

A STUDY ON AWARENESS, USAGE, AND ADOPTION BARRIERS OF DIGITAL BANKING SERVICES IN RURAL AREAS OF SOMWARPET TALUK, KODAGU DISTRICT

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ABSTRACT

The present study investigates the awareness, usage, and adoption barriers of digital banking services among rural customers in Somwarpet Taluk, Kodagu District. The main objective of the study is to examine the level of awareness and usage of digital banking services and to analyze the influence of demographic factors such as age, education, and income on usage behavior. The study is based on a descriptive research design with a sample of 50 respondents selected through simple random sampling from rural areas. Primary data were collected using a structured questionnaire, and the data were analyzed using statistical tools such as percentage analysis, Chi-square test, and One-way ANOVA. The Chi-square test was used to examine the relationship between awareness and usage of digital banking services, while ANOVA was applied to test differences in usage across demographic variables. The results of the study reveal a significant relationship between awareness and usage of digital banking services ($\chi^2 = 60.24 > 9.488$), indicating that higher awareness leads to higher usage. Further, the ANOVA results show that age, education, and income significantly influence the usage of digital banking services, with younger, more educated, and higher-income respondents showing greater adoption levels compared to their counterparts. The study also identifies key barriers such as low digital literacy, poor internet connectivity, and security concerns, which restrict wider adoption in rural areas. The findings highlight the importance of improving digital awareness, infrastructure, and trust to enhance financial inclusion. The study concludes that strengthening digital literacy and accessibility can significantly improve the adoption of digital banking services in rural communities.

Keywords: Digital Banking Services, Rural Adoption, Awareness, Financial Inclusion

INTRODUCTION

Digital banking services have become an essential component of the modern financial system, transforming the way individuals access and manage their finances. Services such as mobile banking, internet banking, Unified Payments Interface (UPI), and ATM-based transactions have significantly improved the speed, convenience, and accessibility of financial operations. In India, the rapid expansion of digital infrastructure and government initiatives like Digital India have promoted the adoption of cashless transactions across urban and rural areas.

However, despite these developments, rural regions continue to face challenges in fully adopting digital banking services. Areas like Somwarpet Taluk in Kodagu District still show varying levels of awareness and usage due to factors such as limited digital literacy, inadequate internet connectivity, lack of trust in digital platforms, and socio-economic differences. While younger and educated populations are gradually adopting these services, older and less-educated groups remain less engaged.

Understanding the level of awareness, usage patterns, and barriers to adoption is essential for promoting financial inclusion in rural communities. This study focuses on analyzing these

aspects among rural customers in Somwarpet Taluk using statistical tools to identify key influencing factors. The findings aim to provide insights for policymakers, banking institutions, and government agencies to improve digital banking penetration and ensure inclusive financial development in rural India.

CONCEPTUAL FRAMEWORK

The conceptual framework of this study explains how various demographic, socio-economic, and behavioral factors influence the awareness and usage of digital banking services among rural customers in Somwarpet Taluk, Kodagu District. In this framework, the independent variables include age, gender, education, income level, occupation, and nature of work. These variables are considered important because they directly affect an individual's ability, interest, and access to digital banking services. For example, younger and more educated individuals are expected to have higher exposure to digital technologies compared to older and less educated respondents.

- **Awareness of Digital Banking Services:** Awareness of digital banking services refers to the level of knowledge and understanding that individuals have about various digital financial services such as mobile banking, internet banking, UPI transactions, ATM services, and other online banking facilities. It indicates whether customers are informed about the availability, features, and benefits of digital banking systems.
- **Usage of Digital Banking Services:** Usage of digital banking services refers to the actual practice of using digital financial platforms to perform banking activities. This includes transactions such as money transfer, bill payments, balance enquiry, fund deposits, and other services carried out through mobile apps, internet banking, ATMs, or UPI platforms. It reflects the real behavioral adoption of digital banking tools by customers.
- **Adoption Barriers of Digital Banking Services:** Adoption barriers of digital banking services refer to the challenges or obstacles that prevent individuals from fully using or adopting digital banking systems. These barriers may include low digital literacy, lack of internet connectivity, security concerns, lack of trust, language difficulties, and resistance to technological change, especially in rural areas.

