

Design and Implementation of Web-Based Ordering and Payment System for Mobile Coffee Business

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Abstract

The rapid growth of digital technology has significantly changed consumer behavior, especially in the food and beverage sector. Mobile coffee businesses require efficient digital systems to support ordering, payments, and marketing. This study developed a WordPress-based website integrated with the Midtrans payment gateway to improve transaction efficiency for KopiMubeng, a mobile coffee business. A qualitative descriptive method was used through observation and interviews with owners and customers. The findings show that the website simplifies product ordering, improves record accuracy, and expands digital promotion reach. Integration with Midtrans enables faster, safer, and more reliable transactions. Overall, the system effectively enhances operational efficiency and customer convenience, demonstrating its feasibility as a sustainable digital solution for mobile coffee businesses.

Keywords: *digital marketing, Midtrans, mobile coffee business, payment gateway, WordPress*

INTRODUCTION

The development of digital technology has driven significant changes in various industrial sectors, including micro, small, and medium enterprises (MSMEs). Digitalization is increasingly seen as an important strategy for MSMEs to improve competitiveness and business sustainability, especially in the food and beverage (F&B) sector, which is highly dependent on service speed and proximity to consumers. Along with the development of Industry 4.0, the use of digital technology in business processes has become an important factor

in driving operational efficiency and MSME adaptation to increasingly competitive market dynamics (Hafizh, Hani, Farida, & Prawira, 2024). In line with this, there has been a shift in consumer patterns, with people increasingly prioritizing speed of service, practicality, and ease of digital access in their purchasing activities. Several studies show that most users of food delivery apps are interested in trying new restaurants or menus based on the digital information they obtain through these platforms (Urzais & Rachbini). In view of this, MSME players are required to adapt their operational and marketing models to the ever-evolving digital landscape.

Changes in consumption patterns are inseparable from shifts in consumer characteristics, particularly among digital generations such as Generation Z, which now dominates the market. Recent studies show that 68% of this generation makes at least two online transactions per month (Tahalele, 2025). Consumers in this group tend to prefer content that is personal, fast, and interactive, and rely on digital information when making purchasing decisions (Aprilianti & Agustian, 2025). Ease of transaction, speed of service, and consistent digital experience are important factors in shaping Gen Z's perceptions and loyalty. This situation puts direct pressure on MSMEs to not only be present in the digital realm, but also to be able to design marketing strategies that are adaptive to digital consumer behavior. MSMEs that fail to adjust their marketing approach risk losing relevance and appeal amid increasingly technology-based market competition.

One MSME sector that has shown significant growth in recent years is the coffee industry. Increased domestic coffee consumption has led to the emergence of various business models, ranging from conventional coffee shops to more flexible business concepts. These business models were formed based on the increasing demand for domestic coffee consumption, which grew by 13.9% per year in a survey conducted from 2016 to 2021 (Paryanto, 2025). Among these models, mobile coffee has developed as a business alternative

that offers high mobility and the ability to reach consumers directly in various locations. The characteristics of the mobile coffee business, which emphasizes fast service, a take-away system, and direct interaction with consumers, make this business model relevant to the consumption patterns of urban communities. However, this flexibility also presents its own challenges in terms of marketing, transaction, and business operational management.

Despite having huge market potential, most mobile coffee businesses still face limitations in implementing digitalization. Many businesses still rely on conventional word-of-mouth marketing and manual transaction recording. These limitations result in a narrow market reach, low promotional effectiveness, and suboptimal sales data management. As a result, businesses find it difficult to evaluate their performance and make data-driven decisions, which can ultimately hinder sustainable business development (Herman, Nirwana, Fahdal, & Hasan, 2023).

In addition to marketing and accounting issues, changes in consumer preferences regarding payment systems also pose a challenge for mobile coffee businesses. The adoption of cashless payments has increased in line with the development of the digital financial ecosystem, especially after the COVID-19 pandemic (Rositasari, 2022). Consumers tend to choose payment methods that are fast, secure, and practical, so businesses that still rely on cash transactions have the potential to lose sales opportunities (Linkumkm, 2025). In this context, digital payment systems through payment gateways can no longer be positioned as an additional feature, but rather as an operational necessity to support smooth transactions and improve consumer convenience. Payment gateways, which authorize transactions via credit cards or direct payment methods provided by e-commerce platforms, simplify and improve the accuracy of payment processes in digital-based businesses (Hidajat & Salini, 2024).

