



Analysis of QR Ordering Impact on Efficiency at SatuKata Coffee

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Abstract

This study examines how the digitization of QR Order at SatuKata Coffee affects service process efficiency and customer experience through a service blueprint approach. This research employs a descriptive qualitative method supported by direct observation during two periods: September 13–October 12 and October 28 until November 26, 2025, informal interviews with the owner, staff, and customers, as well as documentation of the ordering flow, barista workflows, and customer interactions. Findings indicate that QR Order streamlines the ordering process, reduces queue buildup at the register, minimizes manual input errors, and gives customers more control over menu selection and payment. The service blueprint also reveals a clearer division between customer actions, front-of-house activities, back-of-house processing, and support systems. At the same time, its implementation relies on stable internet access and customer digital readiness, which can pose challenges during peak hours or for first-time users. Overall, QR Order contributes positively to operational efficiency and a more modern, convenient customer experience, while the service blueprint helps identify areas that still require improvement.

Keywords:

QR Order; digital service; service blueprint; customer experience; coffee shop

1. Introduction

Rapid advances in digital technology have transformed service industries, including food and beverage businesses, by changing how customers search for information, interact with firms, and complete transactions. In hospitality, digital transformation increasingly involves self-service technologies, mobile interfaces, digital menus, and contactless service arrangements that can alter both customer participation and operational workflows. Recent reviews show that self-service technology has become an important stream of hospitality research because it can affect efficiency, convenience, satisfaction, and the customer experience (Pai et al., 2022). Digital transformation in hospitality is also increasingly examined as a business capability rather than simply an IT implementation, because technology changes how services are designed and delivered (Wynn & Lam, 2023; Youssofi et al., 2024)

In coffee shops and restaurants, QR-based ordering is one manifestation of this transformation. Customers can scan a code, access a digital menu, place an order, and complete payment through their own devices. Such systems can reduce dependence on counter-based order taking and potentially redistribute staff attention toward preparation and hospitality. Evidence from restaurant technology research indicates that self-service and mobile ordering can improve convenience and operational performance, although outcomes depend on usability, customer readiness, system reliability, and the extent to which technology is integrated into the wider service process (Nilsson et al., 2021; Z. Xu et al., 2022; Zaitouni & Murphy, 2025). Studies of QR-based ordering in Indonesian coffee shops likewise report practical benefits in ordering and service flow (Wirati et al., 2024).

The relevance of digital ordering is particularly strong for small food-service businesses, where limited staffing can make peak-hour queues and repetitive manual order entry operationally costly. Research on restaurant digitalisation shows that the benefits of technology depend not only on the availability of digital tools but also on managerial capability, employee skills, and process integration (Hidayat et al., 2025; Loh et al., 2025). Digitalisation can therefore create both efficiency gains and new points of friction. For example, customers who are unfamiliar with self-service technology may require assistance, while network instability or poor integration between ordering and production can shift rather than eliminate bottlenecks (Dewi et al., 2022; Esposito et al., 2022).

These issues suggest that QR Order should not be evaluated only as a standalone technological feature. The service process contains interconnected customer actions, visible employee activities, backstage operations, support systems, and physical evidence. Service blueprinting is useful because it makes these relationships visible and helps identify failure points and opportunities for service improvement (Bartch et al., 2023; Dewi et al., 2022; García Lechuga et al., 2023). Recent service-design studies likewise show that blueprinting can be used to diagnose operational problems and align digital interventions with the overall service journey rather than with an isolated touchpoint (Kim et al., 2024; Koo et al., 2024).

SatuKata Coffee in Samarinda provides a relevant local setting for examining this issue because the business has implemented QR-based ordering while continuing to depend on human assistance and conventional food-preparation activities. Initial observations identified long ordering lines during peak periods, the possibility of manual recording errors, and customer confusion during the transition to QR ordering. These conditions indicate that digitalisation does not automatically remove service problems; instead, it can redistribute activities across customers, frontstage employees, backstage staff, and supporting technologies. This study therefore aims to analyse how QR Ordering affects service efficiency and customer experience at SatuKata Coffee and to identify operational strengths, weaknesses, and improvement points through Service Blueprint analysis. The study contributes a process-level view of QR ordering in a local coffee-shop context, complementing prior studies that have more often examined technology acceptance, satisfaction, or system effectiveness separately.