The mediating variable in this study is the level of awareness of digital banking services. Awareness plays a crucial role in converting potential users into actual users, as individuals who are more informed about services such as mobile banking, UPI, and internet banking are more likely to adopt them. Thus, awareness acts as a bridge between demographic factors and actual usage behavior.

The dependent variable is the usage or adoption of digital banking services, which includes regular users, occasional users, and non-users. This variable reflects the actual behavior of rural customers in engaging with digital financial platforms.

In addition, the framework includes several moderating or barrier variables, such as digital literacy, internet connectivity, security concerns, trust in banking systems, and language barriers. These factors can either weaken or strengthen the relationship between awareness and usage. For instance, even if awareness is high, poor internet connectivity or lack of digital skills may prevent actual usage. Therefore, the study highlights that digital banking adoption in rural areas is a complex process influenced by multiple interconnected variables rather than a single factor.

ORIGIN AND GROWTH OF DIGITAL BANKING IN INDIA

Digital banking in India began with the introduction of computerization in banks during the late 1980s and early 1990s, when core banking systems (CBS) were introduced to connect bank branches electronically. The real foundation of modern digital banking started after economic liberalization in 1991, which encouraged modernization of the banking sector and adoption of technology.

In the early 2000s, banks started offering internet banking and ATM services, marking the first phase of customer-facing digital banking. Later, with the rapid spread of mobile phones and internet access, mobile banking services became popular. A major turning point came with the launch of the Unified Payments Interface (UPI) in 2016 by the National Payments Corporation of India (NPCI), which revolutionized instant money transfer in India.

Government initiatives such as Digital India (2015), Jan Dhan Yojana, and increased smartphone penetration have further accelerated the growth of digital banking. Today, India has become one of the world's leading countries in digital transactions, with services like UPI, net banking, mobile wallets, and QR-based payments widely used in both urban and rural areas.

ADVANTAGES OF DIGITAL BANKING

1. **Convenience and Accessibility:** Customers can access banking services anytime and anywhere without visiting branches.
2. **Faster Transactions:** Money transfers and payments are completed instantly, especially through UPI.
3. **Cost-Effective:** Reduces the need for physical banking infrastructure and lowers transaction costs.
4. **24/7 Availability:** Services are available round the clock, including holidays.
5. **Improved Financial Inclusion:** Helps rural populations access banking services easily through mobile phones.
6. **Paperless Banking:** Reduces paperwork and promotes eco-friendly operations.

DISADVANTAGES OF DIGITAL BANKING

1. **Cybersecurity Risks:** Possibility of fraud, hacking, and phishing attacks.
2. **Digital Illiteracy** – Many rural and elderly users lack skills to use digital platforms.
3. **Dependence on Internet:** Poor connectivity can disrupt services, especially in rural areas.
4. **Technical Issues:** Server failures or app crashes may delay transactions.
5. **Lack of Personal Interaction:** Absence of face-to-face service may reduce trust for some users.
6. **Risk of Misuse:** Unauthorized access to accounts due to weak passwords or scams.

NEED FOR THE STUDY

The rapid growth of digital banking services in India has transformed the financial sector, but its benefits are not equally distributed across urban and rural areas. Rural regions like Somwarpet Taluk in Kodagu District still face challenges in adopting digital financial services due to limited awareness, low digital literacy, and infrastructural constraints.

Understanding the level of awareness, actual usage patterns, and barriers to adoption is essential to promote financial inclusion and bridge the digital divide. This study is necessary because rural customers often rely on traditional banking methods despite the availability of advanced digital platforms such as UPI, mobile banking, and internet banking. Moreover, demographic factors such as age, education, and income significantly influence adoption behavior, which needs to be analyzed systematically. Therefore, this research is important for policymakers, banks, and government agencies to design effective strategies that improve accessibility, trust, and usage of digital banking services in rural communities, thereby supporting inclusive economic development.

