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INTEGRATED DIGITAL LAUNDRY APPLICATION FOR MSMES: END-TO-END OPERATIONS AND REMOTE MONITORING

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Abstract— *Micro, Small, and Medium Enterprises (MSMEs), particularly in service sectors such as laundry businesses, often rely on fragmented and manual operational practices, resulting in inefficiencies and limited managerial visibility. Existing digital laundry applications typically support isolated functionalities and lack end-to-end integration. This study proposes and evaluates an integrated digital laundry application that supports end-to-end operations and remote business monitoring for MSMEs. The research adopts a Design Science Research (DSR) approach combined with Agile-based development. A functional prototype was implemented using Flutter-based mobile applications for customers and staff, along with a web-based dashboard for business owners. The system integrates customer booking, operational workflows, digital payments, automated financial recording, and real-time monitoring within a unified platform. Evaluation was conducted through functional testing, System Usability Scale (SUS) assessment, and business impact analysis involving 10 participants. The system achieved a SUS score of 78.5, indicating good usability. In addition, transaction errors were reduced by approximately 70%, and service processing time improved by 47%. These results demonstrate that the proposed system enhances operational efficiency, financial transparency, and managerial control. This study contributes an empirically validated, domain-specific digital artifact that operationalizes digital transformation and technopreneurship concepts in MSMEs.*

Keywords: *Digital Laundry Application, Digital Transformation, Integrated Information Systems, MSMEs, Technopreneurship.*

Intisari— *Usaha Mikro, Kecil, dan Menengah (UMKM), khususnya pada sektor jasa seperti usaha laundry, masih banyak yang mengandalkan proses operasional yang terfragmentasi dan manual, sehingga menyebabkan inefisiensi dan keterbatasan visibilitas manajerial. Aplikasi laundry digital yang ada umumnya hanya mendukung fungsi terpisah dan belum menyediakan integrasi operasional end-to-end. Penelitian ini bertujuan untuk merancang dan mengevaluasi aplikasi laundry digital terintegrasi yang mendukung operasi end-to-end serta pemantauan bisnis secara jarak jauh bagi UMKM. Penelitian ini menggunakan pendekatan Design Science Research (DSR) yang dikombinasikan dengan pengembangan berbasis Agile. Prototipe fungsional dikembangkan menggunakan aplikasi mobile berbasis Flutter untuk pelanggan dan staf, serta dashboard berbasis web untuk pemilik usaha. Sistem ini mengintegrasikan pemesanan pelanggan, alur kerja operasional, pembayaran digital, pencatatan keuangan otomatis, dan pemantauan real-time dalam satu platform terpadu. Evaluasi sistem dilakukan melalui pengujian fungsional, pengukuran usability menggunakan System Usability Scale (SUS), serta analisis dampak bisnis dengan melibatkan 10 partisipan. Sistem memperoleh skor SUS sebesar 78,5 yang menunjukkan tingkat usability yang baik. Selain itu, terjadi penurunan kesalahan transaksi sekitar 70% dan peningkatan efisiensi waktu layanan sebesar 47%. Hasil penelitian menunjukkan bahwa sistem yang diusulkan mampu meningkatkan efisiensi operasional, transparansi keuangan, dan kontrol manajerial. Penelitian ini memberikan kontribusi berupa artefak digital spesifik domain yang tervalidasi secara empiris dalam mengoperasionalisasikan konsep transformasi digital dan teknopreneurship pada UMKM.*

Kata Kunci: *Aplikasi Laundry Digital, Transformasi Digital, Sistem Informasi Terintegrasi, UMKM, Technopreneurship.*

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in economic growth, employment creation, and service provision, particularly in developing countries. Among service-based MSMEs, laundry businesses represent a rapidly expanding sector driven by urbanization, increased workforce mobility, and changing lifestyle patterns. Despite their growing economic significance, many laundry MSMEs continue to rely on manual and semi-digital operational practices, including handwritten transaction records, paper-based receipts, and cash-based payments. These practices often result in operational inefficiencies, data inaccuracies, limited transparency, and weak managerial control (Ali Mansyur H et al., 2024), (Arda et al., 2025), (Hidayat et al., 2025), (Saputra, 2023), (Somaida et al., 2025).