2. Literature Review

a. Digital Service Innovation in Coffee Shops

Digitalisation Digitalization in coffee shops is driven by the need to streamline service delivery, reduce wait times, and create a more modern customer experience. Technologies such as QR menus, mobile ordering, and cashless payments have become commonplace because they help businesses serve customers faster while keeping the ordering process practical and transparent. From an operational perspective, QR-based ordering can reduce input errors, minimize repetitive explanations at the counter, and distribute the workload more evenly

between front- and back-of-house staff. In small businesses, this is particularly valuable because limited human resources often force teams to work under pressure during peak hours (Kim et al., 2024; Thayarnsin, 2025).

Additionally, digital ordering supports the coffee shop's image as a responsive and modern business. Customers are more likely to perceive the brand as efficient and relevant when its service system is easy to use and aligns with their daily digital habits (Esposito et al., 2022; Loh et al., 2025).

Based on the preceding literature review, QR-based ordering technology has been consistently linked to measurable improvements in operational efficiency, service speed, and customer experience within the food and beverage sector. Nevertheless, a notable gap persists in the existing body of knowledge. The majority of prior studies have concentrated predominantly on evaluating technology implementation outcomes through the lens of system effectiveness or user perception, while paying insufficient attention to how such technology is systematically embedded within broader service delivery processes. Works by (Wirati et al., 2024), for instance, have documented the operational advantages of digital ordering systems, yet these studies stop short of providing a holistic mapping of the interconnected relationships among customer touchpoints, frontstage service activities, backstage operational processes, and supporting infrastructure that collectively constitute the service experience.

This gap underscores the necessity of examining QR Order implementation not merely as a standalone technological solution, but as an integral component of an interconnected service system. Accordingly, the present study seeks to address this limitation by applying the Service Blueprint framework as an analytical lens to comprehensively examine how QR Order technology is implemented within a local coffee shop context. By doing so, this study aims to offer a more nuanced and systematic understanding of how service efficiency is generated through the deliberate integration of technology and service process design.

b. Service Blueprint as a Service Analysis Tool

Service Blueprint is a structured method used to map service processes by separating what customers do, what staff members do in the visible service area, what happens behind the scenes, and what support systems enable the service to run. This makes it easier to see how the service works as one connected system rather than as isolated activities. The method is especially useful in services that combine human interaction and technology because it helps identify service bottlenecks, breakpoints, and coordination problems. In a coffee shop setting, blueprint analysis can reveal whether QR Order actually reduces queue time or whether new friction appears in other parts of the process, such as payment confirmation or order display on the barista dashboard (Irwansa & Huda, 2024; Rusito & Diyah Intan Mawarni Putri, 2024)

By visualising the entire service flow, businesses can design more targeted improvements. Service Blueprint therefore functions not only as a description tool, but also as a diagnostic tool for improving service quality, consistency, and operational efficiency.

c. Customer Experience and Efficiency in QR Order

Customer experience is strongly shaped by the way a service is delivered, especially in coffee shops where the atmosphere, speed, and ease of interaction matter as much as the product itself. When the ordering process is simple and predictable, customers tend to feel more in control and more satisfied with the service journey (Duran et al., 2024; Ginting, 2022).

Previous studies show that QR Code-based ordering can increase efficiency and reduce waiting time in café environments. Research on online ordering and QR implementation in coffee

shops reports that digital systems can help manage transactions more effectively, speed up service, and support both customers and staff in handling orders with less friction (Noor Hisyam et al., 2022; Wirati et al., 2024).

Other studies also emphasise that customers are more likely to accept technology when it feels useful and easy to use. In this context, QR Order is not just a technical feature, but a service experience element that can strengthen convenience, improve responsiveness, and support repeat purchase behaviour (Noor Hisyam et al., 2022; Thayarnsin, 2025).

