

# Factors Influencing the Adoption of Digital Banking Services Among Different Demographics

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## **ABSTRACT**

The adoption of digital banking services is increasingly vital in today's financial landscape, yet various factors influence its uptake among different demographic groups. This research examines demographic influences, technological and psychological barriers, and cultural and societal factors affecting digital banking adoption. Using a mixed-methods approach, the study integrates quantitative data from a survey of 1,000 respondents and qualitative insights from focus group discussions. The findings highlight that demographic factors such as age, income, and education significantly impact digital banking adoption rates. Technological barriers, including internet access and device availability, alongside psychological barriers like perceived ease of use and security concerns, also play crucial roles in hindering adoption. Based on these insights, the research proposes targeted strategies to enhance digital banking adoption. Key strategies include improving user-centric design and usability, implementing robust security measures, launching educational and awareness campaigns, employing personalized marketing, enhancing infrastructure and accessibility, and building trust and reliability. By addressing these factors, financial institutions can foster a more inclusive and user-friendly digital banking environment. The study's comprehensive approach offers actionable insights for financial institutions aiming to increase digital banking adoption. It emphasizes the importance of understanding and mitigating technological and psychological barriers while leveraging cultural and societal influences.

**Keywords:** Digital Banking Adoption, Technological Barriers, User-Centric Strategies.

## **Introduction**

The rapid advancement of technology has fundamentally transformed the banking industry, leading to the emergence of digital banking as a mainstream service. Digital banking encompasses a wide range of financial activities conducted through electronic devices such as computers, smart phones, and tablets. It includes services like online banking, mobile banking, and the use of digital wallets. The adoption of digital banking services has been driven by the increasing penetration of internet connectivity, the proliferation of smart phones, and the growing consumer preference for convenient and accessible banking solutions. However, the adoption rate varies significantly across different demographic groups, influenced by a multitude of factors.

Understanding the factors influencing the adoption of digital banking services among different demographics is crucial for financial institutions aiming to expand their customer base and enhance service delivery. Demographics such as age, income level, education, gender, and geographic location play a pivotal role in shaping consumers' attitudes and behaviors towards digital banking.

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**Age** is a significant factor, with younger generations generally exhibiting higher adoption rates of digital banking services. Millennials and Generation Z, having grown up in the digital era, are more inclined to use technology for financial transactions. They value the convenience, speed, and accessibility that digital banking offers. Conversely, older adults may demonstrate reluctance due to a lack of familiarity with technology, concerns about security, or a preference for traditional banking methods. Tailoring digital banking platforms to be more user-friendly and providing adequate support can help bridge this gap.

**Income** level also influences digital banking adoption. Higher-income individuals are more likely to have access to the necessary technology, such as smart phones and reliable internet connections, and thus are more inclined to use digital banking services. They also tend to have more financial products and complex banking needs, which can be efficiently managed through digital platforms. On the other hand, lower-income individuals might face barriers such as the cost of internet access and digital devices, which can hinder their adoption of digital banking.

**Education** is another critical determinant. Individuals with higher levels of education are generally more tech-savvy and better equipped to navigate digital banking platforms. They are more likely to understand the benefits of digital banking, such as lower transaction costs and enhanced financial management tools. Financial literacy programs can play a vital role in increasing the adoption rates among less educated demographics by improving their confidence and competence in using digital banking services.

**Gender** differences also emerge in the adoption of digital banking. Studies suggest that men are generally more likely to adopt new technologies compared to women, who may have different usage patterns and preferences. Addressing the specific needs and concerns of female users through targeted marketing and inclusive design can promote higher adoption rates among women.

**Geographic location** is a crucial factor, particularly distinguishing between urban and rural areas. Urban residents, with better access to technological infrastructure and higher exposure to digital innovations, are more likely to adopt digital banking services. In contrast, rural populations may face challenges such as limited internet connectivity and lower digital literacy levels. Initiatives to improve digital infrastructure and provide education on digital banking in rural areas are essential to increase adoption rates in these regions.

### **Review of Literature**

The adoption of digital banking services has been a focal point of research across multiple disciplines, including information systems, finance, and marketing. This review of literature synthesizes key findings on how demographic factors such as age, income, education, gender, and geographic location influence the adoption of digital banking services.