Existing studies on laundry information systems generally focus on limited operational functionalities, such as transaction recording, order tracking, or basic cashier systems, often implemented through web-based or desktop applications using Rapid Application Development (RAD) or Agile methodologies (Ali Mansyur H et al., 2024), (Arda et al., 2025), (Febriyanti et al., 2025). While these systems demonstrate technical feasibility, they typically address isolated processes and lack comprehensive integration across customer services, internal operational workflows, digital payments, and financial reporting. Consequently, existing solutions do not adequately support end-to-end business operations or managerial decision-making for laundry MSMEs.

In parallel, the broader literature on digital transformation in MSMEs highlights the potential of digital technologies to enhance operational efficiency, innovation capability, and financial performance (Alam et al., 2022), (Cen & Lin, 2025), (Díaz-Arancibia et al., 2024), (Marolt et al., 2025), (Martínez-Peláez et al., 2023), (X. Zhang et al., 2022). However, many digital transformation studies remain conceptual or survey-based, emphasizing adoption factors, organizational readiness, leadership, and perceived barriers rather than presenting concrete, domain-specific system implementations for micro-scale service businesses (Kahveci, 2025), (Martínez-Peláez et al., 2024), (Mick et al., 2024), (Petropoulou et al., 2024). As a result, there is a limited body of research demonstrating how digital transformation frameworks can be operationalized through functional digital artifacts tailored to the operational realities of MSMEs.

Another critical dimension of MSME digitalization is the adoption of digital payment technologies, including mobile wallets and QR-based payment systems. Prior research extensively investigates user acceptance, trust, perceived risk, and security of digital payments using models such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Alkadi & Abed, 2023), (Almaiah et al., 2022), (Bland et al., 2024), (Changchit et al., 2024), (Irianto & Chanvarasuth, 2025), (Purwatiningsih et al., 2025). Nevertheless, these studies often examine digital payment adoption in isolation, without integrating payment mechanisms into internal operational control, automated financial recording, and managerial monitoring systems.

From a technopreneurship perspective, digital technologies are expected to enable entrepreneurs to redesign business processes, create new value propositions, and enhance competitiveness through technology-driven innovation (Karimi & Walter, 2021), (Larisang et al., 2025), (Lestari et al., 2024), (Nanda Nur Rafiana, 2023), (Stawicka, 2021). Despite this expectation, empirical studies that combine technopreneurship concepts with the design, implementation, and evaluation of integrated digital systems for MSMEs remain limited, particularly in service-oriented microenterprises such as laundry businesses. Therefore, there is a clear need for an integrated digital laundry application that not only supports customer-facing services but also enables **end-to-end operational integration and remote business monitoring**, aligning digital transformation initiatives with practical technopreneurial value creation for MSMEs.

Based on a review of the relevant literature, several key gaps are identified. Existing laundry information systems mainly support partial functionalities such as transaction recording, order tracking, and cashier operations, without providing an end-to-end integrated solution that connects customer booking, operational workflows, digital payments, and financial reporting (Ali Mansyur H et al., 2024), (Arda et al., 2025), (Hidayat et al., 2025), (Laundry et al., 2025), (Saputra, 2023), (Somaida et al., 2025). In addition, digital transformation studies in MSMEs are predominantly conceptual or survey-based and rarely demonstrate how these concepts are operationalized into functional systems in specific service domains (Cen & Lin, 2025), (Díaz-Arancibia et al., 2024), (Kahveci, 2025), (Martínez-Peláez et al., 2024), (Mick et al., 2024), (Petropoulou et al., 2024).

Similarly, research on digital payments focuses on adoption and user acceptance but lacks integration with internal business processes such as automated transaction recording, financial reporting, and managerial control (Alkadi & Abed,

2023), (Almaiah et al., 2022), (Bland et al., 2024), (Irianto & Chanvarasuth, 2025), (Purwatiningsih et al., 2025), (Thoumrungroje & Suprawan, 2024).

Furthermore, technopreneurship studies rarely present system-level implementations that directly support daily operations and remote managerial decision-making in MSMEs (Karimi & Walter, 2021), (Larisang et al., 2025), (Lestari et al., 2024), (Nanda Nur Rafiana, 2023). These gaps indicate the absence of an integrated, domain-specific digital system that supports end-to-end operations and remote business monitoring in laundry MSMEs.

