmigration Regulation Number 7 of 2021 on Priority Use of Village Funds, and supported by the 2020–2024 RPJMN, which mandates the digitalization of public services at the village level. This initiative is also based on the principle of modernizing village governance based on e-government to encourage efficiency, transparency, and inclusiveness (Kementerian Desa Pembangunan Daerah Tertinggal dan Transmigrasi, 2020). Responding to this agenda, the Jatirenggo Village Government, Glagah District, Lamongan Regency, initiated the launch of the JALANTOL Application (Jatirengo Integrated Online Service) on September 4, 2022, as the first digital public service innovation in its area. This application was developed locally and based on the local social context. According to the Lamongan PMD Service report (Saputra, 2022), the penetration of Android devices among Jatirenggo residents has reached around 97%, although the methodological details of the survey are not yet available. This reflects community readiness as an important foundation in implementing village service technology. Therefore, citizen involvement and technological device readiness are important requirements for the success of contextually relevant community-driven digital transformation.

The opening of JALANTOL is a strategic presence of local and district stakeholders, with guests including the Head of Glagah District, the Head of the Lamongan Regency PMD Service, and citizens as the main users of the service. Jatirenggo Village Head explained that this application is intended to make online administration services easily accessible so that the public does not need to come directly to the village office, in accordance with the efficiency and digital inclusion principles (Huda, 2022). Meanwhile, the Head of the PMD Service stated that JALANTOL will be used as a best practice towards a smart village model that can be replicated in other villages, especially to reach residents outside the administrative area through a digital platform based on NIK (Population Identification Number) as a user authentication system. As for data security, the JALANTOL login system uses NIK-based authentication pertaining to the village population database but has no explicit security test report and user data encryption standard. The security and privacy protection functions are therefore still areas that require further audits for certification of the integrity of the public information system at the micro level (Susilowati et al., 2025). But even in this, this step itself encapsulates the principle of limited identification and valid administration area-based access, such that it can limit services only for genuine residents and not abused for irresponsible means.

There are seven main features of the JALANTOL application: Administration, Village News, Complaints, Reading Corner, UMKM, BUMDes, and Village Profile (see fig. 1). These features are all intended to deal with aspects of transparency, participation, and effectiveness of village public services. Based on the author's observations in this study, the Administration feature is the most accessed feature, while author observations on the population document and certificate creation service are more effective and quicker. Although the UMKM feature makes it easier to promote local products to wider markets, when asked about transactions, the village responded that online transactions were still minimal. Complaint facility is used by respondents to submit complaints regarding public services and administrative issues. Use of Reading Corner and BUMDes facilities, however, is quite low and still in the early implementation stage, indicating that a need to increase digital literacy and further spread the benefits of these facilities. The assessment of the Village News feature also showed a positive effect on informational accountability, where people admitted to feeling more informed about government activities and village decisions after accessing news through the application. This finding is in line with the study of Supiyandi et al., (2022) which emphasizes that two-way digital communication between the government and citizens is a prerequisite for the success of the e-government system in the regions.

Picture 1. JALANTOL Application Online Services

Source: Application JALANTOL

This, the JALANTOL application is a convenient, handy and appropriate administrative service product for administrative service requirements, yet remains plagued with non-administrative functionalities that have not been exploited maximally. This shows the importance of additional planning development that attends to not only technical requirements, but also adoption plans, digital marketing, and empowerment of citizens in order to achieve the complete potential of the platform in a participatory fashion. That is, digitalization at the village level is not merely a matter of giving a platform, but also creating an active and empowered user ecosystem.

On the other hand, the Reading Corner menu is an educational feature that functions to expand public literacy access to regulatory documents or village development information. Meanwhile, MSMEs and BUMDes reflect JALANTOL's focus on empowering the local economy through the digitalization of village economic information, especially product promotion, transactions, and mapping of the potential of micro-businesses and village institutions. Finally, the Village Profile feature provides general data and narratives related to history, organizational structure, and regional potential, supporting the principle of open data in the context of digital-based village governance. Overall, this service structure shows that JALANTOL is not just an administrative application, but a strategic instrument for integrating bureaucratic services, citizen participation, and economic empowerment into a secure population data-based digital system through the Population Identification Number (NIK) login. This innovation reflects important progress in realizing smart villages in Indonesia, with a measurable and integrated participatory approach (Huda & Mayasari, 2022; Yanti, 2024; Yuhefizar et al., 2024).

