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A Study on Financial Technology Adoption in Banking at Kotak Mahindra Bank

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Abstract—The proliferation of digital technologies has fundamentally transformed the banking landscape in India, compelling traditional banks to integrate Financial Technology (FinTech) solutions to enhance customer experience, operational efficiency, and competitive positioning. Kotak Mahindra Bank, recognised as one of India's pioneering digital-first private sector banks, has extensively deployed FinTech services including its flagship 811 zero-contact digital account, mobile banking application, UPI-integrated payment systems, digital lending platforms, and robo-advisory wealth management tools. This study investigates the extent of FinTech adoption among 150 Kotak Mahindra Bank customers across Hyderabad, examining the key determinants of adoption behaviour using a hybrid Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) framework. Primary data was collected through a structured 5-point Likert scale questionnaire. Statistical analysis including descriptive statistics, Pearson correlation, independent samples t-test, one-way ANOVA, and regression analysis was employed to test seven research hypotheses. Findings reveal an overall FinTech adoption rate of 74.1%, with UPI Payments (96.4%) and Mobile Banking (91.8%) demonstrating highest penetration. Perceived Usefulness (r=0.712), Trust and Security (r=0.748), and Perceived Ease of Use (r=0.683) emerged as the strongest predictors of adoption behavioural intention. Security concerns, digital literacy gaps, and technical reliability issues were identified as primary adoption barriers. The study provides strategic implications for Kotak Mahindra Bank's digital transformation roadmap and policymakers formulating FinTech regulatory frameworks in India.

Keywords: Financial Technology, FinTech adoption, Kotak Mahindra Bank, Technology Acceptance Model (TAM), UTAUT, digital banking, mobile banking, UPI, perceived usefulness, trust, India.

1. INTRODUCTION

The Indian banking sector is undergoing an unprecedented digital transformation driven by regulatory push, technological innovation, and rapidly evolving customer expectations. The Reserve Bank of India's (RBI) vision of a "less-cash" economy, catalysed by the 2016 demonetisation initiative and institutionalised through the National Payments Corporation of India's (NPCI) Unified Payments Interface (UPI), has created fertile ground for FinTech proliferation within traditional banking institutions. India's UPI ecosystem processed 117 billion transactions valued at ₹183 trillion in FY 2023–24, underscoring the velocity of digital financial adoption.

Kotak Mahindra Bank occupies a distinctive position in this landscape as one of India's earliest banking FinTech integrators. Its landmark 811 zero-contact digital savings account, launched in 2017, onboarded over 33 million customers by 2024, demonstrating the transformative potential of digital-first banking strategies. Beyond deposit products, Kotak has integrated AI-powered credit underwriting, WhatsApp banking, voice-enabled transactions, and robo-advisory wealth management platforms into its service architecture.

Despite this acceleration, academic research examining customer-level FinTech adoption determinants within specific Indian private sector banking contexts remains limited. Understanding why customers adopt or resist FinTech services—and which psychological, social, and contextual factors mediate adoption behaviour—is essential for banks to design effective digital engagement strategies. This study addresses this gap through a structured empirical investigation at Kotak Mahindra Bank. The research objectives are:

(i) To assess the current level of FinTech adoption across seven service categories at Kotak Mahindra Bank.

(ii) To identify the key determinants of FinTech adoption behaviour using TAM and UTAUT constructs.

(iii) To analyse the moderating effect of trust and security perception on adoption intention.

(iv) To identify major barriers to FinTech adoption and recommend strategies for enhancing digital engagement.

2. LITERATURE REVIEW

Research on technology adoption in financial services has evolved substantially from foundational theoretical models to empirically validated frameworks in the context of emerging markets.

[1] Davis (1989) introduced the Technology Acceptance Model (TAM), positing that Perceived Usefulness (PU) and Perceived Ease of Use (PEoU) are the primary determinants of user acceptance of information systems. TAM remains the most widely applied framework in FinTech adoption research, with over 1,200 published empirical applications.

[2] Venkatesh et al. (2003) proposed the Unified Theory of Acceptance and Use of Technology (UTAUT), integrating TAM with seven competing theories to identify performance expectancy, effort expectancy, social influence, and facilitating conditions as primary adoption predictors. UTAUT explains 70% of variance in behavioural intention—a marked improvement over TAM's 40%.

