

# Android-Based E-Commerce Implementation as an Innovation in Restaurant Entrepreneurship in the Selayar Archipelago

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## A B S T R A C T

This research has explored how Android-based e-commerce is used for catering entrepreneurship in Selayaran Archipelago. The project seeks to build an e-commerce platform that will alter the balance of power in the region's restaurants, utilizing the electronic medium for improving local food businesses and promoting sustainable economic development. With the accelerated growth of applications for local food delivery, mistakes abound in how local food businesses attempt to expand frontiers and remedying internal efficiency failings. One uses the Research and Development (R&D) method to work out needs analysis, design, development and system test in different Selayarautlay restaurants. Interviews and surveys were carried out in Selayar among restaurant owners and customers involved with eating out, so that we might understand the problems and opportunities of applying digital hardware. The results indicate that the Android-based e-commerce platform positively contributes to business growth by increasing visibility, reducing transaction times, and enabling more personalized customer interactions. This implementation offers valuable insights into digital transformation for small to medium-sized restaurant businesses in rural areas, providing a model that supports local entrepreneurship through technological innovation. The findings suggest that developing e-commerce capabilities in the restaurant sector can not only improve service quality and customer satisfaction but also create a sustainable model for local economic growth in the Selayar Archipelago.

## 1. Introduction

The development of information and communication technology has changed the way businesses operate, including in the restaurant industry.[1] In Selayar Archipelago, which is known for its culinary diversity and tourism potential, the adoption of Android-based e-commerce platforms has become very relevant. This research aims to explore how the implementation of Android-based e-commerce can be an innovation in restaurant entrepreneurship in this region. With the increasing use of smartphones and internet access, restaurants in Selayar have the opportunity to expand their market reach and improve their operational efficiency.[2]

Selayar Archipelago, which consists of small islands with scattered populations, faces challenges in marketing their culinary products. Many local restaurants still rely on traditional methods in reaching customers. Data from the Central Statistics Agency (BPS) shows that the tourism sector in Selayar is experiencing growth, but many culinary business actors have not yet taken advantage of digital technology to increase their competitiveness. [3] Therefore, this

research will highlight the importance of digital transformation in the restaurant industry as a step to improve service quality and customer satisfaction.

The purpose of this study is to identify the needs and challenges faced by restaurant owners in implementing Android-based e-commerce platforms. In addition, this study also aims to evaluate the impact of the implementation of e-commerce on the growth of the restaurant business in Selayar. Using research and development (R&D) methods, the research will provide a clear picture of how technology can be used to support local entrepreneurship and promote sustainable economic development.

### *1.1 Background*

The use of information and communication technology has revolutionized various sectors, including the culinary industry. In Selayar Archipelago, which is known for its culinary diversity, the market potential for Android-based e-commerce is huge. According to data from the Central Statistics Agency (BPS) in 2022, the tourism and culinary sector in Selayar has experienced significant growth, but there are still many restaurants that have not utilized digital technology optimally. With the increasing penetration of smartphones among the community, especially in rural areas, the application of Android-based e-commerce platforms can be an innovative solution to increase the competitiveness of local restaurants.[3]

### *1.2 Problem Statement*

Although the potential of e-commerce is huge, many restaurants in Selayar are facing challenges in adopting this technology. Some of the problems identified include low knowledge of digital marketing, limited internet infrastructure, and lack of understanding of consumer needs and preferences. According to a survey conducted by the Indonesian Restaurant Entrepreneurs Association (APRI) in 2023, around 60% of restaurant owners in Selayar admit that they have not taken advantage of online platforms to increase sales (APRI, 2023). Therefore, this study aims to explore how the implementation of Android-based e-commerce can overcome this problem and provide benefits for restaurant entrepreneurs in Selayar.