The snapshot taken shows one of the greatest features of the JALANTOL – Jatirenggo application, namely the channel of Village Complaints through which residents are able to report in real-time to the village authorities. This is a real manifestation of responsiveness and accountability in online village management. In the capture, the complaint filed by a resident named Effendi on 28 December 2024 reveals that residents can enter administrative complaints – in this case, the delay in issuing a Death Certificate – with the date of submission and necessary background. This shows transparency in the service flow as well as space for citizen participation to demand clarity regarding the ongoing bureaucratic process.

The existence of this channel has strategic value in realizing a democratic, participatory village. In a study of village e-governance Hariyati et al., (2022), the online complaint feature is seen as being able to change the pattern of bureaucratic communication from previously closed to more open and data-based.

Additionally, the system is also a social control mechanism of the village officials' work because each complaint is documented, has a timeline, and can be responded to publicly. Hence, this channel is not just a passive grievance channel, but also an active platform to build trust between villagers and the government of the village, as emphasized by Mauni (2025) that information technology can help reduce asymmetric information and enhance efficiency in public services in the village.

Picture 2. JALANTOL Application Online Services
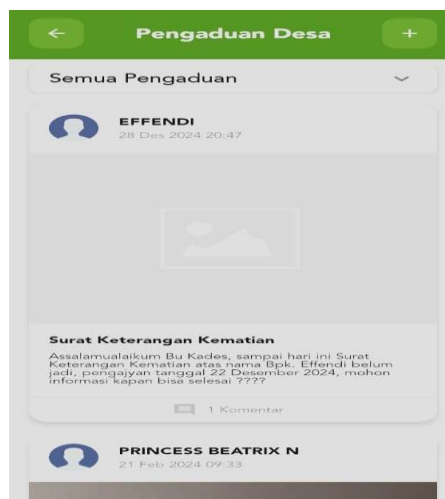
Source: Application JALANTOL

Technologically, the application display shows a user-friendly interface and is easily accessible to the general public. This supports the adoption of more inclusive technology, especially in rural areas with varying levels of digital literacy. Based on research by Noeridha (2023), the success of village e-government is highly dependent on the existence of an active feedback loop that is able to adapt to the needs of the local community. Therefore, the Village Complaints channel in JALANTOL can be categorized as a form of digital accountability mechanism practice, namely a public monitoring system based on a digital platform that facilitates bottom-up control over government services.

Public Perception of the JALANTOL Application – Jatirenggo in Improving Village Administration.

Perception is an experience of an object, event or relationship obtained by summarizing information and interpreting messages. Each individual's perception can be very different even though what is observed is the same. The development of ICT has changed people's perceptions of social, economic and development realities. This also applies to village government administration. The JALANTOL-Jatirenggo application is one form of actualization of ICT development in the field of public services. Furthermore, this study will classify public perceptions regarding the implementation of the JALANTOL-Jatirenggo application. However, previously the author will display the classification of respondents who have filled out the questionnaire. The online survey conducted for a week resulted in 95 quantitative responses from respondents. The number of male respondents was greater, namely 44 respondents, while the number of female respondents was 51 respondents (see table. 1).

Based on the data in Figure 3, it can be comprehended that public awareness of the existence and function of this application is quite high. This is shown by the highest number of respondents falling in the category of "very knowledgeable" (33.33%) and "knowing" (51.04%), totaling 84.37%. This achievement shows that the digital innovation initiated by the Jatirenggo Village Government has not only been successfully developed technically, but has also reached most villagers informationally, through direct

socialization strategies, communication between residents, and the use of digital media. This success reflects the effectiveness of promotion and education carried out by the village and shows the interest and openness of the community to the application of technology in village public services.

Tabel 1. Classification of RespondentsBased on Gender

Classification	Number of Respondents
Male	44
Female	51
Total	95

Source: Processed by the author

This phenomenon can be associated with the initial stages in the theory of innovation adoption by Rogers et al., (2014) that emphasizes that knowledge is the initial step in the process of technology adoption, before it goes through the steps of persuasion, decision, implementation, and confirmation. The fact that it is high indicates that the Jatirenggo community has gone through collectively from awareness stage to the point where they must have reached the interest or evaluation stage, which is the stage at which users begin to weigh the benefits and willingness to implement the technology. In this context, the findings strengthen the position of the JALANTOL Application as a technology that is not only known but also seriously considered by villagers as a relevant administrative tool.

