

The Role of Technology Integration in Transforming CRM Practices: A Case Study of Ujjivan Small Finance Bank

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Abstract

The integration of technology has significantly transformed Customer Relationship Management (CRM) practices, enabling banks to enhance customer-centric operations, improve service quality, and foster long-term loyalty. This conceptual and theoretical study examines the role of technology integration in transforming CRM practices at Ujjivan Small Finance Bank, a pioneer in serving underbanked populations in rural and semi-urban India. By leveraging advanced CRM features such as customer segmentation, predictive analytics, real-time data management, and AI-powered communication tools, Ujjivan has redefined its approach to managing customer relationships, ensuring personalized services and addressing the unique challenges of its socio-economically diverse clientele. This research applies theoretical models, including the Technology Acceptance Model (TAM) and the SERVQUAL framework, to explore how technology-enhanced CRM improves service delivery dimensions such as reliability, responsiveness, assurance, empathy, and tangibles. CRM tools enable Ujjivan to segment customers based on behavioral and demographic data, facilitating targeted financial products such as microfinance loans for rural entrepreneurs and savings accounts for low-income households. Predictive analytics further supports retention by identifying at-risk customers and implementing timely interventions, such as customized repayment plans or grievance redressal. Additionally, real-time data management ensures accurate, seamless interactions across customer touchpoints, while AI-powered chatbots and automated notifications enhance responsiveness and engagement. Despite these advancements, the study highlights key barriers to CRM adoption, such as digital illiteracy, infrastructural challenges, and cultural resistance to technology, which require inclusive strategies to bridge the gap between technology and customer accessibility. Ujjivan has addressed these challenges through initiatives like digital literacy programs, simplified CRM interfaces, and hybrid offline-online models to ensure equitable access to services. These efforts demonstrate how technology integration in CRM aligns with Ujjivan's mission to achieve financial inclusion while enhancing operational efficiency and customer satisfaction. The findings contribute to the theoretical discourse on CRM transformation by illustrating how technology integration can address structural and socio-economic challenges in small finance banking. Furthermore, the study recommends future research into the socio-economic impacts of technology-driven CRM practices, emphasizing their potential to improve financial empowerment and customer engagement in underserved markets.

Keywords: Technology integration, CRM transformation, Ujjivan Small Finance Bank, customer retention, financial inclusion, predictive analytics, SERVQUAL framework, Technology Acceptance Model (TAM).

Introduction

The integration of technology into Customer Relationship Management (CRM) practices has transformed the way financial institutions manage relationships with customers, improving service quality, operational efficiency, and customer satisfaction. For small finance banks like Ujjivan Small Finance Bank, which serve underbanked populations in rural and semi-urban areas, the adoption of technology-enhanced CRM systems is not just a competitive necessity but a strategic imperative to achieve financial inclusion goals. As the banking industry continues to evolve, driven by technological advancements and rising customer expectations, CRM systems have emerged as powerful tools for personalizing services, fostering customer loyalty, and addressing operational inefficiencies. This paper explores the role of technology integration in transforming CRM practices at Ujjivan Small Finance Bank, analyzing its impact on

service delivery and customer engagement while addressing the challenges of serving diverse socio-economic populations.

Background and Relevance

Ujjivan Small Finance Bank is a leader in India's small finance banking sector, with a mission to extend financial services to underserved and underbanked communities. The bank faces unique challenges in managing customer relationships, including the socio-economic diversity of its customer base, varying levels of digital literacy, and infrastructural constraints in rural areas. To overcome these challenges, Ujjivan has adopted a technology-driven approach to CRM, leveraging tools such as customer segmentation, predictive analytics, real-time data management, and AI-powered communication to enhance its ability to meet customer needs. These CRM capabilities allow the bank to deliver personalized financial products, ensure timely service delivery, and foster trust among customers who have limited exposure to formal banking systems.

Theoretical Foundations

The theoretical underpinnings of this study draw on the *Technology Acceptance Model (TAM)* and the *SERVQUAL framework*, which together provide a robust foundation for analyzing the role of technology integration in CRM transformation. The *Technology Acceptance Model (TAM)*, developed by Davis (1989), emphasizes the importance of perceived usefulness and ease of use in driving the adoption of technology, suggesting that CRM tools must be user-friendly and accessible to diverse customer segments to ensure successful implementation. The *SERVQUAL framework*, developed by Parasuraman et al. (1988), evaluates service quality across five dimensions: reliability, responsiveness, assurance, empathy, and tangibles. These frameworks are highly relevant in the context of Ujjivan, as they highlight how CRM systems improve service delivery while addressing structural barriers to financial inclusion.

Significance of CRM practices in small finance banks like Ujjivan, particularly in fostering customer relationships and driving retention

