

Human Resource Information System in SU II Sub-district Palembang

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Abstract

Advances in information technology and the internet make it very easy for a person to get information. Web-based information systems also play an important role in an organization, including Employee Promotion, Mutation, and Pension Information Systems in SU II District, Palembang City. The system was developed using the PHP programming language, MySQLi database, and Web Engineering methods. This web-based system can facilitate the General and Personnel Section in carrying out their duties and functions in processing data quickly with a responsive and user-friendly display so that it can be accessed on desktop and mobile devices and also it is equipped with a feature to send notifications to Email and WhatsApp. Another advantage of this web-based information system is equipped with a feature to send barcodes from important Decision Letters as a security measure in maintaining the confidentiality of important documents.

Keywords: Human Resource, Mutation, Pension, Promotion, Web engineering.

1 Introduction

The implementation and effective use of a Human Resource Information System (HRIS) in Palembang's SU II Sub-district directly align with several Sustainable Development Goals (SDGs) [1]. The article's primary focus on improving administrative efficiency through HRIS adoption aligns with SDG 9 - Industry, Innovation, and Infrastructure - by promoting technological advancement to improve operational processes. Furthermore, the HRIS's ability to streamline personnel management and optimize resource allocation aligns with SDG 8 - Decent Work and Economic Growth, which seeks to ensure productive employment and decent work for all while promoting economic growth. Furthermore, the article's investigation of technological integration within local government administration is related to SDG 16 - Peace, Justice, and Strong Institutions - in that it seeks to establish efficient, transparent, and accountable institutions necessary for sustainable development. This article indirectly contributes to several SDGs by examining the impact of HRIS on organizational efficiency and its contribution to local governance, reinforcing the importance of technology in achieving sustainable development and inclusive growth.

Every element of society [2], including government, education services, environment and society, needs to support a culture of learning in order to improve the quality of Indonesia's human resources. Currently, the dominant penetration of information technology (IT) in various fields has changed human interaction and activity patterns towards digital mode [3]. The digital world based on information technology continues to develop and has an impact on changes in a number of aspects of human life [4]. Information systems today cannot be separated from technology. Along with advances in technology and the internet, it indirectly increases the need for fast, precise and accurate information so that web-based information systems have been widely used by almost all corporate organizations, both government and private as a medium for conveying information. One of the trends in the use of applications by modern society today is mobile-based applications [5], [6].

In order to realize the concept of good governance, the government has begun to utilize technology that is able to accommodate the need for effective and efficient services, one of which is the existence of a Personnel Management Information System. The Personnel Management Information System (SIMPEG) is very important in providing services to all existing personnel because employees are an important asset in the organization of the organization that must be managed properly. Every organization will be able to stand with the activities of human resources (HR) who will initiate, plan, run, organize, and monitor the running of the organization [7] [8]. State Civil Apparatus (ASN) Employees are government tools and equipment whose main duties and functions as state officials are required to have integrity and competence in accordance with the needs of their positions [9]. State Civil Apparatus (ASN) is a profession for Civil Servants (PNS) and government employees with work agreements, who serve in government agencies. ASN employees consist of civil servants and government employees with work agreements, who are appointed by staffing officers and assigned tasks in a government position, or assigned other state duties, and are paid according to the laws and regulations [10].

The absence of an Information System that specifically handles data on promotions (ranks), mutations and pensions in General Staff at the Seberang Ulu Dua (SU II) District Office, Palembang city, in searching for employee data that is transferred and calculating the year of promotion and retirement of employees still refers to the manual. Another problem is the ineffectiveness of delivering information to employees, causing frequent delays in making documents for filing promotions, transfers and pensions due to delays in submitting the necessary requirements. The Personnel Management Information System is also intended to regulate the employees of the State Civil Apparatus (ASN) consisting of Civil Servants (PNS), Regional Civil Servants (Non PNSD). After the performance appraisal [11] is carried out, the employee can be promoted to a better position.

