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Development of a Web-Based Correspondence Service Information System to Improve the Administrative Efficiency of Wonowoso Village

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Abstract

Correspondence administration in Wonowoso Village relied on conventional procedures that lacked an integrated digital workflow for citizen submissions and administrative records. This study aimed to develop a web-based correspondence service information system to support more orderly village administration. Development comprised requirements mapping, system design, implementation, and functional verification. The application was built using Node.js, Express.js, EJS, MongoDB, and Mongoose, with Multer, express-session, bcryptjs, and Nodemailer supporting document uploads, administrator sessions, password security, and rejection notifications, respectively. Verification combined source-code inspection, desktop interface rendering, and examination of a MongoDB backup snapshot. The developed system provides four service types and connects citizen submissions with administrator processing through Pending, Approved, and Rejected statuses. Citizens can review service requirements, complete application forms, and upload supporting documents, while administrators can examine applications, assign letter numbers, preview letters, approve requests, and record reasons for rejection. The database snapshot contained four applications: one Approved and three Rejected. The system supports a more organized administrative workflow through centralized records, online submissions, and structured status management. Its contribution to administrative efficiency is therefore limited to workflow-level support; quantitative improvements were not established because pre–post service-time measurements and user usability testing were unavailable. The study provides a practical basis for refining digital

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village services and conducting broader field evaluations of efficiency and usability.

Keywords: Administrative Workflows; Correspondence Services; Digital Public Services; Village Administration; Web-Based Information Systems

INTRODUCTION

Village administration services are an important part of the government's relationship with the community because the need for cover letters, population documents, and service information appears regularly. The process that still depends on direct arrival often makes the submission of files follow office working hours and officer records. Agostino et al. (2021) explained that the use of digital technology can accelerate changes in the way public services are delivered when people's needs demand more flexible access. Changes in village services need to be accompanied by improvements in work processes so that data and document management becomes more orderly.

The digital transformation of government is related to the structuring of processes, information architecture, and relationships between departments that run services. Gong et al. (2020) place flexibility and organizational architecture as elements that influence the success of the government's digital transformation. The success of digital transformation in public institutions is not only influenced by technological aspects, but also the readiness of organizations to accept changes in the work system. The readiness of managers and the fulfillment of technical needs are aspects that need to be considered when village services begin to be directed towards web-based systems (Tangi et al., 2021).

The condition of mail services in Wonowoso Village before the development of the application did not use a web-based system. The community still follows the usual administrative mechanism, while the submission data has not yet entered the database connected to the administrator interface. The need for development arises because the service process has not connected information on requirements, forms, documents, admin checks, submission status, and letter creation in one system. The integrated flow arrangement is expected to reduce data transfer between records and help village officials track the service process more easily.

A number of studies in Indonesia show that village administrative services are starting to be directed towards a web-based system. Al Hasri & Sudarmilah (2021) reported

the development of a website-based population administration service that obtained usability results in the acceptable category. Khaerunnisa et al. (2021) developed a web-based population system to assist in the processing of village administrative data. Huda & Susanti (2021) focus on the development of certificate services so that the process of submitting and managing letters has a more orderly flow.

The choice of development methods in previous research is also quite diverse. Kurniawan et al. (2020) used a prototyping approach in the Leran Village service system. Kristania (2021) applies User Centered Design to adjust population administration services to user needs. Fatimah et al. (2022) use a Unified Approach when building a web-based village mail administration service. A variety of approaches show that the design of the system needs to follow the character of the problem and the operational needs of the implementation site.

The scope of research on village services continues to grow, not only focusing on mail management, but also leading to the integration of various information and public services more widely. The development of an integrated public administration system is one of the approaches that allows several service processes to be managed through one integrated system (Rahayu & Marup, 2021). The web-based village information system can be used as a means of supporting information delivery and management of administrative services so that the service process runs more structured (Supiyandi et al., 2022). The relevance of web-based systems is crucial in the management of village administration today (Rachmat et al., 2024). The development of research provides the basis that the digitization of village services has been carried out a lot, but the process needs in each village still require adjustments.

The research gap arises in the specific application needs in Wonowoso Village. The application developed combines a public portal with a flow of letter submission, KTP and KK uploads, MongoDB storage, classification of Pending, Approved, and Rejected status, provision of letter numbers, preview of cover letters, approval, and rejection with reasons. The contribution of the research lies in the incorporation of the Wonowoso Village letter service process in one application. Yoraeni et al. (2022) emphasized that village service information systems have a practical role in strengthening public services and developing smart villages.

The conceptual foundation of the research views administrative efficiency as simplifying flows through service access, data centralization, reduced document movement,

and clearer separation of work status. Agostino et al. (2021) show that digital-based public service changes need to be seen from the ability of technology to support more responsive work processes. The efficiency assessment in the Wonowoso Village research is therefore directed at the functions and administrative flows formed in the application. Time or cost savings percentages are not used because pre- and post-system deployment measurement data is not yet available.

The research aims to develop and describe a web-based correspondence service information system for Wonowoso Village as well as examine the main functions based on source code, application display, and database backup. Development goals include the community and administrator sides so that submissions, examinations, and administrative decisions are stored in a more structured manner. The results of the study are expected to provide an implementive overview of the change in manual service flow to web-based services as well as show the parts of the application that still need to be improved before wider use.

METHODS

Research Type and Design

The research uses a software development approach that is oriented towards the development and verification of information systems. The research design consists of four stages, namely needs mapping, system design, application implementation, and verification of data function and consistency. Design selection follows the development artifacts available on the application project, so the development model is not specifically labeled when the process documentation does not explicitly indicate the use of a particular model.

The object of the research is in the form of a correspondence service information system in Wonowoso Village, Karangtengah District, Demak Regency, Central Java. Source code verification and database backups were performed in August 2026, while the analyzed copy of MongoDB contained data activity from August 6 to 11, 2026. The unit of analysis is in the form of the core functions of the application, the source code structure, the interface, and the collection of data related to the mail service, not human respondents.

Data Sources, Instruments, and Data Collection Procedures

The research data was obtained from the source code of the Wonowoso Village service information system application and the database backup documents used to identify the system design, service functions, and data structures applied. Source code checks include routes, controllers, models, EJS views, file upload utilities, authentication, and email modules. Database backups are used to confirm the type of service, the amount of data, the distribution of the submission status, and the fill-in of the fields that are stored in the application.

The verification instrument is in the form of a function mapping sheet that connects needs, source code implementation, interface proof, and data conditions. The laptop version's interface is rendered at a resolution of 1440 x 900 pixels to keep documentation in line with the app's view and style sheet. Eight core views were chosen because they represent the public and admin flows, namely homepage, service list, submission form, admin login, dashboard, rejected submission, Approved submission, and cover letter preview.