Age has been consistently identified as a critical factor in digital banking adoption. Younger consumers, particularly Millennials and Generation Z, are more inclined to embrace digital banking due to their familiarity with technology and preference for convenience (Laukkanen, 2017). Venkatesh, Thong, and Xu (2012) noted that younger users are more likely to perceive digital banking as easy to use and beneficial, leading to higher adoption rates. In contrast, older adults often exhibit resistance due to technological anxiety and a preference for face-to-face interactions (Lee & Coughlin, 2015). Efforts to make digital banking platforms more intuitive and provide targeted education could mitigate these barriers (Chen & Chan, 2014).

Income level significantly affects the adoption of digital banking. Higher-income individuals typically have better access to technology and are more likely to engage with digital banking services (Zhou, 2011). According to Munoz-Leiva et al. (2017), affluent customers often have more complex financial needs that digital banking can efficiently address. Conversely, lower-income individuals may face financial constraints that limit their access to necessary devices and internet connectivity (Truong et al., 2020). Initiatives to provide affordable digital solutions and enhance digital infrastructure are crucial to promoting adoption among lower-income groups (Donovan & Park, 2021).

Education plays a pivotal role in digital banking adoption. Higher levels of education are associated with greater technological proficiency and awareness of the benefits of digital banking (Laukkanen, 2016). Educated individuals are more likely to understand and utilize advanced features offered by digital banking platforms (Gupta & Xu, 2010). Conversely, lower educational attainment is often linked to lower digital literacy, which can impede adoption (Ozili, 2020). Financial literacy programs aimed at enhancing the understanding of digital banking can help bridge this gap (Fungáčová & Weill, 2018).

Gender differences in digital banking adoption have been observed, with men generally more inclined to adopt new technologies compared to women (Gefen & Straub, 1997). Studies by Zhou et al. (2010) and Afshan & Sharif (2016) found that men are more likely to perceive digital banking as useful and easy to use. Women, on the other hand, may prioritize security and ease of use differently (Venkatesh & Morris, 2000). Addressing these gender-specific concerns through targeted marketing and design can enhance adoption rates among women (Riquelme & Rios, 2010).

Geographic location, particularly the urban-rural divide, is a significant factor influencing digital banking adoption. Urban residents, with better access to technological infrastructure and higher digital literacy, are more likely to adopt digital banking services (Laukkanen, 2016). Rural populations often face challenges such as limited internet connectivity and lower exposure to digital innovations (Ali et al., 2021). Policies aimed at improving digital infrastructure and offering education in rural areas are essential to increase digital banking adoption (Shaikh & Karjaluoto, 2015).

In addition to demographic factors, various technological and psychological factors also influence digital banking adoption. The Technology Acceptance Model (TAM), developed by Davis (1989), highlights perceived usefulness and perceived ease of use as key determinants. Further extensions of TAM, such as the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003), incorporate factors like social influence and facilitating conditions, which also play a role in digital banking adoption across different demographics.

Cultural and societal influences also impact digital banking adoption. Hofstede's cultural dimension theory suggests that cultural factors such as individualism versus collectivism and uncertainty avoidance can affect technology adoption behaviors (Hofstede, 2001). Research by Yoon and Steege (2013) indicates that cultural attitudes towards technology and financial institutions influence digital banking adoption, with some cultures being more open to digital transformation than others.

### **Objectives of the Study**

- To analyze Demographic Influences on Digital Banking Adoption
- To investigate Technological and Psychological Barriers
- To assess the Impact of Cultural and Societal Factors
- To develop Strategies to Enhance Digital Banking Adoption

### **Research Methodology**

#### **Research Design**

The study employs a mixed-methods research design, integrating both quantitative and qualitative approaches to provide a comprehensive understanding of the factors influencing digital banking adoption.

#### **Data Collection Methods**

##### **Survey Questionnaire**

- **Target Population:** The target population includes individuals from various demographic backgrounds, including age, gender, income levels, education, and geographic locations.
- **Sampling Method:** Stratified random sampling ensures representation across key demographics. The sample size is 1,000 respondents.
- **Data Collection Tools:** An online survey questionnaire is distributed via email, social media, and banking platforms. The questionnaire includes sections on demographic information, technological and psychological barriers, cultural and societal factors, and attitudes towards digital banking.
- **Secondary Data Analysis**
  - **Sources:** Existing literature, industry reports, and market research studies on digital banking adoption.

#### **Data Analysis Methods**

- **Quantitative Analysis**
  - **Descriptive Statistics:** Used to summarize and profile the demographic characteristics, technological and psychological barriers, and cultural and societal factors of the respondents.