A good web-based information system is an information system developed using software engineering methods. Web engineering (web engineering) is a software engineering model that is used for application development in order to build a high-quality web. It is also explained that the stages in the web engineering method [12] consist of 5 (five) stages, namely: 1) Communication, 2) Planning, 3) Modeling, 4) Construction, and 5) Deployment. This promotion, transfer and retirement information system is designed as web-based information using HTML and PHP languages, and MySQL database.

Human Resource Information Systems (HRIS) are increasingly being used in organizations as a primary sub-function of their Management Information System. HRIS encompasses a variety of functionalities required for complete Human Resource Management, such as recruitment, performance management, learning and development, and more. The skills gained from the widespread use of various HRIS have been shown to increase employee loyalty, which is critical for organizational sustainability. However, the functionality of information systems in human resource management stems from their ability to reduce challenges, as workforce management can be difficult. The advantages of HRIS implementation include faster processes, fewer information errors, better tracking of HR actions, faster HR decision making, better service delivery, and shifting HR focus from administrative to operational [13]. Despite these benefits, top management resistance, a lack of technological knowledge, and the high cost of infrastructure development all pose challenges to HRIS implementation. It is critical to raise top management awareness and address these barriers in order to successfully implement HRIS. Implementing an HRIS in the SU II Sub-district of Palembang could significantly improve human resource management in a variety of institutions, including educational and community organizations.

The goal of the research is to design and implement a Human Resource Information System (HRIS) in Palembang's SU II Sub-district. The purpose of this research is to learn how the HRIS has improved personnel management, increased operational efficiency, and optimized resource allocation within the organizational structure of the Sub-district. This study aims to shed light on the benefits, challenges, and potential improvements of HRIS adoption in the context of local government administration by examining the system's integration, user experiences, and overall impact on HR processes. Finally, this research seeks to provide valuable insights that can guide future HR technology enhancements for improved organizational performance and service delivery in SU II Sub-district, Palembang, and potentially other administrative settings. Implementing an HRIS improves data accuracy and integrity, increases efficiency and productivity, and improves decision-

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making capabilities. An HRIS can help with many HR tasks, including payroll, benefits administration, and employee recordkeeping. This frees up HR personnel to concentrate on more strategic tasks such as talent management and workforce planning. A human resource information system (HRIS) can also provide valuable workforce insights such as employee demographics, skills, and performance. These insights can help you make educated decisions about HR programs and initiatives.

2 Literature Review

A literature review is a critical, analytical summary and synthesis of the current knowledge of a topic. It should compare and relate different theories/research, findings, and so on, rather than just summarize them individually. It should also have a particular focus or theme to organize the review. In this section, the researcher can describe some of the related previous studies. Researchers can review the gaps in the research, then it can be used as a basis for research to be carried out. To support this research process, a number of studies were carried out on a number of previous studies. The research used as a reference, namely: 1) Development of Web-based Personnel Management System (Case Study of PGRI Madiun University) [14], 2) Analysis of Personnel Management Information System (SIMPEG) as a System in Magelang City Government [15], 3) Design of Web-Based Promotion Information System for the Marine Corps of the Indonesian Navy [16], 5) Promotion Service through Application of Study Promotion Management System at Regional Personnel Board of Sidoarjo Regency [17], and 6) Prototype of a web-based human capital information system using the scrum method [18].

The papers presented are similar in that they all focus on the creation and deployment of various information systems in diverse organizational contexts. These articles all focus on the use of technology to improve management processes and services within their respective institutions or industries. They specifically emphasize the value of web-based systems, such as personnel management systems, information systems, promotion information systems, and human capital information systems, in terms of efficiency, effectiveness, and service delivery. They also stress the importance of technology in simplifying operations, improving decision-making processes, and maximizing resource use within the firms they cover. But, none of these studies have been equipped with QR-Code facilities and notifications that can be forwarded to the WhatsApp number of the employee concerned.

Based on the above background, this study will discuss the development of a human information system for promotion, transfer, and retirement information systems at the SU II Palembang Sub-district.

3 Research Method

The information system development method used in this research is web engineering, namely the software engineering model used to develop web-based information systems and the processes used to create high-quality webs. This method requires a systematic and sequential approach that starts at the system level and progresses at each stage. The web engineering method [12] has 5 (five) stages to be able to develop software as shown below (Figure 1): 1) Communication, 2) Planning, 3) Modeling, 4) Construction, and 5) Deployment.