Customer Relationship Management (CRM) practices play a pivotal role in small finance banks (SFBs) like Ujjivan Small Finance Bank, particularly in fostering strong customer relationships and driving retention, which are crucial for ensuring financial inclusion and sustainable growth. Unlike traditional banks that often serve a relatively homogenous customer base, SFBs such as Ujjivan cater to socio-economically diverse and underbanked populations in rural and semi-urban areas. The significance of CRM systems lies in their ability to centralize customer data, analyze behavior, and personalize interactions, enabling banks to deliver tailored services that meet the unique needs of these diverse groups while addressing key barriers such as limited financial literacy, trust deficits, and infrastructural challenges (Kumar & Verma, 2023). CRM systems provide Ujjivan with the tools needed to segment customers based on socio-economic, behavioral, and geographic factors. For example, Ujjivan uses segmentation to develop financial products targeted at specific groups, such as microfinance loans for rural entrepreneurs, savings products for daily wage earners, and financial literacy programs for first-time savers. These efforts ensure that banking services are not only accessible but also relevant, fostering trust and loyalty among customers. Furthermore, predictive analytics, a key feature of CRM, helps identify at-risk customers based on behavioral patterns such as delayed repayments or reduced account activity, enabling the bank to implement proactive retention strategies, such as personalized repayment plans, timely reminders, and targeted engagement campaigns, which significantly reduce churn rates, as noted by Mishra and Tiwari (2023). Another dimension of CRM's significance in small finance banks is its impact on service quality, particularly in addressing the five dimensions outlined in the *SERVQUAL framework*: reliability, responsiveness, assurance, empathy, and tangibles. CRM systems enhance reliability by automating processes such as loan approvals and account updates, ensuring timely and error-free service delivery. Responsiveness is improved through AI-powered chatbots and real-time communication tools that enable Ujjivan to address customer queries promptly, even in regions with limited access to physical branches. Assurance is bolstered by secure data management practices and transparent communication, which build trust among customers who are often skeptical of formal banking systems, as highlighted by Sharma and Gupta (2022). Empathy is fostered through personalized interactions enabled by CRM-driven segmentation and data analysis, allowing the bank to understand and cater to the specific needs of its customers. Tangibles, such as user-friendly digital interfaces, make banking services accessible to customers with limited digital literacy, ensuring inclusivity and convenience. For Ujjivan, CRM practices also address challenges unique to rural and semi-urban banking environments, such as infrastructural constraints and cultural resistance to technology. By integrating offline CRM capabilities alongside digital tools, Ujjivan ensures that its services remain accessible in areas with unreliable internet connectivity and limited smartphone penetration. Additionally, Ujjivan has invested in digital literacy initiatives to educate customers about the benefits of CRM-

enabled services and build their confidence in using digital banking platforms, as emphasized by Rajasekaran and Priya (2023). These initiatives are critical in overcoming cultural resistance to technology, particularly among older customers or those accustomed to traditional, cash-based financial systems. The role of CRM in driving retention is further underscored by its ability to strengthen customer engagement. Ujjivan's CRM systems facilitate continuous communication with customers through automated SMS alerts, personalized email campaigns, and app notifications. These tools keep customers informed about their account status, repayment deadlines, and new service offerings, creating a sense of transparency and trust that strengthens the bank-customer relationship. CRM practices also support cross-selling and upselling opportunities, enabling Ujjivan to offer complementary products such as insurance to customers with consistent savings habits, thereby enhancing customer lifetime value (Raghavan, 2023). Moreover, CRM practices align with Ujjivan's broader mission of financial inclusion by addressing structural barriers that prevent underserved populations from accessing formal banking services. The use of CRM systems to streamline onboarding processes, such as e-KYC and biometric authentication, has reduced entry barriers for new customers, making it easier for individuals in rural areas to open accounts and access credit. By leveraging CRM to foster trust, provide tailored services, and ensure accessibility, Ujjivan not only improves retention but also contributes to the socio-economic development of the communities it serves, as noted by Parasuraman et al. (1988). Despite these advantages, the full potential of CRM in small finance banks like Ujjivan can only be realized through continuous optimization. Strategies such as simplifying CRM interfaces, integrating advanced analytics tools, and maintaining hybrid service models are essential for ensuring that CRM practices remain inclusive and effective. Additionally, future research into the socio-economic impacts of CRM adoption in small finance banks could provide deeper insights into its role in improving financial empowerment, customer satisfaction, and operational sustainability. In conclusion, CRM practices are indispensable for small finance banks like Ujjivan in their efforts to foster strong customer relationships and drive retention. By aligning technological innovation with customer-centric strategies, Ujjivan has positioned itself as a leader in financial inclusion while addressing the unique challenges of serving underserved populations. The lessons from Ujjivan's CRM transformation offer valuable insights for other financial institutions aiming to achieve similar goals in diverse and resource-constrained environments.

Unique challenges faced by Ujjivan due to its socio-economic customer diversity

Ujjivan Small Finance Bank, operating in the context of rural and semi-urban India, faces unique challenges in integrating technology into Customer Relationship Management (CRM) practices due to the socio-economic diversity of its customer base, which includes individuals from varying income levels, education backgrounds, and levels of financial literacy. One significant challenge is the widespread issue of digital illiteracy among rural customers, many of whom lack the necessary skills to navigate digital banking platforms, access mobile applications, or utilize CRM-enabled services, which limits the effectiveness of technology-driven solutions in addressing their needs, as highlighted by Sharma and Gupta (2022). Additionally, limited access to technology, such as smartphones or stable internet connections, poses another obstacle for Ujjivan in delivering seamless CRM experiences to underserved populations, particularly in areas with inadequate digital infrastructure, as emphasized by Mishra and Tiwari (2023). The socio-economic diversity of Ujjivan's customer base also results in a wide range of financial needs and priorities, complicating the process of service customization. For example, while some customers may require microfinance loans to support entrepreneurial activities, others may prioritize savings accounts or basic banking services to achieve financial stability. Meeting these varied demands requires sophisticated CRM systems capable of customer segmentation and predictive analytics, yet implementing these features in regions with limited technological penetration remains a challenge, as noted by Kumar and Verma (2023). Trust deficits in formal banking institutions further complicate Ujjivan's ability to engage with its customers, particularly in communities where banking services are perceived as inaccessible, complex, or misaligned with cultural norms. This skepticism often leads to resistance to adopting digital solutions, especially among older and less tech-savvy individuals, necessitating targeted trust-building initiatives and culturally sensitive communication strategies, as highlighted by Raghavan (2023). In addition to external challenges, internal organizational barriers, such as the high cost of CRM implementation and the need for extensive staff training to manage diverse customer expectations, further complicate technology integration. Employees often face difficulties in adapting to new workflows and tools, particularly when trying to address the varied needs of socio-economically diverse customers, as emphasized by Rajasekaran and Priya (2023). To overcome these challenges, Ujjivan has employed strategies such as simplified and inclusive CRM interfaces, offline CRM capabilities for regions with infrastructural constraints, and community-based digital literacy programs aimed at building customers' confidence in digital banking platforms. These efforts, while impactful, highlight the complexities of addressing socio-economic diversity through CRM practices and underscore the need for continued research into scalable and inclusive solutions.

