

USER INTERFACE DESIGN OF A WEB- AND MOBILE-BASED SALES INFORMATION SYSTEM FOR GBL CHICKEN MODAYAG MSME

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Abstract

GBL Chicken Modayag is a micro-scale culinary business that still relies on manual transaction recording and has not optimally utilized digital media for sales and marketing activities. This condition leads to a high risk of data loss, limited promotional reach, and ineffective dissemination of menu and promotional information to customers. This study aims to design a web and mobile-based sales information system interface as a digital solution to these problems. The research method includes direct observation and interviews with the business owner to analyze the existing system, followed by the design of a proposed system using flowcharts, Entity Relationship Diagrams (ERD), and user interface design developed with Figma. The results of this study produce a sales information system design that supports menu management, online and offline ordering, transaction processing, sales reporting, and communication through a chat feature involving multiple user roles, namely admin, cashier, courier, and customer. The proposed system design is expected to improve sales management efficiency, reduce the risk of transaction data loss, and expand the marketing reach of MSMEs through web and mobile-based digital platforms. However, this study is limited to the design stage and does not include system implementation or usability evaluation, so the results serve as a conceptual reference for future development and testing.

Keywords: Sales Information System, Web And Mobile Interface, MSMEs, Transaction Digitalization

1. INTRODUCTION

The development of information technology has encouraged digital transformation across various sectors, including micro, small, and medium enterprises (MSMEs). The utilization of information systems in sales processes and customer services has become an important factor in increasing operational efficiency and business competitiveness. Web- and mobile-based sales information systems enable more structured, accurate, and easily accessible transaction data management compared to manual recording, which is still widely used by MSME business owners [1], [2].

GBL Chicken Modayag is one of the culinary MSMEs that still applies manual transaction recording using notebooks. Based on observations and interviews with the business owner, this recording method potentially leads to several issues such as loss of transaction data, difficulties in tracking sales history, and limitations in generating

sales reports. In addition, the marketing process still relies on word-of-mouth promotion, resulting in limited dissemination of information regarding menus, promotions, and ordering services. This condition is in line with common problems faced by MSMEs that have not yet optimally utilized digital technology [3].

Various studies indicate that the implementation of sales information systems can serve as a solution to transaction recording and management problems in MSMEs. Database-based sales information systems are capable of overcoming challenges in business monitoring, transaction recording, and financial reporting that were previously conducted manually [4]. The development of web-based sales information systems has also been proven to improve the efficiency of sales data processing and enhance system functional reliability in supporting business operational activities [5]. Furthermore, web-based sales information systems supported by specific frameworks are able to expand marketing reach and facilitate transaction processes as well as

the preparation of sales reports for small and medium-scale businesses [6].

Several previous studies have discussed the development of web- and mobile-based sales information systems as digital solutions for MSMEs. These studies demonstrate that sales information systems can improve service effectiveness, accelerate transaction processes, and assist business owners in managing sales data and reports [7], [8].

Conceptually, a sales information system is an essential subsystem within a business information system that plays a role in recording, processing, and providing integrated sales information [9]. The implementation of sales and service information systems has also been proven to enhance bookkeeping effectiveness, transaction recording, and service quality in MSMEs [10]. Web-based sales information systems can reduce errors in manual recording and produce more organized and systematic financial reports [11]. Overall, sales information systems hold a strategic role in supporting business planning, control, and decision-making processes in a more accurate and directed manner [12].

User Interface (UI) design refers to the visual elements that enable users to interact with a system, while User Experience (UX) focuses on user perceptions related to ease of use, efficiency, and satisfaction when using the system. A well-designed UI/UX plays a critical role in improving system usability, reducing user errors, and increasing task completion efficiency, particularly in information

systems with diverse user roles [13]. In the context of MSMEs, UI/UX design must consider user.

2. RESEARCH METHODOLOGY

This study adopts a system design research approach with the objective of developing a user interface design for a web- and mobile-based sales information system tailored to the needs of users at GBL Chicken Modayag MSME. The research method focuses on analyzing the current system, designing the proposed system, and formulating the user interface design.

2.1 Data Collection Techniques

Data collection was carried out using two primary techniques, namely observation and interviews. Observation was conducted directly at the GBL Chicken Modayag business location to understand the sales process, transaction recording flow, and interactions between customers and business managers. Meanwhile, interviews were conducted with the business owner to obtain information related to existing problems, system requirements, and expectations regarding the information system to be developed. These techniques are commonly used in system design research to accurately obtain user requirements [15].