Customer Communication (User Communication) is the stage of communicating with users in order to find out what users want to formulate the goals and measures of this web-based information system. In this case, the researcher communicates with the Head of Subdivision. General Affairs and Personnel in SU II Sub-district, Palembang City to find out the existing problems and what is desired as material for formulating the goals and measures of the designed web-based information system. Then the problems faced in the General and Personnel Section were found, namely the difficulty in processing data and communicating/delivering information about promotions, transfers and pensions to employees. There are 3 (three) activities in this phase, namely: a) Formulation, b) Negotiation, and c) Elicitation.

The planning stage carried out in this research is the stage of combining requests and information from users and technical planning is carried out by identifying what software and hardware are needed. Furthermore, technical planning will be carried out by identifying what software and hardware are needed, estimating the time required, risk analysis and monitoring. Then we get the required software, namely Visual Studio Code and Xampp software, for the hardware needed in the

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form of laptops and printers as well as the estimated time required, risk analysis and monitoring which is approximately 3 (three) months. There are 4 (four) activities in this phase, namely: a) Estimation, b) Risk Analysis, c) Scheduling, and d) Monitoring.

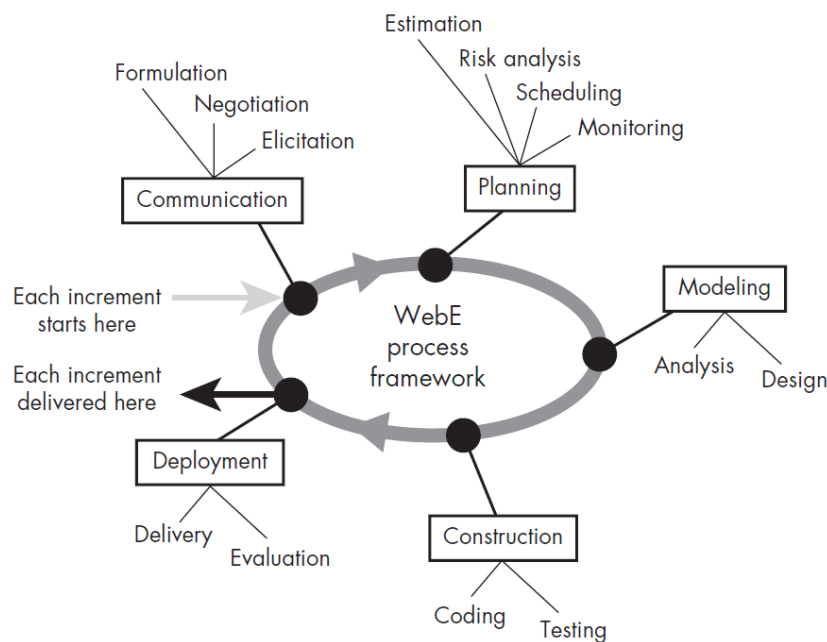


Figure 1 Web Engineering Process [12]

The Modeling stage consists of modeling analysis and modeling design. Modeling analysis (process analysis) is a continuation of the communication phase with users by analyzing the objectives of the Information System: a) Content analysis, formulating the needs of the system and its problems, b) Analysis of interactions (iteration), identifying user interactions with the system based on user access rights, c) Functional analysis, identifying the process of how this web-based information system will display information to users, and d) Configuration analysis, identifying the right environment and infrastructure for the information system to be created. Modeling design The stage of designing what will be in the system, including: a) Interface design, checking the collection of information that has been carried out at the analysis stage, designing the interface sketch of the web information system, b) Aesthetic design, designing the appearance of the page with combinations and images that match the content of the web information system, c) Content design, designing the content of the web information system. The design is designed based on the information needs that have been identified at the analysis stage, d) Navigation design, navigation design for web information systems has rules or authorization rights for each user according to the system workflow, and e) Architectural design, architectural design for information systems web as a whole in the form of a database that is on the system.

