



Public Complaints Information System in Government to Improve Website-Based Public Services

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Abstract

Optimal public service is one indicator of the success of village government in responding to community needs. However, in Lahar Village, the public complaint process is still carried out manually, such as verbally or by hand, so it is prone to data loss, slow in handling, and less transparent. This condition indicates the need for a system that is able to digitize the complaint process to be more effective and efficient. This study aims to design and build a website-based public complaint information system to improve the quality of public services in the Lahar Village government environment. The methodology used includes direct observation, interviews with village officials, and literature studies as the basis for system design. System development is carried out using the PHP programming language and MySQL database. The expected results of this study are the creation of a computerized complaint information system that is easily accessible to the public, and supports the process of recording, handling, and monitoring complaints in a more transparent and structured manner. With this system, it is hoped that public services in Lahar Village can be significantly improved, both in terms of time efficiency and data accuracy.

Introduction

Effective, transparent and responsive public services are the main pillars in realizing good governance. One form of community involvement in the process is through submitting complaints or aspirations regarding government services (Wijayanti et al., 2022; Rafique et al., 2023; Phratama et al., 2024). Unfortunately, in many villages such as Lahar Village, the public complaint system is still manual, such as through verbal, paper, or guest books that are stored physically. This causes complaint information to often be poorly documented, difficult to track, and slow to be followed up by village officials (Ningrum et al., 2025; Rivalen & Wolor, 2025).

The main problems that arise from this traditional complaint system are low efficiency, minimal accountability, and lack of accessibility for the public in submitting their reports or complaints (Mogotloane & Lonw, 2023; Dini et al., 2023). In the digital era like today, this is a serious obstacle in realizing adaptive and participatory public services. Meanwhile, the development of information technology has opened up great opportunities for the government, including at the village level, to adopt a digital system to improve public services (Made & Kurniawan, 2021; Made & Kurniawan, 2021; Budiarto et al., 2024; Danu et al., 2023). The website-based public complaint information system allows the public to submit complaints online, monitor follow-up, and accelerate the flow of communication between residents and village officials. This system also allows for automatic documentation,

recording of complaint status, and periodic performance reporting (Evanita et al., 2023; Shuja et al., 2023; Jayawickrama, 2021).

This research is important because not many villages, especially in rural areas such as Lahar Village, have implemented a digital complaint information system. With these conditions, the need for an integrated and easy-to-use system is very urgent. In addition to increasing the efficiency of complaint management, the implementation of this system also supports the principles of transparency and public accountability, in line with the digital transformation agenda of village government echoed by the central government (Baskoro, 2025; Nayasari, 2025; Prachumrasee et al., 2025). By developing a website-based public complaint information system, Lahar Village is expected to be an example in utilizing technology to improve the quality of public services, strengthen relations between the community and the government, and encourage more modern and participatory village governance.

Theoretical review

Previous Research

Research on public complaint information systems has been done a lot before and is an important basis in developing the system proposed in this study. Some relevant previous studies include:

The purpose of this study is to design a web-based public complaint information system that is expected to help streamline the performance of officers and the public in submitting and handling complaints. The system is designed using the PHP Native and Bootstrap programming languages (Supriatmaja et al., 2022; Niarman et al., 2023; Habib et al., 2023). The system development method uses the Waterfall method. The functional features of the application in the form of community identity, complaint submission, complaint status, and process recording and information services for organizational management are tested using the Black Box testing technique. The test results show that the functional features of the application are valid and can help officers process data and present complaint information to the organization's management, as well as make it easier for the public to submit and monitor the complaint process via Telegram notifications (Zaenudin & Syahidin, 2022; Thomas & Bhat, 2022).

Furthermore, the research entitled "this research aims to design and build a web-based public complaint information system at the North Sumatra BPN Regional Office using the SDLC (System Development Life Cycle) method. This research uses data collection methods through observation, interviews, and documentation. In application development, the SDLC method is applied to ensure that each stage, from planning, analysis, design, implementation, to maintenance, runs optimally (Olorunshola & Ogwueleka, 2021; Chahar & Singh, 2024; Oktaviani & Wahyuningsih, 2024). This application was developed using Visual Studio Code as an editor, PHP as a programming language, and MySQL as a database, thus accelerating the development process and ensuring efficient data management (Dinev & Spasova, 2024; Darmawan, 2025).