Relevance of the study for improving customer-centric banking services

The study is highly relevant for improving customer-centric banking services, particularly in addressing the challenges faced by underserved populations in rural and semi-urban areas. Customer-centric banking requires a deep understanding of customer needs, preferences, and socio-economic circumstances, and the integration of technology into Customer Relationship Management (CRM) practices provides banks like Ujjivan with the tools to achieve these objectives effectively. By leveraging CRM features such as segmentation, predictive analytics, real-time data management, and AI-driven communication tools, Ujjivan can deliver personalized and responsive banking services that align with customer expectations, fostering trust and loyalty, as noted by Sharma and Gupta (2022). The relevance of this study lies in its exploration of how technology-enhanced CRM improves service quality, a critical factor in customer-centric banking, by addressing the five dimensions of the *SERVQUAL framework*: reliability, responsiveness, assurance, empathy, and tangibles. For instance, CRM systems at Ujjivan improve reliability by automating processes such as loan disbursements and repayment reminders, ensuring consistent and accurate service delivery. Responsiveness is enhanced through AI-powered chatbots and instant notifications that address customer queries in real time, reducing wait times and improving engagement, as emphasized by Mishra and Tiwari (2023). Furthermore, assurance is strengthened by CRM-enabled secure data handling and transparent communication, which build trust among customers, particularly those who are new to formal banking systems. Empathy is demonstrated through CRM-driven personalized services, such as customized financial products for microfinance clients or first-time savers, ensuring that each customer feels understood and valued, while tangibles, including user-friendly mobile banking interfaces, make banking services accessible to customers with limited digital literacy, as highlighted by Kumar and Verma (2023). This study is also relevant for its practical insights into overcoming barriers to CRM adoption in customer-centric banking. Challenges such as digital illiteracy, infrastructural limitations, and cultural resistance to technology are addressed through strategies like simplified CRM interfaces, offline CRM functionalities, and digital literacy programs. These efforts not only improve customer access to banking services but also enhance their ability to engage with digital platforms, as noted by Raghavan (2023). The findings of this study provide a roadmap for small finance banks and other financial institutions to align their CRM practices with customer-centric principles. For example, Ujjivan's use of predictive analytics to identify at-risk customers and implement timely retention strategies demonstrates how technology integration enhances customer-centricity by proactively addressing customer needs. Additionally, the study's emphasis on financial inclusion highlights the broader societal impact of technology-driven CRM practices in empowering underserved populations and reducing economic disparities, as emphasized by Rajasekaran and Priya (2023). By contributing to the academic discourse on CRM transformation and its practical application in banking, this study is essential for advancing customer-centric strategies that prioritize accessibility, personalization, and engagement, ultimately positioning small finance banks like Ujjivan as key drivers of financial inclusion and customer satisfaction in underserved markets.

Literature Review related to the study

Overview of Traditional and Technology-Driven CRM Practices

Customer Relationship Management (CRM) has long been recognized as a vital component of banking operations, aimed at building strong relationships with customers, improving service delivery, and driving customer satisfaction. Traditional CRM practices primarily relied on manual record-keeping, in-person interactions, and limited segmentation techniques, making it difficult for banks to personalize services or efficiently manage customer relationships. These systems were labor-intensive, error-prone, and lacked the ability to scale effectively, especially in diverse and resource-constrained environments (Sharma & Gupta, 2022). With advancements in technology, CRM practices have undergone a significant transformation, shifting from static and reactive systems to dynamic, technology-driven solutions. Modern CRM systems leverage tools such as predictive analytics, customer segmentation, real-time data management, and AI-powered communication to deliver personalized services and address diverse customer needs. These systems enable banks to analyze customer behaviors, anticipate needs, and proactively address grievances, making them particularly valuable for small finance banks like Ujjivan that cater to socio-economically diverse populations in rural and semi-urban areas (Kumar & Verma, 2023). Moreover, technology-driven CRM practices enhance operational efficiency by automating routine processes such as onboarding, loan disbursements, and repayment reminders, ensuring consistent and error-free service delivery while allowing employees to focus on higher-value tasks (Mishra & Tiwari, 2023).

Importance of CRM in Enhancing Customer Satisfaction, Loyalty, and Retention

CRM systems play a crucial role in enhancing customer satisfaction by addressing service quality gaps, personalizing customer interactions, and improving responsiveness. The *SERVQUAL framework* (Parasuraman et al., 1988) provides a foundational lens for understanding how CRM contributes to service quality. For instance, technology-driven CRM improves reliability by ensuring accurate and timely service delivery, responsiveness through real-time customer support, assurance via secure data handling and transparent communication, empathy through personalized solutions,

and tangibles through user-friendly interfaces (Raghavan, 2023). Customer satisfaction is further linked to customer loyalty, as satisfied customers are more likely to engage in repeat transactions and recommend the bank's services to others. CRM systems foster loyalty by strengthening trust through consistent and personalized service delivery, a key factor in building long-term customer relationships. For example, Ujjivan's CRM-driven segmentation enables it to tailor financial products such as microfinance loans for rural entrepreneurs and savings accounts for low-income households, ensuring that services align with customer needs and preferences, which is critical for retaining a diverse customer base (Rajasekaran & Priya, 2023). Retention, a critical performance metric for any financial institution, is directly influenced by CRM practices. Technology-driven CRM tools, such as predictive analytics, allow banks to identify at-risk customers by analyzing behavioral patterns such as decreased transaction frequency or delayed repayments. By implementing timely interventions, such as personalized repayment plans or proactive grievance resolution, CRM systems help minimize churn rates and strengthen customer loyalty (Mishra & Tiwari, 2023). Furthermore, automated communication tools integrated into CRM systems ensure that customers remain engaged through timely updates, reminders, and personalized campaigns, fostering transparency and trust.

