



**ANNA MOBILE DIGITALIZATION SYSTEM DESIGN FOR OUTPATIENT
REGISTRATION SERVICES**

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ABSTRACT

The use of online registration for outpatient services at the Hospital provides flexibility and ease of access for patients. This will increase patient satisfaction with Hospital services. The purpose of this innovation project is to produce an effective and innovative ANNA Mobile design framework in an effort to create convenience in outpatient registration services at RSU ANNA Medika Madura. Methods: This innovation project uses the type of Research Development with a Formative research design using the ADDIE development model. The subject of research in this innovation project is the digitalization of outpatient registration at RSU ANNA Medika Madura. The development was carried out by involving several complaints and customers (patients) in the feasibility test of the development product, namely the ANNA Mobile Design Framework. Results: The results of this innovation project are in the form of an ANNA Mobile design framework which is considered feasible and can be implemented into an effective and innovative ANNA Mobile application in an effort to create convenience in outpatient registration services at RSU ANNA Medika Madura. Conclusions: An effective and innovative ANNA Mobile design in an effort to create convenience in outpatient registration services at RSU ANNA Medika Madura.

Keywords: ANNA mobile; online registration services; outpatient

How to cite (in APA style)

Hasinuddin, M., Isnaini, A., & Kulsum, U. (2024). Anna Mobile Digitalization System Design for Outpatient Registration Services. *Indonesian Journal of Global Health Research*, 6(S4), 307-316. <https://doi.org/10.37287/ijghr.v6iS4.4341>.

INTRODUCTION

Health is an important thing that must be considered by everyone, because health is a state of well-being of the body, soul, and body that allows everyone to live productively and economically. One of the national goals is to advance the welfare of the nation, which means meeting basic human needs, namely food, clothing, food, education, health, employment and peace of mind. The goal of health development is to achieve the ability to live healthily for every resident, so the responsibility for realizing optimal health levels lies in the hands of all Indonesian people, the government, and the private sector together (Maranjaya, 2020); (Pradiatiningtyas, 2019). Health is one of the indicators of the success of development carried out by a body (Puspitasari & Rusmawati, 2013); (Rochman et al., 2018). According to Law No. 23/1992 Article 1 states that health is a state of well-being of the body, soul, and body that allows everyone to live productively and economically. Health efforts are every activity to maintain and improve health carried out by the government and the community, one of which is by providing health facilities. Health facilities are places used to carry out health efforts. Health facilities include general hospitals, special hospitals, and other health facilities (Kusnadi et al., 2019); (Pasaribu & Sihombing, 2017).

According to the Indonesian Ministry of Health (2010) concerning Hospitals, a Hospital is a health service institution that provides comprehensive individual health services that provide inpatient, outpatient and emergency services. Hospitals provide several types of services

including OMP services, OMP support services, care services, rehabilitation services, prevention and health improvement, as a place for education and/or training for OMP and para OMP, as a place for research and development of science and technology in the health sector. Hospitals based on the types of services available are divided into two, namely General Hospitals and Special Hospitals. Hospitals based on type are divided into two, namely Type A Hospitals, Type B Hospitals, Type C Hospitals, and Type D Hospitals (Nur et al., 2021).

ANNA Medika Madura Hospital is a private hospital that was established in 2017. ANNA Medika Madura Hospital is located at Jalan RE Martadinata No. 16, Mlajah Village, Bangkalan District, Bangkalan Regency, East Java Province. RSUD ANNA Medika Madura is a type D general hospital with full accreditation by KARS in 2018 and full accreditation by LAMKP-RS in 2023. RSUD ANNA Medika Madura provides a variety of specialist services with 26 specialist doctors and specialist dentists as well as 8 general practitioners and 1 general dentist. There are specialist services for obgyn, pediatrics, internal medicine, internal medicine, kidney and hypertension consultants, general surgery, urology, ophthalmology, anesthesia, emergency, nerves, heart and blood vessels, lungs, ENT, eyes, skin, orthodontics, clinical pathology, and radiology. RSUD ANNA Medika Madura has a vision of becoming the Hospital of Choice for the ompla community in 2028. Service improvements continue to be improved in an effort to achieve this vision.