The research entitled "Design of a Web-Based Public Complaint Service System in Limusnunggal Village". This research aims to design an effective public complaint service that makes it easier for the public to report problems and provide feedback to the authorities. During the prototyping stage, the initial system is coded and presented to potential users to obtain input that will be used to improve the system (Firaldi et al., 2024; Das & Yang, 2022). The feedback-based development stage evaluates and improves the prototype according to the input received. The development of information technology creates devices that can help complete work very easily, agencies and organizations currently use a lot of technology in completing these tasks and jobs, one of which is in providing services using technology in

providing information to customers who need and obtain information (Spring et al., 2022; Tampi et al., 2022; Harahap et al., 2023).

From the three studies above, it can be concluded that the public complaint information system has proven effective in supporting the public service process. Therefore, this study continues and develops the concept by adjusting the needs and characteristics of the Lahar Village community, as well as adding features that support ease of access, transparency, and efficiency of complaint management.

Methods

Method of collecting data

In this study, data was obtained through several data collection techniques, namely:

Observation

Researchers conducted direct observations in the field to see the real process of public complaints in Lahar Village, identify the workflow, and understand the problems that occur in the manual complaint system.

Interview

Interviews were conducted with village officials to obtain detailed information regarding the functional needs of the system, obstacles faced, and community expectations regarding the complaint information system.

Online Complaint Form

After the prototype system was built, researchers used the online complaint form provided in the system to collect public complaint data directly. This data is also used as material for system evaluation and testing.

System Development Methods

The main objective of general system design is to provide an overview of the system to be built and to understand the flow of information and processes in the software system/information system, in order to obtain the functional requirements of the existing system (Riadi & Meimaharani, 2023). The method used this time is the waterfall method which is often called the waterfall method is often called the classic life cycle, the name of this model is actually "Linear Sequential Model" where it describes a systematic and sequential approach to software development, starting with the specification of user needs then continuing through the stages of planning, modeling, construction, and handing over the system to users (deployment), which ends with support for the complete software produced (Hamidani & Etriyanti, 2021).

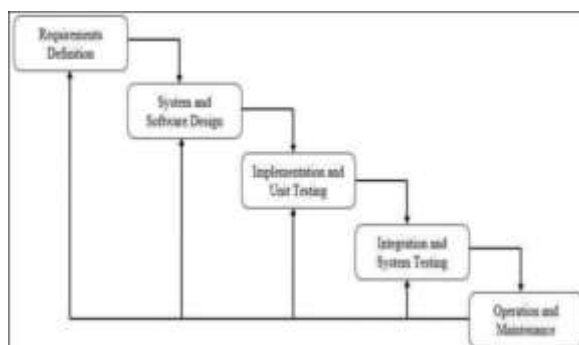


Figure 1. Waterfall method

Based on the Waterfall Model image above, the stages carried out are as follows:

System Requirements Analysis

At this stage, developers must know all the information about software needs such as the use of software desired by users and software limitations. This information is usually obtained from interviews, surveys, or discussions. After that, the information is analyzed to obtain complete data about user needs for the software to be developed.

System Design (Design)

In the design phase, the author will design in detail all parts of the application to be built. This includes the appearance of the user interface, database, and application workflow. The goal is to create a structured framework for application development. The author will plan the application components in detail, design an easy-to-use user interface, and create an efficient database structure. The design phase also considers aspects of security, scalability, and application performance. The results of this design phase will be used as a guide for the next implementation phase.

System implementation (Implementation)

In the implementation phase, the author will transform the application design into a real form. This involves writing program code, developing application features, integrating components, and testing. The author will use the PHP programming language in accordance with established development standards. This process includes programming, database integration, and testing to fix bugs or errors.