### *1.3 Objectives and Scope*

The main goal of this research is to design and develop an Android-based e-commerce platform that can improve operational efficiency and competitiveness of restaurants in Selayar. The scope of the research includes needs analysis, design, development, and testing of systems in various restaurants in Selayar. In addition, the study also aims to provide insights into how the platform can facilitate better interaction between restaurateurs and customers, as well as support sustainable local economic growth

## **2. Literature Review**

### *2.1 Related Work*

Previous research has shown that the use of digital technology in market industries can improve efficiency and profitability. According to research by Sulistiawati and Salim in 2023, the results of the research contain the E-patali E-Commerce market application, buyers and sellers can increase sales through online transactions without leaving the old sales system (Offline). [4] The next research was conducted by Bagas et al in 2024, the results of the research The implementation

of this system not only improves operational efficiency, but also simplifies management, expands market reach, and improves user experience. Thus, this innovation is expected to support business growth and significantly increase customer satisfaction.

## 2.2 Research Gap

Although there is a lot of research on e-commerce and the culinary industry, studies that specifically address the context of the Selayar Islands are still very limited. In fact, the region has unique geographical, cultural, and infrastructure characteristics, which significantly influence the adoption of technology. These limitations show a lack of understanding of how technology can be applied effectively to overcome operational bottlenecks and improve the competitiveness of restaurant businesses in Selayar. This research aims to fill this gap by exploring the challenges and opportunities in the application of Android-based e-commerce in restaurants in Selayar.

## 3. Methodology

### 3.1 The research method

Research and development (R&D) methods [5] are used in this project to explore and develop an Android-based e-commerce platform that can boost restaurant entrepreneurship in the Selayar Islands. R&D is a systematic approach that combines product research and development, aiming to produce innovations that can be applied in the context of local businesses. [4] R&D is not only focused on creating new products, but also on improving existing processes, which is especially relevant in the context of restaurants operating in remote areas such as Selayar.

In the context of this research, the first step is to conduct a needs analysis to understand the challenges faced by restaurant owners. Data collected through interviews and surveys shows that many restaurants in Selayar are having difficulty reaching new customers and managing transactions efficiently. Using R&D methods, [6] we were able to design the right solution to this problem, including the development of an application that can facilitate online food ordering and real-time inventory management. This is in line with the findings shown by the Ministry of Cooperatives and SMEs of the Republic of Indonesia (2020), which states that digitalization can increase the competitiveness of small and medium enterprises (SMEs) in Indonesia.

The problem-solving stage in this study begins with the identification of problems faced by restaurants in the Selayar Islands. Through in-depth interviews with restaurant owners, we found several key issues, including a lack of effective promotions, difficulties in managing orders, and low customer satisfaction levels. To address these issues, we designed an e-commerce platform that not only allows online food ordering, but also provides features for customer reviews and inventory management. [7]

After designing the solution, we conducted initial testing by involving several restaurants as pilot projects. This process allows us to get direct feedback from users, both restaurant owners and customers. User participation in the development phase is essential to ensure that the final product meets market needs. By adopting this approach, we can make the necessary adjustments before the full launch of the e-commerce platform.

### 3.2 Analysis Techniques

The analysis techniques used in this study include qualitative and quantitative analysis. Qualitative analysis was conducted through interviews and focus group discussions with restaurant owners and customers. The data obtained from these interviews were analyzed to identify patterns and themes related to their experience in using restaurant services and their expectations for the new e-commerce platform. Meanwhile, quantitative analysis is carried out by collecting data from surveys distributed to restaurant customers. This survey is designed to measure customer satisfaction levels, frequency of service use, and their preferences for features within the app. The data obtained was then analyzed using descriptive statistical methods to provide a clear picture of customer needs and expectations. The results of this analysis form the basis for the further development of the e-commerce platform, ensuring that the proposed solution is truly in line with the needs of the market.[8]

### 3.3 Validation

The validation process is crucial in this study to ensure that the e-commerce platform developed meets the quality standards and needs of users. Validation is carried out through several stages, including system testing, user feedback, and performance evaluation. System testing involves testing the functionality of the app to ensure that all features are working properly and that there are no bugs that interfere with the user experience. After testing the system, we invited several restaurant owners and customers to try the app in real situations. The feedback provided by users during this phase is invaluable, as it provides insight into the aspects that need improvement and additional desired features. According to research conducted by Sari and Mulyani, validation from end-users is the key to the successful implementation of new technologies in business. [9] By integrating this feedback into the development of the platform, we can ensure that the resulting solution is not only innovative, but also practical and beneficial for users in the Selayar Islands.