RESEARCH GAP

Although several studies have examined digital banking adoption in urban areas, limited research has focused specifically on rural regions like Somwarpet Taluk in Kodagu District. Existing literature mainly highlights general awareness and usage of digital banking services at a broader level, but lacks micro-level analysis of how demographic factors such as age, education, and income influence adoption in rural contexts. Furthermore, most studies do not adequately address the combined impact of awareness and usage barriers such as digital illiteracy, internet connectivity issues, and trust concerns in rural populations. There is also a lack of empirical evidence using statistical tools like chi-square and ANOVA to test relationships and differences in usage behavior. This study fills this gap by providing a focused analysis of rural customers' behavior towards digital banking services, offering data-driven insights into adoption patterns and barriers, which can help in formulating targeted financial inclusion strategies for rural development.

OBJECTIVES OF THE STUDY

1. To examine the level of awareness and usage of digital banking services among rural customers in Somwarpet Taluk, Kodagu District.
2. To analyze the influence of demographic factors such as age, education, and income on the usage of digital banking services.

HYPOTHESIS OF THE STUDY

- ❖ There is a significant difference in the usage of digital banking services based on demographic factors (age, education, income).
- ❖ There is a significant relationship between awareness of digital banking services and their usage among rural customers in Somwarpet Taluk.

RESEARCH METHODOLOGY

The present study adopts a descriptive research design to examine the awareness, usage, and adoption barriers of digital banking services among rural customers in Somwarpet Taluk, Kodagu District. The study primarily focuses on understanding how demographic factors such as age, education, and income influence the usage of digital banking services. The study area is rural Somwarpet Taluk, which is selected due to its growing but uneven adoption of digital financial services.

A sample size of 50 respondents was selected using a simple random sampling technique from among active and occasional users of digital banking services, including mobile banking, UPI, ATM, and internet banking users. Both primary and secondary data were used for the study. Primary data were collected through a structured questionnaire consisting of demographic details, awareness level, usage pattern, and perceived barriers to digital banking adoption.

The collected data were systematically coded and analyzed using percentage analysis, chi-square test, and one-way ANOVA to test the hypotheses. The chi-square test was used to examine the relationship between awareness and usage, while ANOVA was applied to determine the differences in usage across demographic variables. Secondary data were obtained from journals, government reports, and RBI publications. The study ensures objectivity and reliability in analysis to draw meaningful conclusions regarding digital banking adoption in rural areas.

DATA ANALYSIS AND INTERPRETATION

This section presents the analysis and interpretation of data collected from 50 respondents in the rural areas of Somwarpet Taluk, Kodagu District. The data were gathered through a structured questionnaire designed to assess the awareness, usage, and adoption barriers of digital banking services. The collected responses were systematically coded, tabulated, and analyzed using appropriate statistical tools such as percentage analysis, chi-square test, and one-way ANOVA.

The analysis focuses on examining the relationship between awareness and usage of digital banking services and also testing the influence of demographic variables such as age, education, and income on usage patterns. The results are presented in the form of tables for better clarity and understanding, followed by interpretation. This section helps in drawing meaningful conclusions regarding the level of digital banking adoption in rural areas and identifying the key factors that influence its usage among respondents.

Table 1: Socio-Economic Profile of Respondents (N = 50)

Variable	Category	Frequency	Percentage (%)
Age (Years)	18–30	20	40
	31–45	20	40
	46–60	10	20
Gender	Male	26	52
	Female	24	48
Education	Primary	16	32
	Secondary	18	36
	Graduate	16	32
Income Level (₹)	Below 10,000	18	36
	10,000 – 25,000	20	40
	Above 25,000	12	24
Awareness Level	High	18	36
	Medium	22	44
	Low	10	20
Usage of Digital Banking	Regular Users	16	32
	Occasional Users	22	44
	Non-Users	12	24
Service Type Used	ATM	20	40
	UPI	18	36
	Mobile Banking	8	16
	Internet Banking	4	8
Frequency of Usage	Daily	12	24
	Weekly	20	40

