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# A Study on FinTech Impact on Banking with ICICI Bank

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## ABSTRACT

This study examines the impact of Financial Technology (FinTech) on traditional banking services, with specific reference to ICICI Bank Limited. Using a descriptive research design, primary data were collected through a structured questionnaire administered to 100 ICICI Bank customers selected through simple random sampling, supplemented by secondary data from banking journals, reports, and official sources over the period 2021 to 2025. The study examined customer awareness, usage frequency, ease of use, satisfaction, security perception, and service-quality outcomes associated with ICICI Bank's FinTech-enabled services. The results show high customer awareness (80%), with 65% of respondents using digital banking daily or weekly, the Mobile Banking App (40%) and UPI Payments (30%) the most-used services, 70% finding digital banking easy or very easy to use, and 70% satisfied or very satisfied with mobile banking. Eighty percent of respondents agreed that FinTech has considerably improved transaction speed and reduced branch visits, 75% felt digital banking is secure, 60% reported few or no technical issues, and 75% felt FinTech has improved customer service. The study concludes that FinTech has meaningfully modernised ICICI Bank's service delivery, driving a clear shift from branch-based to digital banking, while continued attention to cybersecurity, technical reliability, and digital literacy — particularly among older and less tech-savvy customers — remains necessary to sustain this progress.

***Keywords:*** *FinTech; Digital Banking; ICICI Bank; Mobile Banking; UPI; Customer Satisfaction; Financial Inclusion; Technology Adoption.*

## 1. INTRODUCTION

FinTech — the application of blockchain, big data analytics, cloud computing, artificial intelligence, and mobile applications to financial services — is revolutionising banking worldwide. Over the past decade, FinTech has disrupted traditional banks by introducing innovative financial products, improving customer satisfaction, and enhancing operational efficiency, shifting banking from a product-centric, branch-based model toward a digital, customer-focused, real-time service environment. This shift has been fuelled by internet ubiquity, smartphone adoption, and rising customer expectations for fast, safe, convenient, and round-the-clock banking, met through digital wallets, internet banking, mobile banking apps, peer-to-peer financing, robo-advisory, and blockchain-based transactions.

FinTech's influence spans digital payments (UPI, contactless payments, mobile wallets), credit and lending (AI-based creditworthiness assessment that shortens loan processing), customer experience (AI-driven personalisation and chatbot support), and risk management (blockchain verification, biometric identity, AI-based fraud detection). At the same time, agile FinTech firms with lower overheads represent aggressive competition, pushing banks toward costly but necessary digital transformation, while data privacy, cybersecurity, regulatory uncertainty, and digital literacy gaps remain ongoing challenges. This study examines these dynamics specifically at ICICI Bank Limited, a leading Indian private sector bank, assessing customer awareness, usage, and satisfaction with its FinTech-enabled services over the period 2021 to 2025.

### *1.1 Need for the Study*

Given the pace of technological change in financial services, it is important to study how FinTech is influencing banking specifically at ICICI Bank — how the bank is adjusting to mobile banking, digital payments, AI, and blockchain, and what advantages and difficulties it faces in a competitive digital environment. The study assesses how FinTech boosts financial inclusion, lowers operating costs, and improves customer satisfaction, and offers insight relevant to

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improving risk management, security, and sustainable digital development.

### *1.2 Scope of the Study*

The study investigates how digital technologies — digital payments, mobile banking, online lending, blockchain, AI, and robo-advisory services — are changing ICICI Bank's operations and services, and how FinTech adoption affects customer behaviour, service delivery, operational efficiency, and financial inclusion. It compares conventional and digital banking approaches, identifies the advantages, obstacles, and risks of FinTech integration, and considers the role of regulatory frameworks and cybersecurity safeguards in ensuring secure, efficient digital financial services.

## 2. LITERATURE REVIEW

**Singh and Mittal (2025)** reviewed how FinTech boosts financial inclusion, finding that digital wallets, online lending, and mobile banking substantially increase access for underbanked populations, while uneven technology access and digital literacy gaps remain key obstacles, with regulatory support seen as essential to secure digital financial systems.