The Construction Phase consists of Implementation and Testing. Implementation is done by applying web pages in html form as a whole based on the results of content design on non-technical and technical member activities, while the implementation of content and logic functions is made in PHP form. Testing is done to find out the possibility of errors such as errors in scripts or forms, navigation or display or other parts.

The deployment stage is the stage to provide periodic Web improvements for users and evaluate and provide feedback and aims to disseminate information systems that have been worked on by developers. The deployment can be hosted on a server. The use of web information systems created for the operational environment, sent to end-users and periodically evaluates the web information system. This stage is carried out after the information system has been running or used in the SU II District, Palembang City.

4 Results and Discussions

After going through several stages of the web engineering method, an Information System (Figure 2) for Promotion, Transfer and Retirement of Web-Based Employees was formed in SU II District, Palembang City. This information system can facilitate the General and Personnel Section in carrying out their duties and functions in the management of promotions, transfers and employee retirements. This information system can process data quickly with a responsive and user-friendly display so that it can be accessed on desktop and mobile devices and makes it easier for users/employees to access this web-based information system.

This web-based information system is not only used as a medium for processing data on promotions, mutations and employee pensions in the form of saving, editing, deleting and searching data but can also be used as a medium of information regarding promotions, transfers and pensions to each employee concerned because this web-based information system is equipped with a feature to send notifications to email and WhatsApp regarding when to apply for promotions, transfers and retirements as well as sending a barcode from a website page that displays important documents to the email of each employee concerned, but so that the security of the document is maintained because only employees are distributed barcodes.

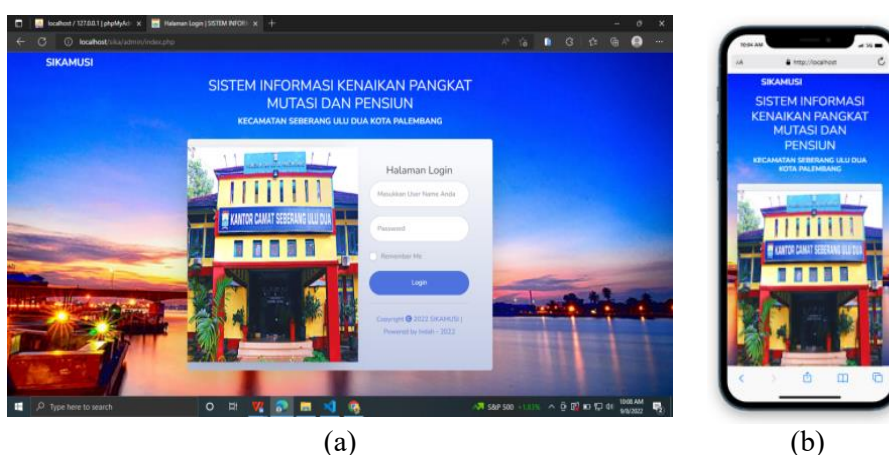


Figure 2 Admin Main Interface

Submissions for promotions, transfers, or retirements can be made either by employees or through the admin. In the view presented in this article, submissions that go through the Admin are displayed. After the Admin logs in, it will enter the Dashboard (Figure 3) which has 3 (three) main menus: 1) Promotion, 2) Mutation, and 3) Retirement.