The implementation of digital payment systems not only impacts the ease of transactions, but also affects operational efficiency and the quality of business data management (Mendrofa, Zendrato, & Zai, 2025). Digital technology integration enables automatic and accurate transaction recording, thereby minimizing manual errors and increasing work efficiency. Well-documented sales data can be used as a basis for business performance analysis, marketing strategy planning, and more accurate business decision-making (N., Maulana, Wiguna, & Khair, 2025). Thus, digitization plays an important role in supporting the sustainability and competitiveness of MSMEs.

In supporting the digital transformation of MSMEs, websites serve as a hub for integrating various marketing and transaction activities. Websites not only function as a medium for information, but also as a means of promotion, communication with consumers, and integration of digital payment systems. The existence of websites enables MSMEs to build brand identity, increase business visibility, and provide consistent access to information for consumers. Therefore, websites can be seen as a digital foundation that supports more structured and professional business management.

Various studies have discussed the use of websites and payment gateways in supporting the digitization of MSMEs. However, most studies still focus on large-scale e-commerce sectors or MSMEs with static business models, while studies that specifically address the context of mobile coffee businesses are still limited. In addition, studies that integrate websites as a marketing medium with payment gateways as a transaction system in a single integrated solution are also relatively rare. Based on these research gaps, this study focuses on the design and implementation of a WordPress-based website integrated with the Midtrans payment gateway. WordPress was originally designed for blogging in 2018 and has since evolved to provide web applications and e-commerce solutions. One of WordPress's main features is its

strong position in search engine optimization (SEO) and its many plugins that can accelerate the indexing process by search engines (MArtinez-Caro, Aledo-Hernandez, Guillen-Perez, Sanchez-Iborra, & Cano, 2018). WordPress was chosen based on its suitability for MSMEs with limited technical resources, while Midtrans was chosen as a digital payment solution relevant to the transaction needs of mobile coffee businesses in Indonesia.

METHOD

Data Source

Data sources in this study consist of primary and secondary data. Primary data were obtained through direct interviews and observations involving the owner and customers of KopiMubeng. These data include user experiences, ease of accessing the website, ordering flow, and perceptions toward the Midtrans digital payment system. Secondary data were derived from relevant literature, online references, WordPress documentation, WooCommerce technical guidelines, and the official Midtrans integration guide, which support the development and analysis of the website system.

Population and Sampling

The population in this research includes individuals directly involved in the KopiMubeng business process. Purposive sampling was used by choosing participants who had actively interacted with the website system. The selected respondents consist of:

- A business owner, aged 22, with more than one year of experience running a mobile coffee business.
- A consumer, aged 21, representing the digital-savvy customer segment who values fast and secure online transactions.

These participants were selected based on their ability to provide clear feedback and relevant experiences regarding online ordering and digital payments.

Data Acquisition

Data acquisition was carried out using a qualitative approach supported by semi-structured interviews and direct observations. Interviews were conducted after respondents used the KopiMubeng website, focusing on usability, transaction efficiency, convenience, and perceptions of Midtrans payment security.

Observations were performed by monitoring the entire ordering flow, from login, browsing the product catalog, adding items to the cart, selecting payment methods, completing checkout, to receiving order status notifications. These observations provide insights into user interaction behavior and system performance.

Additionally, black-box testing was conducted to verify system functions. This testing evaluates system inputs and outputs without examining the internal program code. Each feature, account registration, login, catalog viewing, product selection, Midtrans payment, checkout, and status notification was tested using predefined scenarios and recorded with “Pass” or “Fail” status.

RESULTS AND DISCUSSION

System Flow, Use Case, and Activity Model

The system flow of KopiMubeng.com begins when the customer accesses the homepage and is directed to the product catalog. Before placing an order, the customer is required to register and log in, allowing the system to store personal information and transaction history in an organized way. After logging in, the customer selects the desired

products, adds them to the shopping cart, reviews the order, and then proceeds to the checkout page. At this stage, payment is carried out using one of the online methods available through the Midtrans payment gateway. Once Midtrans confirms that the payment has been successfully completed, the system updates the order status, and the customer can then pick up the product at the chosen outlet.

The Use Case model provides a structured overview of the main processes that can be performed by both the Customer and the Admin of the KopiMubeng website as seen in Figure 1.