This study addresses the identified gaps by proposing and implementing an integrated digital laundry application that operationalizes digital transformation and technopreneurship concepts into a functional system. The proposed application integrates customer booking, operational workflows, digital payment processing, and automated financial recording within a single platform, enabling end-to-end operations. In contrast to prior studies that focus on isolated functionalities, the system provides remote business monitoring through a web-based dashboard, allowing real-time visibility and improved managerial control. Additionally, digital payment mechanisms are embedded directly into operational processes to ensure automatic transaction recording and financial transparency.

This research contributes to applied technopreneurship by demonstrating how conceptual frameworks can be translated into a domain-specific digital artifact. Through the development and evaluation of a working prototype, this study provides empirical evidence of how integrated digital systems can enhance operational efficiency and decision-making in MSMEs. This study aims to design, implement, and evaluate an integrated digital laundry application that supports end-to-end operations, digital payment integration, and remote business monitoring for MSMEs. The research also aims to demonstrate how such a system operationalizes digital transformation and technopreneurship concepts through a functional prototype evaluated using functional testing, usability assessment, and business impact analysis.

MATERIALS AND METHODS

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Digital Transformation in MSMEs

Digital Transformation (DT) refers to the integration of digital technologies into business processes, organizational structures, and value creation mechanisms to improve efficiency, innovation, and competitiveness (Alam et al., 2022), (Cen & Lin, 2025), (Díaz-Arancibia et al., 2024), (Marolt et al., 2025), (X. Zhang et al., 2022), (Kahveci, 2025). In MSMEs, DT involves not only technology adoption but also the reconfiguration of operational processes and decision-making practices (Kahveci, 2025), (Martínez-Peláez et al., 2024), (Mick et al., 2024). In this study, DT is operationalized through the development of an integrated digital laundry application that digitally transforms manual processes into automated workflows, including customer booking, operational tracking, digital payment processing, and financial reporting. This implementation translates DT concepts into a functional system tailored to MSME operational needs.

Digital Transformation and Technopreneurship

Technopreneurship combines entrepreneurial activities with technological innovation to create new value propositions and competitive advantages (Karimi & Walter, 2021), (Larisang et al., 2025), (Lestari et al., 2024), (Nanda Nur Rafiana, 2023), (Stawicka, 2021). Entrepreneurial agility, defined as the ability to respond rapidly to digital disruption, is critical for sustaining competitiveness (Karimi & Walter, 2021).

In this research, technopreneurship is operationalized through the design and implementation of a domain-specific digital system that enables MSME owners to improve service delivery, automate business processes, and enhance decision-making through real-time data visibility. This approach demonstrates how technological innovation can be directly embedded into daily business operations.

Laundry Information Systems

Existing laundry information systems mainly support isolated functionalities such as transaction recording, order tracking, and basic reporting (Ali Mansyur H et al., 2024), (Arda et al., 2025), (Hidayat et al., 2025), (Saputra, 2023). While these systems contribute to digitization, they lack integration across customer services, operational workflows, payments, and financial reporting.

This study addresses this limitation by implementing an integrated system that connects all operational components into a unified platform, enabling end-to-end service management and improving overall operational efficiency.

Digital Payment Integration

Digital payment technologies such as mobile wallets and QRIS are widely adopted in MSMEs, with prior studies focusing on user acceptance, trust, and security (Alkadi & Abed, 2023), (Almaiah

et al., 2022), (Bland et al., 2024), (Changchit et al., 2024), (Irianto & Chanvarasuth, 2025), (Purwatiningsih et al., 2025), (Thoumrungroje & Suprawan, 2024), (Q. Zhang et al., 2023).

In this study, digital payment is operationalized by integrating payment mechanisms directly into the system workflow, enabling automatic transaction recording, real-time financial updates, and improved financial transparency.

End-to-End Integrated Information Systems

End-to-end integrated information systems connect customer interaction, internal operations, and financial reporting within a unified platform (Cen & Lin, 2025), (Marolt et al., 2025), (Wang & Zhang, 2025). This concept is implemented in the proposed system by integrating booking, operational processing, payment, and monitoring modules into a single application, ensuring seamless data flow and operational consistency.