**Xu, Kasperskaya, and Sagarra (2025)** used bibliometric analysis to show that FinTech adoption strongly affects banks' profitability, risk management, and operational efficiency, with AI, blockchain, and machine learning central to this transformation, while flagging regulatory compliance and financial stability as ongoing risks.

**Anand and colleagues (2025)** found that blockchain, robo-advisory, mobile banking, and AI-based credit scoring meaningfully improve banks' operational effectiveness and personalised service delivery, while noting that growing technology reliance heightens cybersecurity and regulatory concerns and intensifies competition between banks and digital-first firms.

**Liu and colleagues (2025)** reviewed FinTech-related banking risks, identifying phishing, malware, and data breaches as major concerns, while finding that closer bank-FinTech cooperation and regulatory frameworks such as GDPR and PSD2 help mitigate these risks alongside AI-powered fraud detection.

**Dao, Le, and Nguyen (2025)** conducted a systematic review showing that FinTech significantly improves financial accessibility through online lending and mobile banking, lowering transaction costs and benefiting developing economies most, while digital illiteracy and infrastructure gaps remain key barriers.

**Murinde, Rizopoulos, and Zachariadis (2022)** found that FinTech lowers operating costs and boosts banking efficiency and customer satisfaction, driven by digital payments, blockchain, and AI, though adoption varies across countries by infrastructural readiness, with cybersecurity and regulatory uncertainty as persistent concerns.

**Osei, Cherkasova, and Oware (2023)** reviewed digital transformation in banking bibliometrically, finding that automation and data-driven decision-making improve efficiency and competitiveness while posing cybersecurity and data-privacy risks, and linking digital innovation increasingly to long-term banking sustainability.

**Liu, Chan, and Chimhundu (2024)** mapped FinTech banking research across adoption, development, and performance themes, finding blockchain, AI, and digital payments the most studied technologies, with regulatory uncertainty and cybersecurity risk identified as recurring challenges even as emerging economies rapidly expand FinTech research.

**Asif, Sarwar, Nawaz, and Akbar (2024)** used bibliometric and content analysis to show that FinTech improves banking efficiency, customer convenience, and transaction speed, particularly through AI, blockchain, and crowdfunding, while finding that adoption depends heavily on customer trust and that FinTech aids financial access for underserved communities.

**Judijanto (2025)** conducted a bibliometric review showing that FinTech research has grown sharply since 2020, concentrated on mobile banking, blockchain, and AI-based financial services, with India, China, and the US leading research and a clear shift from conventional to digital-first financial ecosystems.

**Chen and Guo (2024)** found that FinTech improves credit access and financial services for small and micro firms, with digital financial instruments boosting business innovation and investment, while also noting risks of digital dependence and financial instability.

**Zhang and Wang (2024)** conducted a bibliometric review showing that FinTech strongly influences banking performance and financial decision-making, with AI, blockchain, and cloud computing driving efficiency and risk

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management gains, while flagging data security and regulatory compliance as ongoing concerns and emerging-economy research as comparatively scarce.

Taken together, the literature consistently finds that FinTech improves banking efficiency, customer satisfaction, and financial inclusion, while raising cybersecurity, regulatory, and digital-literacy challenges that require ongoing attention. Most studies also converge on the view that FinTech is reshaping rather than replacing conventional banks, with collaboration between banks and FinTech firms increasingly seen as the more productive path forward — a dynamic this study examines concretely through the customer experience at ICICI Bank Limited.