CRM's Role in Addressing Socio-Economic Diversity

For small finance banks like Ujjivan, which serve customers with varying levels of financial literacy, income, and access to technology, CRM systems are indispensable in bridging socio-economic disparities. By enabling customer segmentation based on demographic and behavioral data, CRM systems help banks design inclusive financial products that cater to the specific needs of underserved populations. For instance, Ujjivan uses CRM analytics to identify customers who may benefit from financial literacy programs, ensuring that they are empowered to make informed financial decisions (Sharma & Gupta, 2022). However, socio-economic diversity also presents challenges, such as digital illiteracy and cultural resistance to technology adoption. CRM systems address these barriers through features like user-friendly interfaces, localized communication, and offline capabilities, ensuring that customers with limited access to technology can still benefit from enhanced service quality. Ujjivan's hybrid offline-online CRM model demonstrates the potential of technology to create inclusive banking solutions, making it a valuable case study for similar institutions (Raghavan, 2023).

Emerging Trends in CRM Practices

The integration of advanced technologies such as artificial intelligence (AI), machine learning (ML), and biometric authentication is further revolutionizing CRM practices in banking. AI-powered chatbots, for example, enhance responsiveness by providing instant query resolution, while ML algorithms improve predictive analytics capabilities, enabling banks to anticipate customer needs more accurately. Biometric authentication enhances assurance by providing secure and seamless onboarding processes, especially for customers in rural areas with limited access to traditional identification methods (Rajasekaran & Priya, 2023). Despite these advancements, the adoption of technology-driven CRM in small finance banks remains limited by infrastructural constraints, high implementation costs, and the need for extensive staff training. Addressing these challenges requires a strategic approach that aligns technological innovation with organizational goals and customer needs, ensuring that CRM systems deliver value to both the bank and its customers. The literature underscores the transformative potential of technology-driven CRM practices in enhancing customer satisfaction, loyalty, and retention, particularly for small finance banks like Ujjivan. By addressing service quality gaps, personalizing interactions, and improving engagement, CRM systems enable banks to create customer-centric strategies that align with the principles of financial inclusion. However, achieving these outcomes requires addressing barriers such as digital illiteracy and infrastructural limitations, as well as investing in inclusive CRM strategies and continuous technological innovation.

Theories and Frameworks related to Technology Acceptance Model (TAM) related to Assessing perceived usefulness and ease of use of CRM technology

The *Technology Acceptance Model (TAM)*, developed by Davis (1989), is one of the most widely used theoretical frameworks for assessing the adoption and effectiveness of new technologies, particularly in the financial and banking sectors. The model posits that two primary factors—*perceived usefulness (PU)* and *perceived ease of use (PEOU)*—determine an individual's intention to adopt and use a technology, making it a relevant framework for analyzing the adoption of Customer Relationship Management (CRM) technology in small finance banks. In the context of CRM adoption, *perceived usefulness* refers to the extent to which users believe that CRM tools enhance service efficiency, customer interactions, and overall banking operations, while *perceived ease of use* measures the degree to which CRM systems are considered intuitive, user-friendly, and accessible to bank employees and customers alike (Davis, 1989; Venkatesh & Bala, 2008). These factors significantly influence behavioral intention and actual system usage, making TAM a critical model for evaluating CRM effectiveness in financial institutions.

Perceived Usefulness (PU) in CRM Technology

The *perceived usefulness* of CRM technology in banking is driven by its ability to improve customer engagement, automate routine processes, and provide actionable insights through data analytics. Studies suggest that CRM adoption is higher in organizations where employees and customers perceive tangible benefits, such as increased efficiency in service delivery, faster response times, and improved customer satisfaction (Sharma & Gupta, 2022). For instance, CRM-integrated predictive analytics enable banks to identify at-risk customers and implement personalized retention strategies, reducing churn rates and enhancing loyalty. Moreover, CRM tools facilitate real-time data management, ensuring that customer information is consistently updated and accessible across departments, thereby enhancing decision-making and service personalization (Kumar & Verma, 2023). In the banking sector, *perceived usefulness* is also linked to CRM's ability to streamline onboarding processes through e-KYC verification and automated documentation, reducing administrative burdens and making banking more accessible for underserved populations. Small finance banks, such as Ujjivan, benefit from CRM's capacity to support financial inclusion by ensuring that rural customers receive tailored financial products and services based on behavioral and demographic data analysis (Mishra & Tiwari, 2023). Thus, a high level of *perceived usefulness* encourages greater adoption and integration of CRM technologies in financial institutions.

Perceived Ease of Use (PEOU) in CRM Technology

While *perceived usefulness* is crucial for CRM adoption, *perceived ease of use* is equally significant, as complex or unintuitive CRM systems can discourage employees and customers from fully utilizing their features. In banking, ease of use is assessed by factors such as interface simplicity, accessibility across digital platforms, and the availability of user support systems (Venkatesh & Davis, 2000). CRM solutions that incorporate intuitive dashboards, minimal training requirements, and seamless integration with existing banking operations are more likely to be adopted successfully. A significant challenge for small finance banks is ensuring that their CRM platforms are accessible to users with varying levels of digital literacy. For instance, in the case of Ujjivan, many customers may have limited experience with digital banking platforms, making simplified CRM interfaces and multilingual support critical for widespread adoption (Raghavan, 2023). Furthermore, employees in small finance banks may also face barriers to CRM adoption due to inadequate training or resistance to new workflows. Addressing these challenges requires an emphasis on user-friendly design, mobile accessibility, and ongoing employee training programs to improve confidence in CRM usage (Rajasekaran & Priya, 2023).

TAM Extensions and Their Relevance to CRM Adoption

Over the years, TAM has been expanded to include additional variables that influence technology adoption. The *Unified Theory of Acceptance and Use of Technology (UTAUT)*, developed by Venkatesh et al. (2003), builds on TAM by incorporating factors such as social influence, facilitating conditions, and performance expectancy, providing a more comprehensive understanding of CRM adoption. In banking, these extended models highlight the role of organizational culture, management support, and infrastructure availability in shaping CRM adoption trends (Dwivedi et al., 2019). Additionally, the *Expectation-Confirmation Theory (ECT)* is relevant to CRM adoption, as it explains how users develop expectations about technology, assess its actual performance, and determine satisfaction levels based on expectation-confirmation (Oliver, 1980). In small finance banks, customers and employees often compare CRM systems to traditional banking methods, and their willingness to continue using CRM tools depends on whether the technology meets or exceeds expectations.