System Testing (Verification)

In the testing phase, the author will undergo a series of trials to check the performance of the application built, ensure compliance with the requirements that have been set, and detect and fix bugs or errors that may occur. This testing aims to ensure that the application is of high quality, stable, and ready to be launched to users with optimal performance according to their expectations.

System Maintenance

In the maintenance phase, the author will continuously monitor and improve the application after it is launched. The purpose of this phase is to maintain the performance and reliability of the application, as well as provide support to users in terms of troubleshooting and feature enhancements. The author will respond to user feedback, identify and fix bugs or errors that arise, and make updates and improvements as needed. In addition, the author will also monitor the performance of the application, and optimize the application to stay in line with the latest technological developments. This maintenance phase is an important step in keeping the application running well and providing a satisfying experience for users.

Results and Discussion

System Implementation

Admin Login Page

On this login page, only admins can log in and admins can enter the username and password that have been created.



Figure 2. Login Page

Such log-in screen is developed only to support administrative users and this forms the initial security level to a system and role segregation. It has restricted this page to only authenticated users thus the sensitive data that is contained in the complaints as well as the tools to manage the system are not accessible to unauthorized users. The user-specific sessions are also triggered on the login page, and the system has an ability to monitor the activity logs and limit the access using the user credentials. Using the lens of public administration, this layer is one of the key factors assuring integrity, at least in a rural setting, where there was no or little access control before (Hamidani & Etriyanti, 2021).

Community Dashboard Page

On the community dashboard page, the public can report and view the response status.



Figure 3. Community Dashboard Page

The community dashboard is the primary point of interaction with the citizens, through it, the user can create new complaints and track them. Such an interface is an indication of a participatory model of governance in which the citizenry is not merely a receiver of services, but is also a stakeholder. The dash enables easy reporting by people on civic matters, promote openness and the real time update of system status. The fact that it is accessible via a centralized panel means that the users are enabled to monitor the responsiveness of the government without involving the traditional methods of physically visiting and following-up. This aspect can be mentioned as being in line with the concepts of the e-governance that prioritize responsiveness and empowerment of the users via the elements of digital feedback (Zaenudin & Syahidin, 2022).

Submit Complaint Page

On the public complaints page, people can make their latest complaints.



Figure 4. Submit Complaint Page

In this page, a clear electronic form is available to fill in the details of the complaint with space to enter personal identification and other specified issues. Through complaint intake standardization addressed by the system it will guarantee complete filing of submissions according to categorization and it may also be prioritized according to urgency or type. The concept of change to digital submission versus the verbal one contributes to fewer uncertainties, loss of data, and the targeting of the response. The page itself can be thought of as the entry point into a front-end data pipeline that can be validated by passing it into the backend processing system, a good practice in developing digital services that receive feedback associated with the front-end.

Complaint Process Page

On this page, the public can see that complaints have been successfully processed.



Figure 5. Complaint Process Page

This page indicates it has received a complaint and placed it in the processing queue so a user does not have to wait to see whether their complaint has been received. It transitions to the contrast between passive submission to active participation, which helps the user have more confidence in the system. The visual confirmation of progress is another way of minimizing the uncertainty and disheartening repetitive complaints or physical check ups. In terms of

usability, this functionality improves systems feedback cycles which are fundamental to attaining trust in any public digital platform, particularly among first-time or inexperienced users (Firaldi et al., 2024).

Complaint Status Page

On this page, the public can see whether the complaint has been processed, not yet processed, or completed..