Development and Verification Stages

The first stage maps the need from the initial state that is not yet web-based to the digital functions available on the application. The second stage is to compile the service flow and system architecture based on routes, controllers, models, and relationships with MongoDB. The third stage examines the implementation of technology in each of the key functions. The fourth stage verifies through a comparison of source code, interface rendering, and a copy of the database condition.

Table 1. Key Technologies Used in Systems

Components	Technology/Modules	Main Functions
Back-end	Node.js and Express.js 4.18.2	Handle routes, controllers, requests, and application responses
View	EJS 3.1.9	Rendering public and administrative pages
Database	MongoDB and Mongoose 7.0.3	Store and model service data and submissions
Upload files	Multer 1.4.5-lts.1	Save user documents in the upload folder
Authentication	Express Session and bcryptjs	Manage admin sessions and password matching
E-mail	Nodemailer 8.0.1	Trying to send a notification when a submission is rejected

Based on Table 1, the application architecture separates the user's browser, Express route, controller, Mongoose model, and MongoDB. View EJS handles presentations, while supporting modules work on authentication, document upload, and email functions. Component separation makes it easy to trace the relationship between interface actions and changing data in the database.

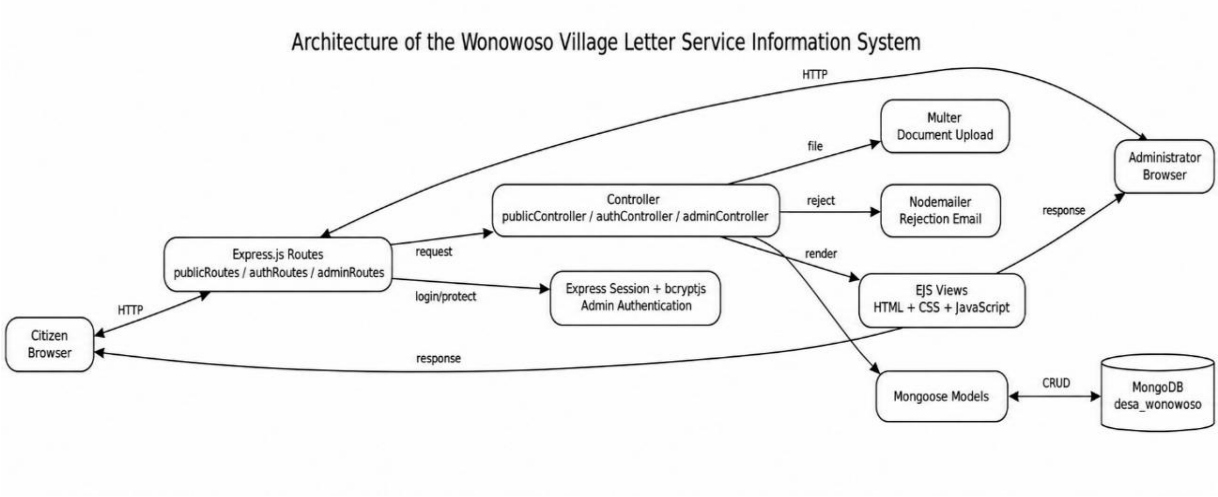


Figure 1. Letter Service Information System Architecture

Based on Figure 1, the main flow of the system starts from the selection of services by the community, filling out forms, uploading documents, and storing submissions with Pending status. The administrator then reviews the data and documents, gives the letter number, conducts a preview, and then determines the status of Approved or Rejected according to the service decision. The decline branch stores the reason and executes the email function, while the approval branch stores the effective date without the email delivery function.