Implications and Recommendations for CRM Adoption

Given the insights from TAM and its extended models, financial institutions should focus on enhancing both *perceived usefulness* and *perceived ease of use* to drive CRM adoption. Strategies to achieve this include:

1. Enhancing CRM functionality: Banks should integrate AI-driven analytics and automation features that improve efficiency, reduce response times, and enhance personalization.
2. User-friendly design: Simplified interfaces with multilingual options and offline capabilities can make CRM platforms more accessible to digitally illiterate customers.
3. Employee training programs: Regular workshops and on-the-job training sessions can improve employees' confidence in using CRM tools, reducing resistance to adoption.
4. Customer education initiatives: Digital literacy campaigns can help customers navigate CRM-powered banking services, increasing engagement and trust.

5. Organizational support: Management should foster a technology-friendly work culture by incentivizing CRM usage and addressing concerns related to system complexity or workload increases.

The Technology Acceptance Model (TAM) provides a strong theoretical foundation for assessing the adoption of CRM technology in banking, with *perceived usefulness* and *perceived ease of use* emerging as critical determinants of CRM success. While CRM tools significantly enhance service quality, customer retention, and operational efficiency, their widespread adoption in small finance banks requires a focus on accessibility, employee training, and customer education. Extending TAM with frameworks like UTAUT and ECT further refines the understanding of CRM adoption dynamics, emphasizing the need for banks to align technological advancements with user expectations and infrastructure realities. Future research should explore the socio-economic impact of CRM adoption in financially underserved regions, assessing its role in improving financial literacy, economic empowerment, and long-term banking engagement.

Global and Local Context with Examples of CRM implementation in other small finance banks globally and their outcomes

The adoption of Customer Relationship Management (CRM) systems in small finance banks worldwide has demonstrated significant improvements in financial inclusion, customer engagement, and retention, as seen in the case of Ujjivan Small Finance Bank, which has successfully leveraged CRM-driven customer segmentation, predictive analytics, and real-time data management to tailor financial services to underbanked populations, aligning with global best practices observed in institutions such as Equity Bank in Kenya, where CRM technology has been integrated with mobile banking solutions to provide micro-loans and savings accounts to financially excluded customers, reducing default rates and increasing customer satisfaction (Muriithi & Wachira, 2023), while BancoSol in Bolivia has implemented CRM-powered mobile banking and real-time data analytics to enhance microfinance accessibility, leading to a 20% increase in loan repayment rates and improved overall customer engagement, demonstrating the role of technology in financial inclusion (Gutiérrez et al., 2023), and similarly, in Southeast Asia, Bank Rakyat Indonesia has employed AI-powered CRM solutions such as chatbots and automation workflows, which have enhanced customer responsiveness, reduced service delivery time, and increased customer satisfaction by personalizing banking solutions for rural farmers and small business owners (Yulianto & Setiawan, 2023), while in India, small finance banks like Ujjivan, Jana Small Finance Bank, and AU Small Finance Bank have adopted CRM technology to enhance customer interactions, automate banking processes, and improve financial accessibility, with Ujjivan using CRM analytics to identify at-risk customers and deploy proactive engagement strategies to reduce churn rates, Jana Small Finance Bank leveraging mobile-first CRM strategies to facilitate SMS-based banking services in rural areas, and AU Small Finance Bank implementing omnichannel CRM solutions that provide a seamless experience across digital and physical touchpoints, leading to a 25% increase in customer retention over three years (Kumar & Verma, 2023; Mishra & Tiwari, 2023), and through a comparative analysis of CRM adoption, it becomes evident that successful implementations share common best practices, including customer segmentation and predictive analytics that enable personalized banking experiences, AI-driven CRM enhancements that improve responsiveness and operational efficiency, and mobile-first CRM strategies that expand financial access to remote populations, demonstrating that small finance banks globally and locally can benefit from technology-driven CRM frameworks to enhance customer retention and financial inclusion, while also highlighting the need for further research into the long-term socio-economic impact of CRM adoption in financial institutions serving marginalized communities (Sharma & Gupta, 2022; Rajasekaran & Priya, 2023).

Research Gap related to CRM technology integration in the specific context of Ujjivan Small Finance Bank

The integration of Customer Relationship Management (CRM) technology in small finance banks (SFBs) has gained substantial attention in recent years due to its potential to improve financial inclusion, enhance customer engagement, and optimize service delivery; however, despite its evident benefits, a significant research gap remains in understanding the challenges and strategic implementations of CRM technology within the specific operational framework of Ujjivan Small Finance Bank, as existing studies have primarily focused on large commercial banks or microfinance institutions, leaving a gap in knowledge regarding how small finance banks like Ujjivan adapt CRM tools to address the unique needs of their diverse and socio-economically varied customer base (Sharma & Gupta, 2022). One of the major research gaps lies in the lack of empirical studies that analyze how CRM-driven segmentation, predictive analytics, and AI-powered engagement impact customer retention in small finance banks, particularly in underserved rural and semi-urban areas where digital literacy remains low and access to banking services is often limited due to infrastructural constraints, as most existing literature on CRM technology in banking focuses on urban financial institutions with digitally mature customers, failing to address the practical challenges of deploying CRM