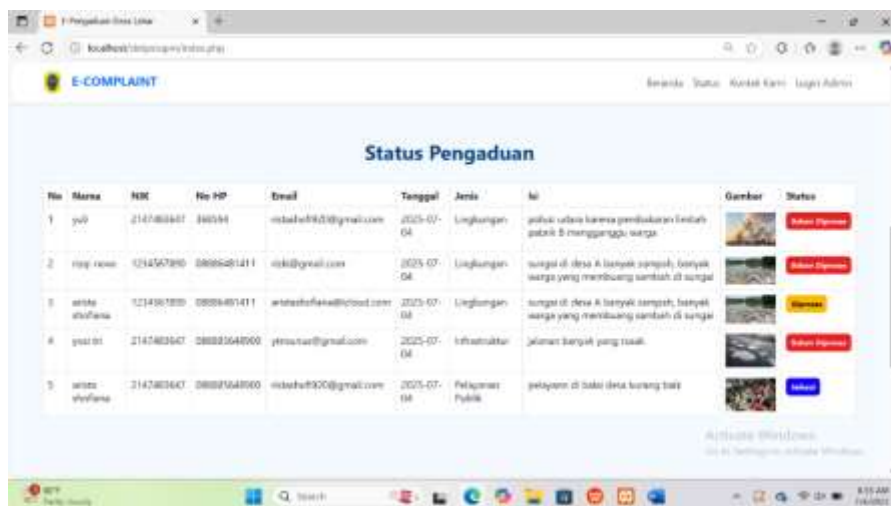


Figure 6. Complaint Status Page

The given page allows one to see the actual state of complaints that are submitted, using the following categories, unprocessed, in process, and completed. It takes the typically non-transparent complaint management procedure and turns it into a visible and open line of work. The transparency assists in controlling what citizens expect and keeping administrative hard work since the progress is not done in secret. This feature implies supporting service-level contracts (SLAs) and enables one to trace any slowdown or lack of action by members of the community. It indicates one of the most powerful possibilities of digitized complaint systems connected with constant traceability (Evanita et al., 2023).

Admin dashboard page

On the admin dashboard page, the admin can see complaint data, reports and logout.

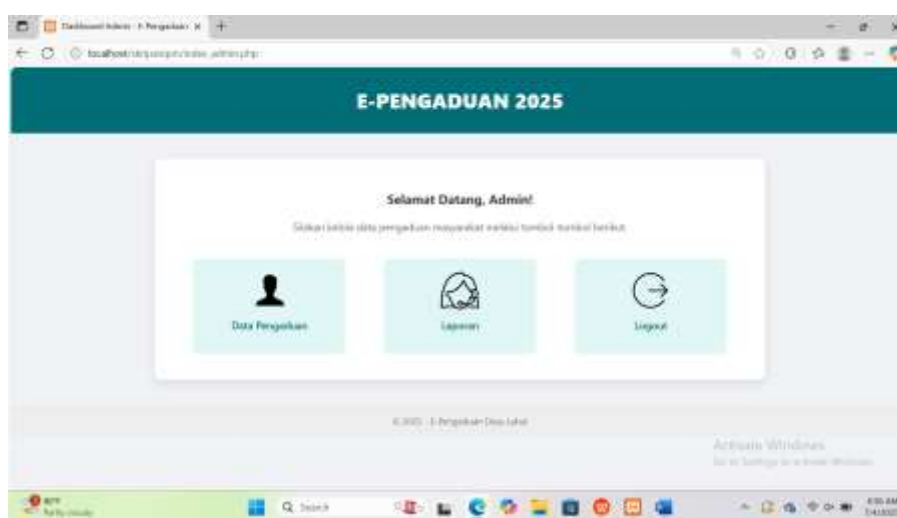


Figure 7. Admin Dashboard

The key operations on the system that are aggregated on the admin dashboard include viewing the data in the complaints, getting access to reports, and log out. It acts as a control point of

backend governance and administrators can get access to the system measures and complaint queues in real time. The dashboard minimizes navigation friction and enables quicker triage of complaints as well since all complaints management functionalities have been consolidated into a single page. It operationalizes the administrative oversight role and is in accordance with digital governance requirements in which back-office insight is as crucial as front-end usability (Wijayanti et al., 2022).

Complaint Data Page

On this page, the admin can view complaint data and respond to complaints.