3. Research Methodology

This study employed a descriptive qualitative approach to examine the implementation of QR Order at SatuKata Coffee through Service Blueprint analysis. This approach was considered appropriate because the study aimed to obtain an in-depth understanding of the service process, including customer interactions with the system, staff responses, and the internal operations that support the ordering flow. The research was conducted at SatuKata Coffee, located in Samarinda. The research subjects were selected purposively to ensure that the data were obtained from informants who were directly involved in the service process. The informants consisted of an Owner, 2 baristas, and 15 customers who had used the QR Order service.

Data were collected through three main techniques: direct observation, informal interviews, and documentation. Observation was carried out to record the service process in the coffee shop, including customer behavior, order placement, staff service responses, and the use of the QR Order system. Informal interviews were conducted with the manager, baristas, and customers to obtain their experiences, perceptions, and explanations regarding the implementation of the service. Documentation was used to collect supporting evidence in the form of ordering interface screenshots, menu displays, service flow records, and other relevant operational documents. These data sources were used to capture both the visible and invisible aspects of the service process.

The data analysis followed the interactive model of Miles and Huberman, which consists of data reduction, data display, and conclusion drawing/verification. In the data reduction stage, the collected information was selected, coded, and grouped according to the components of the Service Blueprint, namely customer actions, frontstage actions, backstage actions, and support processes. In the data display stage, the findings were organized into a Service Blueprint matrix to identify the structure and flow of the service process. Finally, conclusions were drawn through verification by comparing the results of observation, interviews, and documentation to ensure the credibility and consistency of the findings. This procedure allowed the study to produce a systematic and valid description of the QR Order implementation at SatuKata Coffee.

4. Result And Discussion

The findings show that QR Order has changed the service flow at SatuKata Coffee from a staff-centred ordering model into a more customer-led and digitally supported process. The service begins when customers enter the shop, scan the QR code, browse the menu, place an order, complete payment, wait for preparation, and finally receive their drinks or food.

At the frontstage level, staff interaction becomes more focused on assistance, verification, and hospitality rather than repetitive order-taking. Meanwhile, backstage operations become more structured because orders arrive automatically in the dashboard, allowing baristas to arrange tasks more systematically and reducing the possibility of missed or duplicated orders.

Table 1. 1 Service Blueprint Mapping of QR Order at SatuKata Coffee

Service Blueprint Layer	Key Observation	Impact on Efficiency and Experience
Customer actions	Customers scan the QR code, browse the digital menu, place orders, and pay through their phones.	Shorter queues and greater customer control.
Frontstage actions	Staff assist with QR use, verify orders, and focus on hospitality instead of repeated manual ordering.	Reduced counter pressure and clearer service interaction.
Backstage actions	Orders flow directly to the dashboard, baristas sequence preparation, and transactions are logged automatically.	Fewer input errors and more organised workflow.

Source: Processed Data (2026)

The blueprint also shows that the support system is essential for keeping the process stable. QR platforms, internet access, dashboard notifications, menu databases, and payment confirmation systems all work together so that the service can move smoothly from ordering to preparation. Physical evidence such as QR stands, menu screens, receipts, and the pickup area reinforces the image of a modern and organised service environment. These findings are consistent with the view of who emphasizes that service blueprints can enhance the visibility of service processes and help organizations identify critical points throughout the service interaction.

Table 1. 2 Observed Effects of QR Order Implementation

Support System	Physical Evidence	Main Effect
QR ordering platform, internet connection, and payment integration.	QR standee, digital menu, confirmation screen, and receipt.	Faster ordering and a more modern service impression.
Menu database, dashboard notification, and barista workflow.	Counter area, pickup spot, and barista station.	Better preparation accuracy and smoother service flow.
Staff guidance and customer device compatibility.	Instruction signs and review prompts.	Easier onboarding for new users and better service consistency.

Source: Processed Data (2026)

a. Efficiency and Customer Experience Effects

The main impact of QR Order is visible in service efficiency. Queue length is reduced, order handling becomes faster, and cashier workload is lighter because many ordering tasks are transferred to the customer interface. This allows staff to focus more on service quality, preparation speed, and customer assistance. The finding is consistent with research showing that restaurant self-service and mobile ordering can create efficiency and performance benefits when the technology is properly integrated into service operations (Deksne et al., 2021; Y. Xu et al., 2024).