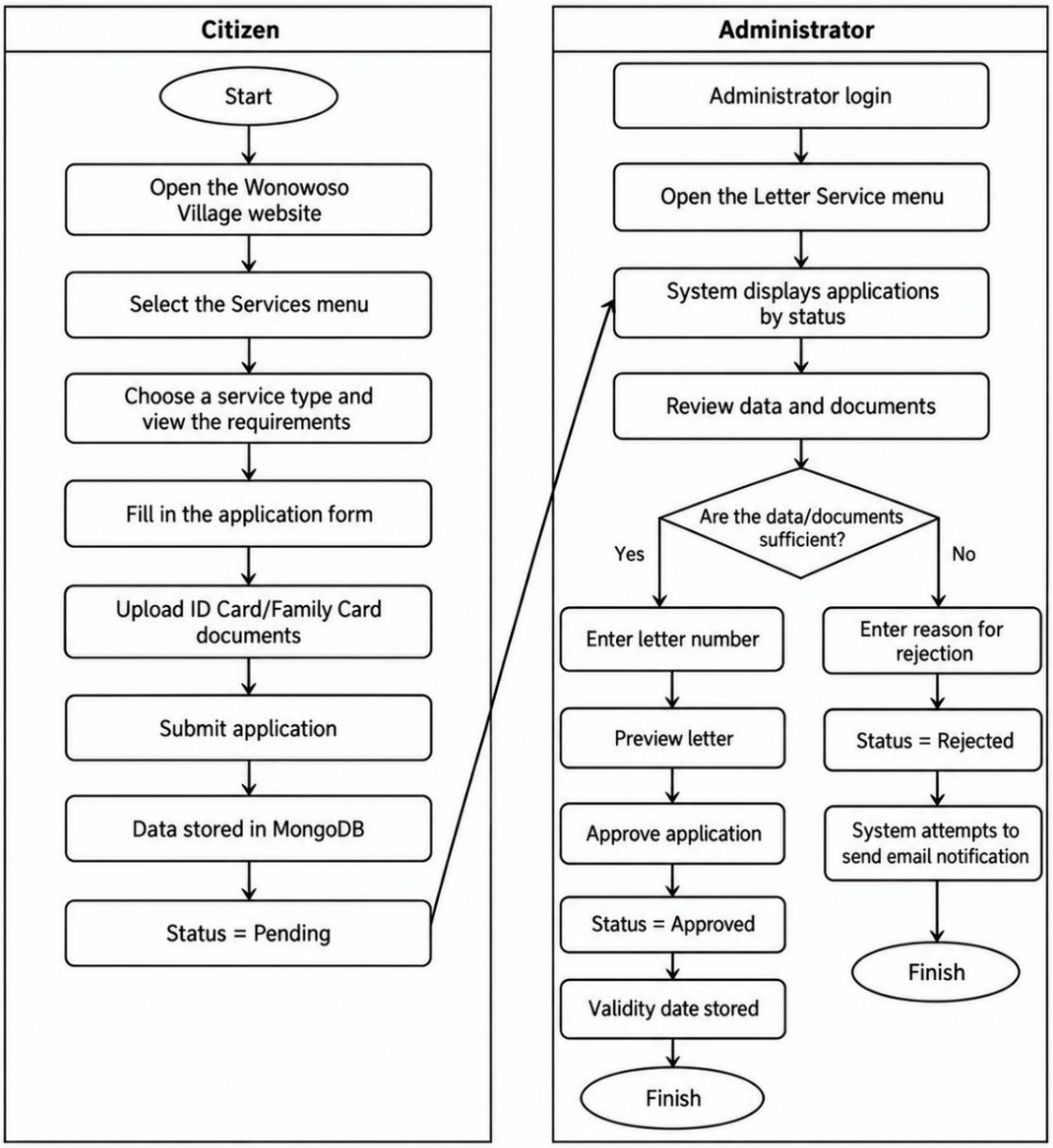


Figure 2. Flowchart of Wonowoso Village Mail Service System

Analysis Techniques and Validity of Findings

The analysis was carried out in a descriptive-functional manner by comparing service needs, proof of implementation in the code, interface output, and the contents of the MongoDB backup. The distribution of submission status is calculated as a description of the condition of the database during backup, not as a measure of the success of the service for all residents. Negative findings are still recorded so that the results of the study not only show the functioning of the operation, but also show limitations related to the efficiency and reliability of the administration.

The validity of the findings is maintained through triangulation of artifacts. A function is declared implemented when the source code or interface trace shows a consistent mechanism, then is reinforced by the stored data if the function results in a database change. The identity data that appears in the screenshot comes from a copy of the implementation provided with the application project. Identity disguise is still required before publication if the data on the recording is real citizen data.

RESULTS

System and Database Structure

The development results show that the app has two main usage spaces. The public space provides a homepage, profiles, services, news, gallery, and contacts, while the administrator space contains a dashboard and data management functions. The mail flow is connected through the Submission model that references the Service model and stores the applicant's identity, needs, KTP or KK file, mail number, status, reason for rejection, and effective date.

Database backups show that the application does not contain just an empty structure. The available collection includes one admin account, four services, four submissions, four news, two galleries, two contact messages, thirteen village devices, one profile, one village statistics data, and one site configuration. The stored data shows that the functions on the public page and the administrator are running at the implementation stage.

Table 2. MongoDB Collection Summary

No.	Collection	Number of Documents	Description
1	Admins	1	Administrator account
2	Layanans	4	Master mail service
3	Submission	4	Community application data
4	São paulo	4	News content
5	Galeris	2	Gallery content
6	Contact	2	Community message
7	Whisperers	13	Village device data
8	Desastatistiks	1	Village statistics
9	Profiles	1	Village profile
10	Sitesettings	1	Site configuration

Table 2 summarizes the MongoDB collections used in the application. The four stored services show different administrative needs. The creation of an ID card includes a

Birth Certificate and KK, while the creation of a Birth Certificate contains a husband and wife ID card, KK, and marriage book. The preparation of a Death Certificate has five requirements, while the SKCK introductory service lists KTP and KK as required documents.

Table 3. Services and Requirements Summary in MongoDB Snapshot

No.	Service Type	Stored Requirements
1	Creation of ID cards	Birth Certificate; CD
2	Birth Certificate Creation	Husband & wife ID cards; CD; Wedding book
3	Creation of a Death Certificate	The Deceased Family; ID card of the deceased; Birth Certificate of the Deceased; the Complainant's ID Card; Reporting family
4	Introduction to SKCK Creation	ID card; CD

Public Interface

Figure 3 shows the homepage display of the Wonowoso Village website. The home page serves as the entrance to village information and navigation to the service. The display structure places the identity of Wonowoso Village, the main menu, statistics, service information, and supporting content on a single page. Figure 3 shows the result of rendering source code on the laptop screen without redesigning interface elements.

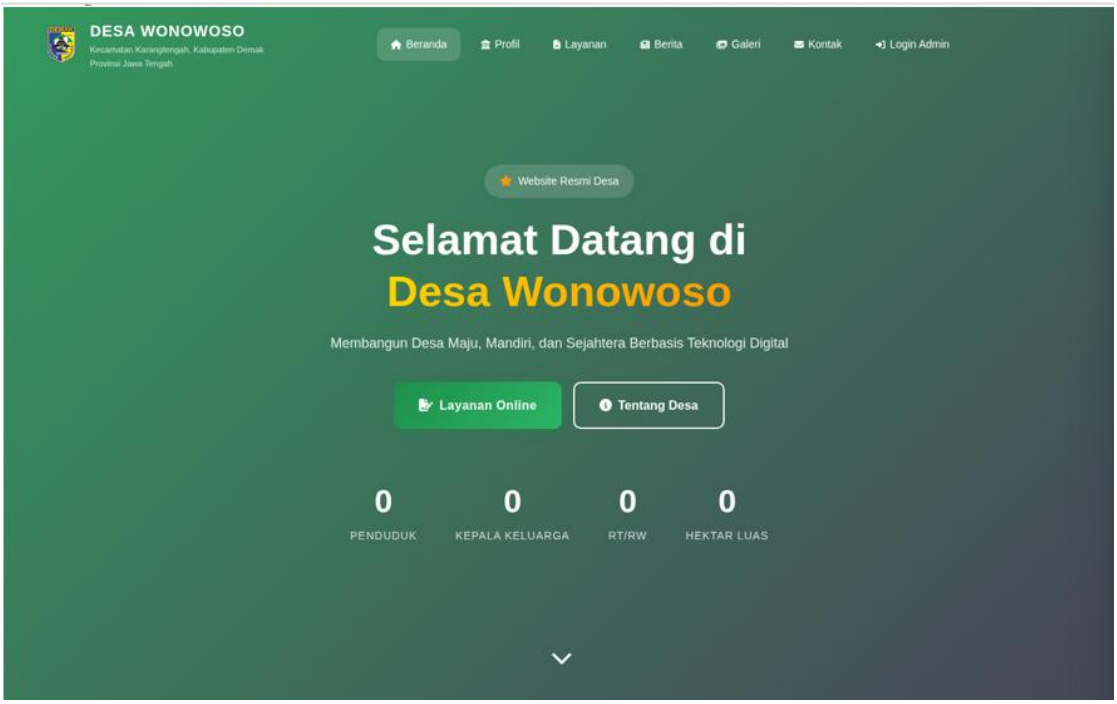


Figure 3. Home Display of Wonowoso Village Website (Indonesian Version, https://desa-wonowoso.vercel.app/)

Figure 4 displays the available service list interface. The service menu displays four types of services according to MongoDB data. Users choose the service to read the description and requirements before submitting the application. Separation of service information helps reduce the need to explain the same requirements over and over again through direct communication.