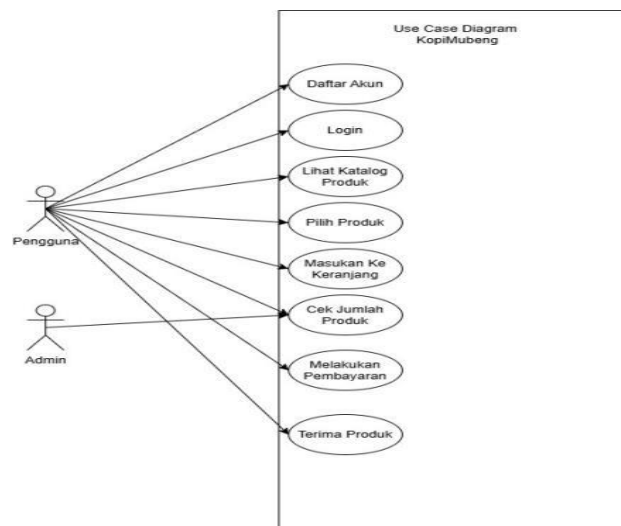


Figure Error! No text of specified style in document.1. Use Case

Figure 1 shows how each actor interacts with system features and clarifies the operational mechanisms and transaction paths supported by the application. The actors involved are:

- Customer (User): the primary actor who interacts directly with KopiMubeng.com to purchase coffee products, access the catalog, perform payments, and receive the ordered products.

- **Admin:** responsible for managing the system, including adding, updating, or removing products in the catalog and monitoring incoming orders from the back-end interface.

The main use cases for the Customer include:

- **Register Account:** The customer creates an account to be able to perform transactions and store personal and transaction data.
- **Login:** The customer logs in to access personal features such as viewing order status or using reward points.
- **View Product Catalog:** The customer views the list of available coffee products.
- **Select Product:** The customer chooses the desired product(s) from the catalog.
- **Add to Cart:** Selected products are added to the shopping cart for further processing.
- **Check Product Quantity:** The system checks the quantity of items in the cart before proceeding.
- **Make Payment:** The customer completes the payment through various methods provided by Midtrans to ensure secure and fast transactions.
- **Receive Product:** The customer receives the ordered product by picking it up at the outlet.

Meanwhile, the main use cases for the Admin are:

- **Manage Products:** Adding, deleting, or updating products in the catalog according to business needs.
- **Monitor Orders:** overseeing order status and taking appropriate actions based on the current status of each order.

The Activity Diagram in Figure 2 provides further details about the dynamic behavior of the system by illustrating the end-to-end steps of an online transaction on KopiMubeng.com. All transactions are conducted digitally, starting from account registration or login, browsing

and selecting products from the catalog, proceeding to checkout, selecting a payment method, completing the payment through Midtrans, and then moving on to the ordering process by the merchant. This diagram involves three main paths: Customer, System (WordPress + WooCommerce and Midtrans integration), and Merchant/Outlet (M).

From the Customer side, the flow begins with account registration or login. New users must first create an account, while existing users can log in using their registered email and password. The system verifies the account and redirects the customer to the dashboard upon successful authentication. The customer then explores the product catalog, selects the desired coffee items, adjusts the quantity if needed, and adds them to the cart. Once ready, the customer proceeds to checkout, where the system displays a summary of the items and total payment.

