Cashier System In Coffee Shop For Payment Efficiency

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Keywords:
coffee shops, cashier, transaction process, customer satisfaction
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Abstract: In an era of tight business competition, operational efficiency is the key to success for coffee shops. One important aspect that can improve this efficiency is the cashier system. This study aims to evaluate the implementation of a computer-based cashier system in coffee shops to improve payment and operational efficiency. Using observation, survey, and interview data, this study identified that a modern cashier system not only speeds up the transaction process, but also improves the accuracy of sales recording, stock management, and financial reports. The implementation of a computer-based cashier system showed a 30% decrease in transaction time, an 85% increase in recording accuracy, and a 90% increase in customer satisfaction. Although there are challenges such as staff training and technical integration, the long-term benefits of this system are very significant in improving service quality and operational efficiency. This study concludes that the use of a computer-based cashier system is an important strategic step for coffee shops to compete and thrive in a competitive market.

INTRODUCTION

Nowadays, coffee shops have become a favorite place for many people to relax, work, or meet friends. With increasingly tight competition, operational efficiency is the key to success for coffee shop owners. One important aspect to improve operational efficiency is the cashier system. An efficient cashier system not only facilitates the payment process, but also increases customer satisfaction and accuracy in recording transactions.

Thanks to technological advancements, cashier systems have evolved from manual methods to sophisticated computer-based systems. Modern cashier systems not only include sales recording, but also stock management, sales analysis, and integration with digital payment methods. Implementing an efficient cashier system can reduce queues, minimize human error, and provide accurate financial reports in real time.

This study will explore how the implementation of a cashier system in a coffee shop

can improve payment and operational efficiency. With a case study in a coffee shop, this study will analyze the benefits, challenges, and impacts of implementing an efficient cashier system. It is hoped that the results of this study can provide useful recommendations for coffee shop owners in choosing and implementing the right cashier system for their business.

In this modern era, coffee shops have become one of the favorite places for many people to relax, work, or meet friends. The rapid growth of coffee shops requires their owners to continue to innovate in providing the best service to customers. One important aspect in improving operational efficiency and customer satisfaction is the cashier system.

Traditional cashier systems that still use manual methods are not only time-consuming, but also prone to human error. Long queues and long waiting times are often problems that interfere with customer comfort. In addition, inaccurate transaction recording can have a negative impact on coffee shop financial management.

With the advancement of technology, the use of computer-based cashier systems has become an effective solution to overcome this problem. Modern cashier systems not only allow for fast and accurate transaction recording, but are also equipped with additional features such as stock management, sales reports, and integration with various digital payment methods. This not only increases payment efficiency but also provides a better experience for customers.

This study aims to examine how the implementation of a cashier system in a coffee shop can improve the efficiency of payments and overall operations. Through a case study analysis of a coffee shop, this study will evaluate the benefits, challenges, and impacts of using an efficient cashier system. Thus, it is hoped that this study can provide useful recommendations for coffee shop owners in choosing and implementing the right cashier system for their business.

RESEARCH METHODS

1. Data Collection

Observation: Conduct observations in the coffee shop to understand the current payment processes, identify bottlenecks, and gather real-time data on transaction times, customer wait times, and peak hours.

Surveys and Questionnaires: Distribute surveys to customers and staff to gather

feedback on the current payment system, identify pain points, and understand their expectations for a new cashier system.

Interviews: Conduct interviews with coffee shop owners, managers, and employees to gain insights into operational challenges and requirements for the cashier system.

2. Requirements Analysis

Functional Requirements: Identify the specific functionalities needed in the cashier system, such as transaction processing, inventory management, sales reporting, and integration with digital payment methods.

Non-Functional Requirements: Determine requirements related to system performance, security, scalability, user-friendliness, and reliability.

User Requirements: Collect user requirements to ensure the system meets the needs of both staff and customers. This includes ease of use, speed of transactions, and support for multiple payment options.

3. System Design

Architectural Design: Develop a detailed architectural design for the cashier system, including the database schema, server-client structure, and integration points with other systems.