- **Inferential Statistics:** Employed to test hypotheses and examine relationships between independent variables (e.g., demographic factors, barriers, cultural factors) and the dependent variable (digital banking adoption). Techniques include chi-square tests, t-tests, and regression analysis.
- **Qualitative Analysis**
  - **Thematic Analysis:** Used to analyze focus group discussions. Transcripts are coded to identify key themes and patterns related to barriers and cultural influences on digital banking adoption.
  - **Content Analysis:** Applied to open-ended responses in the survey and secondary data sources to corroborate and expand upon quantitative findings.

## Data Analysis and Interpretation

### Analysing Demographic Influences on Digital Banking Adoption

To analyze demographic influences on digital banking adoption, we used survey data collected from a sample of participants. The analysis focused on key demographic factors such as age, income level, education, gender, and geographic location. The analysis involves descriptive statistics to profile the respondents and inferential statistics to compare digital banking adoption rates across different demographic groups.

**Table1:Demographic Profile of Respondents**

Demographic Factor	Categories	Frequency	Percentage(%)
Age	18-24	150	15.0
	25-34	250	25.0
	35-44	200	20.0
	45-54	200	20.0
	55+	200	20.0
Income Level	<Rs.25,000	200	20.0
	Rs.25,000-Rs.50,000	300	30.0
	Rs.50,001-Rs.75,000	250	25.0
	>Rs.75,000	250	25.0
Education	High School	200	20.0
	Intermediate	300	30.0
	Bachelor's Degree	300	30.0
	Postgraduate Degree	200	20.0
Gender	Male	500	50.0
	Female	500	50.0
Geographic Location	Urban	600	60.0
	Rural	400	40.0

**Table2:Digital Banking Adoption Rates by Demographic Factors**

Demographic Factor	Categories	Adoption Rate (%)	Non-Adoption Rate (%)	p-value
Age	18-24	85.0	15.0	0.001
	25-34	80.0	20.0	0.001
	35-44	70.0	30.0	0.010
	45-54	60.0	40.0	0.050

	55+	50.0	50.0	0.050
Income Level	<Rs.25,000	40.0	60.0	0.050
	Rs.25,000-Rs.50,000	55.0	45.0	0.030
	Rs.50,001-Rs.75,000	70.0	30.0	0.010
	>Rs.75,000	85.0	15.0	0.001
Education	High School	40.0	60.0	0.050
	Intermediate	60.0	40.0	0.020
	Bachelor's Degree	75.0	25.0	0.001
	Postgraduate Degree	80.0	20.0	0.001
Gender	Male	70.0	30.0	0.020
	Female	60.0	40.0	0.020
Geographic Location	Urban	75.0	25.0	0.001
	Rural	50.0	50.0	0.001

### Interpretation of Results

- **Age:** Younger age groups (18-34) show significantly higher adoption rates of digital banking services compared to older age groups (45+), indicating a generational shift towards digital preferences.
- **Income Level:** Higher income levels correlate with higher adoption rates. Individuals earning more than Rs. 75,000 have the highest adoption rates, suggesting that financial resources enable better access to digital technologies.
- **Education:** Higher educational attainment is strongly associated with higher adoption rates. Postgraduate degree holders are more likely to adopt digital banking, reflecting higher digital literacy and comfort with technology.
- **Gender:** Males have a slightly higher adoption rate than females, highlighting potential gender differences in technology adoption that need to be addressed through targeted strategies.
- **Geographic Location:** Urban residents have significantly higher adoption rates compared to rural residents, underlining the impact of infrastructure and accessibility on digital banking adoption.

### Investigating Technological and Psychological Barriers

The adoption of digital banking services is influenced not only by demographic factors but also by technological and psychological barriers. Understanding these barriers is crucial for financial institutions aiming to enhance user experience and increase adoption rates. This section explores the key technological and psychological barriers faced by different demographic groups in adopting digital banking services, using survey data.

The analysis involves descriptive statistics to profile the respondents' perceptions and inferential statistics to examine the relationship between these barriers and the adoption of digital banking services.

**Table3: Technological and Psychological Barriers Among Respondents**

Barrier Category	Specific Barrier	Frequency	Percentage (%)
Technological	Lack of Internet Access	200	20.0
	Lack of Device Availability	150	15.0
	Poor Internet Quality	250	25.0
Psychological	Perceived Difficulty	300	30.0
	Security Concerns	400	40.0
	Lack of Trust in Technology	350	35.0

**Table4: Impact of Technological Barriers on Digital Banking Adoption**

Technological Barrier	Adoption Rate (%)	Non-Adoption Rate (%)	p-value
Lack of Internet Access	30.0	70.0	0.001
Lack of Device Availability	40.0	60.0	0.005
Poor Internet Quality	45.0	55.0	0.010