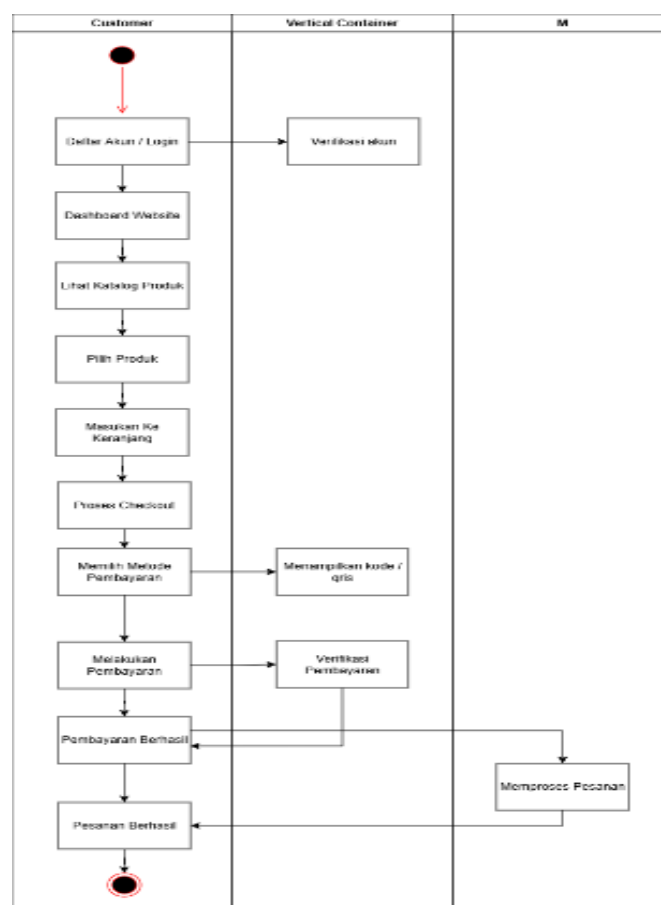


Figure 2. Activity Diagram

In the payment stage, the customer selects one of the available online payment methods, such as e-wallet, bank transfer, or card, which are all managed through Midtrans. The system generates a payment code or QR code, and the customer completes the payment using the chosen method. Midtrans processes the payment and sends a notification back to the system. If the payment is successful, the order status is updated to “paid”; if it fails or expires, the status is set accordingly, and the customer may be prompted to retry.

Once the payment has been verified, the Merchant (M) processes the order by preparing the products according to the details received from the system. The order is then prepared for pickup (or delivery, if applied), and the merchant updates the order status to indicate that it has been successfully processed. Finally, the customer receives the product and obtains confirmation that the order has been completed. This activity flow ensures that each stage of the transaction, starting from login, product selection, payment, and order fulfillment, runs in a structured, secure, and traceable manner, providing an optimal user experience.

Website Implementation Results

The implementation of the KopiMubeng website using WordPress and WooCommerce successfully produced a functional online ordering system supported by an integrated Midtrans payment gateway. The landing page in Figure 3 presents a visual identity that reflects the KopiMubeng mobile coffee concept, featuring a strong visual impression through imagery of the signature coffee bicycle and a clear call-to-action directing users to begin ordering. The layout and typography are designed to attract attention quickly and guide visitors toward the main transaction features.

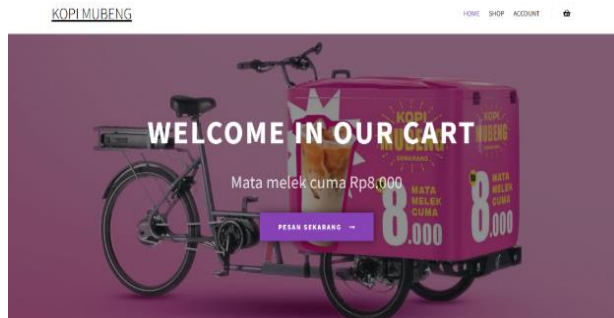


Figure 3Error! No text of specified style in document.. **Landing Page**

The login page in Figure 4 was designed to provide flexible access options, allowing users to sign in using Google accounts or manual email–password input. The system also provides a “Remember me” feature to maintain session convenience, as well as an account registration feature offering reward points to encourage new-user sign-ups. This supports user onboarding and enhances digital transaction readiness.

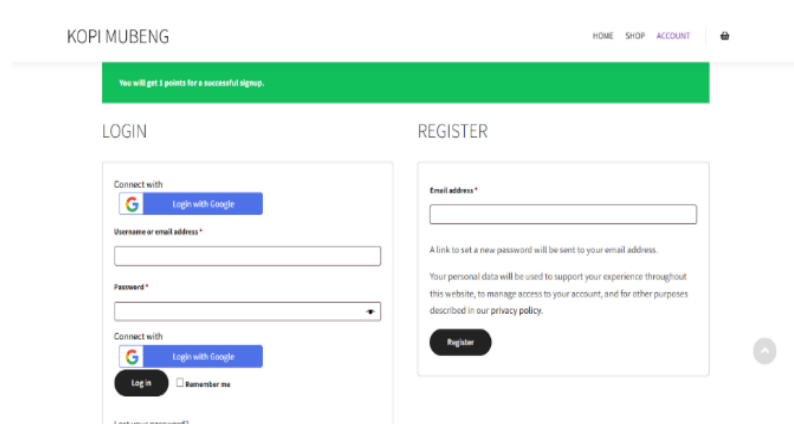


Figure 4Error! No text of specified style in document.. **Login Page**

The Shop page in Figure 5 enables users to view product categories (Coffee and Non-Coffee) with clear product images, descriptions, and “Add to Cart” options. A search bar is also available to help users find specific products quickly. This interface simplifies product browsing and enhances overall user experience.