Remote Business Monitoring

Remote business monitoring enables owners to supervise operations and financial performance without physical presence. However, its implementation in MSMEs remains limited (Ali Mansyur H et al., 2024), (Arda et al., 2025), (Hidayat et al., 2025). In this study, remote monitoring is operationalized through a web-based dashboard that provides real-time visibility of transactions, operational status, and financial performance, enabling better managerial control.

Conceptual Framework

Based on the literature, this study proposes a conceptual framework in which an integrated digital application serves as the core artifact that operationalizes digital transformation and technopreneurship concepts. The system integrates end-to-end operations, digital payments, and remote monitoring, which collectively enhance efficiency, transparency, and decision-making in laundry MSMEs.

Summary

Existing studies provide strong theoretical foundations but lack practical implementation. This study bridges this gap by developing and evaluating a functional integrated digital system that operationalizes digital transformation and technopreneurship in MSMEs.

Research Approach and Design

This study adopts a Design Science Research (DSR) approach to design, implement, and evaluate a functional integrated digital laundry application for MSMEs. The system is developed based on real operational needs and implemented as a working prototype using Flutter-based mobile applications for customers and staff, and a web-based dashboard for owners.

Research Framework Based on Application Prototype

The research framework is derived from the operational flow implemented in the prototype, where the integrated system connects customer interaction, internal operations, digital payments, and managerial monitoring. The system supports booking, operational workflow management, payment processing, and real-time monitoring through a unified platform. This framework ensures alignment between conceptual design and system implementation.

System Development Method

The system is developed using Agile methodology with iterative cycles. Each iteration includes implementation of key modules such as:

1. Customer booking
2. Operational status updates
3. Digital payment processing
4. Owner dashboard monitoring

User feedback from laundry owners and staff is collected at the end of each iteration to improve usability and system performance. This iterative approach ensures alignment between system requirements and real-world usage.

System Architecture and Prototype-Based Design

The system adopts a client–server architecture consisting of:

1. Flutter-based mobile applications (customer and staff)
2. Web-based dashboard (owner)
3. Backend services (Node.js & Express)
4. MySQL database
5. Payment gateway (QRIS / e-wallet)

The architecture supports real-time data synchronization across all components, enabling integrated operations and remote monitoring.

Data Sources and Research Context

This study is conducted in a laundry MSME environment. Data are collected during prototype usage over a 2-week testing period involving 10 participants (5 owners and 5 staff).

Data sources include:

1. Operational logs (system-generated)
2. Transaction records (digital payments)
3. User feedback (SUS questionnaire)

These data are used to evaluate system functionality, usability, and business impact.

System Evaluation Method

Functional Evaluation

Functional evaluation is conducted using scenario-based testing. Each feature is tested against predefined success criteria.

Tabel 1: Functional testing scenarios

Feature	Test Scenario	Expected Result	Actual Result
Booking	Customer submits booking	Order stored successfully	Succes
Payment	QRIS/e-wallet payment	Transaction recorded	Succes
Monitoring	Owner views dashboard	Real-time data displayed	Succes

Source: (Research Results, 2026)

Table 1. All test cases were executed successfully without critical errors, confirming that the system meets functional requirements.
3.6.2 Usability Evaluation. Usability evaluation is conducted using the System Usability Scale (SUS). A total of 10 participants completed the SUS questionnaire after using the system. The system achieved a SUS score of 78.5 (SD = 5.1), indicating good usability and suitability for MSME environments.

Business Impact Evaluation

A before–after comparison is conducted to evaluate business impact using measurable indicators.

Tabel 2: Business performance indicators before and after system implementation

Indicator	Before Application	After Application
Transaction errors Service	~10% error rate	~3% error rate
Service processing time	15 minutes/older	8 minutes/older
Owner monitoring	Manual	Real-time Daasboard

Source: (Research Results, 2026)

The results indicate:

1. Error reduction of approximately 70%
2. Processing time improvement of 47%
3. Significant improvement in managerial visibility.

Ethical and Data Handling Considerations

The system implements role-based authentication and secure API communication to ensure data protection. User data are stored in a secured database, and payment transactions are processed through a trusted payment gateway (QRIS/e-wallet).