The growth of patients at ANNA Medika Madura Hospital shows a positive trend every year. Patient growth occurs in the ER, inpatients, and outpatients. Along with the increasing number of outpatient visits at ANNA Medika Madura Hospital, the possibility of complaints related to outpatient services also increases. ANNA Medika Madura Hospital provides space for the public to provide criticism and suggestions related to outpatient services by scanning the Complaint Barcode placed at several points in the outpatient room at ANNA Medika Madura Hospital. After scanning the Complaint Barcode, patients can type in criticism and suggestions related to the outpatient services provided at ANNA Medika Madura Hospital. The Complaint Barcode provided is one way to continue to maintain the quality of outpatient services provided to patients and continue to increase patient satisfaction regarding the outpatient services provided at ANNA Medika Madura Hospital.

The Complaint Barcode scan results obtained criticism and suggestions related to the outpatient service registration process which was considered less convenient for patients. Currently, registration for outpatient services at ANNA Medika Madura Hospital can be done using three methods, namely direct registration (On Site), registration by telephone and via the WhatsApp application to the customer care section of ANNA Medika Madura Hospital. Direct registration (On Site) is a method of registering outpatients by making a direct visit to the admissions section of ANNA Medika Madura Hospital. Registration for outpatients by telephone is registration of outpatients by calling the customer care section of ANNA Medika Madura Hospital. These two registration methods are the initial methods used by ANNA Medika Madura Hospital in outpatient registration services. With the increasing number of outpatient visits, the two outpatient registration methods are no longer sufficient to meet the needs of outpatient registration services at ANNA Medika Madura Hospital.

Registration via the WhatsApp application is registration of outpatients by sending a written message (chat) via the WhatsApp application to the customer care section of ANNA Medika Madura Hospital. Initially, the registration method via the WhatsApp application was considered effective in addressing the needs of outpatient registration services by reducing the

density of On Site and telephone registrations. However, with the increasing number of outpatient visits, the WhatsApp registration method is now considered no longer able to meet the needs of outpatient services. This causes delays in outpatient services and affects patient satisfaction with outpatient services. Therefore, it is hoped that innovation will be created immediately to overcome the inability of ANNA Medika Madura Hospital to meet the needs of outpatient registration services so that it can improve the quality of service to patients and increase patient satisfaction. Along with the emergence of problems in outpatient registration services, ANNA Medika Madura Hospital is implementing digitalization in several aspects of service, one of which is the application of Electronic Medical Records integrated with SIMRS and BPJS V-claims. The application of digitalization to the medical record ompla and hospital information ompla is considered effective and efficient in overcoming several problems related to medical records and the internal verification process of BPJS claims. Therefore, digitalization is also expected to be an innovation to overcome problems in the outpatient service registration process.

Currently, the use and development of technology and information in the health sector is growing rapidly. In line with its development, many health facilities provide online registration via mobile. The use of online registration provides flexibility to patients because they do not need to queue for long, patients can see the order of patients according to their arrival, easy access, self-service and can see some information provided by health care facilities (Majiid et al., 2021). In today's era, everyone demands increasingly efficient health care services, one of which is health services in the Hospital environment (Nabyla & Sigitta, 2019); (Zulfikar & Supianto, 2018). Good service is the key to attracting consumer interest and maintaining it, with good service can create consumer satisfaction that leads to consumer resilience and loyalty (Asworowati et al., 2023); (Rachman & Aini, 2019). The aim of this innovation project is to produce an effective and innovative ANNA Mobile design framework in an effort to create convenience in outpatient registration services at RSU ANNA Medika Madura. In line with the increasingly rapid developments in the world of technology, information technology is one of the tools to help improve services for hospitals, one of which is in patient registration services so that patients receive good and targeted services in a short time.