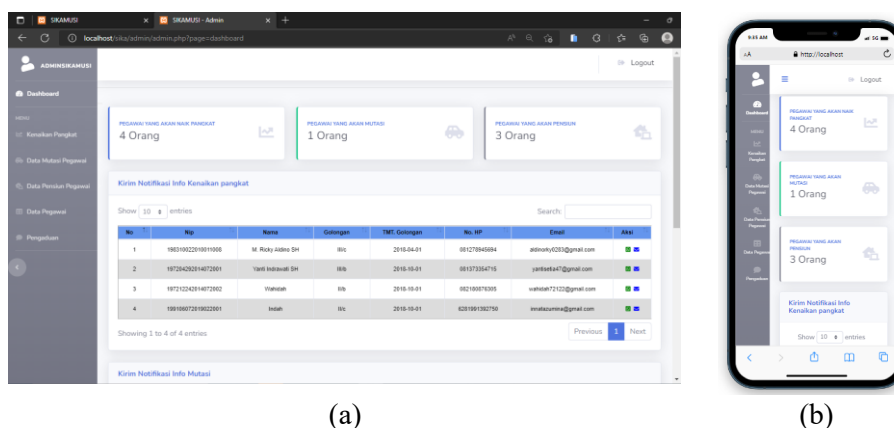


Figure 3. Admin Dashboard Menu

The Human Resources Information System in this study focused on 3 (three) processes, namely: 1) Promotion, 2) Mutation, and 3) Retirement. This section will discuss each of these functions. For the management of promotions, transfers and pensions, a submission button is provided which when

clicked will display an application form. Employees can apply for promotion, transfer or retirement as needed by filling out the data form and uploading the required documents.

On the dashboard page that has been explained above when the admin presses on the words "Employees who will be promoted" it will be directed to a table containing data from employees who will be promoted in detail. In the form, the employee must fill in the data correctly and upload important documents as a condition that must be completed. There are 8 (eight) documents required for the application for promotion (Figure 4.a & 4.b), namely: 1) Application Letter, 2) Approval Letter, 3) Statement Letter of Proposed Promotion, 4) Statement Not Sentenced, 5) Final Decree (SK), 6) Latest Work Order, 7) Identity Card (KTP), and 8) Employee Card (Karpeg). After filling out the form, the data that is filled will be entered directly on the promotion page (see Fig. 5.a). On this page the admin can process data and documents that have been uploaded and then can directly send the promotion file to the BPKSDM of Palembang City. After waiting for some time, BPKSDM will issue a Promotion Decree. Then the Admin can directly enter the promotion data on the employee promotion page (see Figure 4.c).

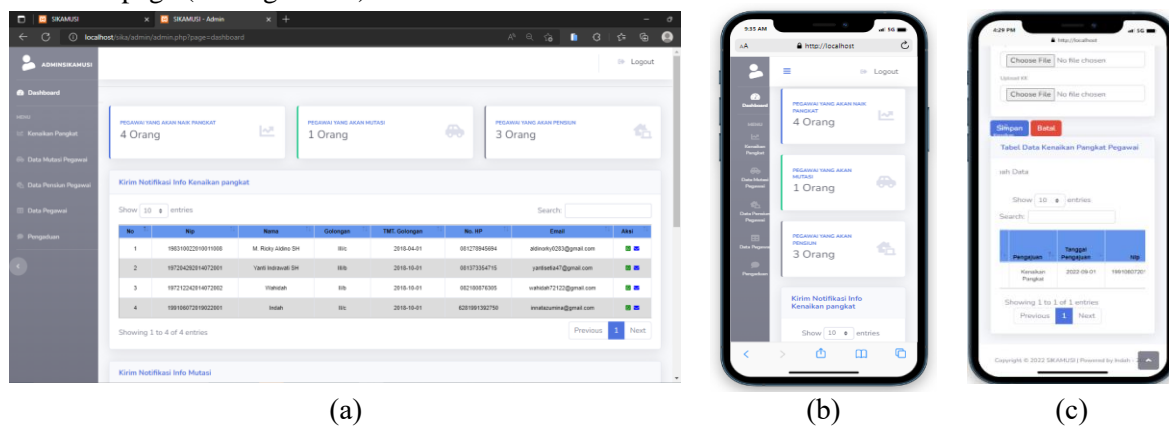


Figure 4. Promotion Application Menu

For the transfer application process, the employee concerned can directly submit the transfer application process through the system. To apply for a mutation, employee must prepare documents such as those in the promotion process. In this form, the employee must fill in the data correctly and upload important documents as a condition that must be completed. After filling out the form, the data that is filled will be directly entered on the mutation submission page (see Figure 5.a). After all the files entered are verified, the staff will send them to BKPSMD. After being processed by BKPSDM, a Transfer Decree (SK) will be issued. Furthermore, the SU II staff will enter the latest SK Mutation into the SU II system (Figure 5.c).