Potential risks such as unauthorized access and data leakage are mitigated through authentication control and data validation mechanisms.

Chapter Summary

This chapter describes the research methodology, system design, and evaluation approach. By combining DSR and Agile development, the study ensures alignment between theoretical concepts and practical implementation. The next chapter presents the system implementation and interface design.

RESULTS AND DISCUSSION

SYSTEM DESIGN AND IMPLEMENTATION

Overview of the Proposed System

This chapter presents the design and implementation of the integrated digital laundry application developed as a multi-platform system consisting of Flutter-based mobile applications for customers and staff, and a web-based dashboard for owners. The system supports end-to-end operations, including booking, operational processing, digital payments, and remote monitoring, in alignment with the architecture and framework described in Chapter III.

User Roles and Access Control

The system applies role-based access control (RBAC) to manage user interactions based on responsibilities. Customers use the mobile application for booking, tracking, and payments; staff manage operational processes; and owners monitor operations and financial performance via the web dashboard.

Source: (Research Results, 2026)

Figure 1. User roles and access levels in the integrated digital laundry system

Figure 1 illustrates the role-based access structure, showing how customers, staff, and owners interact with different system components according to their roles.

Customer Workflow

The customer workflow begins with authentication, followed by service selection, booking, and payment. Customers can track real-time order progress through the application.

Source: (Research Results, 2026)

Figure 2. Customer workflow in the integrated digital laundry application

Figure 2 presents the end-to-end customer workflow, including authentication, booking, payment, and real-time tracking, ensuring seamless service interaction.

Operational Workflow for Laundry Staff

Laundry staff process incoming orders by verifying details, updating service status at each stage, and confirming completion. All updates are synchronized in real time.

Source: (Research Results, 2026)

Figure 3. Operational workflow for laundry staff

Figure 3 illustrates the staff workflow from order verification to completion, highlighting real-time synchronization with customer and owner interfaces.

Owner Dashboard and Remote Business Monitoring

The web-based dashboard enables owners to monitor transactions, operational status, and financial performance in real time.

Source: (Research Results, 2026)

Figure 4. Web-based owner dashboard for remote business monitoring

Figure 4 shows the dashboard interface providing real-time visibility of business performance and supporting remote decision-making.

Digital Payment Integration

The system integrates QR-based and e-wallet payments directly into operational workflows, enabling automatic transaction recording and financial reporting.

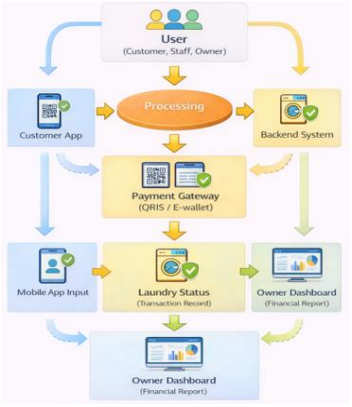
Source: (Research Results, 2026)

Figure 5. Digital payment integration workflow

Figure 5 illustrates how payment transactions are processed through the gateway and synchronized with the system database and dashboard.

Database Design and Data Flow

The system uses a centralized database to store user, transaction, and operational data. Data are synchronized through RESTful APIs across all system components.



Source: (Research Results, 2026)

Figure 6. Simplified database schema and data flow

Figure 6 illustrates how data flows between mobile applications, backend services, and the owner dashboard, ensuring consistency and transparency.

Implementation Environment

The system is implemented using widely adopted technologies suitable for MSMEs.

Tabel 3. Implementation environment and technology stack

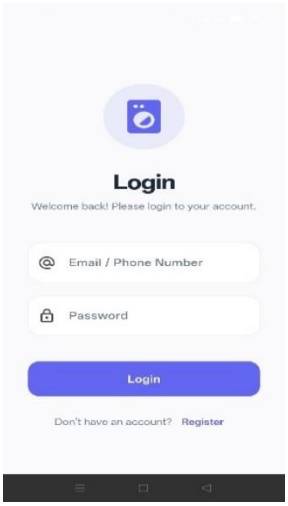
Component	Technology
Mobile App	Flutter
Web Dashboard	HTML, CSS, JavaScript
Backend	Node.js & Express
Database	MySQL
Payment	QRIS / e-wallet

Source: (Research Results, 2026)

Table 3 summarizes the implementation environment of the integrated digital laundry application prototype. The mobile application is developed using Flutter, backend services use Node.js with the Express framework, and a MySQL database is employed for data storage. The owner dashboard is built with standard web technologies (HTML, CSS, and JavaScript), while development and testing are conducted using a standard personal computer suitable for MSME application development.