METHOD

This innovation project uses the type of Research Development. In this innovation project, development was carried out on the digitalization of outpatient registration at RSU ANNA Medika Madura. This innovation project uses a Formative research design using the ADDIE development model. This innovation project seeks to develop in more detail and in detail the digitalization of outpatient registration at RSU ANNA Medika Madura so that a more effective and innovative design is obtained and can be applied according to service needs. The subject of research in this innovation project is the digitalization of outpatient registration at RSU ANNA Medika Madura. The development was carried out by involving several hospital personnel, namely: (1) IT officers (2) customer care officers (3) customers (patients) in the feasibility test of the development product, namely the "ANNA MOBILE Design Framework". The ADDIE Development Model consists of five stages, namely (1) Analysis (2) Design (3) Development (4) Implementation 5) Evaluation (Satriawan, 2023).

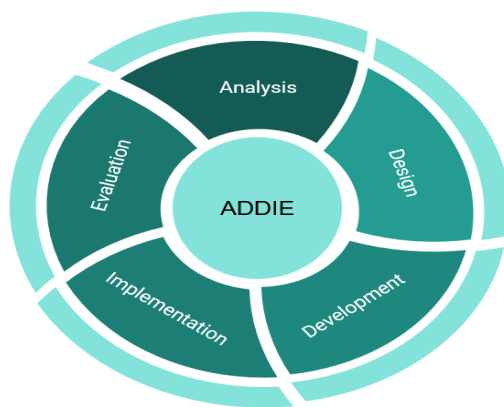


Figure 1. ADDIE Development Model

Development Procedure

The development steps based on the ADDIE development concept consist of five stages, namely:

Analysis

Research development begins with an analysis of the problems related to the ongoing patient registration process, results/findings:

Table 1. Problem Analysis

| Constraint Registration | Method |
|---------------------------|--|
| Direct (On site) | <ul style="list-style-type: none"> - Punctuality in the waiting room - Long queues - Extra security - Need facilities (toilets, trash, AC, etc.) |
| By Phone to Customer Care | <ul style="list-style-type: none"> - Long duration, and often causes complaints |
| WhatsApp | <ul style="list-style-type: none"> - Becomes the method most chosen by customers so that customer care responses are slow, so complaints often occur |

Next, further analysis will be carried out using the SWOT analysis principle (Strengths, Weaknesses, Opportunities, Threats).

Design

At the design stage, the product is still conceptual and will underlie the development of the next process. At this stage, all aspects that are elements to be assessed are defined. In this innovation project, in the design stage, the ANNA Mobile design framework will be designed conceptually, consisting of product content, application instructions, and other related aspects such as interfaces.

Development

The Development stage is the activity of realizing the product design that has previously been described conceptually into a product that is ready to be assessed for its feasibility. In this product innovation in the development stage, the conceptual framework of the ANNA Mobile system design is developed into the ANNA Mobile system design framework (visually).

Implementation

At the Implementation stage, a feasibility test is carried out by involving related parties. In this innovation project, a feasibility test was carried out on the ANNA Mobile design framework to obtain an assessment by involving several professionals and customers. The

professionals involved include IT officers, admission officers, and customer care officers at RSU ANNA Medika Madura. Customers are outpatients at RSU ANNA Medika Madura.

Evaluation

Evaluation is the final stage of ADDIE. The development evaluation stage is carried out to provide feedback on the results of the feasibility test and make appropriate revisions. The results of the revision are submitted to the Focus Discussion Group (FGD) to obtain recommendations for the revision results. The final goal of the evaluation is to measure the achievement of development objectives. The final goal of this innovation project is to obtain an effective and innovative outpatient registration digitalization system design, namely the ANNA Mobile design framework which is then prepared for application.

RESULTS

Analysis

Analyzing the need to develop a digitalization of the outpatient registration system at RSU ANNA Medika Madura. The analysis was conducted through Focus Group Discussion (FGD) involving professionals and patients. The professionals involved include the Head of the Outpatient Installation, Head of the Medical Support Installation, Admission Officer, Customer Care, Security Team (Satpam). The results of the FGD showed that there was an increase in the number of outpatient visits from year to year. The increase in outpatient visits has caused an increase in the workload of registration officers (admission officers and customer care).