### *2.1 Theoretical Framework*

This study draws on six complementary theoretical perspectives. Davis's (1989) Technology Acceptance Model (TAM) explains adoption through perceived usefulness and perceived ease of use — both central to why customers migrate to mobile banking apps, digital wallets, and online payment systems that make banking faster and simpler. Rogers's Diffusion of Innovation (DOI) theory frames adoption as a process of knowledge, persuasion, decision, implementation, and confirmation, shaped by relative advantage, compatibility, complexity, trialability, and observability — helping explain uneven adoption across customer segments and institutions. Financial Intermediation Theory frames banks as traditional connectors of savers and borrowers, a role increasingly challenged by peer-to-peer lending, crowdfunding, and DeFi platforms that reduce reliance on banks as intermediaries, pushing banks to reposition as technology-driven service providers. Christensen's Disruptive Innovation Theory explains how FinTech firms target underserved segments with simpler, cheaper digital-first alternatives (mobile wallets, neobanks, robo-advisors) that progressively attract mainstream customers, forcing incumbent banks to adopt digital technologies or partner with FinTech firms. Innovation Diffusion in Financial Services Theory highlights how organisational readiness, customer demand, regulatory climate, and technical infrastructure jointly shape how quickly banks deploy blockchain-based systems, AI-driven fraud detection, and digital lending platforms. Finally, Agency Theory and Transaction Cost Economics together explain why FinTech reduces information asymmetry between banks and customers through transparent, automated digital transactions, and why it lowers the search, negotiation, and enforcement costs traditionally associated with banking transactions.

## 3. OBJECTIVES OF THE STUDY

- To examine the development of Financial Technology (FinTech) in banking.
- To study the influence of FinTech on conventional banking and financial services.
- To examine how digital payment technologies improve banking efficiency and effectiveness.
- To assess FinTech's impact on customer satisfaction, convenience, and banking experience.
- To evaluate FinTech's impact on financial inclusion and banking access.
- To identify the advantages of FinTech adoption, such as cost optimisation, operational efficiency, and faster service delivery.

### *Hypotheses*

$H_0$: FinTech has no significant effect on ICICI Bank Limited's banking services, and FinTech adoption is not significantly associated with customer satisfaction or operational efficiency.

$H_1$: FinTech has a significant effect on ICICI Bank Limited's banking services, and FinTech adoption is significantly associated with customer satisfaction and improved operational efficiency.

## 4. ANALYSIS

This descriptive study is based on primary data collected through a structured questionnaire administered to 100 ICICI Bank Limited customers, selected using simple random sampling to ensure each population member had an equal chance of selection and to reduce bias. The sample spans a range of ages, occupations, and income levels. This was supplemented with secondary data from banking journals, books, official reports, and financial publications. Data were analysed using percentage analysis and tabulation to interpret customer feedback on FinTech's impact on banking.

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### *4.1 Awareness and Usage of FinTech Services*

**Table 1: Awareness, Usage Frequency, and Most-Used Digital Service (N = 100)**

| Metric | Category | Respondents | Percentage (%) |
|---|---|---|---|
| Awareness of FinTech services | Yes | 80 | 80 |
| Awareness of FinTech services | No | 20 | 20 |
| Frequency of digital banking use | Daily | 30 | 30 |
| Frequency of digital banking use | Weekly | 35 | 35 |
| Frequency of digital banking use | Monthly | 20 | 20 |
| Frequency of digital banking use | Rarely | 15 | 15 |
| Most-used digital service | Mobile Banking App | 40 | 40 |
| Most-used digital service | UPI Payments | 30 | 30 |
| Most-used digital service | Internet Banking | 20 | 20 |
| Most-used digital service | ATM Services | 10 | 10 |

*Source: Primary survey data collected from 100 ICICI Bank Limited customers.*

Awareness of ICICI Bank's FinTech-enabled services is high at 80%, reflecting strong communication of its digital offerings, though a residual 20% remain unaware and would benefit from further outreach. Usage is frequent — 65% of respondents use digital banking daily or weekly — indicating that FinTech has become embedded in routine banking behaviour rather than being used only occasionally. The Mobile Banking App (40%) and UPI Payments (30%) are clearly the most popular channels, together accounting for 70% of primary usage, while ATM usage has fallen to just 10%, confirming a decisive shift toward mobile-first and app-based banking.