Picture 3. Percentage of Respondents' Knowledge of JALANTOL - Jatirenggo application
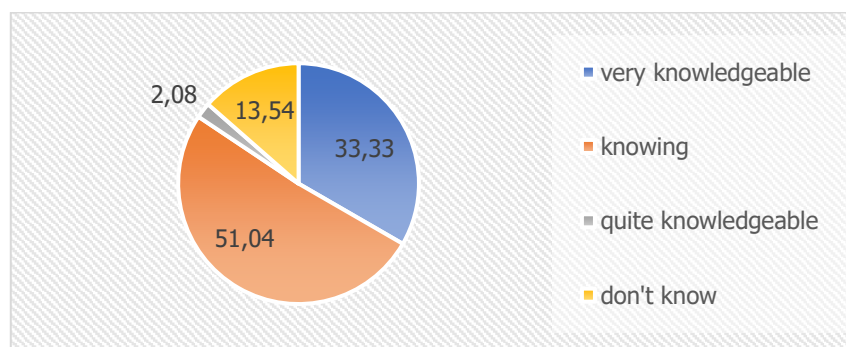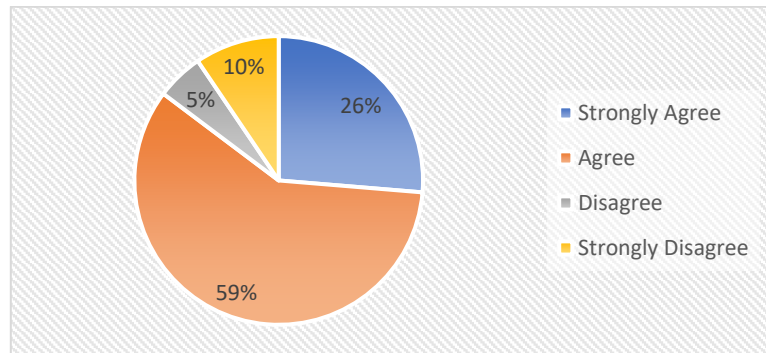

Source: Processed by the author

Furthermore, the digital literacy of the community as depicted in this data is an important foundation in ensuring the success of the implementation of technology-based public services. Yanti (2024) emphasized that the success of the digitalization of public services at the village level is directly correlated with the level of digital literacy of residents. So, if the community has an adequate understanding of the functions and benefits of the application, this automatically increases the potential for active participation in the digital service system and reduces resistance to technological innovation.The high level of community knowledge of JALANTOL also strengthens the assumption that village digital innovation has been socially accepted, an important indicator in the concept of smart village sustainability. In this context, social acceptance of technology is a measure of the initial success of digital transformation because it is able to minimize obstacles such as cultural resistance, bureaucratic miscommunication, and access gaps. In fact, the finding that only 13.54% of respondents did not know at all shows that the challenge of information inclusion still exists, but on a scale that can be strategically addressed through a community approach.

According to the data in Figure 4 that displays the percentage of public perception of the use-fitness of the JALANTOL - Jatirenggo Application, it can be said that most respondents view this application as useful in the field of village public services. As many as 25 respondents (26.04%) stated that they strongly agree,

and 57 respondents (59.38%) stated that they agree, so that in total 85.42% of respondents gave a positive assessment of the usefulness of the application. Meanwhile, only 14.58% of respondents stated that they disagreed or strongly disagreed. On a 4-point Likert scale, descriptive statistics calculation of the mean value is 3.02, and the mode is 3 (Agree). This reflects that the degree to which the public judges the application to be useful is in the high category, showing JALANTOL's performance in meeting expectations among villagers about the convenience and quickness of administrative services.

Picture 4. Percentage Public perception of usefulness the JALANTOL-Jatirenggo application

Source. processed by the author

When viewed by age category, there is a significant difference in the distribution of perceptions. In the 17–30 age group, 94.7% of respondents rated the usefulness of the application as "Agree" or "Strongly Agree", while in the >45 age group, only 72% gave a similar assessment. In fact, among this oldest age group, 28% claimed to disagree or strongly disagree, marking a gap in technology acceptance across age lines. These results indicate previous analyses where the function of age has been recognized as playing a crucial role in shaping views about digital technology, in the sense that younger age groups would be more accommodating, accustomed to the use of digital, and accepting of innovation within public service systems. In contrast, older age groups are likely to face obstacles such as low digital literacy, perceived complexity, and resistance to online systems.