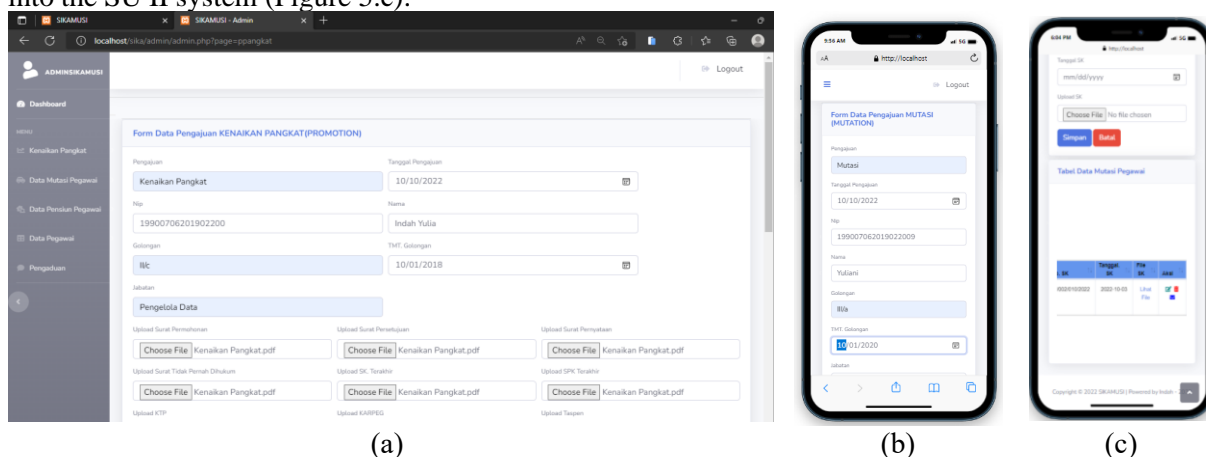


Figure 5. Mutation Application Menu

On the dashboard page that has been explained above when the admin presses on the words "Employees Who Will Retire" it will be directed to a table containing detailed data from employees who will retire. To apply for a pension, employees must prepare all the documents as in the promotion and transfer application, but are added with 3 (three) more documents (Figure 6), namely: 1) Retirement Savings Card (Taspen), 2) Marriage Certificate, and 3) Family Card (KK). After all files

have been submitted and verified, the files will be sent to BKPSDM. After waiting for some time, a Pension Decree will be issued for the employee concerned. The SK Pension will then be entered by SU II staff into the system (Figure 6.c).