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Figure 1: Digital Banking Usage and Experience (N = 100)

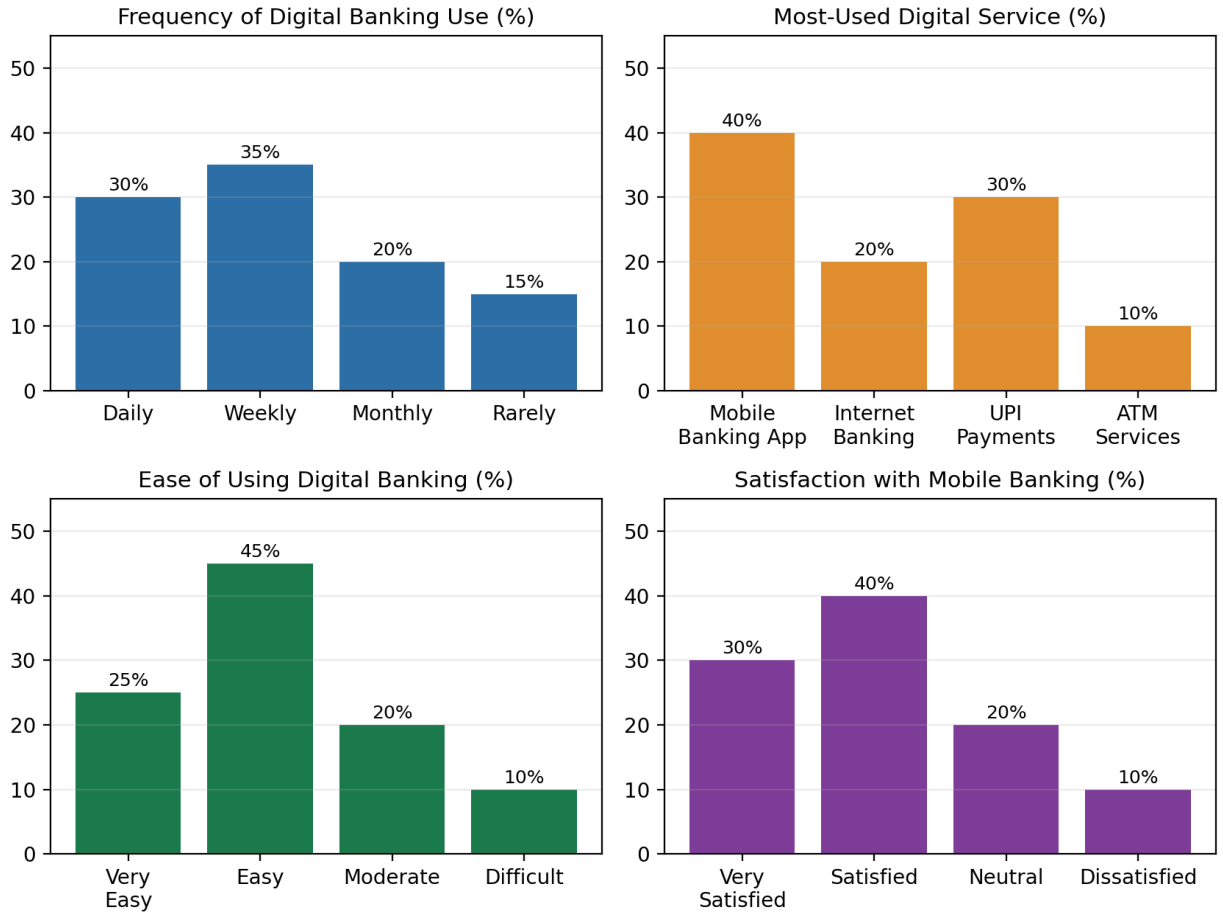



**Figure 1: Digital Banking Usage and Experience (N = 100)**

### *4.2 Ease of Use and Satisfaction*

**Table 2: Ease of Use and Satisfaction with Mobile Banking (N = 100)**

| Metric | Category | Respondents | Percentage (%) |
|---|---|---|---|
| Ease of using digital banking | Very Easy | 25 | 25 |
| Ease of using digital banking | Easy | 45 | 45 |
| Ease of using digital banking | Moderate | 20 | 20 |
| Ease of using digital banking | Difficult | 10 | 10 |
| Satisfaction with mobile banking | Very Satisfied | 30 | 30 |

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| Metric | Category | Respondents | Percentage (%) |
|---|---|---|---|
| Satisfaction with mobile banking | Satisfied | 40 | 40 |
| Satisfaction with mobile banking | Neutral | 20 | 20 |
| Satisfaction with mobile banking | Dissatisfied | 10 | 10 |

Seventy percent of respondents rate ICICI Bank's digital banking as easy or very easy to use, indicating a broadly positive user experience, though the 10% who find it difficult — likely concentrated among older or less tech-savvy customers — point to a continued need for interface simplification. Satisfaction with mobile banking mirrors this pattern: 70% report being satisfied or very satisfied, with only 10% dissatisfied, suggesting that the platform is meeting most customers' expectations while leaving room for targeted improvement.