technology in a financial ecosystem that serves individuals with minimal exposure to digital banking platforms (Kumar & Verma, 2023). Furthermore, while research has explored the benefits of CRM in improving service quality using frameworks such as *SERVQUAL* and the *Technology Acceptance Model (TAM)*, there is limited understanding of how these theoretical models align with the ground realities of Ujjivan's operations, particularly in the context of cultural resistance to technology adoption and the need for hybrid offline-online CRM strategies that cater to customers in regions with unreliable internet connectivity and smartphone penetration (Mishra & Tiwari, 2023), while another critical gap is the lack of studies that assess the long-term impact of CRM-driven automation and predictive analytics on customer engagement and financial inclusion outcomes, as existing research has largely focused on short-term service improvements rather than evaluating how sustained CRM interventions influence customer behavior, financial literacy, and banking habits over time (Rajasekaran & Priya, 2023). Moreover, the current body of literature does not sufficiently explore the internal organizational challenges of CRM adoption at Ujjivan, including employee resistance, training deficiencies, and the high costs of implementation, with most studies assuming that technology adoption is a seamless process, overlooking the practical difficulties that arise in integrating CRM systems with legacy banking infrastructures and ensuring that frontline banking staff are adequately trained to utilize CRM tools effectively (Raghavan, 2023), while the role of artificial intelligence in CRM within small finance banks also remains underexplored, particularly regarding how AI-driven chatbots, automated workflows, and data-driven decision-making enhance customer service while maintaining a human-centric approach, which is essential for building trust among first-time banking customers who may be skeptical of automated systems (Yulianto & Setiawan, 2023). Addressing these research gaps is crucial for providing actionable insights into how CRM technology can be optimized for Ujjivan Small Finance Bank and other similar institutions, ensuring that technological advancements translate into meaningful improvements in customer retention, financial inclusion, and overall banking accessibility.

Conceptual Framework related to Technology integration in CRM (e.g., data analytics, AI, mobile CRM tools) based on Dependent Variable and Moderating Variables related to TAM and SERVQUAL Dimensions

The integration of technology into Customer Relationship Management (CRM) systems has transformed banking operations, particularly in small finance banks like Ujjivan Small Finance Bank, where digital tools such as data analytics, artificial intelligence (AI), and mobile CRM platforms are leveraged to enhance customer engagement, improve service quality, and drive customer retention, with this conceptual framework incorporating theoretical foundations from the *Technology Acceptance Model (TAM)* and the *SERVQUAL framework* to analyze the relationships between CRM technology adoption and customer satisfaction, as the *Technology Acceptance Model (TAM)*, developed by Davis (1989), posits that *perceived usefulness* and *perceived ease of use* are the primary determinants of technology adoption, making them critical moderating variables in assessing CRM effectiveness, while the *SERVQUAL framework* (Parasuraman et al., 1988) evaluates service quality based on five key dimensions—reliability, responsiveness, assurance, empathy, and tangibles—which serve as indicators of how well technology-integrated CRM solutions enhance customer experiences and trust in banking services (Kumar & Verma, 2023).

Dependent Variable: Customer Retention

Customer retention is the dependent variable in this conceptual framework, as it represents the ultimate goal of CRM implementation, with retention being influenced by improvements in service quality, efficiency, and engagement enabled by technology-driven CRM solutions such as AI-powered chatbots, mobile CRM applications, and predictive analytics, where AI-driven CRM tools improve responsiveness by providing instant support and query resolution, while predictive analytics enable banks to anticipate customer needs, detect at-risk accounts, and implement proactive engagement strategies that reduce churn rates and strengthen loyalty, as highlighted by Mishra and Tiwari (2023).

Independent Variables: Technology-Enabled CRM Features

1. **Data Analytics** – CRM-driven data analytics allow banks to segment customers based on behavior, transaction history, and risk profiles, enabling targeted marketing campaigns, personalized product offerings, and customized financial solutions that enhance customer satisfaction and retention (Sharma & Gupta, 2022).
2. **Artificial Intelligence (AI) and Automation** – AI-powered CRM systems facilitate automated service responses, fraud detection, and workflow optimization, ensuring faster query resolution and reducing human intervention for routine banking tasks, while AI-driven chatbots enhance responsiveness, one of the key dimensions of *SERVQUAL* (Raghavan, 2023).
3. **Mobile CRM Tools** – The integration of mobile-based CRM solutions, such as banking apps, SMS-based notifications, and voice-enabled banking services, ensures greater accessibility for customers in remote areas, improving convenience and engagement, thereby increasing service reliability and usability (Rajasekaran & Priya, 2023).

Moderating Variables: TAM and SERVQUAL Dimensions

1. **Perceived Usefulness (TAM)** – The extent to which customers and bank employees find CRM technology beneficial in improving service quality, streamlining transactions, and facilitating financial inclusion determines CRM adoption success (Davis, 1989).
2. **Perceived Ease of Use (TAM)** – The simplicity and user-friendliness of CRM interfaces, especially for digitally illiterate customers, play a crucial role in ensuring widespread adoption and engagement (Yulianto & Setiawan, 2023).
3. **Service Quality (SERVQUAL)** – CRM effectiveness is measured through five service quality dimensions:
 - ✓ **Reliability** – Ensuring consistent, error-free service delivery through CRM automation and real-time transaction monitoring.
 - ✓ **Responsiveness** – AI-powered chatbots and CRM-driven customer support enhance response times and reduce service delays.
 - ✓ **Assurance** – Secure CRM data management and transparent banking policies build trust among customers.
 - ✓ **Empathy** – CRM-driven personalized services improve customer relationships by catering to individual needs.
 - ✓ **Tangibles** – User-friendly mobile CRM interfaces enhance banking accessibility and usability.

This conceptual framework demonstrates that technology integration in CRM, supported by the *Technology Acceptance Model (TAM)* and the *SERVQUAL framework*, plays a critical role in improving service quality and customer retention in small finance banks like Ujjivan, with the successful adoption of CRM technologies such as AI-driven automation, data analytics, and mobile CRM tools being moderated by perceived usefulness, perceived ease of use, and service quality dimensions, highlighting the need for future research to assess how CRM-driven innovations impact long-term customer engagement, financial literacy, and banking accessibility in underserved markets.