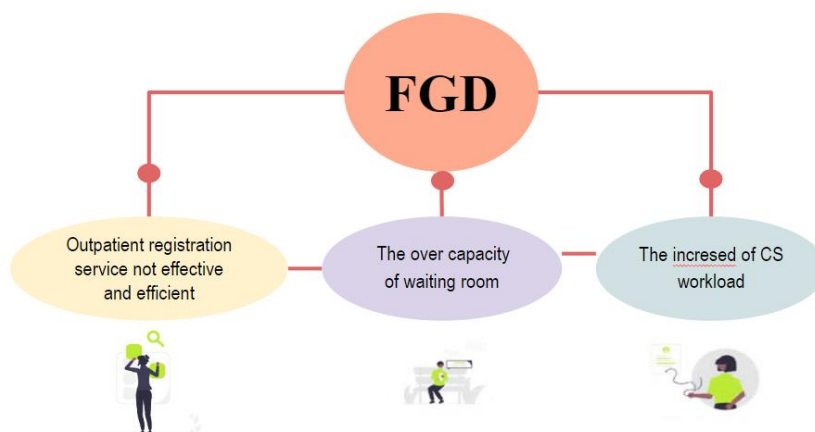


Figure 2. FGD 1 Results

From the SWOT analysis conducted, it was found that the Weakness that emerged, namely digitalization in outpatient registration services could not reach all customers, could be overcome with one of the existing Opportunities, namely the culture of the Madurese community whose kinship system is quite high. While the Threaten that emerged, namely Cyber Security, could be overcome with the Strength owned by RSU ANNA Madura, namely the availability of resources to prevent Cyber Crime.

Design

Designing the ANNA Mobile design framework conceptually. At this stage, each component to be assessed is defined, consisting of:

- a. Interface
- b. Product Content (content)
- c. Implementation Instructions.

Development

The Development stage is the activity of realizing the product design that has previously been described conceptually into a product that is ready to be assessed for its feasibility. In this product innovation in the conceptual development stage, the ANNA Mobile system design framework is developed into a visual ANNA Mobile system design framework.

Implementation

At this stage, an FGD was conducted to compile the questionnaire. The FGD involved the Head of Outpatient Installation, Head of Medical Support Installation, Admission Coordinator and the Hospital IT team. Then, validity and reliability tests were conducted on the questionnaire. After that, a Feasibility Study was conducted with professionals and patients using a questionnaire with a Likert scale that had previously been tested for validity and reliability. The professionals involved in the Feasibility Study included the Head of Outpatient Installation, Head of Medical Support Installation, Registration Officer, Customer Care, Security Team (Satpam), IT Team, and Hospital IT experts.

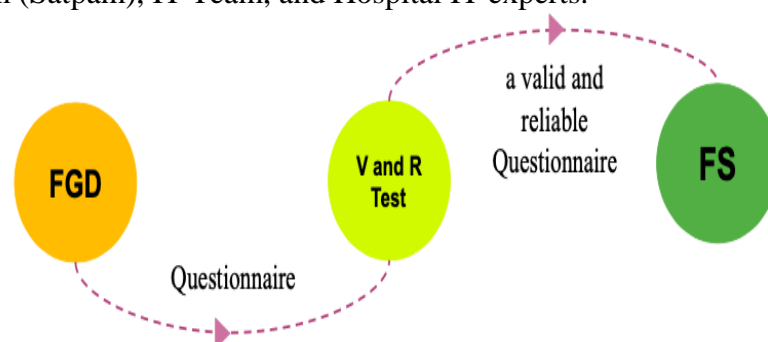


Figure 2. Implementation stage

Evaluation

The result of the evaluation stage is the addition of a Price List feature on the homepage, making it easier for patients to get information about financing at RSU ANNA Medika Madura.