Daftar Pengaduan

No	Nama	NIK	HP	Email	Tanggal	Jenis	Isi	Gambar	Status
1	yuli	2147483647	368594	ristashof920@gmail.com	2025-07-04	Lingkungan	polusi udara karena pembakaran limbah pabrik B mengganggu warga		Belum Diproses
2	rizqi nova	1234567890	08886481411	rizki@gmail.com	2025-07-04	Lingkungan	sungai di desa A banyak sampah, banyak warga yang membuang sampah di sungai		Belum Diproses
3	arista shofiana	1234567890	08886481411	aristashofiana@icloud.com	2025-07-04	Lingkungan	sungai di desa A banyak sampah, banyak warga yang membuang sampah di sungai		Diproses
4	yosi tri	2147483647	088885648900	ytrisunus@gmail.com	2025-07-04	Infrastruktur	jalan banyak yang rusak		Belum Diproses
5	arista shofiana	2147483647	088885648900	ristashof920@gmail.com	2025-07-04	Pelayanan Publik	pelayanan di balai desa kurang baik		Diproses

Figure 8. Complaint Data Page

This interface will have a list of the complaints received and allows the administrator to respond to these complaints or update the complaints. It facilitates a systematic approach to feedback, so that every complaint will be looked into and an action taken. The interface allows a direct response, therefore, minimizing delays in processing and assisting with evidence-based answers. Database-wise, this page links submission module to resolution documentation so that the entire complaint tracking process can be executed. It represents the digitization of the administrative workflow and is crucial in keeping records of the operations (Ramadhani, 2020).

Complaint Page in Process

On this page, the admin can mark complaints as being processed.



Figure 9. Complaint Page in Process

With the help of this screen an administrator can indicate which complaints are being processed. It is used as an internal status update which shows that it is under investigation or review. When looking at projects management stand point, this step enhances work rankings and enables the tracking of numerous grievances tracking them by their progress. The title also facilitates in defining the role of the staff and assists with balancing the loads in complaint resolution teams. In terms of operations, this mid-level status will avoid premature closure and present a sense of work discipline.

Complaint Page Completed in Process

On this page, the admin can mark if the complaint has been resolved.

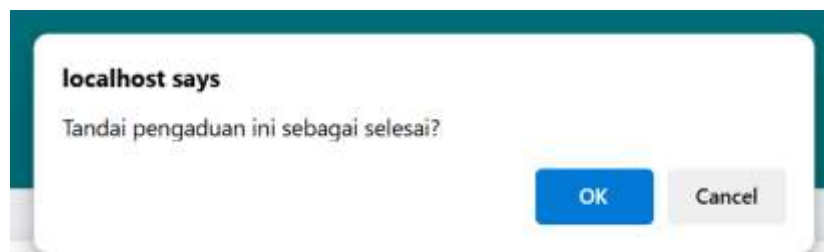


Figure 10. Complaint Processing Completed Page

On this page, the administrator can then update complaints to a completed state, which is reflected in the status view that the user will see. It is the end part of the complaint life cycle and it also provides closure as well as administrative responsibility. It also has the functionality of record-keeping on internal reporting and external audit. As a user-experience perspective, this confirmation will enhance credibility of the system and give the citizens the assurance that what they have provided has had tangible results (Firaldi et al., 2024; Ibrahim et al., 2018).

Admin Report Page

On this page, the admin can print reports according to the date and status they want to print.