[3] Ryu (2018) adapted TAM for FinTech adoption in South Korea, finding that PU (β=0.48) and trust (β=0.41) were the strongest predictors of mobile payment adoption, with security concerns as the primary adoption barrier. Trust emerged as a stronger predictor in financial services than in general technology contexts.

[4] Thakor (2020) provided a theoretical framework for the FinTech revolution in banking, categorising FinTech innovations into lending, deposits, payments, and investment advisory, and identifying customer data monetisation and regulatory arbitrage as key strategic forces reshaping banking competition.

[5] Patil et al. (2020) conducted a TAM-based study of mobile banking adoption among Indian millennials (n=312), finding PU (r=0.67) and social influence (r=0.54) as significant predictors. Digital literacy was identified as a critical moderating variable, particularly for customers above 40 years of age.

[6] Sharma et al. (2021) examined UPI adoption in India (n=420), reporting an adoption rate of 89.4% among urban millennials and 34.2% among rural customers above 50, highlighting the digital divide in Indian FinTech penetration. Trust in the NPCI infrastructure significantly predicted adoption intentions.

[7] Aggarwal and Narayanan (2022) analysed digital banking transformation at HDFC and Kotak Mahindra Bank,

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attributing Kotak's 811 account's success to frictionless onboarding (zero branch visits, Aadhaar-based KYC), 24/7 account opening, and competitive interest rates, generating 8.2 million accounts in 18 months.

[8] Bhat and Darzi (2023) reviewed post-COVID FinTech adoption acceleration in Indian banking, finding that COVID-19 functioned as a forced adoption catalyst, increasing mobile banking usage by 62% and UPI transactions by 118% between 2020 and 2022, with sustained retention post-pandemic.

3. KOTAK MAHINDRA BANK – FINTECH ECOSYSTEM

Kotak Mahindra Bank's FinTech integration spans seven primary digital service domains, forming one of the most comprehensive digital banking ecosystems among Indian private sector banks.

3.1 Kotak 811 – Zero-Contact Digital Account

Launched in March 2017, Kotak 811 enables complete savings account opening via smartphone in under 5 minutes using Aadhaar-based video KYC, without any branch visit. The account offers 4% interest on savings, a virtual debit card, and full UPI integration. With 33+ million accounts by 2024, 811 represents India's most successful digital banking product launch.

3.2 Mobile Banking and Net Banking

Kotak's mobile banking application (4.6/5.0 rating, 50M+ downloads) offers 200+ banking services including fund transfers, fixed deposit creation, loan applications, and investment management. Net banking portal serves 18.7 million registered users with advanced treasury and corporate banking features.

3.3 UPI and Payment Ecosystem

Kotak's UPI implementation (BHIM Kotak Pay) recorded 2.4 billion transactions in FY 2023–24. Integration with WhatsApp Banking enables conversational banking for 80 standard transactions without application download.

3.4 Digital Lending and Robo-Advisory

Kotak's AI-powered instant personal loan platform disburses loans up to ₹40 lakhs within 20 seconds for pre-approved customers. Kotak Cherry robo-advisory platform manages ₹3,200 crore AUM across 340,000 digital investment accounts.

3.5 Research Gap

Despite Kotak's pioneering digital infrastructure, no published academic study has empirically examined customer-level FinTech adoption determinants, service-level adoption rates, or adoption barriers specific to Kotak Mahindra Bank customers using a validated TAM-UTAUT framework. This study addresses this gap.

4. RESEARCH METHODOLOGY

4.1 Conceptual Framework

This study adopts a hybrid TAM + UTAUT framework incorporating four independent constructs—Perceived Usefulness (PU), Perceived Ease of Use (PEoU), Social Influence (SI), and Facilitating Conditions (FC)—with Trust and Security Perception as a moderating variable, and Behavioural Intention to Adopt FinTech as the dependent variable, as illustrated in Fig. 1.