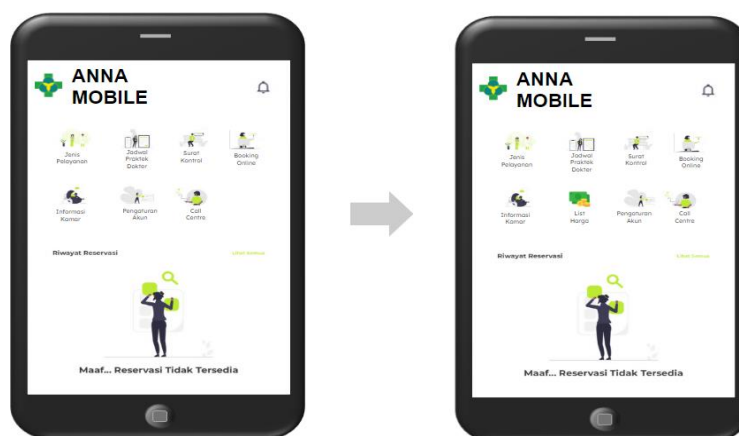


Figure 3. Evaluation results

DISCUSSION

The UI design of a mobile-based application in the form of a prototype can provide convenience in online registration so as to minimize queues. The application can also be used by hospitals as a medium for delivering health information. The design stages consist of seven aspects, including information collection, identification of needs, planning, initial design,

testing and final stages. In the UI design using the figma application, the results of the trial are tested on users, then there is a refinement process (Fajar et al., 2023); (Putra et al., 2023). In a study entitled Online Outpatient Registration Application at the Mulya Medika Clinic using Waterfall, an online outpatient registration application was produced at the Mulya Medika Clinic using the Waterfall method which started from the needs analysis stage then the design was carried out, then in the third stage the coding was carried out into the programming language. The fourth stage was testing using black box testing, and the last stage was maintenance (Fithri et al., 2020); (Saifudin & Zakaria, 2023). With the online outpatient registration application, it can be concluded that the public can find out clinic information without having to go directly to the place they are going to, patients can more easily register for outpatient care, it can make it easier for employees to collect data, it can make it easier for doctors to see the practice schedule and data of patients who register for outpatient care (Sofica et al., 2019); (Christian & Ariani, 2019).

Based on the results of the study entitled Online Patient Registration Application and Health Administration Service System at the North Tapin Health Center, it can be concluded that a computerized application can provide convenience and speed up the online patient registration process and the health administration service process at the North Tapin Health Center, data stored in one database can provide security in data storage so there is no need to worry about data being damaged or lost, the Online Patient Registration application and Health Administration Service System at the North Tapin Health Center are designed using Table Design for database design, Data Flow Diagram (DFD) is used to describe data flow, and data storage uses a Mysql database. The programming language used is CodeIgniter (Zahratonnisa, 2022); (Muhammad, 2020). In a study entitled Evaluation of Outpatient Registration Information System at PKU Muhammadiyah Bantul General Hospital, the results of the study include that PKU Muhammadiyah General Hospital uses computerized and manual methods in its outpatient registration service process. The data needed is the patient's identity and the polyclinic or unit that the patient wants to go to. The organization of its workforce has been well organized. However, the very minimal number of workers and the complaint facilities that are considered still lacking, make the workforce in the outpatient registration section have to bear a fairly large workload. This results in the report on the number of outpatients produced not being said to be accurate, timely, and relevant (Fadil & Ruhiat, 2018); (Lubis et al., 2019).

Components/elements presented in the ANNA Mobile design framework. The components assessed from the quality of the content are the relevance of information, completeness, clarity and conciseness. The relevance of information describes the information presented as relevant to reality. Completeness describes that the information presented is comprehensive, guiding users through each step of the process that must be passed. Clarity and conciseness describe that elements are presented clearly and concisely, avoiding unnecessary jargon and technical language, ensuring that users can easily understand the information provided without confusion (Aulia & Irawan, 2023) (Santoso & Anggara, 2021).

CONCLUSION

The conclusion of this study includes the results of observations on the effective and innovative ANNA Mobile design in an effort to create convenience in outpatient registration services at RSU ANNA Medika Madura. The ANNA Mobile design can reduce communication and transportation costs and can be the main registration gateway that will reduce the potential for duplicate data from various media.

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