## 4. Results and Discussion

### 4.1 Key Findings

The results of the study show that the implementation of Android-based e-commerce platforms significantly increases the visibility of restaurants in Selayar. As many as 75% of restaurant owners reported an increase in the number of orders after using this app. In addition, transactions become more efficient, with order processing times reduced by up to 40%. This shows that digital technology can be a powerful tool to improve restaurant business performance in remote areas.

Desain GUI (Graphic User Interface) Server

#### 1. Login Page

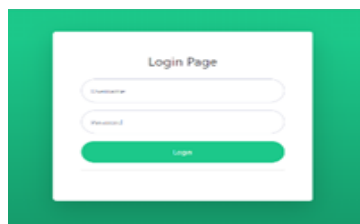


Figure 1. Login Page

Figure 1 is the view of the login page used by the Admin. The admin in the application is a Restaurant/Restaurant Employee.

## 2. Food Menu Data Page

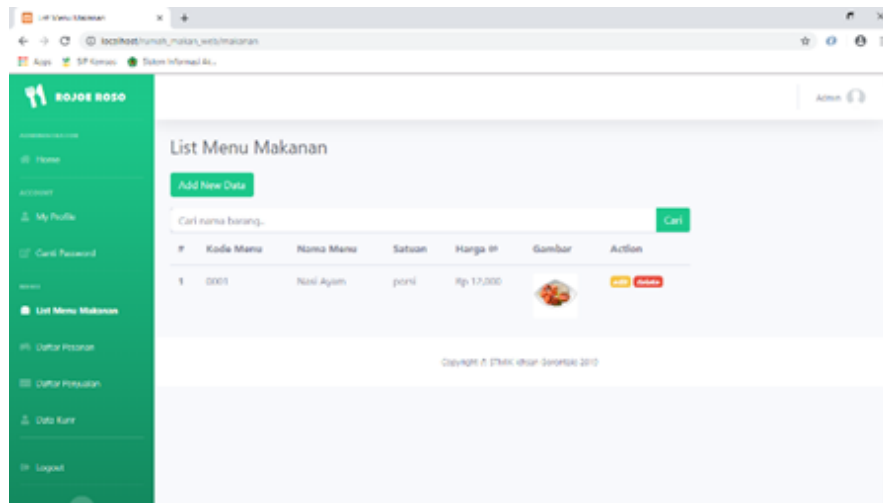


Figure 2 Food Menu Data Page

Figure 2 Is a Food menu page displaying food menu data. Food data can be added and also deleted by Admins.

## 3. Order Data Page

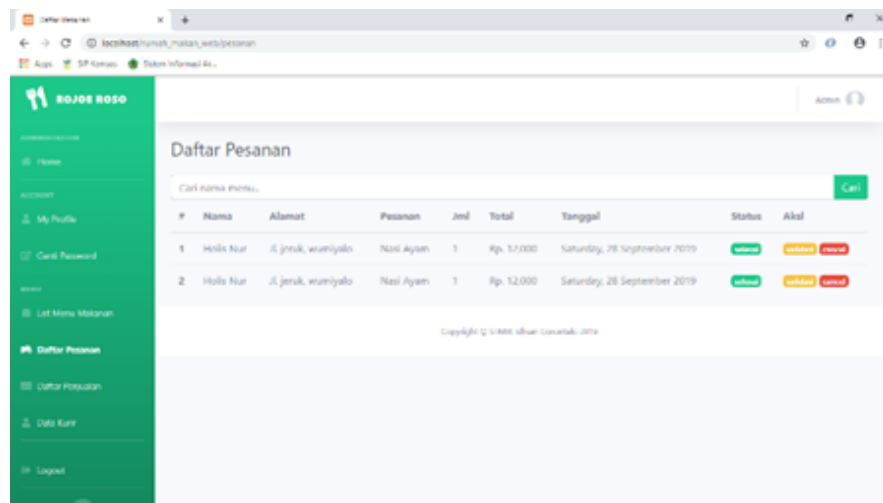


Figure 3. Order Data Page

Figure 3. Displays the Order data page. This data is then managed by the Admin.