Application Interface Design

Customer Registration Interface

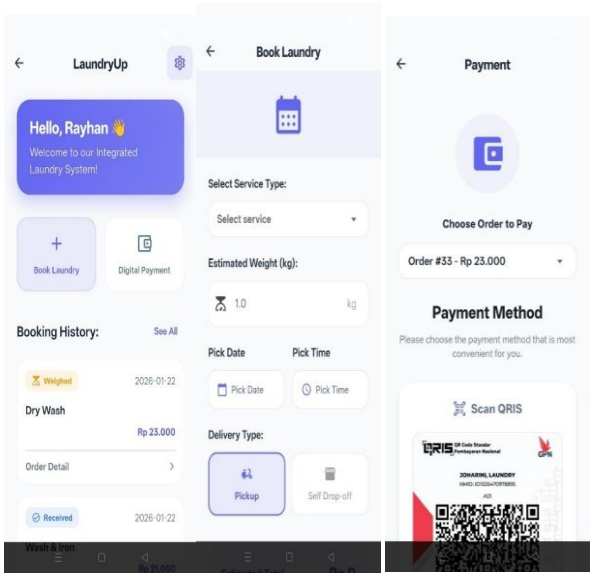


Source: (Research Results, 2026)

Figure 7. Customer registration interface in the LaundryUp mobile application

Figure 7 shows the user registration interface, allowing new users to create an account by entering personal information such as name, contact number, and password.

Customer Mobile Interface

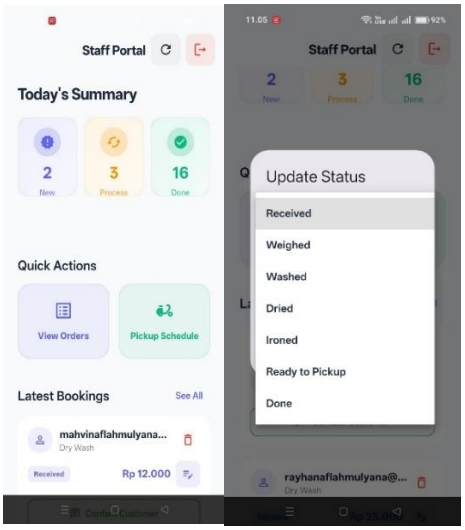


Source: (Research Results, 2026)

Figure 8. Customer mobile application interface of LaundryUp

Figure 8 presents the customer interface for accessing services, booking orders, making payments, and tracking order status in real time.

Staff Interface

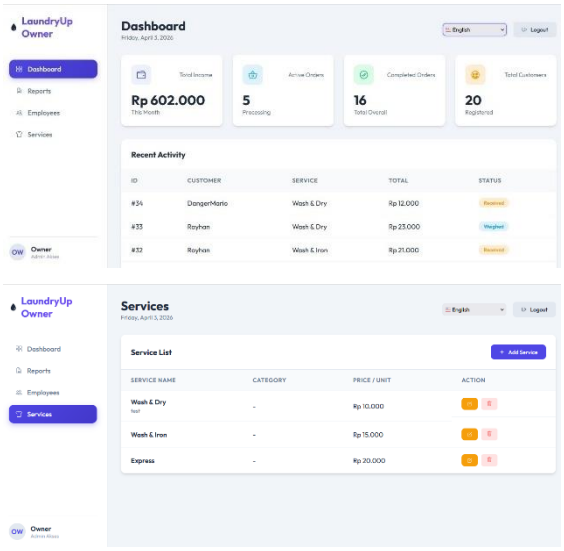


Source: (Research Results, 2026)

Figure 9. Staff portal interface in the LaundryUp application

Figure 9 illustrates the staff interface, providing daily summaries of orders and enabling operational management such as status updates and scheduling.