2.2 Analysis of the Existing System

The system analysis stage aims to identify weaknesses and constraints in the currently implemented sales system. The illustration of the existing system design can be seen in the flowchart presented in Figure 1. Existing System Flowchart

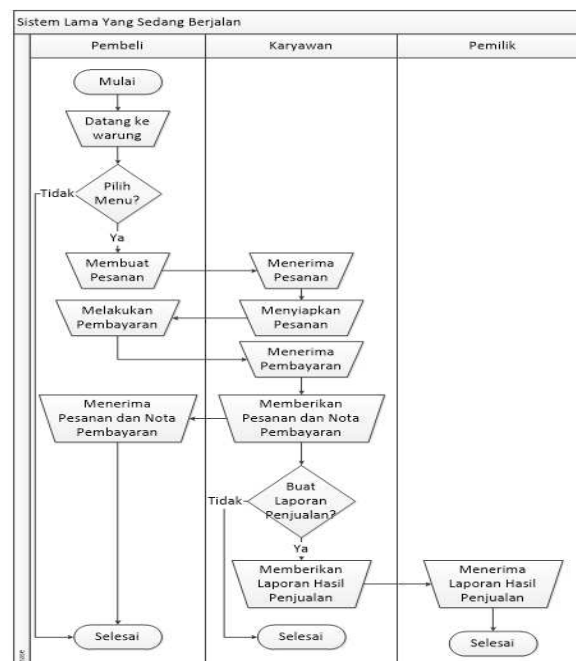


Figure 1. Existing System Flowchart

The current system is still manual, where transaction recording is carried out using

notebooks. This condition has the potential to cause data loss, difficulties in searching transaction

history, and delays in generating sales reports. The results of the analysis of the existing system are then used as the basis for developing a more structured and integrated proposed system.

2.3 Proposed System Design

The proposed system design is carried out to provide a solution to the problems identified in the existing system. The system is designed to be web-

and mobile-based and involves several user roles, namely admin, cashier, courier, and customer. Each role has different access rights and functions according to operational needs. The system workflow is visualized using a flowchart to clearly and systematically illustrate the business processes [16].

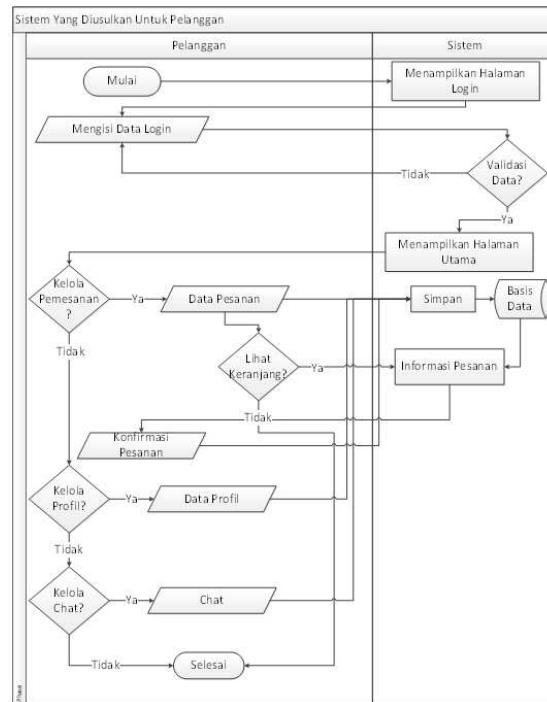


Figure 2. Proposed Customer System

In Figure 2, the flowchart is designed for customers and illustrates the system usage flow. The process begins with user login, which is then verified by the system. If the credentials are valid, the customer is directed to the main page to manage orders,

shopping cart, data storage, as well as view and confirm orders stored in the database. Customers can also manage their profiles and utilize the chat feature. The process ends after all desired activities have been completed.

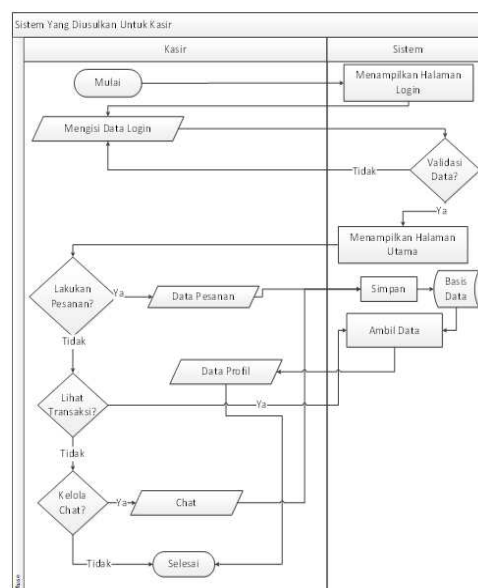


Figure 3. Proposed Cashier System

Figure 3 presents the proposed flowchart for the cashier, which consists of several procedural steps. The process begins with entering login data, followed by displaying the login page and validating the credentials. If the data is valid, the system will display the main page, and the employee will be prompted whether a customer wishes to place an order. If yes, the cashier inputs