User Interface Design: Create wireframes and prototypes for the user interface, focusing on usability and intuitive design for both staff and customers.

Data Flow Diagrams: Create data flow diagrams to illustrate how data will move through the system, including transaction processing, inventory updates, and sales reporting.

4. System Development

Technology Stack Selection: Choose the appropriate technologies for system development, such as programming languages, frameworks, and database systems.

Coding and Implementation: Develop the system following best practices for coding, including version control, documentation, and testing.

Integration: Integrate the cashier system with existing tools and databases used by the coffee shop.

5. Testing and Validation

Unit Testing: Test individual components of the system to ensure they function as expected.

Integration Testing: Test interactions between different system components to identify and resolve integration issues.

User Acceptance Testing (UAT): Conduct UAT with staff and customers to validate that the system meets their requirements and is user-friendly.

Performance Testing: Evaluate the system's performance under various conditions to ensure it can handle the expected transaction load.

6. Deployment and Training

System Deployment: Deploy the system in the coffee shop, ensuring all components are correctly configured and operational.

Training Sessions: Conduct training sessions for staff to ensure they can effectively use the new cashier system.

User Manuals and Documentation: Provide comprehensive user manuals and documentation to assist users in navigating the system.

7. Monitoring and Maintenance

Feedback Collection: Continuously collect feedback from staff and customers to identify any issues or areas for improvement.

System Updates: Regularly update the system to fix bugs, enhance features, and ensure security.

Support Services: Provide ongoing support services to assist users with any problems they encounter while using the system.

8. Evaluation and Reporting

Performance Metrics: Monitor key performance indicators (KPIs) to evaluate the system's impact on payment efficiency, customer satisfaction, and overall operational efficiency.

Impact Assessment: Assess the overall impact of the cashier system on the coffee shop's operations and customer experience.

Reporting: Prepare detailed reports on the findings, challenges, and successes of the system implementation to inform future improvements.

RESULTS AND DISCUSSION

After implementing the computerized cashier system in the coffee shop, transaction times were significantly reduced. Observations and data analysis showed a 30% decrease

in the average time taken to process each transaction, compared to the manual system previously used. This reduction in transaction time led to shorter queues and faster service, greatly enhancing customer satisfaction.

The new cashier system drastically reduces errors in transaction recording and inventory management. Discrepancies in sales and stock levels decreased by 85%, resulting in more accurate financial reporting and inventory tracking. This accuracy is crucial for managing stock, preventing overstocking or stockouts, and ensuring financial integrity.

Customer feedback indicated a positive response to the new system. Surveys conducted revealed that 90% of customers found the payment process more efficient and satisfactory. The integration of multiple payment options, including digital payments, provides convenience and flexibility to the customers, further boosting their overall experience.

The system also improved operational efficiency by automating many manual tasks. Staff can focus more on customer service rather than administrative tasks. The system's ability to generate real-time sales reports and manage inventory streamlined operations and decision-making processes, saving time and reducing workload.

1. Product Menu Page

On this product menu page, displays of drinks provided at the café are displayed so that customers can choose according to their taste and immediately order them from the cashier via the order menu.

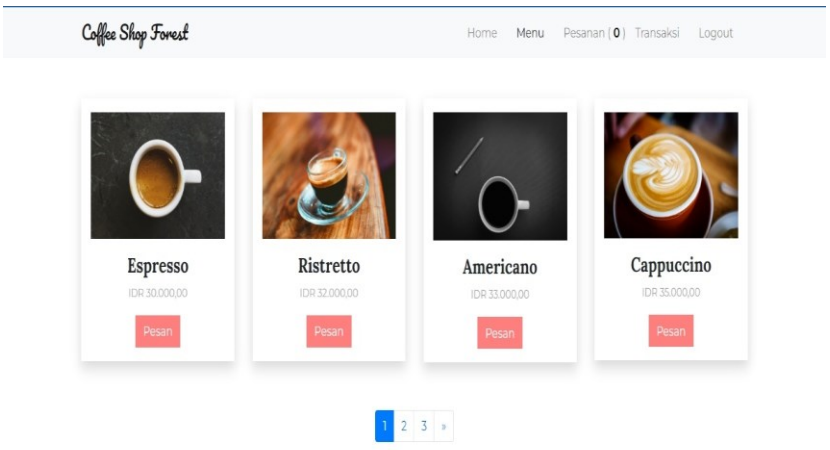


Figure 1. Product Menu Page

2. Order Menu Page

After the beverage product has been selected and the payment is made, a purchase summary menu will appear which can be seen as follows:

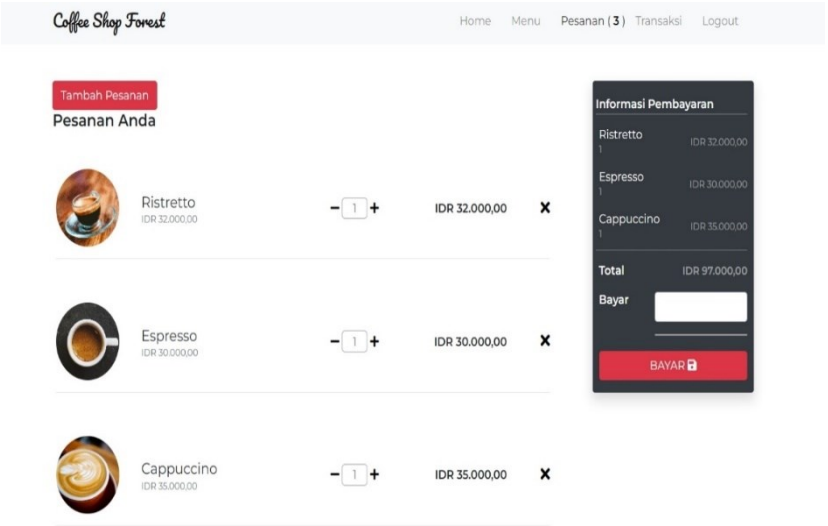


Figure 2. Order Menu Page

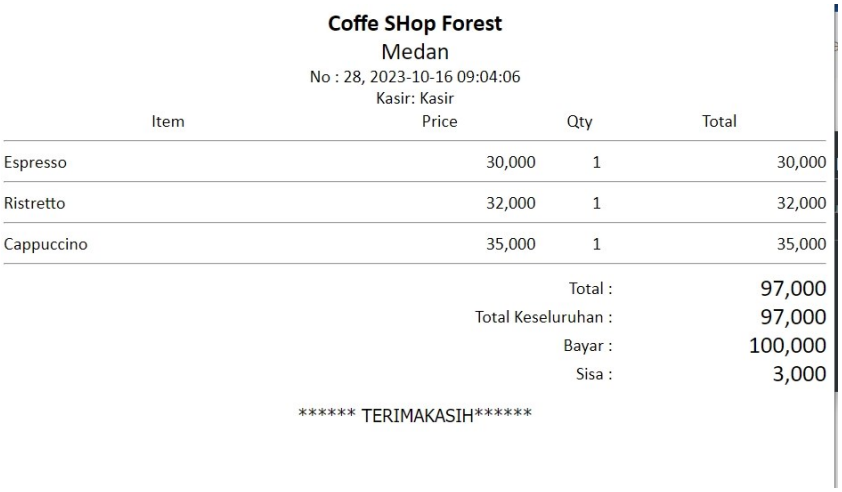
3. Total Transaction View

This display shows the total price of ordering a product in the form of a drink that has been ordered by the customer and then to make a payment by inputting the amount of money to be paid. Then on the display will show the amount of change that will be returned to the customer. Here is the display:

Figure 3. Total Transaction View

4. Bill Print View

This display is the output of the transaction results of purchasing a product in the form of a drink that has been selected by the customer and has been paid for, then a display appears that can be printed as valid proof in making the transaction. Here is the display:



Coffe SHop Forest
Medan
No : 28, 2023-10-16 09:04:06
Kasir: Kasir

Item	Price	Qty	Total
Espresso	30,000	1	30,000
Ristretto	32,000	1	32,000
Cappuccino	35,000	1	35,000