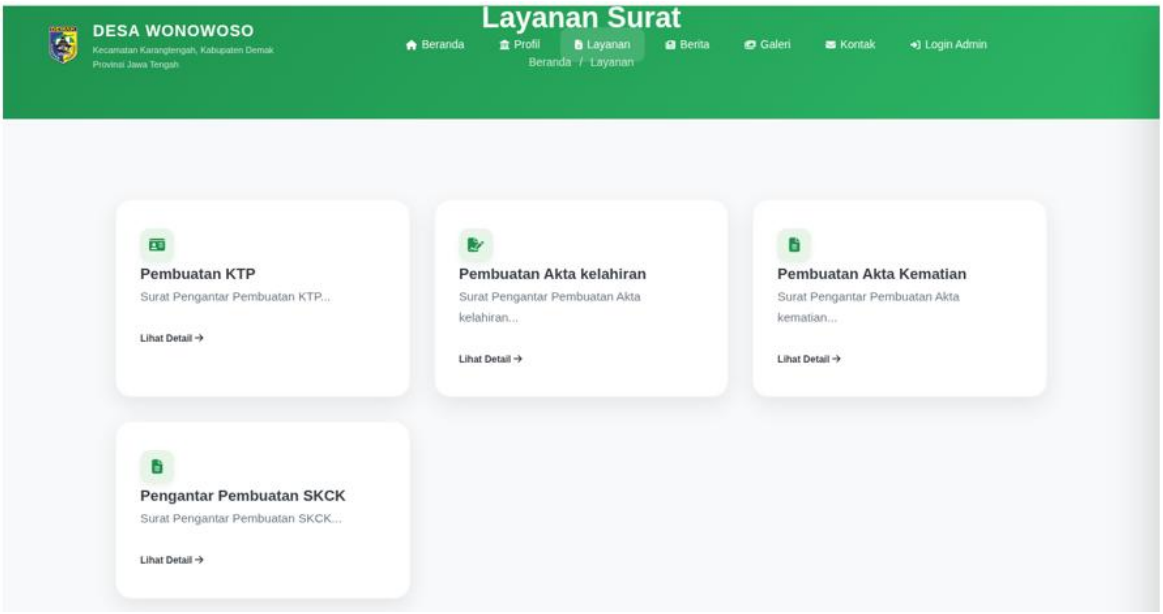


Figure 4. Service List View
(Indonesian Version, https://desa-wonowoso.vercel.app/)

Based on Figure 5, the submission form collects name, gender, place and date of birth, nationality, religion, occupation, RT/RW, email, phone number, address, needs, as well as KTP and KK files. The controller stores new submissions with a status of Pending, while files received through Multer are placed in the 'public/uploads/user_docs' directory. Figure 5 shows the KTP service form as rendered from the application view.

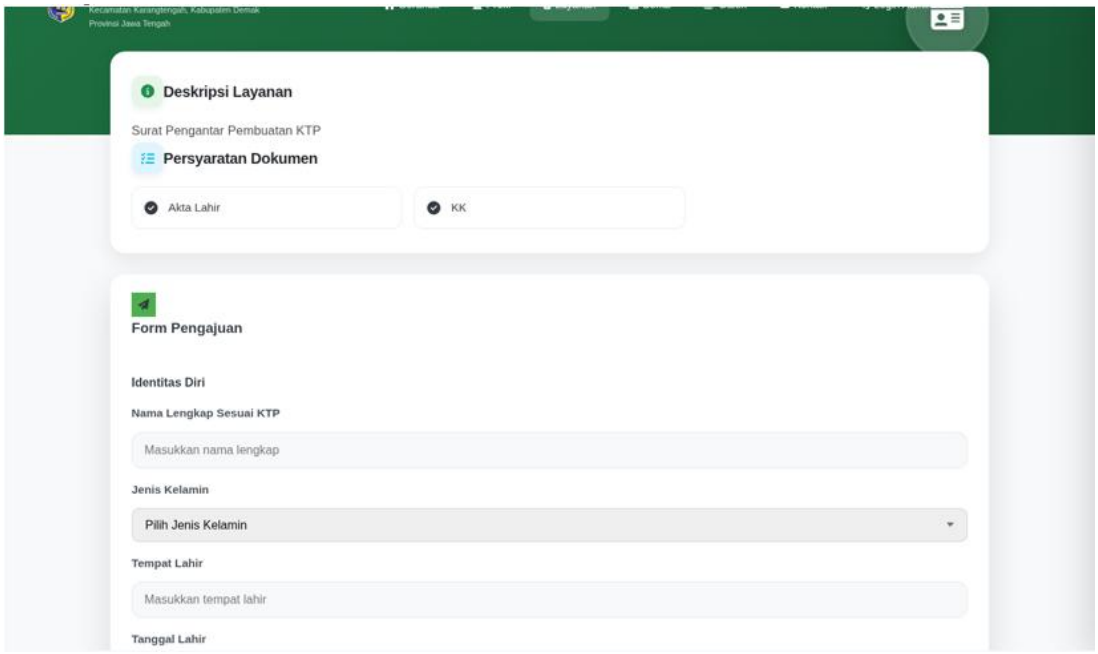


Figure 5. ID Card Service Application Form Display (Indonesian Version, https://desa-wonowoso.vercel.app/)

Administrator Interface and Status Management

Figure 6 shows the administrator login interface. Access administrators protected login pages that search for usernames in the Admin collection and compare passwords using bcryptjs. Successful login sessions are saved through Express Session before the user is directed to the dashboard. Separation of access keeps public pages distinct from internal data management functions.