the order data, which will then be stored in the system, and the order delivery confirmation will be carried out. In addition, the employee can also manage the profile and chat features as needed. Once all steps have been completed, the process is concluded.

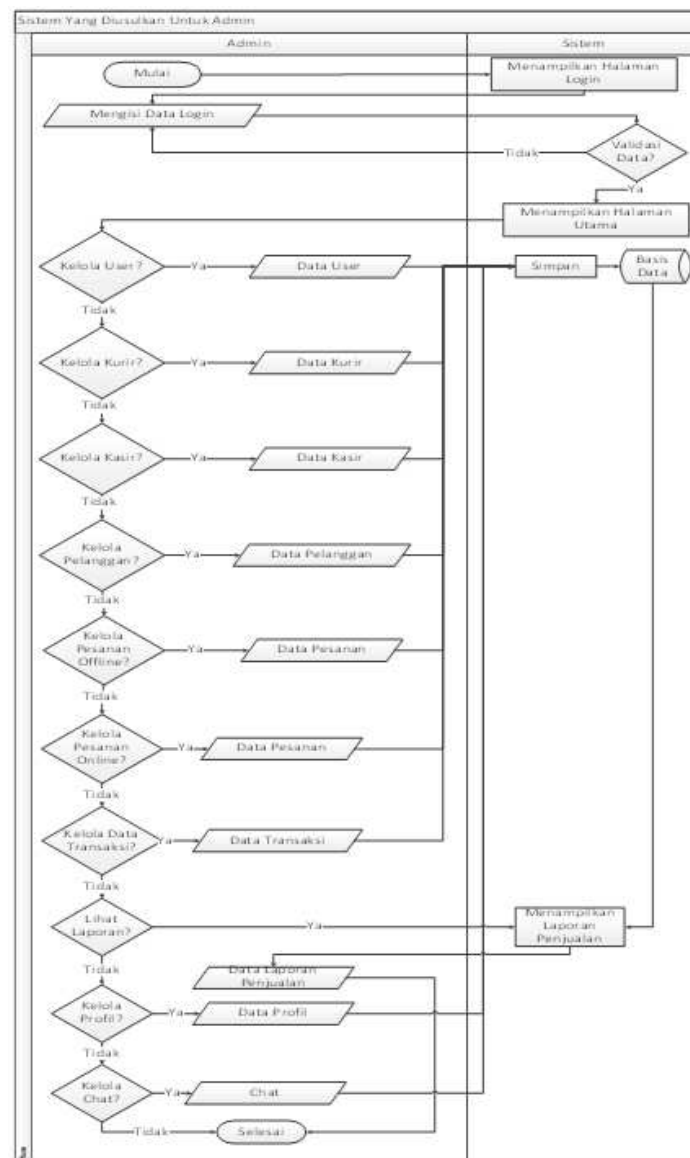


Figure 4. Proposed Admin System

Figure 4 presents the flowchart of the new system for the admin. The process begins with a login procedure using a username and password, which will be validated by the system. If the login data is invalid, the admin will be redirected back to the login page; however, if it is valid, the admin will be directed to the main page. On this page, the admin

can manage login user data, cashier data, courier data, customer data, offline and online orders, transactions, reports, and profile settings. The managed data will be stored in the database, and reports will be generated based on the data retrieved from the database. The process ends when the admin has finished using the system.