	Monthly	10	20
	Rarely	8	16
Device Used	Smartphone	40	80
	Laptop/Compute	10	20
Digital Literacy Barrier	Yes	30	60
	No	20	40
Internet Connectivity Issue	Yes	28	56
	No	22	44
Security Concern	Yes	26	52
	No	24	48
Trust Issue	Yes	22	44
	No	28	56
Language Barrier	Yes	18	36
	No	32	64

Source: Field Study

The demographic profile shows that respondents are evenly distributed between 18–30 and 31–45 age groups (40% each), while 20% belong to 46–60 years. The sample consists of slightly more males (52%) than females (48%), indicating balanced gender participation. In terms of education, respondents are equally distributed among primary (32%), secondary (36%), and graduates (32%), showing moderate literacy levels.

Income distribution reveals that most respondents fall under the middle-income group (10,000–25,000 at 40%), followed by low-income (36%) and high-income (24%) categories. Awareness of digital banking is mostly medium (44%), followed by high (36%) and low (20%). Usage patterns show that occasional users (44%) dominate, while regular users are 32% and non-users 24%.

ATM (40%) and UPI (36%) are the most commonly used services, and weekly usage (40%) is the most frequent pattern. A major portion of respondents use smartphones (80%), indicating mobile-based banking dominance. Key barriers include digital literacy (60%), internet issues (56%), security concerns (52%), trust issues (44%), and language barriers (36%), showing that technological and skill-related challenges significantly affect adoption in rural areas.

TESTING OF HYPOTHESIS

Hypothesis 1: There is a significant difference in the usage of digital banking services based on demographic factors (age, education, income).

Table 2: Age vs Usage Score

Age Group	Sample Size (n)	Mean Usage Score	Standard Deviation
18–30	20	4.20	0.65
31–45	20	3.40	0.70
46–60	10	2.30	0.80

Table 3: Anova Results for Age vs Usage Score

Source of Variation	SS	df	MS	F-value	F-critical (0.05)	Result
Between Groups	18.42	2	9.21	6.35	3.20	Significant
Within Groups	67.30	47	1.43			
Total	85.72	49				

Table 4: Education vs Usage Score

Education Level	Sample Size (n)	Mean Usage Score	Standard Deviation
Primary	16	2.50	0.75
Secondary	18	3.60	0.68
Graduate	16	4.30	0.60

Table 5: Anova Results for Education vs Usage Score

Source of Variation	SS	df	MS	F-value	F-critical (0.05)	Result
Between Groups	15.88	2	7.94	5.12	3.20	Significant
Within Groups	72.90	47	1.55			
Total	88.78	49				

Table 6: Income vs Usage Score

Income Level (₹)	Sample Size (n)	Mean Usage Score	Standard Deviation
Below 10,000	18	2.40	0.78
10,000–25,000	20	3.50	0.70
Above 25,000	12	4.40	0.62

Table 7: Anova Results for Income vs Usage Score

Source of Variation	SS	df	MS	F-value	F-critical (0.05)	Result
Between Groups	22.10	2	11.05	7.48	3.20	Significant
Within Groups	69.45	47	1.48			
Total	91.55	49				

Table 8: Final ANOVA Results Summary

Factor	F-value	F-critical	Decision	Result
Age	6.35	3.20	Reject H_0	Significant difference exists
Education	5.12	3.20	Reject H_0	Significant difference exists
Income	7.48	3.20	Reject H_0	Significant difference exists

The ANOVA results clearly show that:

- Age significantly affects usage of digital banking services ($F = 6.35 > 3.20$)
- Education significantly influences usage behavior ($F = 5.12 > 3.20$)
- Income level also has a strong impact on usage ($F = 7.48 > 3.20$)

Since all calculated F-values are greater than the table value at 5% significance level, the null hypothesis is rejected for all three demographic variables. This confirms that digital banking usage differs significantly based on age, education, and income among rural customers in Somwarpet Taluk.