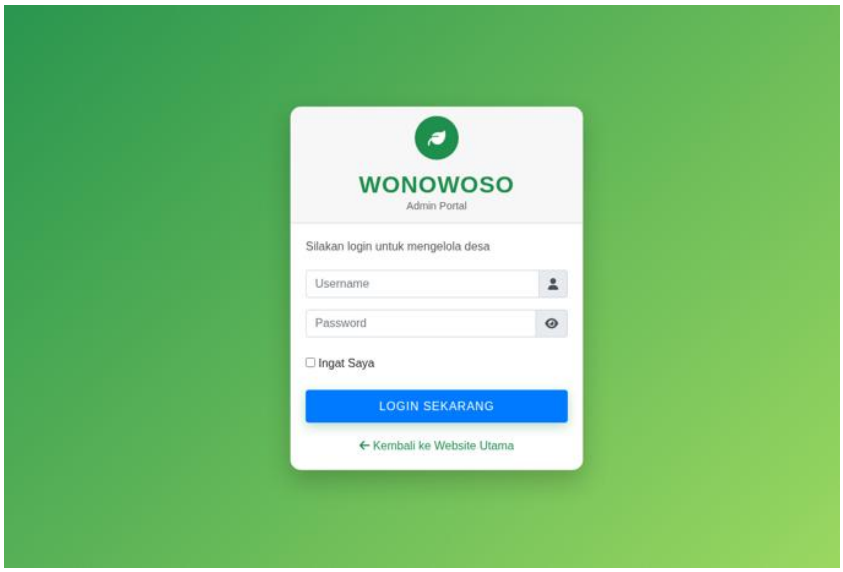


Figure 6. Administrator Login View (Indonesian Version, https://desa-wonowoso.vercel.app/)

Based on figure 7, the dashboard summarizes the number of services, news, galleries, messages, and submission status. The controller calculates Pending, Approved, and Rejected directly from MongoDB so that the summary follows the state of the stored data. The database backup analyzed contains four submissions with a composition of one Approved, three Rejected, and no Pending.

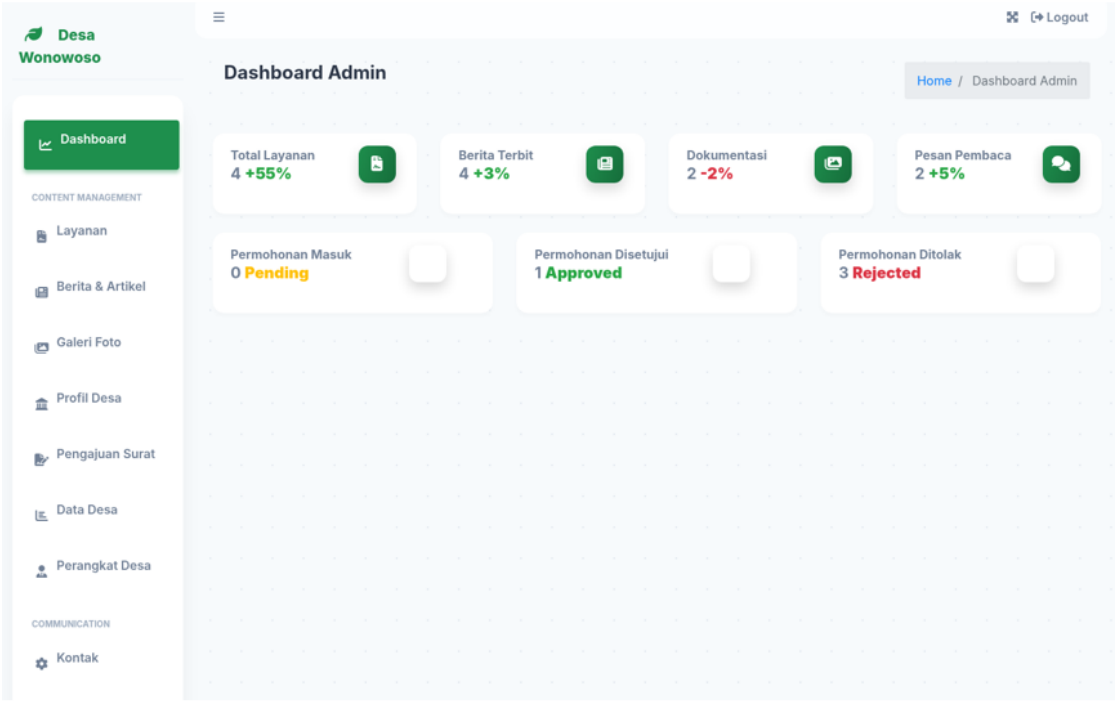


Figure 7. Administrator Dashboard View
(Indonesian Version, https://desa-wonowoso.vercel.app/)

Table 4. Distribution of Submission Status on Database Snapshots

Status	Quantity	Snapshot Proportion	Meaning of Process
Pending	0	0%	There are no pending submissions at snapshot time
Approved	1	25%	The application has been approved and has an effective date
Rejected	3	75%	Submission rejected and save the reason for rejection

Table 4 describes the distribution of submission status in the database snapshot. Figure 8 shows the rejected submission status view. The Rejected list indicates that administrators can separate a rejected request from another status. The rejection controller stores the 'rejectionReason', then tries to send an email to the applicant's address. Email delivery failures are handled through a 'try-catch' block, so state changes are saved when email configuration is not yet available.

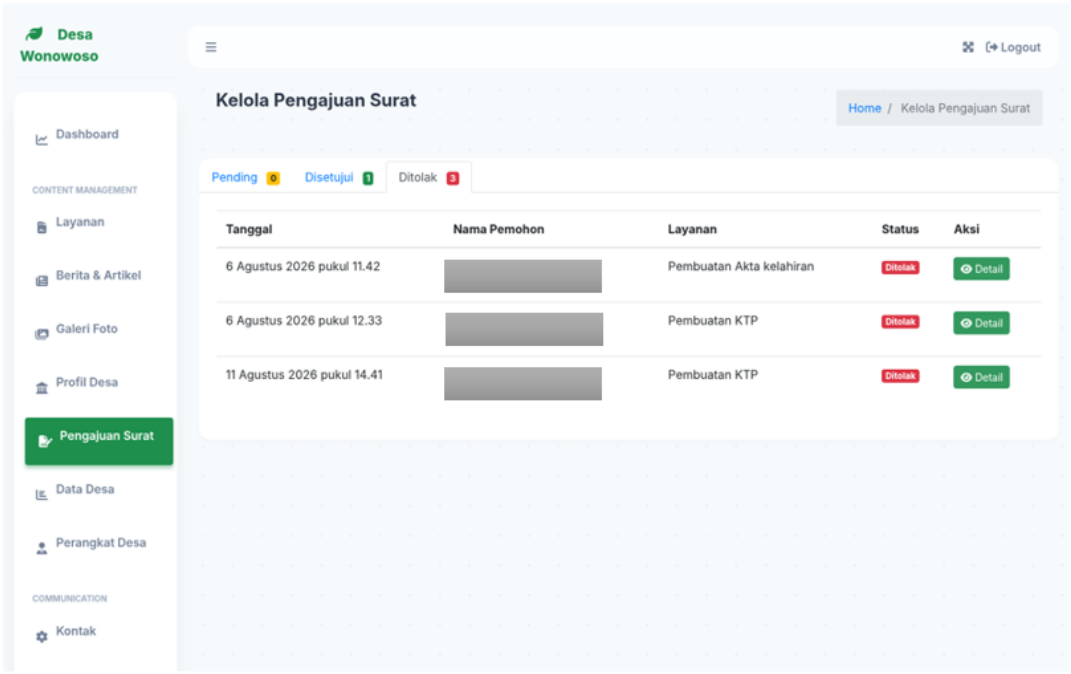


Figure 8. Submission Status Rejected View
(Indonesian Version, https://desa-wonowoso.vercel.app/)

Figure 9 presents the approved submission page. The Approved list displays the approved submissions. The approval process requires a mail number at the controller level, changes the status to Approved, and stores the 'Effective date' according to the approval time. Figure 9 shows the Approved data available on the implementation copy.