Table 2. Cross-tabulation of Age Group and Perceived Usefulness of the JALANTOL Application

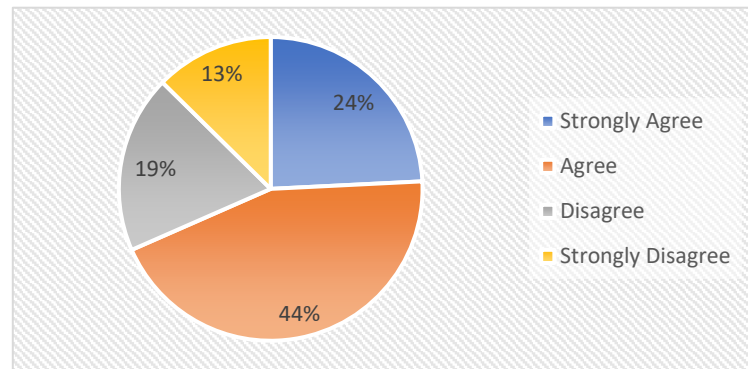| Age Group	Total Respondents (n)	Agree / Strongly Agree (n)	Percentage (%)	Disagree / Strongly Disagree (n)	Percentage (%)
17–30 years	38	36	94.7%	2	5.3%
31–45 years	33	29	87.9%	4	12.1%
>45 years	25	18	72.0%	7	28.0%
Total	**96**	**83**	**86.46%**	**13**	**13.54%**

Source: Processed by the author

Though JALANTOL has proved itself to be an effective digital public service innovation, the results highlight the applicability of demography-driven improvement strategies. Village governments can consider educational approaches and digital assistance specifically for the elderly, such as through community training, visual aids, or family-based interventions. This approach will strengthen the perception of usability more evenly, increase the sustainability of applications, and expand the impact of village digital transformation in an inclusive and equitable manner.

Based on the data in Figure 5, public perception of the ease of use of the JALANTOL – Jatirenggo Application shows a significant positive response. The majority of respondents considered the application easy to use, indicating that the interface design and navigation system have been developed adaptively to

the characteristics of users in the village. Simplicity of the menu, feature functions transparency, and the login using the Population Identification Number (NIK) are the fundamental components that support this ease perception.

Picture 5. Percentage Public perception of the ease of the JALANTOL application – Jatirenggo Application

Source: Processed by the author

This finding confirms the user-centric design principle, and further, it indicates that this app has already achieved the "perceived ease of use" stage in the technology adoption process, as built in the UTAUT (Unified Theory of Acceptance and Use of Technology) model. In this case, usability is not only a technical issue, but also a psychological one that supports the user's intention to continue using the service (Yuhefizar et al., 2024).

Table 3. Cross-tabulation of Age Group and Perceived Ease of Use of the JALANTOL Application

| Age Group	Total Respondents (n)	Agree / Strongly Agree (n)	Percentage (%)	Disagree / Strongly Disagree (n)	Percentage (%)
17–30 years	38	32	85.0%	6	15.0%
31–45 years	33	22	66.7%	11	33.3%
>45 years	25	11	44.0%	14	56.0%
Total	**96**	**65**	**67.71%**	**31**	**32.29%**

Source: Processed by the author

Quantitatively, the results of a survey of 96 respondents showed that 67.71% of residents agreed or strongly agreed that this application facilitates administrative services, with an average perception score of 2.78 on a 4-point Likert scale. Meanwhile, only 32.29% of respondents were in the category of disagreeing or disagreeing. When this data is reviewed by age category, there is a quite striking variation in perception: 85% of respondents aged 17–30 years stated that they agreed or strongly agreed, while in the age group over 45 years, this figure dropped to only 44%. The Pearson correlation between age and perceived ease of use produced a weak negative value ($r = -0.29$), indicating that the older the respondents, the lower their perception of the ease of use of the application.

Thus, these results not only strengthen the position of the JALANTOL Application as an effective digital innovation in the village, but also emphasize that successful technology adoption requires a strategy based on user demographics and social cognition. Referring to Rogers and the UTAUT approach, success is not only about the innovation available, but also about how user perceptions are formed, mediated by ease, usefulness, and social support. Therefore, the Jatirenggo Village Government needs to expand the socialization approach, age-based training segmentation, and optimization of the overall user experience so that this innovation can become a model for replication of smart villages at the national level.