From the customer perspective, QR Order improves convenience and perceived control. Research on restaurant self-service and contactless technologies similarly identifies convenience, usability, and customer acceptance as important dimensions of the digital service encounter (Hao, 2021; Pan et al., 2021). Customers can inspect the menu more calmly, place orders without rushing at the counter, and interact with the coffee shop through a process that feels more flexible. Research on digital menus and restaurant self-service supports the importance of perceived control, usability, convenience, and enjoyment in digital service experiences. The present case adds qualitative evidence that these benefits are experienced through the redistribution of service tasks between customers and employees.

b. Challenges and Development Directions

Despite these benefits, the blueprint reveals several challenges. The service depends on stable internet access, and first-time users may require guidance before becoming comfortable with the system. During peak hours, digital ordering can also create a backlog if incoming orders exceed preparation capacity. These observations are consistent with research showing that digital service innovation can reduce friction in some parts of the customer journey while creating new requirements for infrastructure, user readiness, and operational coordination (Esposito et al., 2022; Hidayat et al., 2025).

The findings therefore indicate that implementation quality matters as much as the technology. SatuKata Coffee needs clear instructions, responsive staff support, reliable dashboard operation, and monitoring of order volume against production capacity. This is consistent with the broader digital-transformation literature, which emphasises that technology creates value when it is integrated with organisational processes and capabilities rather than treated as an isolated tool (Loh et al., 2025; Soto Setzke et al., 2023; Wynn & Lam, 2023).

c. Strategic Implications for SatuKata Coffee

The results suggest that QR Order is not only a convenience feature but also a strategic service innovation. When supported by a well-designed blueprint, it helps SatuKata Coffee serve customers with less friction while retaining human assistance where it is most needed. The key managerial implication is therefore to manage QR ordering as a service system, not merely as a digital interface.

Three practical priorities follow from the findings. These priorities are consistent with recent work showing that restaurant digital transformation should be accompanied by operational readiness, customer support, and attention to perceived risk and service continuity (Thayarnsin, 2025). First, the menu interface and instructions should be kept simple and readable so that first-time users can complete an order independently. Second, a backup connectivity arrangement and an alternative ordering device at the counter should be available to reduce disruption when customers lack stable internet access or are unfamiliar with QR ordering. Third, staff should monitor the relationship between digital order inflow and preparation capacity during peak periods. These actions align with research emphasising usability, support, process integration, and operational readiness in self-service and digital restaurant technologies (Dewi et al., 2022; Nilsson et al., 2021; Zaitouni & Murphy, 2025).

5. Conclusion

This study concludes that the implementation of QR Order at SatuKata Coffee contributes positively to service efficiency and customer experience. Through Service Blueprint analysis, the ordering system is shown to shorten the customer journey, reduce manual queue-based ordering,

and create a more structured service flow. The system also shifts the role of staff from repetitive order takers to service facilitators who support verification, preparation, and customer assistance. This change helps reduce pressure at the front counter and allows employees to focus more effectively on service delivery quality.

From the customer perspective, QR Order provides greater convenience, control, and a more modern service experience. Customers are able to place orders more easily, avoid unnecessary waiting, and interact with the coffee shop through a process that feels faster and more flexible. However, the study also identifies several constraints, particularly dependence on stable internet access, adaptation difficulties among first-time users, and the need to balance digital order volume with preparation capacity. These findings indicate that the success of service digitalisation depends not only on the technology itself, but also on how well the entire service system is managed and supported operationally.

Based on these findings, several managerial implications can be proposed. SatuKata Coffee should provide a backup Wi-Fi connection in the cashier or service area to reduce disruption during network instability. In addition, the shop should place one tablet at the counter for customers who do not have sufficient internet access or are unfamiliar with QR-based ordering. During peak hours, staff should also be assigned to guide new users and monitor order flow so that service speed and accuracy remain consistent. With these improvements, QR Order can function not only as a digital feature, but also as a reliable service system that supports both operational efficiency and customer satisfaction.

In line with these practical implications, Service Blueprint is proven to be an effective framework for evaluating QR Order implementation in a local coffee shop. The study provides practical insight for SatuKata Coffee and similar businesses that want to improve service quality through digitalisation without losing the human warmth that customers still value.

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