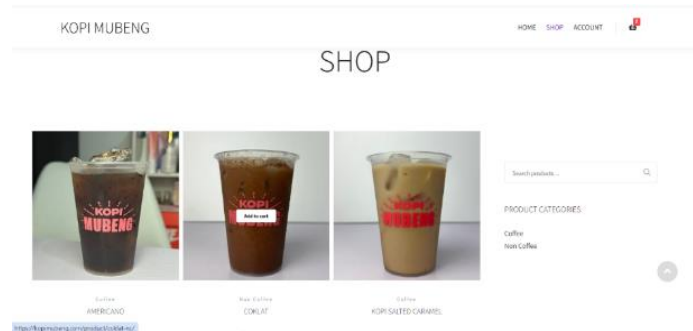


Figure 5. Shop Page

Black-box Test Result. Black-box testing was conducted to evaluate whether all system features worked according to their functional specifications. Testing examined the system purely from the user perspective by providing inputs on the interface and observing the resulting system response.

Testing Components. Each main feature was tested through a structured scenario, including account registration, login, catalog display, product selection, Midtrans payment flow, checkout completion, and notification generation.

Summary of Test Results. The results of black-box testing indicate that all tested features performed successfully. For example:

- Account registration with valid data successfully created an account and redirected the user to the homepage.
- Login using valid credentials redirected the user to their dashboard.
- Catalog and product viewing displayed all available products accurately.
- Product selection correctly showed product descriptions and price details.

- Payment via Midtrans proceeded smoothly and generated appropriate order status notifications.

All test scenarios resulted in a “Pass” status, confirming that the website functions effectively and is ready for user operation.

Interview Results

Interviews were conducted with one KopiMubeng business owner and one customer to understand usability, convenience, reliability, and long-term feasibility of the system.

- 1. Owner Perspective.** The owner appreciated the efficiency gains resulting from digital ordering and Midtrans integration. Manual errors in recording orders and payments were reduced, while online transactions sped up service time.
- 2. Customer Perspective.** The customer found the website very easy to use, with a clear interface and intuitive navigation, even for first-time users. The digital payment process was perceived as **faster and more secure** compared to manual payment methods. The customer particularly appreciated:
 - The **shopping cart** feature,
 - The **payment notification** system,
 - The overall convenience of online ordering.

These findings indicate a positive user experience and suggest strong acceptance of the system by both operational stakeholders and end users.

Operational Impact Analysis

The implementation of a WordPress-based website integrated with Midtrans resulted in improved operational efficiency for the KopiMubeng business. Product management, order handling, and transaction processing became more organized and faster. Additionally, digital payments minimized recording errors and improved transaction accuracy, contributing to smoother business operations.

Overall, system implementation demonstrates strong potential for sustainable use and future feature expansion.

CONCLUSION AND IMPLICATIONS

This study has successfully designed and implemented a WordPress-based website for KopiMubeng integrated with the Midtrans payment gateway as a digital solution to support mobile coffee business operations. The system provides core functionalities such as user registration, login, product catalog browsing, cart management, online payment, and order status notification, all of which are accessible through a structured and user-friendly interface. Black-box testing results show that every main feature, from account registration and login to product selection, checkout, and payment processing, operated according to the specified functional requirements, with all test scenarios declared “Pass.”

The integration of Midtrans as a digital payment solution contributes to faster and more secure transactions compared to manual methods. This reduces the risk of recording errors and helps streamline the payment process, thereby improving overall operational efficiency. The website also simplifies product management, order handling, and coordination between online ordering and on-site pickup, which is crucial for a mobile business model such as KopiMubeng.

Interview findings from both the business owner and a customer indicate a positive response toward the system. Users perceive the website as easy to use, with clear navigation and helpful features such as the shopping cart and payment notifications. Digital payment via Midtrans is considered more practical and reliable, reinforcing user trust in the transaction process. These qualitative insights confirm that the system is not only functional from a technical perspective but also well received from the user experience standpoint.

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