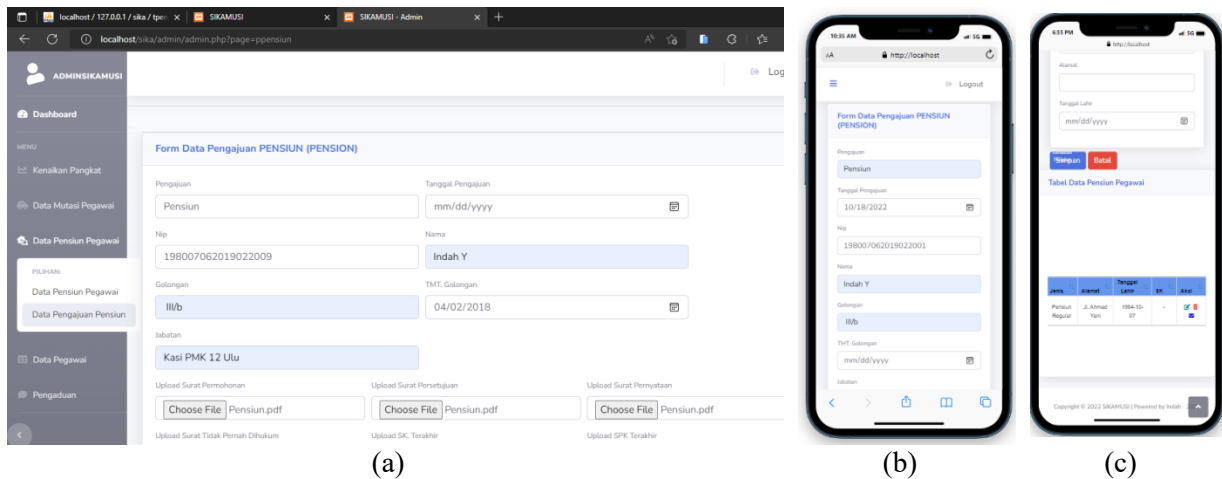


Figure 6. Pension Application Menu

This system is equipped with a feature of sending notifications both to Email and WhatsApp Numbers from employees who are taking care of Promotions, Transfers, or Retirements (Figure 7). Notifications are sent by the SU II admin staff. To send notifications, admin staff can do it via admin dashboard. This menu is equipped with a send message feature to provide information via Email and WhatsApp and Email.

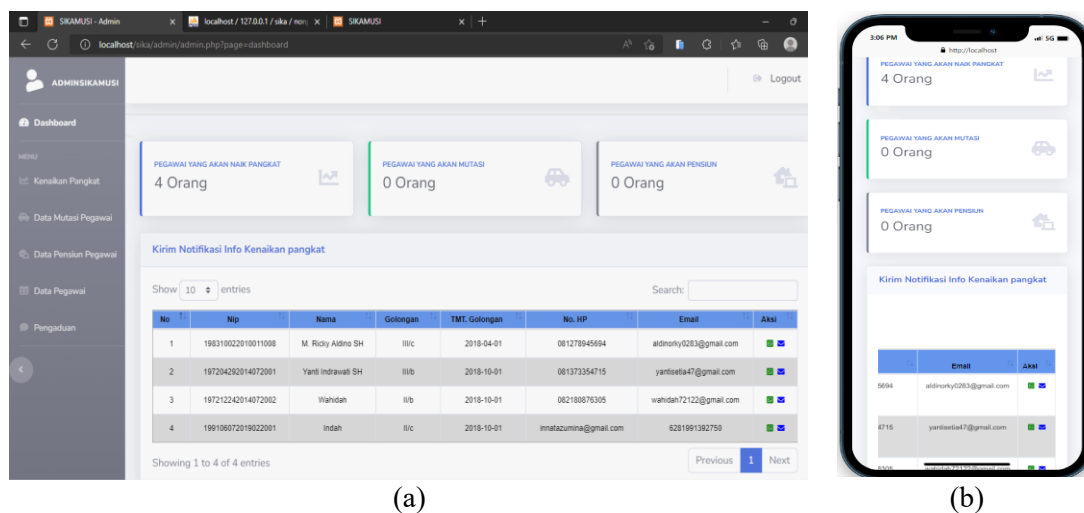
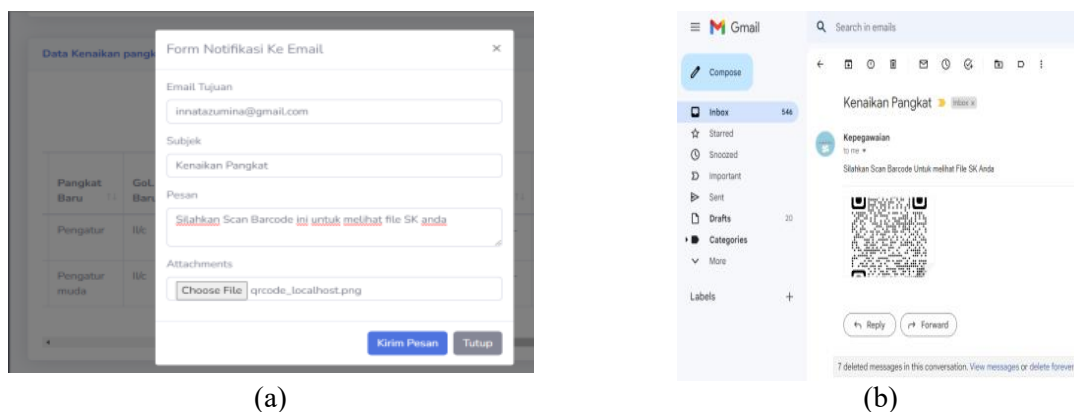