***4.3 FinTech's Effect on Transactions, Branch Visits, and Service Quality***

**Table 3: Perceived Impact of FinTech on Transactions and Service Quality (N = 100)**

| Metric | Category | Respondents | Percentage (%) |
|---|---|---|---|
| FinTech improves transaction speed | Strongly Agree | 35 | 35 |
| FinTech improves transaction speed | Agree | 45 | 45 |
| FinTech improves transaction speed | Disagree | 15 | 15 |
| FinTech improves transaction speed | Strongly Disagree | 5 | 5 |
| Reduction in branch visits | Yes, significantly | 50 | 50 |
| Reduction in branch visits | Yes, slightly | 30 | 30 |
| Reduction in branch visits | No change | 10 | 10 |
| Reduction in branch visits | Not sure | 10 | 10 |
| Security of digital banking | Very Secure | 35 | 35 |
| Security of digital banking | Secure | 40 | 40 |
| Security of digital banking | Neutral | 15 | 15 |
| Security of digital banking | Insecure | 10 | 10 |
| Technical issues faced | Frequently | 10 | 10 |
| Technical issues faced | Occasionally | 30 | 30 |
| Technical issues faced | Rarely | 40 | 40 |
| Technical issues faced | Never | 20 | 20 |

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| Metric | Category | Respondents | Percentage (%) |
|---|---|---|---|
| Improvement in customer service | Strongly Agree | 30 | 30 |
| Improvement in customer service | Agree | 45 | 45 |
| Improvement in customer service | Disagree | 15 | 15 |
| Improvement in customer service | Strongly Disagree | 10 | 10 |

Eighty percent of respondents agree or strongly agree that FinTech has considerably accelerated transactions, and an equal 80% report a significant or slight reduction in branch visits, together confirming a clear behavioural shift from physical to digital banking channels. Perceptions of security are also strong, with 75% describing digital banking as secure or very secure, though the residual 15% neutral and 10% insecure responses point to a continued need for visible security communication. Technical reliability is reasonably good — 60% report rarely or never facing technical issues — though the 30% reporting occasional issues suggest room for infrastructure improvement. Finally, 75% agree or strongly agree that FinTech has improved customer service, reinforcing the broader pattern of positive customer experience with ICICI Bank's digital transformation.

Figure 2: FinTech Perception Metrics at ICICI Bank (N = 100)