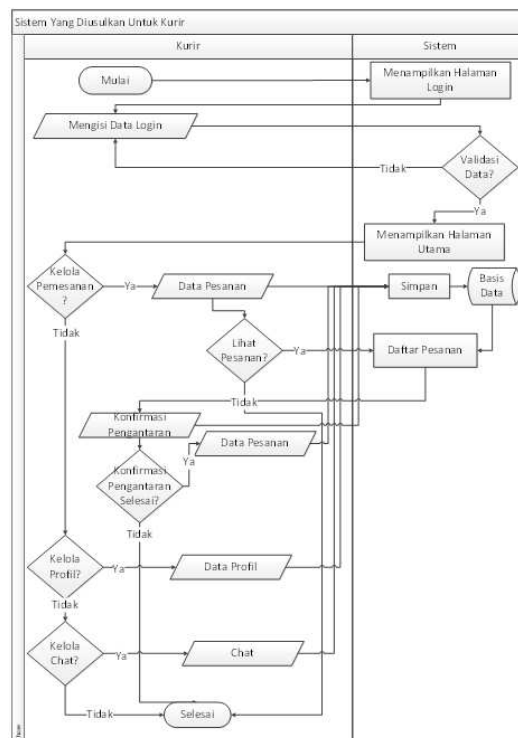


Figure 5. Proposed Courier System

Figure 5 shows the proposed system flowchart for couriers, illustrating the management processes carried out by the courier. The process begins when the courier logs in and the data is verified by the system. If the data is valid, the courier is directed to the main page; otherwise, the courier must repeat the login process. On the main page, the courier can manage orders, profile, and chat features. Through the order menu, the courier can view orders that are ready for delivery and confirm the delivery process. The courier can also update profile data and use the chat feature. The process

ends when the courier has finished using the system.

2.4 Database Design

The database design is carried out to support the storage and management processes of the sales information system data. The database structure is illustrated using an Entity Relationship Diagram (ERD), which depicts the relationships among entities such as users, food menus, orders, transactions, reports, and chats. This design aims to ensure data integrity and support transaction processes in a structured manner.

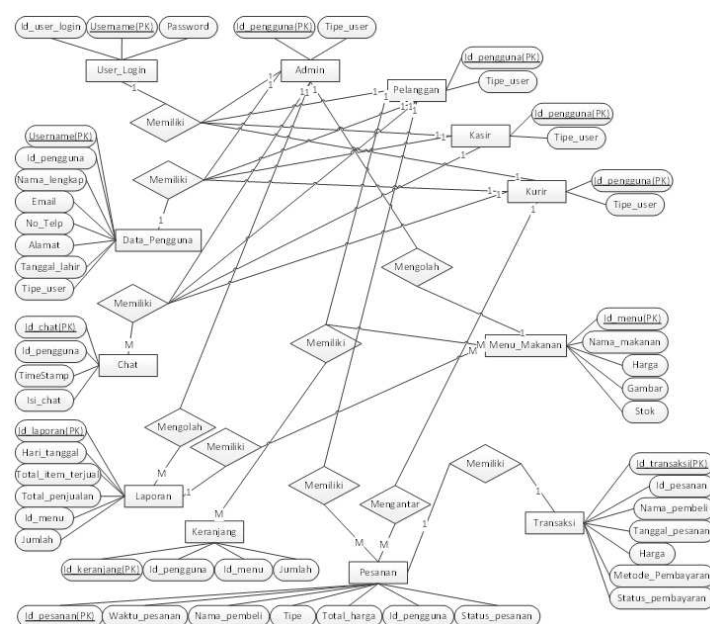


Figure 6. ERD Design

The ERD shown in Figure 6 serves as the foundation for the database design of the GBL Chicken Modayag sales information system for both web and mobile versions. This schema consists of ten main interconnected tables. The User_Login table functions as the access point for all users with roles such as Admin, Customer, Cashier, and Courier, each of whom has profile data stored in the Data_Pengguna table. The business process centers on the Menu_Makanan table as product data, which can be temporarily stored in the Keranjang (Cart) before being

processed into Pesanan (Orders). Each order generates a Transaksi (Transaction) payment record, and orders requiring delivery are managed through the Kurir table. The system also provides a Chat feature for communication, as well as Sales Reports, which are generated from transaction data to support evaluation and business planning.

The summary of tables in the system design can be seen in the Table 1.

Table 1. Summary of Database Tables

NO	Table Name	Number of Attributes	Description
1.	Menu_Makanan	5	Table used to store food menu data in the database
2.	Pesanan	7	Table used to store order data in the database
3.	Transaksi	7	Table used to store transaction data in the database
4.	Laporan	6	Table used to store report data in the database
5.	Chat	4	Table used to store chat data in the database
6.	User_login	3	Table used to store user login data for accessing the system
7.	Data_Pengguna	8	Table used to store user profile data in the system

2.5 User Interface Design

The final stage of this research method is the design of the user interface. The interface is designed using Figma to produce a visual system design that is easy to use and intuitive. The interface design focuses on

ease of navigation, display consistency, and design adaptation to the characteristics of users based on their respective roles. This user interface design serves as a reference for the development of the web- and mobile-based sales information system in the next stage.