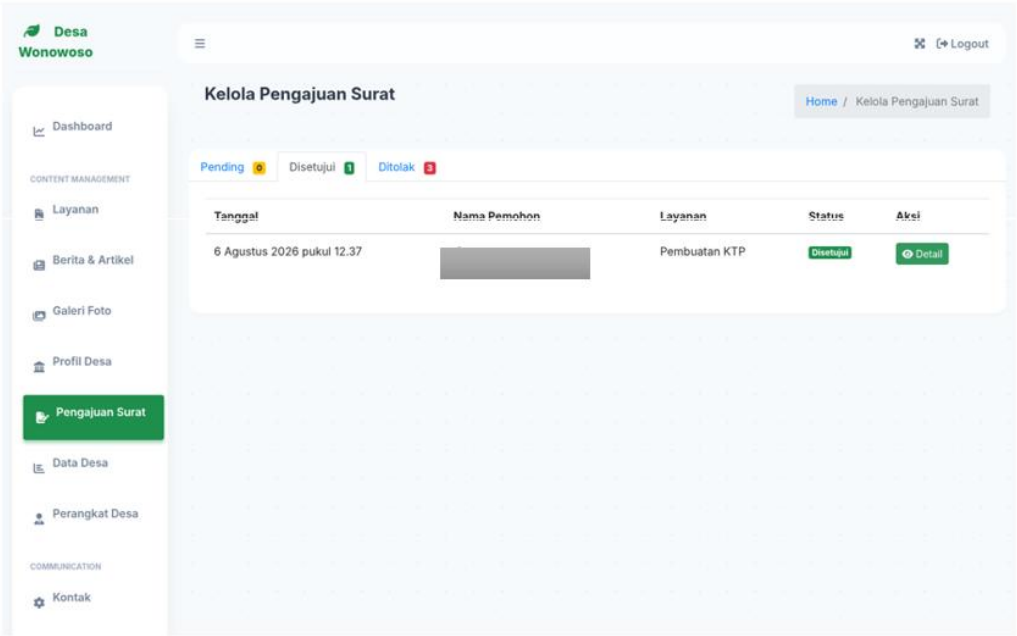


Figure 9. Submitted Status Approved View
(Indonesian Version, https://desa-wonowoso.vercel.app/)

Figure 10 illustrates the cover letter preview feature. Letter preview takes submission data to be compiled into a cover letter. The letter number can be saved first through the preview function, then the letter page contains the identity, needs, completeness status of the ID card or KK, the date of the letter, and the conditions of approval.



PEMERINTAH KABUPATEN DEMAK
KECAMATAN KARANG TENGAH
DESA WONOWOSO
JL. DESA WONOWOSO NO. 1 RT. 002

SURAT KETERANGAN
PENGANTAR
Nomor : 11/712/V/2026

Yang bertanda tangan di bawah ini menerangkan bahwa:

Nama Lengkap	: [redacted] **Kel : Laki-laki**
Tempat / Tgl Lahir	: [redacted]
Kewarganegaraan	: **wni** **Agama : isllam**
Pekerjaan	: **buruh**
Tempat Tinggal	: [redacted]
Surat Bukti Diri	: **KTP : Terlampir** **KK : Tidak Terlampir**
Keperluan	: **surat nikah**
Berlaku mulai tanggal	: **11/8/2026** **S/D Seperlunya**
Keterangan lain-lain	: Nama tersebut di atas benar – benar warga Desa Wonowoso dan beradat istiadat baik.

Demikian untuk menjadikan maklum bagi yang berkepentingan.

Dibuat di : **Wonowoso**
Pada tanggal : 11/8/2026

Ttd Pemegang	Mengetahui Camat Karangtengah	Kepala Desa Wonowoso

Figure 10. Cover Letter Preview View
(Indonesian Version, https://desa-wonowoso.vercel.app/)

Verify Key Functions

Table 5 provides the verification results of the main system functions. Verification of eight core functions shows consistent interconnectedness between view, controller, and data. The term 'observed' is used because verification focuses on proof of implementation and rendering, rather than field-scale user acceptance testing. A summary of the proof of function is presented in Table 5

Table 5. Verify the Main Functions of the System

No.	Function	Proof of Implementation	Verification Results
1	Public Home	Route publik, controller index, view index	Observed
2	List of services	Service model, route/service, service view	Observed
3	File submission and upload	Post Submission and Multer	Implemented; Submission data is available on snapshot
4	Login administrator	Auth Controller, bcryptjs, session	Observed in the interface and source code
5	Dashboard overview	countDocuments for content and status	Observed
6	Application rejection	Status Rejected, rejectionReason, email function	Implemented; Three Rejected data are available
7	Submission approval	Letter number, Approved, dateValid	Implemented; One Approved data is available
8	Preview latter	Route Letter and View Letter Introduction	Observed

Negative Findings and Anomalies

Table 6 summarizes the identified negative and anomalous findings. A check of the source code and database backups found several conditions that needed to be noted as negative findings. Anomalous recording is necessary because the administrative service system is not sufficiently assessed from the availability of pages. The consistency of the rules that connect requirements, status, and communication to the applicant also determines the reliability of the service flow.

Table 6. Identified Negative/Anomalous Findings

No.	Findings	Evidence	Implications
1	Validation of the completeness of the documents has not been forced at the time of approval	The approve function does not check the requirements; one KTP data with Approved status has kk=false	The decision still relies heavily on manual admin checks
2	Tracking of independent status by the community has not been found	Public routes don't provide a submission status check page	Applicants do not yet have a web channel to check the progress of the application
3	Email notifications only exist in the decline branch	Reject Submission calls send Email; approveSubmission doesn't call the email function	Approval information has not been automatically sent through the same mechanism
4	Some demographic fields are optional and the input format is not normalized	Schema requires core data, while other demographic fields are optional Strings; Snapshot shows write variations	Data quality requires stronger form validation and admin checks

DISCUSSION

The most noticeable change is seen in the move of the submission process from a mechanism that is not yet web-based to a flow stored in a single application. The community gets access to information on requirements, forms, and document uploads, while village officials manage applications through dashboards. Hilhorst et al. (2022) show that the use of information technology in public services can generate efficiency gains when technology truly supports organizational work processes. The results of the study show that service and submission data have been stored in one system.