Methodology related to the study

The study adopts a conceptual and theoretical research approach to examine the role of technology integration in transforming Customer Relationship Management (CRM) practices at Ujjivan Small Finance Bank, with the methodology grounded in an extensive review of existing literature, theoretical frameworks such as the *Technology Acceptance Model (TAM)* and the *SERVQUAL framework*, and publicly available data on Ujjivan's CRM strategies, as the research aims to provide a structured analysis of how CRM technologies including data analytics, artificial intelligence (AI), and mobile CRM tools enhance customer engagement, improve service quality, and drive retention in small finance banks (Sharma & Gupta, 2022), while employing a qualitative case study approach, which is particularly effective in exploring the integration of technology into CRM practices within the specific operational context of a financial institution, where the analysis is conducted using secondary data sources, including academic journal articles, industry reports, regulatory filings, and Ujjivan's publicly disclosed CRM initiatives (Yulianto & Setiawan, 2023), and following a conceptual research design, synthesizing key theoretical perspectives to assess the relationship between technology-driven CRM practices and service quality outcomes, particularly through the lens of *TAM* (which evaluates perceived usefulness and perceived ease of use) and *SERVQUAL* (which measures service quality dimensions such as reliability, responsiveness, assurance, empathy, and tangibles) (Davis, 1989; Parasuraman et al., 1988), with secondary data collection methods comprising an academic literature review analyzing recent peer-reviewed studies on CRM technology adoption in small finance banks, particularly AI-powered analytics, predictive modeling, and mobile banking integrations (Mishra & Tiwari, 2023), industry reports examining trends in CRM adoption and challenges specific to small finance banks based on financial regulatory bodies, banking associations, and market research firms (Kumar & Verma, 2023), and case study data from Ujjivan Small Finance Bank, which reviews publicly available information on Ujjivan's CRM systems, customer segmentation strategies, AI-driven chatbots, and predictive analytics tools used to enhance customer retention and satisfaction (Raghavan, 2023), while the data analysis process involves thematic coding, where key findings from literature and industry reports are categorized under major themes such as the impact of CRM technology on customer retention, effectiveness of AI-powered analytics in predicting customer behavior, role of mobile CRM tools in increasing financial accessibility, and barriers to CRM adoption, including digital illiteracy and infrastructure challenges, with the study integrating two established theoretical frameworks to interpret the findings, namely the Technology Acceptance Model (TAM), which assesses how *perceived usefulness* and *perceived ease of use* influence the adoption of CRM technology by both bank employees and customers, particularly in underserved financial markets (Davis, 1989), and the SERVQUAL Framework, which evaluates how CRM-driven service improvements enhance reliability, responsiveness, assurance, empathy, and tangibles, ultimately leading to improved customer satisfaction and retention (Parasuraman et al., 1988),

while the study's limitations include reliance on secondary data rather than primary data collection such as surveys or interviews, meaning findings are dependent on existing research and publicly available financial data, and while the case study method provides in-depth insights into Ujjivan's CRM strategies, findings may not be fully generalizable to other small finance banks with different regulatory or technological infrastructures (Rajasekaran & Priya, 2023), with the methodological approach ensuring a rigorous analysis of how technology integration in CRM enhances customer experience and retention at Ujjivan Small Finance Bank, contributing to both theoretical discourse and practical banking strategies for financial inclusion.

Barriers and Challenges related to Digital illiteracy and resistance among rural customers, High implementation costs and training requirements and Infrastructure challenges in remote areas

The barriers and challenges associated with the integration of Customer Relationship Management (CRM) technology at Ujjivan Small Finance Bank, particularly in the context of digital illiteracy, resistance among rural customers, high implementation costs, training requirements, and infrastructural challenges in remote areas, present significant obstacles to the effective adoption and utilization of technology-driven banking solutions, as digital illiteracy remains a primary concern in rural and semi-urban regions where a substantial portion of the customer base has limited exposure to digital financial platforms, mobile banking applications, and automated service channels, thereby restricting their ability to engage with CRM-enabled banking services, which ultimately impacts customer retention and financial inclusion (Sharma & Gupta, 2022), while resistance to technology adoption is further compounded by socio-cultural factors, generational gaps, and skepticism toward digital transactions, as many rural customers prefer traditional cash-based interactions due to perceived risks associated with digital banking, such as fraud, lack of control over personal finances, and the complexity of navigating unfamiliar interfaces, making it essential for Ujjivan to develop customer education programs, simplified mobile CRM interfaces, and hybrid service delivery models that bridge the gap between digital banking and conventional branch-based interactions (Mishra & Tiwari, 2023), and in addition to customer-related challenges, high implementation costs and extensive training requirements pose significant hurdles for Ujjivan's CRM adoption, as deploying sophisticated CRM tools such as AI-driven chatbots, predictive analytics, and automated workflows requires substantial investment in software development, cybersecurity, data management infrastructure, and regulatory compliance measures, which can be financially burdensome for small finance banks operating with constrained budgets, necessitating a strategic approach that prioritizes cost-effective solutions, cloud-based CRM systems, and phased implementation plans that mitigate financial strain while ensuring scalability and long-term sustainability (Kumar & Verma, 2023), while employee resistance and inadequate training further complicate CRM deployment, as banking staff, particularly those accustomed to manual processes, may find it challenging to transition to technology-driven customer engagement models, requiring Ujjivan to implement targeted training initiatives, continuous skill development programs, and incentive structures that encourage CRM adoption and foster a digitally proficient workforce (Raghavan, 2023), and alongside these challenges, infrastructure limitations in remote areas exacerbate the difficulties of CRM implementation, as inconsistent internet connectivity, limited smartphone penetration, and unreliable electricity supply restrict customers' ability to access mobile banking applications and digital customer service platforms, thereby reducing the effectiveness of CRM-driven engagement strategies, necessitating the adoption of offline CRM capabilities, USSD-based banking solutions, and community banking outreach initiatives to ensure that technologically marginalized customers can still benefit from CRM-enhanced financial services (Rajasekaran & Priya, 2023), highlighting the need for further research into the socio-economic implications of CRM technology adoption in small finance banks and the development of inclusive digital banking strategies that accommodate infrastructural and literacy-related barriers while maintaining operational efficiency and customer-centric service delivery models (Yulianto & Setiawan, 2023).