Owner Dashboard Interface



Source: (Research Results, 2026)

Figure 10. Owner dashboard interface of the LaundryUp application

Figure 10 shows the web-based dashboard used by owners to monitor revenue, orders, and customer data in real time, supporting remote business monitoring and decision-making.

4.10 Summary of System Design and Implementation. This chapter presents the system design and implementation based on the developed prototype. The system demonstrates how integrated digital technologies can support end-to-end operations and remote monitoring in laundry MSMEs through a multi-role and multi-platform architecture.

Results

This section presents the evaluation results of the integrated digital laundry application prototype based on functional testing, usability assessment, and business impact analysis, as defined in Chapter III and implemented in Chapter IV.

Functional Testing Results

Functional testing was conducted using scenario-based validation as presented in Table 2. The results show that all core system functionalities operated as expected. Customer bookings were successfully recorded in the database, digital payments via QRIS and e-wallets were automatically processed and logged, and the owner dashboard displayed real-time transaction and operational data. All test scenarios met the predefined success criteria without critical errors, indicating that the system satisfies its functional requirements.

Usability Evaluation Results

Usability evaluation was conducted using the System Usability Scale (SUS) with 10 participants (5 laundry owners and 5 staff). The system achieved a mean SUS score of 78.5 (SD = 5.1), which falls within the "good" usability category. Participants reported that the booking process was easy to understand, operational updates were efficient, and the dashboard interface was clear and informative. These results indicate that the system is user-friendly and suitable for MSME environments with limited technical expertise.

Business Impact Evaluation Results

A before–after comparison was conducted to evaluate the business impact of the system, as summarized in Table 4.

The results show:

Transaction errors decreased from approximately 10% to 3% (≈70% reduction)
Average service processing time decreased from 15 minutes to 8 minutes (≈47% improvement)
Owner monitoring improved from manual observation to real-time dashboard-based monitoring. These findings demonstrate that the system improves operational efficiency, reduces errors, and enhances managerial visibility.

Discussion

The results demonstrate that the proposed system successfully supports end-to-end operational integration, connecting customer interaction, operational workflows, digital payments, and managerial monitoring within a unified platform. This directly addresses the research gap identified in Chapter I regarding fragmented laundry information systems. From a digital transformation perspective, the system operationalizes key concepts by converting manual processes into integrated digital workflows, enabling real-time data access and process automation.

From a technopreneurship perspective, the implementation of a web-based dashboard enables remote business monitoring, enhancing entrepreneurial agility and supporting data-driven decision-making. Furthermore, the integration of digital payments into operational workflows extends prior studies by embedding financial transactions directly into business processes, resulting in improved financial transparency and reduced reconciliation errors. Overall, the findings indicate that lightweight, domain-specific digital systems can effectively support digital transformation in MSMEs, offering a more practical alternative to complex enterprise-level solutions.

5.3 Research Contributions

This study provides three main contributions:

Practical Contribution

A functional integrated digital laundry application that supports end-to-end operations and remote monitoring in MSMEs.

Theoretical Contribution

Demonstrates how digital transformation and technopreneurship concepts can be operationalized into a domain-specific digital artifact.

Methodological Contribution

Combines Design Science Research and Agile development to bridge system design and empirical evaluation in MSME contexts.

Limitations and Future Research

This study has several limitations. The evaluation was conducted within a limited operational context involving a small number of participants and a short testing duration. Additionally, advanced features such as predictive analytics and demand forecasting were not implemented.

Future research may explore:

Large-scale and long-term system evaluation Integration of data analytics and forecasting. Multi-branch system implementation. Integration with broader digital ecosystems such as supply chain and customer loyalty systems

CONCLUSION

This study proposes and evaluates an integrated digital laundry application that supports end-to-end operations and remote business monitoring for MSMEs. The results demonstrate that the system improves operational efficiency, reduces transaction errors, and enhances financial transparency and managerial control. By operationalizing digital transformation and technopreneurship concepts into a functional system, this study provides both practical and theoretical contributions to MSME digitalization. Overall, the findings highlight the potential of technopreneurship-driven digital solutions as an effective approach for achieving sustainable digital transformation in service-based micro-enterprises.

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