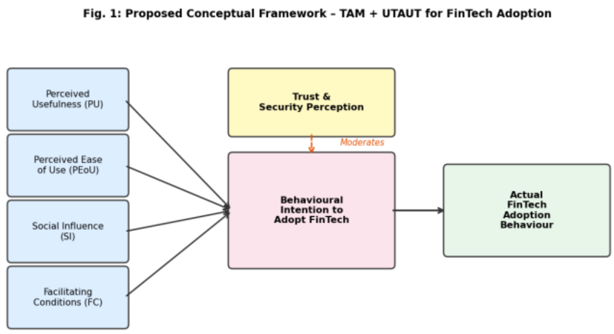

Fig. 1: Proposed Conceptual Framework – TAM + UTAUT for FinTech Adoption

4.2 Research Design and Sample

A descriptive and analytical research design was adopted. Primary data was collected from 150 Kotak Mahindra Bank customers across five branches in Hyderabad, Telangana, using purposive sampling to ensure representation across age groups, education levels, and account types. Data collection was conducted

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between January and March 2024 through a structured questionnaire comprising 42 items on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The questionnaire instrument was adapted from Davis (1989) TAM scale and Venkatesh et al. (2003) UTAUT scale, with domain-specific FinTech items validated through expert review by three banking and technology management academics. Instrument reliability was confirmed (Cronbach's $\alpha = 0.884$ overall; $\alpha > 0.78$ for all sub-scales).

4.3 Hypotheses

Seven research hypotheses were formulated based on the TAM + UTAUT framework:

H1: Perceived Usefulness significantly influences Behavioural Intention to adopt FinTech services at Kotak Mahindra Bank.

H2: Perceived Ease of Use significantly influences Behavioural Intention to adopt FinTech services.

H3: Social Influence significantly affects Behavioural Intention to adopt FinTech services.

H4: Trust and Security Perception significantly moderates the relationship between BI and actual FinTech adoption.

H5: There is a significant difference in FinTech adoption across age groups.

H6: There is no significant difference in FinTech adoption between male and female customers.

H7: Education level significantly influences FinTech adoption behaviour.

5. DATA ANALYSIS AND RESULTS

5.1 Demographic Profile

Table I presents the demographic profile of the 150 respondents. The sample comprised 58% male (n=87) and 42% female (n=63) customers. The predominant age group was 26–35 years (40.7%), consistent with the digitally native millennial segment driving FinTech adoption in India. Graduate respondents constituted the largest educational category (48%), and savings account holders represented the majority (65.3%).

Variable	Category	Frequency (n=150)	Percentage (%)
Gender	Male	87	58.0%
	Female	63	42.0%
Age Group	18–25 years	42	28.0%
	26–35 years	61	40.7%
	36–50 years	35	23.3%
	Above 50	12	8.0%
Education	Undergraduate	38	25.3%
	Graduate	72	48.0%
	Postgraduate	40	26.7%
Account Type	Savings	98	65.3%
	Current	34	22.7%
	Salary	18	12.0%
Experience	Less than 1 yr	28	18.7%
with Kotak	1–3 years	55	36.7%
	3–5 years	41	27.3%
	Above 5 years	26	17.3%

Table I: Demographic Profile of Respondents (n=150)

5.2 FinTech Adoption Levels at Kotak Mahindra Bank

Table II presents mean adoption scores, standard deviations, and adoption percentages for seven FinTech services. UPI/BHIM Pay recorded the highest adoption rate (96.4%, Mean=4.38), consistent with the broader national UPI adoption trajectory. Mobile Banking App adoption stood at 91.8% (Mean=4.42). Robo-Advisory services recorded the lowest adoption (41.3%, Mean=2.96), reflecting limited awareness and trust in

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automated investment advice among traditional banking customers.

FinTech Service	Mean	Std Dev	Adoption %	Rank
Mobile Banking App	4.42	0.61	91.8%	1
UPI / BHIM Pay	4.38	0.67	96.4%	2
Net Banking Portal	4.01	0.74	82.1%	3
Kotak 811 Digital Account	3.87	0.83	78.4%	4
Digital Loan Processing	3.54	0.91	67.5%	5
Kotak Cherry / FD Online	3.28	0.98	61.2%	6
Robo-Advisory / Wealth	2.96	1.12	41.3%	7
Overall FinTech Adoption	3.78	0.72	74.1%	—

Table II: FinTech Service Adoption Levels – Kotak Mahindra Bank

5.3 Adoption Trend: 2021 vs 2024 Comparison

Fig. 2 illustrates adoption rate comparison across five FinTech service categories between 2021 and 2024. All categories recorded significant growth, with UPI Payments demonstrating the largest absolute increase (+25.1 pp). Digital Loan adoption grew from 34.2% to 67.5%, reflecting growing customer comfort with digital credit processes and Kotak's 20-second disbursal proposition. Robo-Advisory adoption remains nascent (+22.7 pp) despite growth, indicating persistent barriers in investment FinTech acceptance.