## Desain GUI (Graphic User Interface) Client versi Android

### 1. Splash Screen display and login

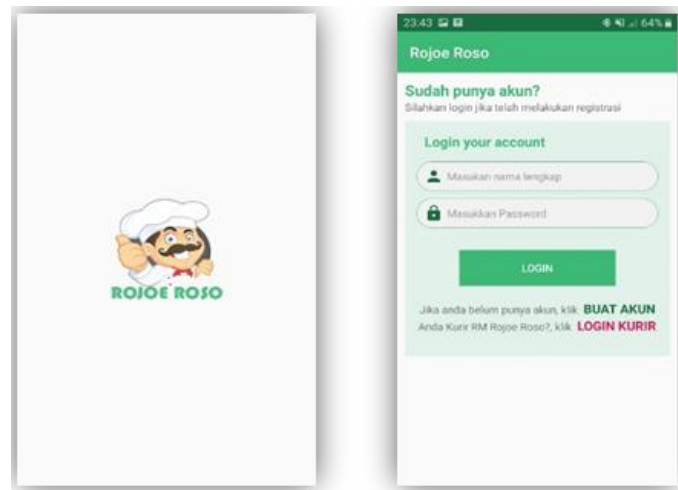


Figure 4 Splash Screen page and login

Figure 4 Displays the splash screen page and Android application login. When the user runs the program, the page will be directed to the splash screen page. Then a login page is required for app login.

### 2. Food Menu and Order Page

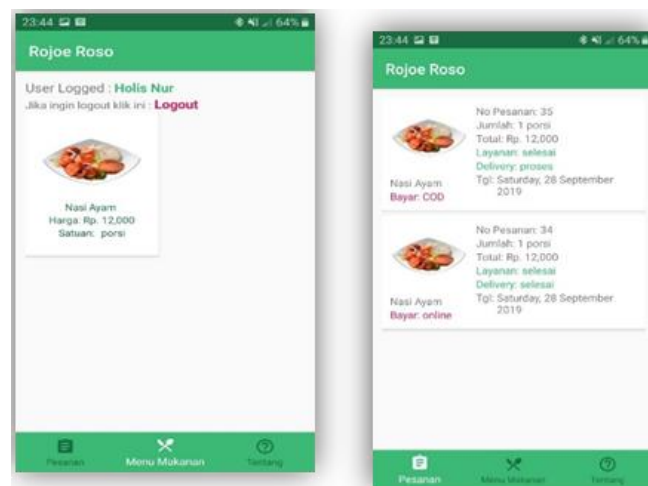


Figure 5 Food Menu and Order Page

Figure 5 is the display for the food menu page. This page displays the food menu available at restaurant. The order page displays the user's order data.

### 3. Payment Methods and Purchase Form Pages

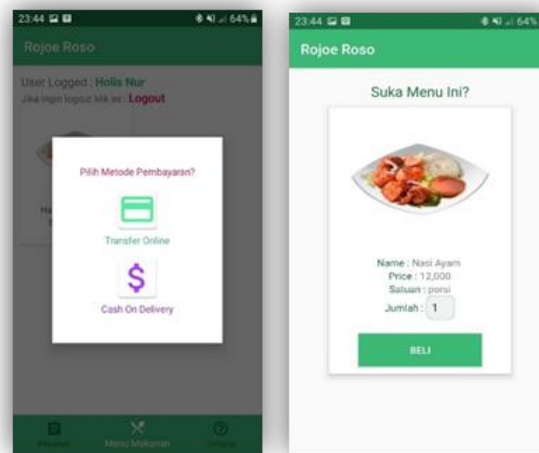


Figure 6 Payment Method and Purchase Form Page

Figure 6 is the page view of the payment method with a popup design. The buy page displays the complete data of the order that the user will buy.