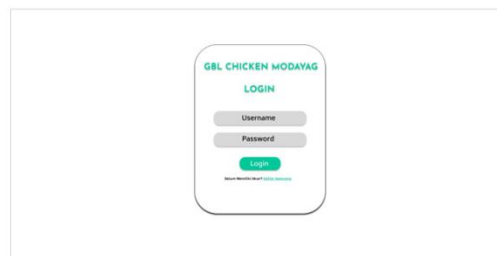


Figure 7. Login Page Display

Figure 7 shows the login page, which contains the system name, username and password fields, as well as a button for validating login data. This page also provides a password recovery link, privacy policy information, and a “remember me” option to enhance user convenience. The design is made

simple and intuitive to ensure ease of use. The use of a white background gives a clean and professional impression, while the emerald green login button symbolizes trust and encourages users to confidently access the system.

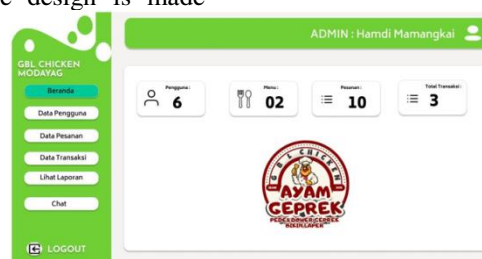


Figure 8. Admin Dashboard Page Display

Figure 8 shows the desktop website homepage for users with the Admin role, as indicated by the username “Hamdi Mamangkai.” This page features a header that displays user identity and role type, as well as a navigation menu on the left side for accessing system features, including a logout button. The interface is designed to be intuitive to

facilitate administrators in managing data, accessing reports, and viewing important information. The use of green accents on the sidebar creates a modern impression, enhances navigation clarity, and maintains visual consistency with the login page, thereby improving comfort and efficiency in using the system.

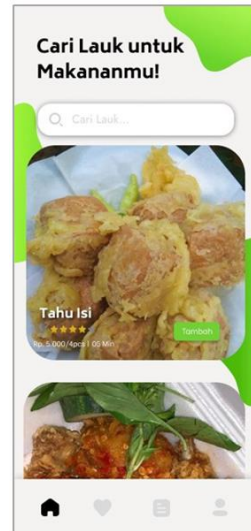


Figure 9. Customer Page Display (Mobile)

Figure 9 shows the purchase page on the mobile website for customers. The page contains a list of available food menus that can be ordered, equipped with a search bar to facilitate menu searching. Customers can scroll through the page to view the available menus and select items by setting the desired quantity before adding them to the shopping cart.

3. RESULT AND DISCUSSION

3.1 Results

The results of this study are in the form of a user interface design for a web- and mobile-based sales information system developed in accordance with the operational needs of GBL Chicken Modayag MSME. This interface design was produced based on the user requirements analysis conducted in the research methodology stage and focuses on ease of use, clarity of navigation, and functional suitability for each user role.

The system is designed to support four types of users, namely admin, cashier, courier, and

customer. Each user is provided with a different interface display according to their tasks and access rights. This approach aims to minimize system usage complexity and improve efficiency in carrying out sales activities and customer services.

On the admin side (web), the interface design facilitates the management of user data, menus, orders, transactions, sales reports, and chat through a structured navigation menu. The layout and features are organized to enable administrators to quickly access the main modules and reduce unnecessary work steps.

On the customer side (mobile), the interface design emphasizes display simplicity to ensure that the ordering process is easy to understand, starting from selecting menus, managing the cart, choosing payment methods, to monitoring order status. The interface is designed consistently to reduce potential user errors and enhance user experience [17].



Figure 10. Data Management Display (Admin)

Figure 10 shows the customer management application interface of GBL Chicken Modayag, dominated by green and white colors. The sidebar on the left provides navigation menus, while the main section displays a customer data table containing name, address, phone number, and

email, equipped with add, edit, delete, and search features. This page is accessed by the admin “Hamdi Mamangkai” and is equipped with a logout button. The interface is designed to be simple and functional to facilitate customer data management.