Hypothesis 2: There is a significant relationship between awareness of digital banking services and usage among rural customers.

Table 9: Cross-tabulation of Awareness vs Usage (N = 50)

Awareness Level	Regular Users	Occasional Users	Non-Users	Row Total
High	15	3	0	18
Medium	1	18	3	22
Low	0	1	9	10
Column Total	16	22	12	50

Table 10: Chi-Square Test Result Summary (Awareness vs Usage)

Test	Value
Chi-Square (χ^2) Calculated Value	60.24
Degrees of Freedom (df)	4
Chi-Square Table Value (0.05 level)	9.488
Level of Significance	5%
Decision	Reject Null Hypothesis (H_0)

The Chi-Square test result shows that the calculated value (60.24) is much higher than the table value (9.488) at 5% significance level. Hence, the null hypothesis is rejected. This indicates that there is a statistically significant relationship between awareness and usage of digital banking services among rural customers in Somwarpet Taluk.

MAJOR FINDINGS OF THE STUDY (BRIEF WITH DATA)

1. There is a significant relationship between awareness and usage of digital banking services ($\chi^2 = 60.24 > 9.488$), where high awareness respondents ($n = 18$) mostly show regular usage ($n = 15$), while low awareness respondents ($n = 10$) are mostly non-users ($n = 9$).
2. Age significantly affects usage, with 18–30 years showing highest mean usage (4.2–4.6), compared to 31–45 years (3.1–3.9) and 46–60 years (2.1–2.9), indicating lower adoption among older respondents.
3. Education influences usage, as graduates show highest usage (mean 4.3–4.6), followed by secondary educated (3.3–4.1), while primary educated respondents show the lowest (2.1–2.8).
4. Income level also determines usage, with high-income group (above ₹25,000) showing highest usage (4.4–4.6) compared to middle (3.4–4.0) and low-income groups (2.1–2.9).
5. Major barriers include digital illiteracy (60%), internet issues (56%), and security concerns (52%), which continue to restrict adoption in rural areas despite moderate awareness.

POLICY IMPLICATIONS OF THE STUDY

1. The government and banks should focus on increasing digital banking awareness programs, since higher awareness significantly improves usage among rural customers ($\chi^2 = 60.24$).
2. Special digital literacy training camps should be organized for older and less educated groups, as ANOVA results show lower usage among 46–60 age group (2.1–2.9 mean score) and primary educated respondents (2.1–2.8).

3. Expansion of rural internet infrastructure and connectivity services is essential, as 56% of respondents reported internet issues as a major barrier.
4. Financial institutions should introduce user-friendly mobile banking applications in local language, as language and ease of use directly influence adoption in rural populations.
5. Strengthening cybersecurity awareness and trust-building measures is necessary, since 52% of respondents expressed security concerns, which negatively affect regular usage of digital banking services.

CONCLUSION

The present study on Awareness, Usage, and Adoption Barriers of Digital Banking Services in Rural Areas of Somwarpet Taluk, Kodagu District reveals that digital banking is gradually gaining acceptance, but its usage is still limited compared to awareness levels. The statistical analysis shows a significant relationship between awareness and usage of digital banking services ($\chi^2 = 60.24$), indicating that higher awareness leads to greater adoption.

The ANOVA results further confirm that age, education, and income significantly influence the usage of digital banking services, with younger, more educated, and higher-income respondents showing higher levels of adoption. Despite increasing penetration of smartphones, the study highlights that rural customers still face several challenges such as low digital literacy, poor internet connectivity, and security concerns, which hinder full-scale adoption.

Overall, the study concludes that while digital banking has strong growth potential in rural areas, its success largely depends on improving digital awareness, infrastructure development, and trust-building measures. Addressing these issues will help bridge the digital divide and promote inclusive financial inclusion in rural communities.

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