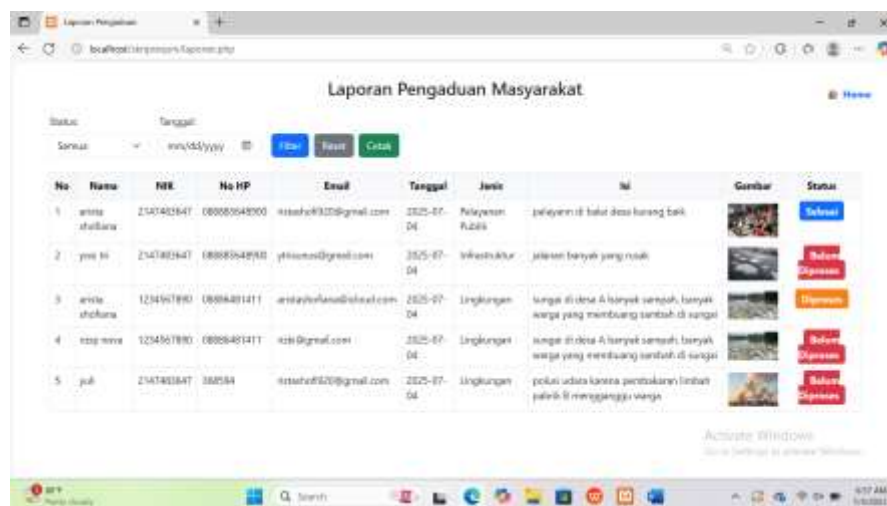


Figure 11. Admin Report Page

This page provides report generation tools based on status and date filters, allowing administrators to produce specific performance summaries. Such functionality is vital for weekly or monthly evaluations, presenting trends in complaint types, response times, and resolution rates. The feature supports evidence-based planning and reporting to higher authorities or community stakeholders. In public sector IT systems, this ability to filter and output data for governance oversight is central to institutional transparency and program monitoring (Hamidani & Etriyanti, 2021).

Print All Reports Page

This page displays the printed results of all reports.



Figure 12. Print All Reports page

The interface is used to view the final output of all complaining information in the system and this is designed to be the final copy of information to be used in printing. It enables the administrator to create full records of institutional memory, auditing, or disclosure. The printable version enables physical archiving, which cannot be overlooked when it comes to a hybrid digital-rural environment in which a part of a process still requires the paper-based verification to be adapted to the archiving processes. It demonstrates adherence to the rules of bureaucracy and strengthens the validity of digital records (Riadi & Meimaharani, 2023).

Advancing Public Service Delivery through Digitized Complaint Management in Village Governance

The introduction of online-based system of information on public complaints in Lahar Village marks a turning point in the way the grassroots process of governance responds to the challenges of the digitalization of the provision of public services. When transitioning to a web-based system, following a predominantly manual system of documentation and oral communication remains in rural areas of administration, it fully transforms the efficiency and transparency of administration in the government. This paper shows how digitalization of the complaint system, in addition to speeding up the process of handling reports institutionalizes accountability by recording all complaints in a structured manner and giving realtime status reports. Such changes are part and parcel of a wider paradigm shift in the practice of e-governance, in which digital platforms are no longer an after-thought but a critical part of service responsiveness especially in the post-pandemic age where there is a heightened call towards responsiveness and engagement with the community via participation in ways that were not possible previously (Wijayanti et al., 2022; Ramadhani, 2020; Evanita et al., 2023).

The system is designed using the Waterfall approach that introduces a definite linearity in the development and deployment. This type of structured approach is helpful in the scenario of the rural digital infrastructure in the sense that it allows controlled work and prevents excessive misuse of resources when carrying it out. The gradual process of analyzing requirements of the systems then testing and offering maintenance guarantees a user need is well understood then it is put to test before implementing it completely. This is especially of utmost essence in village-level systems where IT level is not so efficient and there is organizational preparedness. Research in comparable institutional contexts supports the performance of this kind of linear development methodology because researchers found that the Waterfall model is appropriate in projects that possess clear requirements and can allow only a few adjustments in the middle of the development process (Hamidani & Etriyanti, 2021; Riadi & Meimaharani, 2023). The fact that the system was developed in the present

study through steps of identifying the requirements, via interviews and field observations, to the end implementation of the same highlights a process-driven approach that guarantees local governance needs in accordance with technical design.