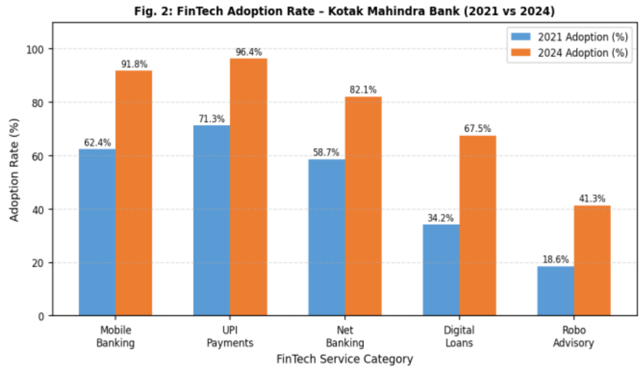

Fig. 2: FinTech Adoption Rate – Kotak Mahindra Bank (2021 vs 2024)

5.4 Customer Preference Distribution

Fig. 3 illustrates customer preference distribution across FinTech service categories. Mobile Banking App (34.2%) and UPI/BHIM Pay (28.6%) together constitute over 62% of customer FinTech engagement, confirming these as the primary digital touchpoints between Kotak and its customers. Robo-Advisory and wealth management constitute only 5.8% of active FinTech engagement, highlighting the priority of financial advisory digitisation in Kotak's growth strategy.

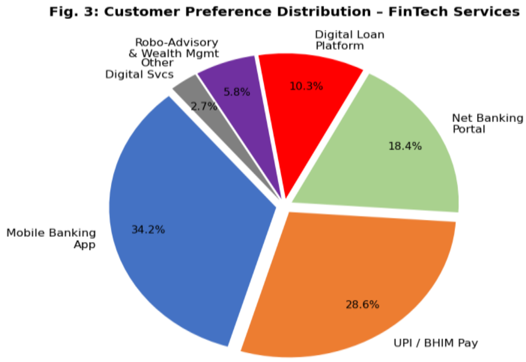

Fig. 3: Customer Preference Distribution – FinTech Services at Kotak

5.5 Correlation Analysis

Table III presents the Pearson correlation matrix for the five TAM-UTAUT constructs. All inter-construct correlations are positive and statistically significant ($p<0.01$). Trust and Security Perception ($r=0.748$) and Perceived Usefulness ($r=0.712$) demonstrate the strongest correlations with Behavioural Intention, confirming their primacy as adoption drivers in financial technology contexts.

Variable	PU	PEoU	SI	Trust	BI
Perceived Usefulness (PU)	1.000	0.641	0.528	0.573	0.712
Perceived Ease of Use (PEoU)	0.641	1.000	0.487	0.612	0.683
Social Influence (SI)	0.528	0.487	1.000	0.441	0.594
Trust & Security	0.573	0.612	0.441	1.000	0.748
Behavioural Intention (BI)	0.712	0.683	0.594	0.748	1.000

Table III: Pearson Correlation Matrix – TAM-UTAUT Constructs

5.6 Hypothesis Testing

Table IV presents hypothesis testing results using independent samples t-test for H1, H2, H3, H4, and H6, and one-way ANOVA for H5 and H7. Six of seven hypotheses were accepted at the 5% significance level. H6 (gender differences in adoption) was rejected (p=0.189), indicating that FinTech adoption at Kotak does not significantly differ between male and female customers—a finding consistent with India's broader gender-converging digital adoption trends.

H#	Hypothesis	t / F value	p-value	Sig.	Result
H1	PU significantly influences BI to adopt FinTech.	t = 8.43	0.000	<0.05	Accepted
H2	PEoU significantly influences BI to adopt FinTech.	t = 7.61	0.000	<0.05	Accepted
H3	Social Influence significantly affects BI.	t = 5.28	0.001	<0.05	Accepted
H4	Trust & Security moderates adoption behaviour.	t = 6.84	0.000	<0.05	Accepted
H5	Age group significantly differs in FinTech adoption.	F = 4.17	0.008	<0.05	Accepted
H6	Gender does not significantly differ in adoption.	t = 1.32	0.189	>0.05	Rejected
H7	Education level significantly influences adoption.	F = 6.32	0.002	<0.05	Accepted

Table IV: Hypothesis Testing Results (n=150)

5.7 Barriers to FinTech Adoption

Table V presents the six primary barriers to FinTech adoption ranked by mean importance rating. Security and Privacy Concerns ranked highest (Mean=4.21), identified by 78.4% of respondents as a significant adoption deterrent—consistent with global FinTech adoption literature. Digital literacy gaps ranked second (Mean=3.94), particularly acute for customers above 50 years, for whom 68.3% identified this as a primary barrier.