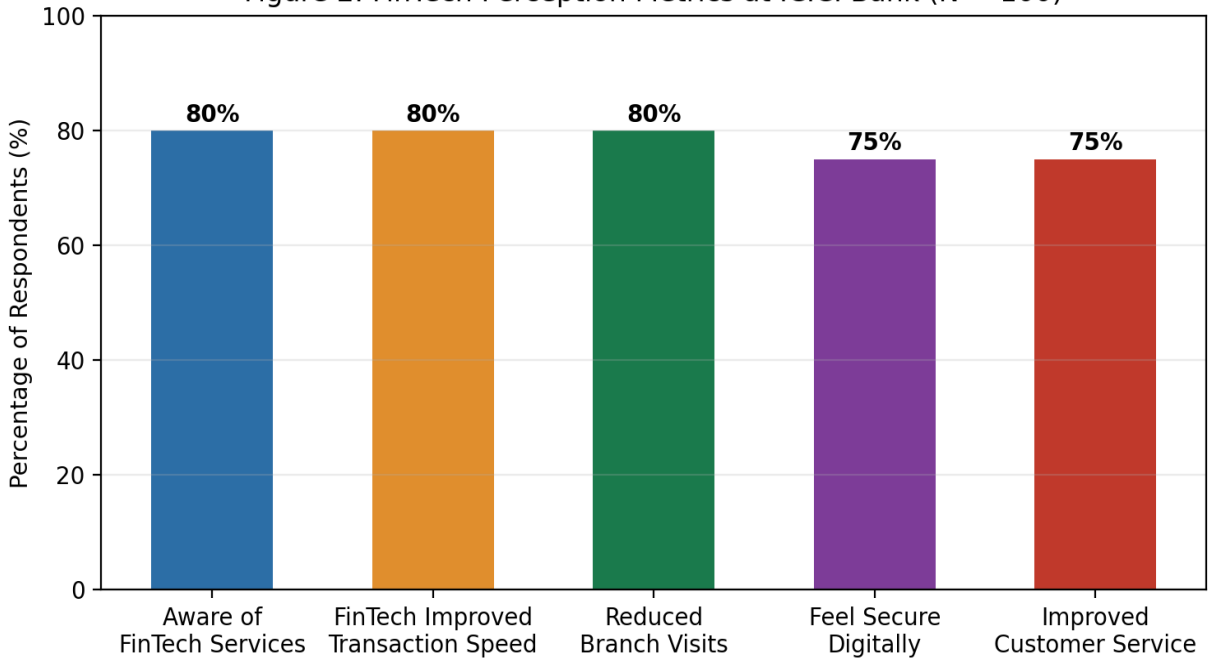



**Figure 2: FinTech Perception Metrics at ICICI Bank (N = 100)**

## 5. FINDINGS

- ICICI Bank's FinTech services are well known among customers, with 80% awareness.
- 65% of respondents use digital banking daily or weekly, indicating strong customer engagement.
- The Mobile Banking App (40%) and UPI Payments (30%) are the most popular services, while ATM usage has fallen to 10%, indicating a clear shift toward digital platforms.
- 70% of ICICI Bank's customers find digital banking easy or very easy to use.

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- 70% are satisfied or very satisfied with mobile banking.
- 80% agree or strongly agree that FinTech has considerably boosted transaction speed.
- 80% of respondents report a significant or slight reduction in branch visits, indicating a shift toward digital banking.
- 75% of respondents feel digital banking is secure or very secure.
- 60% report rarely or never facing technical issues, indicating reasonable system reliability.
- 75% agree or strongly agree that FinTech has improved customer service.

## 6. SUGGESTIONS

- ICICI Bank should launch awareness campaigns to educate non-users about its FinTech offerings and increase digital penetration.
- The bank should simplify complicated features in mobile and online banking to improve usability across all age groups.
- Server stability, app performance, and network speed should be improved to reduce occasional technical difficulties and boost transaction efficiency.
- Advanced fraud detection methods and clearer security communication should be implemented to address the concerns of the minority who feel insecure.
- Rural and semi-urban regions should be prioritised for better digital access and financial inclusion.
- Customer support should be strengthened through faster grievance redressal and 24/7 chat assistance.
- With ATM usage declining, ICICI Bank could reposition ATMs to offer value-added services beyond simple withdrawals.
- Regular updates to the mobile banking app should focus on improving speed, reducing errors, and enhancing navigation.
- Digital literacy workshops should be offered for older and less tech-savvy customers to build their confidence with digital banking tools.
- UPI and Instant Payment options should be expanded further, given their strong popularity and reliability among customers.

## 7. CONCLUSION

This study on FinTech's impact on banking at ICICI Bank Limited shows that financial technology has meaningfully transformed the bank's service delivery. Most customers are aware of and actively use digital banking services — mobile banking, UPI payments, and internet banking — and find ICICI Bank's digital platforms popular, user-friendly, and largely trustworthy. FinTech has visibly improved transaction speed, reduced branch visits, and enhanced customer service efficiency, confirming a substantial shift from conventional to digital banking among the customer base surveyed.

At the same time, the study notes continuing technical difficulties for a minority of users, lingering cybersecurity concerns, and a need for greater digital literacy among older and less tech-savvy customers — challenges that, if addressed, would further strengthen digital banking adoption. Overall, FinTech has helped ICICI Bank Limited modernise its banking system, making it faster, more accessible, and more customer-friendly, and continued innovation, infrastructure investment, and customer education will be key to sustaining this progress and further improving adoption and satisfaction going forward.

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