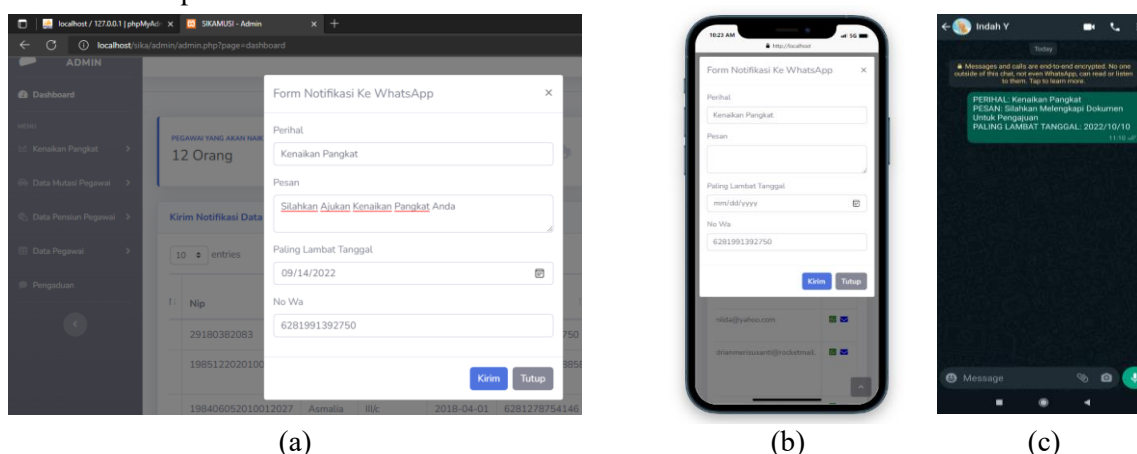
Figure 7. Dashboard Notification Page Interface

On the dashboard there is a display of how many employees are applying for promotions, transfers, and retirements. Admin can press the link from each sub menu (Promotion | Mutation | Pension). Then a table will appear containing employees who are in the Promotion/Mutation/Retirement process. To send notifications, in the action section there are 2 (two) Email and WhatsApp icons.



(a) (b)
Figure 8. The Email Notification Promotion Page with Barcode

When the Admin presses the Email icon, a form will appear to send a message (Figure 7.a). This page is also equipped with a barcode send feature for important documents to the employee's email. In the table on this page there is a send email icon. On the send email icon when clicked it will display a Form as access to connect with the Admin Gmail account and the email account of the employee concerned (see Figure 8). The email sent contains a QR-Code. QR Code [19] is a two-dimensional barcode invented by a Japanese company called Denso Wave in 1994. To send notifications via WhatsApp, admin staff can press the WhatsApp icon (Figure 7.a). The system will then send a message to the employee's WhatsApp number (Figure 9). WhatsApp is one of the most popular and widely used mobile communication and collaboration apps [20]. After receiving the message, the employee can directly apply via the link that has been shared. Then the employee concerned will be directed to the web provided.



(a) (b) (c)
Figure 9. The WhatsApp Notification Promotion Page with Barcode

5 Conclusion

Web-Based Information System for Promotion, Transfer and Retirement of Employees in SU II Sub-district, Palembang City is designed using the PHP programming language, MySQLi database and Web Engineering methods. This web-based information system has two interfaces consisting of the administrator section in this case is the admin and the user section in this case is the employee. The user's website (employee) includes six pages, namely the home page, info, about, contact us and complaints and submissions where users can apply for promotions, transfers or retirements with. On the website administrator (admin) which includes five pages, the admin can control the application for promotion, transfer or retirement on the dashboard page which contains data on employees who will be promoted, transferred or retired and this dashboard page is provided with a form to send information directly related on the WhatsApp number or email of the respective employee. The admin can also input data on the promotion page, mutation page and retirement page where the three pages can send barcodes from files uploaded at the time of input to each employee via email so that employees can view the Decree (SK) or download the file, and the complaint page is used to submit employee complaints. The Web-Based Information System for Promotion, Transfer and Retirement of Employees in SU II Sub-district, Palembang City makes it easier for the General and Personnel

Section in the management a promotion, transfer and retirement of employees in SU II Sub-district, Palembang City.

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