Based on the data in Figure 6 which presents the percentage of public perception of the suitability of the JALANTOL – Jatirenggo Application with their needs, it can be seen that the majority of respondents gave a positive assessment. As many as 30 respondents (31.25%) stated that they strongly agree, and 47 respondents (48.96%) agree, so that a total of 77 respondents or 80.21% considered that the features in the application are in accordance with the administrative and informational needs of village residents. Meanwhile, only 13.54% stated that they disagree, and 6.25% strongly disagree. If converted into a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree), the average value (mean) is 3.05, with a mode of 3 (agree). This value reflects that the level of perception of the suitability of the application is in the high category, even slightly higher than the average perception of ease of use (3.02) and usefulness (3.02), which shows that residents not only feel that this application is useful, but also relevant to their needs directly.

Picture 6. Percentage Public perception of suitability to needs of the JALANTOL application – Jatirenggo Application
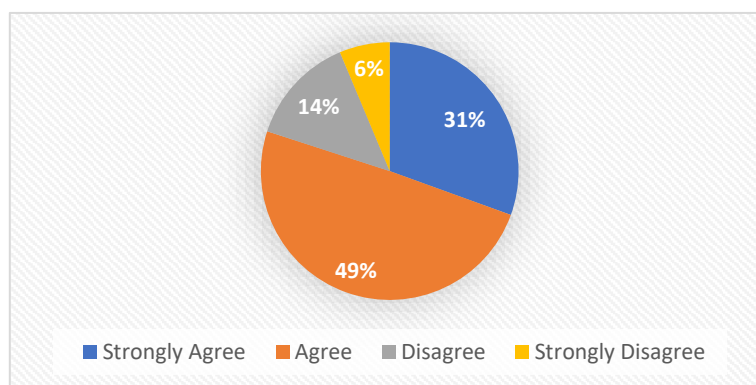
Source: Processed by the author

Furthermore, the cross-tabulation results show significant variations based on age category. The 17–30 age group recorded the highest percentage in the "Strongly Agree" and "Agree" categories (32 out of 38 respondents, or 84.2%). The 31–45 age group also had a similar tendency, with 84.8% stating a positive assessment. However, in the >45 group, the rate decreased to 68%, and the other 32% informed us that it was inappropriate. This change indicates that the level of appropriateness of the application is perceived higher by the working age and lower by the old age who are more prone to suffer from limited digital availability, perceived sophistication, or unfamiliarity with particular features.

Table 4. Cross-tabulation of Age Group and Perception of Application Suitability

Age Group	Total Respondents (n)	Agree / Strongly Agree (n)	Percentage (%)	Disagree / Strongly Disagree (n)	Percentage (%)
17–30 years	38	32	84.2%	6	15.8%
31–45 years	33	28	84.8%	5	15.2%
>45 years	25	17	68.0%	8	32.0%
Total	**96**	**77**	**80.2%**	**19**	**19.8%**

Source: Processed by the author

The high sense of appropriateness by the young age group indicates that the JALANTOL application is not just popular as an administration tool, but is also compatible with their digital lifestyle. While, in the older age group, the sense of unsuitability could indicate unfamiliarity due to a lack of previous experience with technology or limitations in accessing functionalities on its own. Rogers also stated that innovation adoption is influenced by the level of observability and trialability, which means that repeated direct

experience is needed for residents to feel that the application is truly suitable and useful. The fact that most respondents agreed or strongly agreed with the suitability of JALANTOL shows that this application has succeeded in actualizing public expectations in village service practices, from population administration, complaint channels, to MSME information and local news. However, the elderly group who still feel unsuitable shows that support for technology implementation must be accompanied by social and educational interventions, such as community-based digital training, assistance in using features, and simplifying the application's visuals.

This discussion strengthens the conclusion that JALANTOL is not only functionally accepted, but is also considered contextually appropriate by most people, especially the younger generation. However, to increase the distribution of benefits and narrow the digital divide, the village government needs to adopt a more inclusive engagement strategy so that this perception of suitability can be evenly distributed across all age groups and social backgrounds, so that the application truly reflects the principles of fair and adaptive digital public services. The implementation of the JALANTOL – Jatirenggo application as a form of digital public service innovation at the village level is a concrete manifestation of the national agenda for developing Smart Villages (Kementerian Desa Pembangunan Daerah Tertinggal dan Transmigrasi, 2020). Research findings show that JALANTOL not only answers the administrative needs of village communities, but also opens up wider space for participation, transparency, and accountability in village governance. This validates research work by Afrilia et al., (2024) to the extent that e-innovation in local government can drive structural and cultural transformation in the provision of public services, given that this is built on a participatory nature and considering local needs.