In functional terms, the created system hosts an administrative component as well as a user-friendly part that also complement each other closing the feedback cycle between the community members and governmental actors. Possibility of complaining through provided interfaces, tracking the progress of complaints issued, and resolving the complaints will give people obvious mechanisms of civic participation. In contrast to the traditional systems in which reports can be lost in the bureaucratic maze, the digital platform provides the traceability and guarantee of the fact that the voice of citizens is officially recorded and taken into consideration. This especially carries a lot of weight in terms of strengthening legitimacy of local government, since the visibility of the resolve status boosts the amount of trust by the citizens and confidence. Research on e-service transparency has demonstrated how using such systems that are able to track a request placed by the user in real-time has a great potential in improving the user perceptions of government reliability and of empowering the citizen population (Zaenudin & Syahidin, 2022). Furthermore, some of the characteristics like admin dashboards and automatic report generation not only facilitate back-office procedures but can also empower policy actors to undertake a performance audit and produce metrics of service dimensions to hold people responsible.

The selection of the extended development technologies of PHP and MySQL is also strategic and an equilibrium between the expressiveness of the tools, economical costs, and may viability. These open-source solutions are specifically applicable in case of village-level structures where budget and shortage of technical resources are other main aspects to be considered. Moreover, the structure enables scalability to expand in the future to include such capabilities as SMS notifications, mobile applications, or even integration with superior reporting systems used in the government. Such forethought is consistent with modern best practices of IT projects sustainability in the general public, which prioritize modularity and adaptability as the key design characteristic to ensure the resiliency of systems in the long-term (Firaldi et al., 2024; Ibrahim et al., 2018). The introduction of a simple log in process by administrators, layered dashboards by users and staff, and delineation about complaint processing stages demonstrates that the system is respectful of hierarchies of functional roles and is also simple with regard to user navigation, which are two important indicators of popularizing adoption and long-time use in community settings.

Notably, such a system is not a vacuum but places Lahar Village within a national discourse of digitalization of local governance. Although the municipalities located in urban areas can already provide smart e-government platforms, the ones in the rural areas are frequently not on the same level as the municipalities that are not limited by infrastructural, cultural, or financial limitations. The creation and implementation of such system is therefore a proof-of-concept statement, that in spite of relatively meager technological means at their disposal, it is possible to make significant improvements in service delivery and administrative responsibility. This project also signals a broader epistemic shift in how village governance is conceptualized from reactive service delivery to proactive civic facilitation. As digital citizenship becomes an increasingly important element in development discourse, tools like the one developed in this study not only enhance operational efficiency but also contribute to the broader project of democratizing access to governance mechanisms (Zaenudin & Syahidin, 2022).

Conclusion

The creation and utilization of public complaint information system via a web-based project of Lahar Village signify a revolutionary change in the management, monitoring and

enhancement of the provision of rural-based services. Through the digitization of a system whereby villagers have had to present themselves verbally, submit applications in paper format and receive follow-ups irregularly, this system has created a backbone of orderly, responsible, transparent governance at the village landing. The study illustrates how modifying the approach of e-government to making available and OpenTools accessible and adoptable and giving opportunities to local governments with limited infrastructures can go a long way in generating efficiency, responsiveness and citizen engagement into the fleeing bodies.

The Waterfall approach was beneficial to the project as it allowed the system requirements to be properly identified and to be converted to functionality design elements. Every phase of system development, including the needs assessment phase, development phase, and maintenance phase, was done in a meticulously serious manner, which led to a platform that fits well with the expectations of the users and the workflows in which administrators would engage. The strong delineation of users roles among citizens, staff, and administrators, enhanced by the intuitive navigation and the ease of use of the interface, also compounds the practical side of the system being applicable in a real world setting of the governance.

Functionally, end-to-end complaint management is facilitated, and the system provides functions to create complaints, track its status, administrative response, and generation capability of reports. These functions not only facilitate the process of service delivery, but also institutionalizes the administrative memory in the form of record keeping. Notably, the system will increase the levels of trust that the population will have because the feedback of complaint management can be seen by the community, thus promoting ideas of participatory governance and transparency.

In addition to that, the architecture of the system is scalable, which means that the system can be connected to the higher tier e-government system or to mobile-based extensions in the future. This positions the platform not merely as a localized solution but as a replicable and adaptable model for other rural regions seeking to modernize public service delivery without incurring high technical or financial barriers.

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