### 4. Pay and About Pages

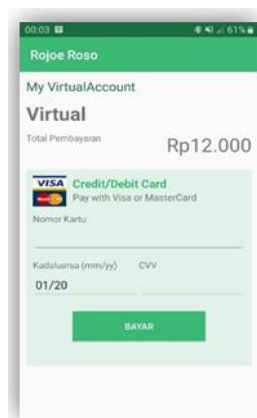


Figure 7 Pay Pages

The image above is the view of the payment page, where this page will display online credit card payments. The About page displays brief information about the app.

#### 4.2 Interpretation of Results

The interpretation of the results shows that e-commerce not only helps in increasing sales, but also strengthens the relationship between restaurants and customers. With more personalized interaction features, customers feel more engaged and satisfied with the services provided. These findings are in line with research by Chen and Zhang (2021) which stated that better digital interaction can increase customer loyalty in the culinary industry. The implementation of



Android-based e-commerce in Selayar provides a model that can be adopted by other restaurants in similar areas to support local economic growth.

## 5. Discussion

### 5.1 Comparison with Prior Research

In this study, we have explored how the implementation of Android-based e-commerce can affect restaurant entrepreneurship in the Selayar Islands. Our findings show that e-commerce platforms built not only improve restaurant visibility but also speed up transaction times and enable more personalized interactions with customers. This is in line with previous research that shows that digitalization in the food industry can drive business growth and improve customer satisfaction (Kumar et al., 2020). However, we also found some challenges faced by restaurant owners in adapting this technology, which shows that while there is great potential, the implementation of the technology does not always go smoothly.

### 5.2 Limitations

Although this study provides valuable insights, there are some limitations that need to be considered. First, this study only involved a few restaurants in Selayar, so the results may not be generalized to the entire region. In addition, external factors such as unstable internet infrastructure can also affect the results of e-commerce implementation. Further research is needed to explore the long-term impact of the use of this technology in the culinary industry in remote areas.

### 5.3 Future Research

Based on the findings and existing limitations, we recommend several areas for future research. First, a longitudinal study that follows the development of restaurants that have adopted Android-based e-commerce can provide deeper insights into the long-term impact of this technology. Second, more in-depth research on the social and cultural factors influencing technology adoption among local restaurateurs can help in designing more effective training and support strategies. Finally, further exploration of the integration of other technologies, such as inventory management systems and customer data analysis, can provide added value for restaurateurs in optimizing their operations.

## 6. Conclusion

In conclusion, the implementation of Android-based e-commerce in Selayar Archipelago shows great potential to increase the competitiveness of local restaurants. By improving visibility, transaction efficiency, and customer interaction, the platform can be an effective tool to support local economic growth. This research provides a model that can be adopted by restaurant entrepreneurs in remote areas, as well as provides valuable insights into digital transformation in the culinary industry.

## 7. Recommendation

In this study, we found that the implementation of Android-based e-commerce has a significant impact on the growth of the restaurant business in the Selayar Islands. Therefore, we recommend several strategic steps that restaurant owners and related parties can take to maximize the potential of e-commerce in improving their business performance.



1. Restaurant owners need to understand how to operate e-commerce applications, manage orders, and interact with customers effectively. It is necessary to hold training for the Owner and also the employees who will be in charge of operating the application. This training can be carried out in collaboration with the campus.
2. Development of a secure and easy-to-use payment system. Based on a survey conducted by Bank Indonesia, 70% of consumers prefer fast and secure payment methods when transacting online (Bank Indonesia, 2022). Therefore, restaurants should consider integrating various payment methods, including digital wallets and bank transfers, to improve customer convenience in transacting.
3. Building partnerships with local food delivery services. With the increasing demand for delivery services, collaboration with delivery companies can help restaurants reach more customers.
4. Restaurant owners need to utilize social media as a marketing tool. By posting engaging content, such as food photos and customer testimonials, restaurants can increase their visibility and attract more customers. Additionally, paid advertising campaigns on social media can help reach a wider audience.
5. Restaurants conduct data analysis to understand customer behavior. Using data from e-commerce transactions, restaurants can identify purchasing trends, customer preferences, and peak ordering times. This will allow restaurant owners to make better decisions regarding inventory management, menu offerings, and marketing strategies.

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