**Table5:Impact of Psychological Barriers on Digital Banking Adoption**

Psychological Barrier	Adoption Rate (%)	Non-Adoption Rate (%)	p-value
Perceived Difficulty	35.0	65.0	0.001
Security Concerns	40.0	60.0	0.005
Lack of Trust in Technology	30.0	70.0	0.001

### Interpretation of Results Technological Barriers

- **Lack of Internet Access:** A significant barrier, with only 30% adoption among those lacking reliable internet access. This highlights the importance of internet accessibility in promoting digital banking.
- **Lack of Device Availability:** Affects 15% of respondents, showing that access to appropriate devices is crucial for adoption.
- **Poor Internet Quality:** Reported by 25% of respondents, with an adoption rate of 45%, indicating that improving internet quality can enhance digital banking adoption.

### Psychological Barriers

- **Perceived Difficulty:** 30% of respondents find digital banking difficult to use, leading to a lower adoption rate (35%). Simplifying user interfaces and providing user support can mitigate this barrier.
- **Security Concerns:** 40% of respondents are concerned about the security of digital banking, which negatively impacts adoption rates (40%). Enhancing security measures and communicating these effectively can build trust.
- **Lack of Trust in Technology:** Affects 35% of respondents, with only 30% adoption among this group. Building trust through transparency and reliable service can improve adoption rates.

### Assessing the Impact of Cultural and Societal Factors

Cultural and societal factors play a crucial role in shaping individuals' attitudes and behaviors towards technology, including digital banking services. These factors include cultural attitudes towards technology, trust in financial institutions, and social influence. Understanding how these elements affect digital banking adoption can help financial institutions tailor their strategies to different cultural contexts. This section explores the impact of cultural and societal factors on the adoption of digital banking services using survey data.

The analysis involves descriptive statistics to profile the respondents' cultural and societal characteristics and inferential statistics to examine the relationship between these factors and the adoption of digital banking services.

**Table6:Cultural and Societal Factors Among Respondents**

Factor Category	Specific Factor	Frequency	Percentage (%)
Cultural Attitudes	Positive Attitude Towards Technology	500	50.0
	Negative Attitude Towards Technology	300	30.0
	Neutral Attitude Towards Technology	200	20.0
Trust in Financial Institutions	High Trust	400	40.0
	Medium Trust	350	35.0
	Low Trust	250	25.0
Social Influence	Strong Influence	450	45.0
	Moderate Influence	350	35.0
	Weak Influence	200	20.0

**Table7:Impact of Cultural Attitudes on Digital Banking Adoption**

Cultural Attitude	Adoption Rate (%)	Non-Adoption Rate (%)	p-value
Positive Attitude	80.0	20.0	0.001
Negative Attitude	30.0	70.0	0.001
Neutral Attitude	50.0	50.0	0.010

**Table8:Impact of Trust in Financial Institutions on Digital Banking Adoption**

Trust Level	Adoption Rate (%)	Non-Adoption Rate (%)	p-value
High Trust	75.0	25.0	0.001
Medium Trust	55.0	45.0	0.005
Low Trust	30.0	70.0	0.001

**Table9:Impact of Social Influence on Digital Banking Adoption**

Social Influence Level	Adoption Rate (%)	Non-Adoption Rate (%)	p-value
Strong Influence	70.0	30.0	0.001
Moderate Influence	50.0	50.0	0.010
Weak Influence	35.0	65.0	0.001

### Interpretation of Results Cultural Attitudes

- **Positive Attitude Towards Technology:** Respondents with a positive attitude towards technology have a high adoption rate (80%), indicating that cultural acceptance of technology is a strong driver of digital banking adoption.
- **Negative Attitude Towards Technology:** Those with negative attitudes show significantly lower adoption rates (30%), highlighting the need for cultural change and education to foster adoption.
- **Neutral Attitude Towards Technology:** Respondents with neutral attitudes have moderate adoption rates (50%), suggesting that they could be swayed by targeted interventions and positive experiences.

### Trust in Financial Institutions

- **High Trust:** High trust in financial institutions correlates with a high adoption rate (75%), emphasizing the importance of building and maintaining trust to promote digital banking.
- **Medium Trust:** Medium trust levels show moderate adoption rates (55%), indicating room for improvement through enhanced security and customer relations.
- **Low Trust:** Low trust results in significantly lower adoption rates (30%),under scoring the critical need for financial institutions to address trust issues.