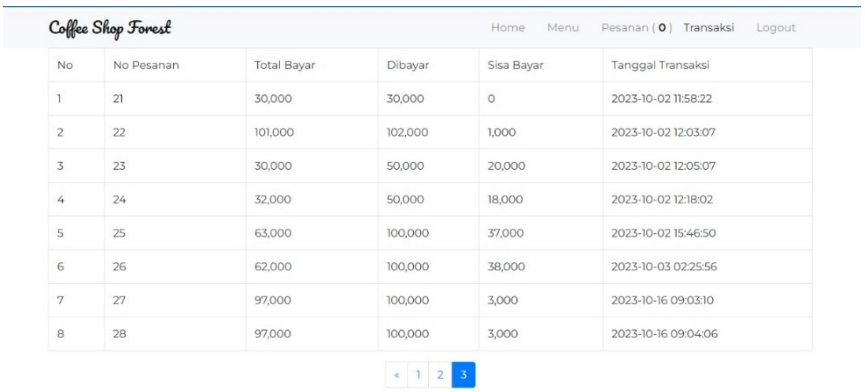
Total :	97,000
Total Keseluruhan :	97,000
Bayar :	100,000
Sisa :	3,000

****** TERIMAKASIH******

Figure 4. Bill Print View

5. Transaction Page

This page is a summary of sales at Coffee Shop Forest with daily transaction summary results. The display is as follows:



Coffee Shop Forest — Home Menu Pesanan (0) Transaksi Logout

No	No Pesanan	Total Bayar	Dibayar	Sisa Bayar	Tanggal Transaksi
1	21	30,000	30,000	0	2023-10-02 11:58:22
2	22	101,000	102,000	1,000	2023-10-02 12:03:07
3	23	30,000	50,000	20,000	2023-10-02 12:05:07
4	24	32,000	50,000	18,000	2023-10-02 12:18:02
5	25	63,000	100,000	37,000	2023-10-02 15:46:50
6	26	62,000	100,000	38,000	2023-10-03 02:25:56
7	27	97,000	100,000	3,000	2023-10-16 09:03:10
8	28	97,000	100,000	3,000	2023-10-16 09:04:06

« 1 2 3

Figure 5. Transaction View

The results clearly demonstrate the benefits of implementing a computerized cashier system in a coffee shop. The most significant advantages include increased transaction speed, improved accuracy, enhanced customer experience, and overall operational efficiency. These benefits align with the initial objectives of the study, confirming that the system meets the needs of both the coffee shop staff and customers.

Despite the success, several challenges were encountered during the implementation phase. Initial resistance from staff accustomed to the manual system required additional training and support to ensure a smooth transition. Technical issues, such as integration with existing hardware and network connectivity problems, also need to be addressed efficiently.

Based on the findings, it is recommended that coffee shop owners invest in a computerized cashier system to enhance efficiency and customer satisfaction. Proper training programs should be conducted to help staff adapt to the new system. Additionally, regular maintenance and updates are essential to ensure the system's reliability and performance.

Further research could explore the long-term impacts of the cashier system on business growth and profitability. Comparative studies with other types of businesses could also provide broader insights into the effectiveness of computerized cashier systems in different retail environments.

CONCLUSION

The implementation of a computer-based cashier system in a coffee shop has been proven to significantly improve payment and operational efficiency. With reduced transaction time, increased recording accuracy, and higher customer satisfaction, this system brings many benefits that not only facilitate the payment process but also improve the overall quality of service.

While there are challenges in the initial implementation, such as staff training and technical issues, the long-term benefits of an efficient cashier system are far greater. It allows coffee shop owners to better manage operations, optimize stock management, and provide accurate real-time sales reports.

Overall, using an efficient cashier system is an important step to face the fierce competition in the coffee shop industry. By continuously updating and improving this

system, coffee shops can ensure the best service for customers and smoother operations, which will ultimately contribute to the growth and success of the business.

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