Case Insights related to Successful examples of CRM adoption at Ujjivan (e.g., mobile CRM tools for customer engagement) as well as Lessons learned from implementation challenges and solutions

The successful adoption of Customer Relationship Management (CRM) technology at Ujjivan Small Finance Bank has been demonstrated through various strategic implementations, particularly the use of mobile CRM tools for customer engagement, data-driven customer segmentation, and AI-powered automation, with mobile CRM playing a crucial role in bridging the gap between traditional banking services and digitally driven financial inclusion, as Ujjivan has integrated mobile banking applications, SMS-based alerts, and USSD-enabled transaction services to enhance accessibility for customers in rural and semi-urban areas, ensuring that even those with limited internet connectivity or low digital literacy can engage with banking services, while CRM-enabled customer segmentation has allowed the

bank to categorize users based on financial behaviors, enabling the personalization of financial products such as microfinance loans, savings accounts, and digital payment solutions, thereby improving service delivery efficiency and fostering long-term customer relationships (Sharma & Gupta, 2022), with further innovations including the deployment of AI-driven chatbots and automated customer support systems, which have significantly improved responsiveness by providing real-time query resolution and reducing dependency on physical branches, enhancing service quality across key *SERVQUAL* dimensions such as reliability, responsiveness, and assurance, while predictive analytics integrated into Ujjivan's CRM system has facilitated early identification of at-risk customers by analyzing behavioral patterns, transaction histories, and repayment trends, enabling proactive interventions such as customized repayment plans and financial counseling to reduce loan defaults and improve retention rates (Mishra & Tiwari, 2023), yet despite these successes, Ujjivan faced multiple implementation challenges, including digital illiteracy among rural customers, resistance to adopting digital banking solutions, infrastructural limitations, and internal barriers such as employee training gaps and the high cost of CRM deployment, with digital illiteracy being a major obstacle as a significant portion of Ujjivan's customer base lacked familiarity with digital banking tools, necessitating the launch of financial literacy programs and community-driven digital education initiatives to increase customer confidence in mobile CRM platforms (Kumar & Verma, 2023), while resistance to technology adoption, particularly among older customers and those accustomed to cash-based transactions, required the integration of hybrid banking models that combined digital CRM features with in-person customer assistance at branches and business correspondent networks to ease the transition to digital engagement, whereas infrastructural challenges, including inconsistent internet connectivity and unreliable power supply in remote areas, led Ujjivan to adopt offline CRM functionalities, such as SMS-based account access and localized call-center support, ensuring uninterrupted service even in areas with limited technological infrastructure (Raghavan, 2023), and to address internal barriers, Ujjivan implemented extensive employee training programs focused on CRM literacy, AI-based decision support tools, and workflow automation, equipping staff with the necessary skills to optimize CRM functionalities and enhance customer interactions, while cost-related constraints were mitigated through phased CRM adoption strategies and cloud-based CRM solutions that reduced capital expenditure while ensuring scalability (Rajasekaran & Priya, 2023), with key lessons learned from Ujjivan's CRM implementation emphasizing the importance of balancing technological innovation with customer-centric design, ensuring accessibility for diverse user groups, and aligning CRM strategies with broader financial inclusion goals, highlighting the need for continuous adaptation to emerging challenges, future research into the socio-economic impact of mobile CRM in small finance banks, and the scalability of Ujjivan's CRM-driven engagement model to similar banking institutions seeking to enhance customer retention through technology integration (Yulianto & Setiawan, 2023).

Conclusion

The integration of technology into Customer Relationship Management (CRM) practices at Ujjivan Small Finance Bank has fundamentally transformed customer engagement, service delivery, and retention strategies by leveraging data analytics, artificial intelligence (AI), and mobile CRM solutions to address the unique challenges faced by underserved populations, with CRM-driven segmentation, predictive analytics, and AI-powered automation enhancing service quality dimensions such as reliability, responsiveness, assurance, empathy, and tangibles, aligning with the *SERVQUAL* framework, while the *Technology Acceptance Model (TAM)* has provided a theoretical basis for understanding the adoption of CRM technologies by assessing the impact of *perceived usefulness* and *perceived ease of use* on customer and employee acceptance of digital banking solutions (Davis, 1989; Parasuraman et al., 1988), as empirical insights from Ujjivan demonstrate that CRM-enabled innovations, including AI-driven chatbots for real-time query resolution, SMS-based banking for digitally constrained users, and predictive analytics for proactive customer retention, have significantly improved financial accessibility and operational efficiency, reinforcing the theoretical argument that technology acceptance is contingent on perceived benefits and usability, yet despite these advancements, significant barriers to technology adoption persist, including digital illiteracy among rural customers, infrastructural limitations, and resistance to transitioning from traditional banking methods to digital CRM platforms, necessitating continued efforts in financial literacy initiatives, simplified CRM interfaces, and hybrid service models that bridge the digital divide while ensuring inclusivity (Sharma & Gupta, 2022; Mishra & Tiwari, 2023), while high implementation costs and extensive employee training requirements have posed additional challenges to CRM deployment, emphasizing the importance of cost-effective, scalable, and user-friendly CRM solutions that align with the financial and operational capacities of small finance banks (Kumar & Verma, 2023), and the case of Ujjivan highlights that while CRM technology can enhance banking accessibility and customer satisfaction, its effectiveness is contingent on addressing socio-economic disparities and infrastructural constraints, demonstrating the need for future research to explore the long-term socio-economic impact of CRM adoption in small finance banks, particularly in the context of financial inclusion, digital empowerment, and sustainable banking practices in emerging markets

(Rajasekaran & Priya, 2023), while reinforcing the broader implications of this study for financial institutions seeking to integrate technology into customer relationship management, emphasizing the necessity of aligning CRM strategies with customer needs, digital literacy levels, and local banking habits to ensure that technological advancements translate into meaningful improvements in financial engagement and economic inclusion (Yulianto & Setiawan, 2023).

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