This application also includes a number of strategic elements such as public grievance platforms, MSME information, online service administration, and reading spaces. This all-rounded approach upholds the argument of Agustina & Widiyarta (2023) which confirmed that the design of the JALANTOL application does reflect the spirit of a digital-based "one-stop public service" not only efficient but also socially inclusive. In addition, strengthening NIK-based governance for user login reflects the village's efforts to integrate data security and digital-based authentication systems, as emphasized in the study by Susilowati et al., (2025) that the success of a smart village is largely determined by the integration of information technology into the social and administrative structure of the community. In terms of community perception, this study shows that the level of knowledge, usefulness, ease of use, and suitability of the application to the needs of residents are in the high category. This data is in line with the Technology Acceptance Model (Rogers et al., 2014), and is reinforced by Yuhefizar et al., (2024) who, through the UTAUT model, found that performance expectancy and effort expectancy are strong determinants of e-government adoption in the village context. Similar findings were also conveyed by Aidin (2025) who emphasized that village digitalization will run optimally when supporting factors such as digital literacy, social trust, and ease of technology have been met—all elements that have been proven to appear in the implementation of JALANTOL.

The real-time complaint channel provided by JALANTOL marks a step forward in building a participatory digital accountability system. This strengthens the view of Hariyati et al., (2022) which shows that digital service channels such as online complaints in public services can change the pattern of relations between citizens and the bureaucracy from passive to active and open. Mauni (2025) also emphasized that the use of information technology can reduce information asymmetry and strengthen public trust in local governments, which in the context of Jatirenggo is shown through well-documented administrative reporting that can be responded to transparently.

JALANTOL's success cannot be separated from its ability to adopt user-friendly design principles, as mentioned by Noeridha (2023) who showed that public service applications that are able to adapt to the level of digital literacy of rural communities will have higher adoption and sustainability rates. The JALANTOL application, with its simple menu, intuitive navigation, and NIK-based login, reflects this principle well. Furthermore, the use of this platform for promoting MSMEs and strengthening BUMDes reflects that

digitalization is not only administrative, but also strategic in developing the capacity of the village economy digitally, as exemplified in the study of Mahmud et al., (2024) regarding the integration of Siskeudes in strengthening village fund accountability. Thus, the JALANTOL - Jatirenggo innovation is not just an ordinary public service application, but has been a best practice of a digital village that is able to synergize bureaucratic services, citizen participation, economic empowerment, and digital social control in one place. This success shows that the smart village is not an abstract futuristic concept but a concrete reality achievable through a participatory process, policy support, and inclusive technological innovation that is responsive to local capacity.

4. Conclusion

The findings of this research confirm that JALANTOL – Jatirenggo is an instance of a significant innovation in Indonesian village e-governance. Being the tangible manifestation of the policy agenda of Smart Village, this application has successfully overcome the long-standing gap between conventional bureaucratic routine and evolving digital demands of public service delivery in rural areas. Empirical results show a highly favorable public perception on a number of dimensions—knowledge, perceived utility, ease of use, and contextual relevance—that indicate its effectiveness and acceptability at the grass-roots level.

Theoretically, the study broadens the application of the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) by demonstrating that they are applicable in village governance. The performance expectancy, effort expectancy, and system compatibility constructs are particularly validated as essential predictors of digital adoption in low-resource, community-level settings. These findings contribute to the literature by applying user acceptance theory to rural governance settings—where digital readiness and socio-cultural processes are different from urban ones. At the practical level, JALANTOL offers a model that other village governments can follow in adopting sustainable, responsive, and participatory digital services. Its inbuilt functionalities—from population management, MSME information management, citizen grievances, to public openness—communicate volumes about the need to have digital platforms that are inclusive, context-sensitive, and citizen-centric. Its grievance facility inbuilt into it also contributes to the UNDP Digital Governance Strategy (2022–2025) by enabling participatory monitoring, auditability, and citizen e-accountability at the grassroots level.

To strengthen future development and scholarly insight, further research is recommended using specific designs, such as longitudinal studies to assess sustainability, comparative research across multiple villages to identify scalability factors, and controlled training-based experiments to measure changes in digital literacy and adoption behavior. In addition, psychometric tools need to be applied in measuring cognitive and behavioral change among users, more particularly as it relates to trust, empowerment, and institutional legitimacy. These directions will provide a more synthesized understanding of how digital innovations can generate long-term civic change and institutional resilience at the village level.

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