Centralization of data in MongoDB makes application information, mail number, expiration date, and status stored in an interconnected record. Administrators don't need to form separate lists for Pending, Approved, and Rejected because status categories are read directly from the database. Najoan & Setiyawati (2023) show that a web-based village administration system helps integrate the management of previously dispersed data. The similarity in the pattern lies in the unification of processes, while the Wonowoso Village application uses Node.js, Express.js, EJS, and MongoDB as the main technology arrangements.

Web-based submission access also changes the position of the community in the administrative process. Digital forms reduce the need to submit initial data through face-to-face, but self-service still demands clarity of instructions and the ability of users to understand requirements. Madsen et al. (2022) found that digital self-service can reduce some of the administrative burden while giving rise to new competency demands for citizens. Hyytinen et al. (2022) show that the acceptance of digital public services is also influenced by the way services are introduced and used by unfamiliar groups. The Wonowoso Village application therefore requires user evaluation so that the ease of access is not only assessed from the availability of online forms.

The flow of letters in the application forms a fairly clear series of work from submission, examination, preview, to admin decisions. Syaebani et al. (2021) show that website-based mail services can replace some of the conventional stages when the application process is systematically arranged. Rohmah & Gunawan (2023) show that the regulation of processes in the population administration system affects the regularity of incoming services. The Wonowoso Village system has advantages in recording status and reasons for rejection,

but it has not provided a tracking page that the community can open after the submission has been submitted.

The structure of routes, controllers, models, views, and databases helps divide the responsibility of application functions. The arrangement of components does not automatically guarantee better services, as the digital benefits remain dependent on how the village device uses the available flows. Scupola & Mergel (2022) explain that the creation of public value through digital transformation is related to the involvement of actors at the planning, management, delivery, and assessment stages of services. Eom & Lee (2022) also emphasized that the government's digital transformation brings opportunities as well as challenges that need to be responded to through organizational capacity. The findings of Wonowoso Village confirm that technology plays a role as a means of work, while administrative decisions remain with the village apparatus.

Testing of the service process found limitations in the validation mechanism of submission documents. The approval function has not checked the list of service requirements automatically, while the database backup shows the application of the KTP in Approved status with a KK value of 'false'. The implementation of digital systems at the local level still faces governance challenges, especially when the technology design is not fully in accordance with the needs and work patterns of users (Ramadani et al., 2022). The app data isn't enough to declare that an admin's decision was wrong, but programmatic rules need to be strengthened so that approvals don't rely on checks that aren't recorded in the system. Automatic validation based on 'requirements' is the closest fix to the problem found.

Status communication is still an incomplete part. The system tries to send an email when the request is rejected, but the approval hasn't triggered a notification and the community doesn't have a page to see the progress of the submission yet. Fratama et al. (2025) place accessibility as an important element when village public services are built web-based. The addition of an application code, tracking page, and Approved notification will ensure that access to information does not stop after the form is successfully submitted.

The availability of dashboards, services, news, galleries, and village device data shows that the application is expanding beyond mere mail functions. Hartatik et al. (2024) show that a web-based village information system can unite information and administrative needs through several mutually supportive modules. The development direction of Wonowoso Village is in line with the village portal integration pattern, but the scope of research still

focuses on the correspondence process. Feature expansion should be done after the core functions of the mail service are stable so that the complexity of the application does not grow faster than operational needs.

The practical implications of the research are related to the management of more centralized and easy-to-trace administration. Village officials obtain status summaries through dashboards, while communities have submission channels that do not always rely on direct submission of initial forms. The efficiency benefits still need to be carefully assessed because service duration, officer workload, and user experience have not been measured before and after application deployment. The next evaluation needs to combine runtime measurement with usability so that the benefits of the system are not only derived from the success of the technical function.

The limitations of the research come from the evaluation space that is still narrow. The examination uses source code, rendering, and database backups, while the experience of the community and village apparatus has not been collected through field testing. The number of implementation data is only four submissions, so the composition of Approved and Rejected does not represent the performance of services in general. Testing of safety, performance, device compatibility, and system resistance to loads is also not yet available. Advanced research needs to add dynamic document validation, status tracking, approval notifications, log audits, security tests, uptime measurement, and usability evaluation.

CONCLUSION

The development resulted in a web-based correspondence service information system that connects the community and the Wonowoso Village administrator. The core functions include the presentation of four services, requirement information, application forms, uploading KTP or KK, storing Pending status, managing the application list, providing mail numbers, previewing letters, approval, rejection and reasons, and experimenting with email notifications on rejection. Proof of implementation is obtained through source code conformity, laptop version interface rendering, and MongoDB backups that contain one Approved and three Rejected submissions.

The contribution of the research lies in the application of digital flows in accordance with the needs of Wonowoso Village services and in the mapping of the relationship between public processes, administration, and databases. The system helps simplify the administrative

process through web-based filing, centralized data storage, and more organized status management. The magnitude of the efficiency increase has not been expressed in percentage because the measurement of the time-before-after, workload, and usability of users has not been done.

The next enhancement needs to prioritize automatic validation of the completeness of requirements before approval, status tracking features for the community, notifications on Approved submissions, input normalization, and trail audit of admin activity. Field evaluation with village officials and the community needs to assess service time, usability, security, and application performance. The results of the broader evaluation will provide a stronger basis for assessing the system's contribution to the efficiency of village administration.