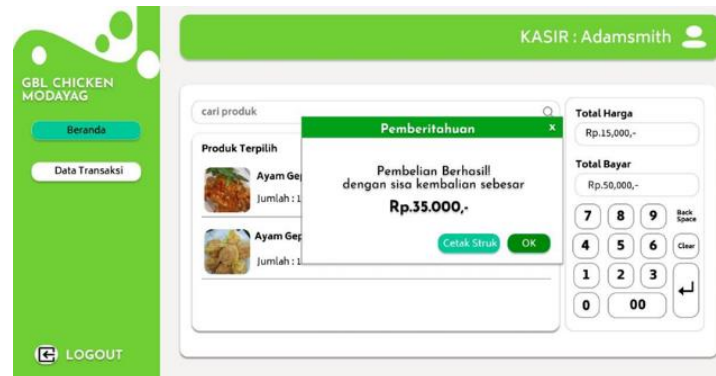


Figure 11. Cashier Page Display

Figure 11 shows the cashier system display after a transaction has been successfully processed. The system displays a notification indicating that the purchase was successful with a change of Rp35,000, along with “Print Receipt” and “OK”

buttons. In the background, transaction details are shown, including the purchase of two portions of Ayam Geprek with a total price of Rp15,000 and a payment of Rp50,000. The navigation panel on the left still displays the Home menu, Transaction Data, and the Logout button.



Figure 12. Customer Page Display

After selecting the payment method on the previous screen, this page displays the interface for

customers to proceed with their order using the selected payment method.

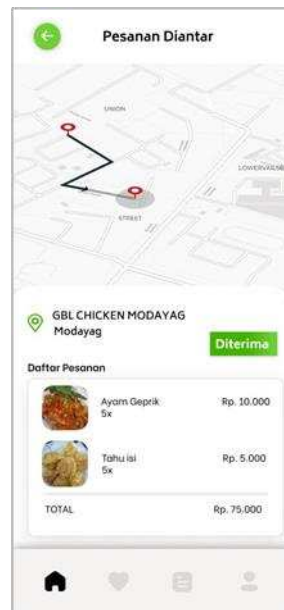


Figure 13. Courier Page Display

Figure 13 shows the “My Orders” page in the application. At the top, there is a map displaying the courier’s route to the customer’s location. The customer information section displays the customer’s name, order status, order time, and estimated courier arrival. The delivery status is indicated through three stages: Packed, In Delivery, and Received. This page also shows the order list consisting of Ayam Geprek and Tahu Isi with a total price of Rp75,000, along with navigation icons at the bottom to access other features.

3.2 Discussion

The resulting user interface design provides a solution to the operational and marketing problems previously faced by the MSME, which initially relied on manual processes. With a multi-role interface design (admin, cashier, courier, and customer), the operational workflow can be separated according to user responsibilities, making it more structured and efficient.

These findings are consistent with previous studies, which state that digital-based sales information systems can improve service effectiveness, assist in managing sales data, and support transaction and reporting processes in culinary and retail businesses [4], [5]. The distinction of this study lies in its primary focus on user interface design as the foundation for system development, so that the research results may serve as a reference before the technical implementation stage is carried out.

From an analytical perspective, the proposed interface design addresses the core operational issues of MSMEs by translating manual workflows into structured digital interactions. The separation of interfaces based on user roles reduces cognitive load and minimizes operational errors, as each user only interacts with features relevant to their responsibilities.

Furthermore, the consistent use of visual elements, navigation patterns, and layout structures across web and mobile platforms supports usability continuity, which is essential for MSMEs transitioning from manual to digital systems. Although this study does not evaluate usability metrics quantitatively, the design decisions are aligned with established UI/UX principles, suggesting potential improvements in efficiency and user satisfaction when the system is implemented in future work.

4. CONCLUSION

This study produced a user interface design for a web- and mobile-based sales information system tailored to the operational needs of GBL Chicken Modayag MSME. The interface is designed to support the digitalization of the sales process, starting from ordering and transaction management to the presentation of sales reports, involving several user roles, namely admin, cashier, courier, and customer.

The design results indicate that the proposed system interface is able to facilitate the management of sales and order data, as well as improve service effectiveness for customers. With a structured and user-friendly display, the proposed system design is expected to minimize problems arising from manual recording, such as data loss and delays in report preparation.

This sales information system interface design can serve as an initial reference for the development and implementation of web- and mobile-based sales information systems in MSMEs, particularly in the culinary sector, to support the improvement of operational efficiency and the sustainable utilization of digital technology.

This study is limited to the design of the user interface and does not include system

implementation or empirical usability testing. Therefore, the effectiveness of the proposed interface has not been quantitatively measured. Future research is expected to continue this work by implementing the system and conducting usability evaluations to assess user satisfaction, efficiency, and system performance in real operational environments.

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