### Social Influence

- **Strong Influence:** Strong social influence from family, friends, and community leads to higher adoption rates (70%), demonstrating the power of social networks in technology adoption.
- **Moderate Influence:** Moderate social influence results in balance adoption rates (50%), suggestingthattheseindividualscanbeinfluencedbytargetedmarketingandpeertestimonials.
- **Weak Influence:** Weak social influence correlates with lower adoption rates (35%), indicating that these individuals may require more personalized and direct engagement strategies.

### Developing Strategies to Enhance Digital Banking Adoption

Enhancing digital banking adoption requires targeted strategies that address the diverse needs and barriers identified among different demographic, technological, psychological, cultural, and societal groups. This section outlines effective strategies that financial institutions can implement to increase the adoption of their digital banking services, drawing on the insights gained from analyzing demographic influences, technological and psychological barriers, and cultural and societal factors.

## Strategy Development Framework

The development of strategies to enhance digital banking adoption will follow a comprehensive framework that includes:

### User-Centric Design and Usability Improvements

- **Objective:** Simplify the user interface and improve the overall user experience to make digital banking more accessible and intuitive for all users, particularly those who find technology challenging.

#### Action Steps

- Conduct usability testing with a diverse group of users to identify pain points and areas for improvement.
- Implement user-friendly design principles, such as clear navigation, intuitive layout, and easy-to-understand language.
- Develop and integrate voice-activated features and chat bots to assist users with limited digital literacy.
- Offer multilingual support to cater to non-native speakers.

### Enhanced Security Measures

- **Objective:** Address security concerns by implementing robust security features and educating users on safe banking practices.

#### Action Steps

- Implement multi-factor authentication (MFA) and biometric authentication to enhance security.
- Regularly update security protocols and software to protect against cyber threats.
- Provide users with real-time alerts and notifications for suspicious activities.
- Educate users on best practices for online security through webinars, tutorials, and informative content.

### Educational and Awareness Campaigns

- **Objective:** Increase digital literacy and awareness about the benefits of digital banking through targeted educational initiatives.

#### Action Steps

- Launch digital literacy programs in collaboration with community organizations and educational institutions.
- Create engaging and informative content, such as video tutorials, info graphics, and interactive guides, to explain digital banking features.
- Organize workshops and webinars to demonstrate the use of digital banking services.
- Develop targeted campaigns for different demographic groups, focusing on their specific needs and concerns.

### Personalized Marketing and Customer Engagement

- **Objective:** Use personalized marketing techniques to engage customers and encourage them to adopt digital banking services.

#### Action Steps

- Utilize data analytics to segment customers based on their preferences, behavior, and demographics.
- Develop personalized marketing messages and offers tailored to each customer segment.
- Implement loyalty programs and incentives, such as cash back offers and rewards, to encourage digital banking usage.
- Engage with customers through multiple channels, including social media, email, and in-app notifications, to maintain a consistent and personalized communication flow.



### Infrastructure and Accessibility Enhancements

- **Objective:** Improve the infrastructure and accessibility of digital banking services to ensure that all users, especially those in rural or underserved areas, can access and use these services effectively.

#### Action Steps

- Partner with telecommunications companies to improve internet access and quality in rural and underserved areas.
- Develop light weight mobile applications that can function effectively on low-band width connections.
- Provide access to digital banking services through community centers, libraries, and other public facilities equipped with internet access.
- Offer off line support options, such as SMS-based services, for users with limited internet connectivity.

### Building Trust and Reliability

- **Objective:** Build and maintain trust with users by ensuring the reliability and transparency of digital banking services.

#### Action Steps

- Communicate transparently about the security measures and protocols in place to protect user data.
- Ensure consistent and reliable service availability to build confidence in the digital banking platform.
- Provide exceptional customer support, including 24/7 help lines and responsive online assistance.
- Showcase customer testimonials and success stories to highlight positive user experiences and build social proof.

### Conclusion

This research comprehensively analyzed factors influencing digital banking adoption across different demographics, technological and psychological barriers, and cultural and societal factors. The findings reveal that positive cultural attitudes, high trust in financial institutions, and strong social influence significantly drive adoption. Technological barriers like internet access and psychological concerns such as perceived security also play crucial roles. Effective strategies to enhance adoption include user-centric design improvements, robust security measures, educational campaigns, personalized marketing, infrastructure enhancements, and building trust. By addressing these multifaceted factors, financial institutions can create a more inclusive and accessible digital banking environment, thereby increasing adoption rates. This holistic approach not only caters to diverse customer needs but also positions digital banking as a reliable and user-friendly service in the evolving financial landscape.

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