REFERENCES

Agostino, D., Arnaboldi, M., & Diaz Lema, M. (2021). New development: COVID-19 as an accelerator of digital transformation in public service delivery. *Public Money & Management, 41*(1), 69–72. https://doi.org/10.1080/09540962.2020.1764206

Al Hasri, M. V., & Sudarmilah, E. (2021). Sistem Informasi Pelayanan Administrasi Kependudukan Berbasis Website Kelurahan Banaran. *MATRIK: Jurnal Manajemen, Teknik Informatika dan Rekayasa Komputer, 20*(2), 249–260. https://doi.org/10.30812/matrik.v20i2.1056

Eom, S.-J., & Lee, J. (2022). Digital government transformation in turbulent times: Responses, challenges, and future direction. *Government Information Quarterly, 39*(2), Article 101690. https://doi.org/10.1016/j.giq.2022.101690

Fatimah, D. D. S., Paryatin, Y., & Nurhasanah, N. (2022). Rancang Bangun Sistem Informasi Pelayanan Administrasi Surat Desa Berbasis Web Menggunakan Metode Unified Approach. *Jurnal Algoritma, 18*(2), 376–384. https://doi.org/10.33364/algoritma/v.18-2.842

Fratama, Y., Christian, A., & Yandi, J. (2025). Pembangunan Sistem Informasi Layanan Publik Berbasis Web untuk Meningkatkan Aksesibilitas dan Efisiensi Administrasi di Desa Karang Agung. *Jurnal Komputer, Informasi dan Teknologi, 5*(2), 1–11. https://doi.org/10.53697/jkomitek.v5i2.2947

Gong, Y., Yang, J., & Shi, X. (2020). Towards a comprehensive understanding of digital transformation in government: Analysis of flexibility and enterprise architecture. *Government Information Quarterly, 37*(3), Article 101487. https://doi.org/10.1016/j.giq.2020.101487

Hartatik, N., Azizah, N. L., & Busono, S. (2024). Sistem Informasi Desa Berbasis Web dengan Menggunakan Metode Waterfall. *JIPI (Jurnal Ilmiah Penelitian dan Pembelajaran Informatika), 9*(1), 264–271. https://doi.org/10.29100/jipi.v9i1.4428

Hilhorst, C., Behrens, C., Brouwer, E., & Sneller, L. (2022). Efficiency gains in public service delivery through information technology in municipalities. *Government Information Quarterly, 39*(4), Article 101724. https://doi.org/10.1016/j.giq.2022.101724

Huda, M. S., & Susanti, N. (2021). Sistem Informasi Pelayanan Surat Keterangan pada Kantor Desa (SI SUKET). *Indonesian Journal of Technology, Informatics and Science (IJTIS), 2*(2), 75–80. https://doi.org/10.24176/ijtis.v2i2.6275

Hyytinen, A., Tuimala, J., & Hammar, M. (2022). Enhancing the adoption of digital public services: Evidence from a large-scale field experiment. *Government Information Quarterly, 39*(3), Article 101687. https://doi.org/10.1016/j.giq.2022.101687

Khaerunnisa, N., Maryanto, E., & Chasanah, N. (2021). Sistem Informasi Pelayanan Administrasi Kependudukan Berbasis Web Menggunakan Metode Waterfall di Desa Sidakangen Purbalingga. *Jurnal Ilmu Komputer dan Informatika, 1*(2), 99–108. https://doi.org/10.54082/jiki.12

Kristania, Y. M. (2021). Sistem Informasi Pelayanan Administasi Kependudukan Desa (M-Desa) dengan Metode User Centered Design. *Indonesian Journal on Software Engineering (IJSE), 7*(1), 1–9. https://doi.org/10.31294/ijse.v7i1.8972

Kurniawan, A., Chabibi, M., & Dewi, R. S. (2020). Pengembangan Sistem Informasi Pelayanan Desa Berbasis Web dengan Metode Prototyping pada Desa Leran. *JURIKOM (Jurnal Riset Komputer), 7*(1), 114–121. https://doi.org/10.30865/jurikom.v7i1.1863

Madsen, C. Ø., Lindgren, I., & Melin, U. (2022). The accidental caseworker – How digital self-service influences citizens' administrative burden. *Government Information Quarterly, 39*(1), Article 101653. https://doi.org/10.1016/j.giq.2021.101653

Najoan, A. R. F., & Setiyawati, N. (2023). Pembangunan Sistem Informasi Administrasi Desa Berbasis Web dengan Menggunakan Framework Laravel. *Jurnal Pendidikan Teknologi Informasi (JUKANTI), 6*(2), 212–221. https://doi.org/10.37792/jukanti.v6i2.984

Rachmat, Z., Irfan, A., S., W., & Ardi. (2024). Sistem Informasi Pelayanan Administrasi pada Desa Abbanuangnge Kabupaten Soppeng. *REMIK: Riset dan E-Jurnal Manajemen Informatika Komputer, 8*(1), 56–65. https://jurnal.polgan.ac.id/index.php/remik/article/view/13210

Rahayu, R. E. G., & Marup, P. (2021). Rancang Bangun Sistem Informasi Pelayanan Administrasi Publik Terpadu Berbasis Web. *Jurnal Algoritma, 18*(1), 25–34. https://doi.org/10.33364/algoritma/v.18-1.826

Ramadani, L., Yovadiani, A., & Dewi, F. (2022). When innocence is no protection: Governance failure of digitization and its impact on local level implementation. *Transforming Government: People, Process and Policy, 16*(1), 68–80. https://doi.org/10.1108/TG-09-2021-0142

Rohmah, A. A., & Gunawan, D. (2023). Implementasi Algoritma Priority Scheduling Sistem Informasi Pelayanan Administrasi Kependudukan Desa. *Jurnal Informatika: Jurnal Pengembangan IT, 8*(3), 181–187. https://doi.org/10.30591/jpit.v8i3.4891

Scupola, A., & Mergel, I. (2022). Co-production in digital transformation of public administration and public value creation: The case of Denmark. *Government Information Quarterly, 39*(1), Article 101650. https://doi.org/10.1016/j.giq.2021.101650

Supiyandi, Zen, M., Rizal, C., & Eka, M. (2022). Perancangan Sistem Informasi Desa Tomuan Holbung Menggunakan Metode Waterfall. *JURIKOM (Jurnal Riset Komputer), 9*(2), 274–280. https://doi.org/10.30865/jurikom.v9i2.3986

Syaebani, A., Tyasmala, D. V., Maulani, R., Utami, E. D., & Wahyuni, S. N. (2021). Pengembangan Sistem Informasi Pelayanan Surat Menyurat (SIRA) Berbasis Website dengan Menggunakan Framework CodeIgniter: Studi Kasus Kelurahan Mendawai. *Journal of Information System Management (JOISM), 3*(1), 32–38. https://doi.org/10.24076/joism.2021v3i2.446

Tangi, L., Janssen, M., Benedetti, M., & Noci, G. (2021). Digital government transformation: A structural equation modelling analysis of driving and impeding factors. *International Journal of Information Management, 60*, Article 102356. https://doi.org/10.1016/j.ijinfomgt.2021.102356

Yoraeni, A., Basri, H., & Puspasari, A. (2022). Penerapan Sistem Informasi Pelayanan Desa dalam Meningkatkan Kualitas Pelayanan Publik dan Mewujudkan Smart Village. *JMM (Jurnal Masyarakat Mandiri), 6*(5), 4084–4094. https://doi.org/10.31764/jmm.v6i5.10655