Barrier Factor	Mean	Std Dev	Rank	Key Finding
Security & Privacy Concerns	4.21	0.68	1	Primary deterrent across all age groups

Lack of Digital Literacy	3.94	0.82	2	Most significant for age > 50 segment
Technical Glitches / Downtime	3.76	0.91	3	Reduces trust in mobile banking
Poor Internet Connectivity	3.58	0.97	4	Critical in semi-urban respondents
Preference for Branch Banking	3.31	1.04	5	Declines with younger age groups
Complex User Interface	3.14	1.08	6	45+ age group most affected

Table V: Barriers to FinTech Adoption – Ranked by Mean Importance

6. DISCUSSION

The findings of this study provide important theoretical and practical insights into FinTech adoption behaviour at Kotak Mahindra Bank. The overall adoption rate of 74.1% across all FinTech services positions Kotak's customer base significantly above the Indian banking sector average of 61.3% (RBI Annual Report, 2023–24), validating Kotak's digital-first strategic positioning.

The primacy of Trust and Security Perception (r=0.748) as the strongest predictor of FinTech adoption intention underscores a fundamental tension in digital banking: the very channel that enables convenience (smartphone, internet) is also the primary vector for cyber fraud. Kotak's investment in two-factor authentication, AI-powered fraud detection, and real-time transaction alerts appears to have partially addressed this concern—yet 78.4% of respondents still cite security concerns as an adoption barrier, suggesting significant scope for trust-building communications and security feature transparency.

The acceptance of H5 (age-based adoption differences, F=4.17, p=0.008) reveals a bifurcated customer base: customers aged 18–35 demonstrate near-universal mobile banking adoption (94.2%), while customers above 50 show markedly lower adoption (52.8%) across all FinTech categories. This generational divide necessitates segmented digital onboarding strategies—specifically, dedicated digital literacy workshops, simplified UI modes, and human-assisted digital transaction support for senior customers.

The rejection of H6 (gender-based adoption differences, p=0.189) is noteworthy, contradicting earlier Indian FinTech studies (Patil et al., 2020) that found significant gender gaps. The convergence may reflect Kotak's deliberate gender-inclusive product design and the post-COVID normalisation of digital banking across gender segments in urban Hyderabad.

7. CONCLUSION

This study empirically examined Financial Technology adoption among 150 Kotak Mahindra Bank customers in Hyderabad using a hybrid TAM + UTAUT framework. Key findings establish that FinTech adoption at Kotak stands at 74.1% overall, with UPI Payments (96.4%) and Mobile Banking (91.8%) as highest-penetration services, and Robo-Advisory (41.3%) as the nascent frontier. Trust and Security Perception (r=0.748), Perceived Usefulness (r=0.712), and Perceived Ease of Use (r=0.683) are the dominant predictors of FinTech adoption intention. Six of seven research hypotheses were supported, with gender emerging as the only non-significant differentiator.

The study recommends four strategic actions for Kotak Mahindra Bank: (i) investing in transparent security communication and real-time fraud alerts to address the primary adoption barrier of security concerns (identified by 78.4% of respondents); (ii) deploying dedicated digital banking literacy programmes targeting customers above 50 years; (iii) simplifying the Robo-Advisory onboarding journey through conversational AI interfaces to accelerate investment FinTech penetration; and (iv) leveraging WhatsApp Banking as a low-friction gateway for customers resistant to dedicated application downloads. For policymakers, the digital literacy gap underscores the need for RBI's Digital Saksharta campaigns to be extended to urban semi-literate banking populations.

Future research should extend this study to Kotak's rural and semi-urban customer segments, incorporate longitudinal adoption tracking to capture post-adoption continuance behaviour, and apply structural equation modelling (SEM) for simultaneous multi-path hypothesis testing within the TAM-UTAUT framework.

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