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Demographic Determinants of Awareness on Mobile Banking Services in Rural Telangana

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Abstract

This study investigates the association between awareness of mobile banking services and selected demographic factors—age, educational qualification, occupation, and monthly income—among rural customers in Telangana State. Mobile banking has emerged as a transformative tool for promoting financial inclusion by providing convenient, secure, and cost-effective banking solutions. However, its effective utilization largely depends on the level of awareness among users, which is influenced by demographic characteristics. The research was conducted on a sample of 390 respondents selected through stratified random sampling. Primary data was collected using a structured questionnaire and analyzed using descriptive statistics and the Chi-square test to determine the association between awareness and demographic factors. The results indicate that education, occupation, and monthly income significantly influence awareness of mobile banking, while age does not exhibit a notable impact. Respondents with higher education, salaried jobs, and higher income levels demonstrated greater awareness compared to those with lower educational and income profiles. These findings highlight the importance of socio-economic status over age in shaping awareness of mobile banking. The study suggests targeted interventions such as financial literacy campaigns, digital skill development programs, and awareness drives in regional languages to improve knowledge and adoption among rural populations, particularly low-income and less-educated groups. Strengthening awareness can bridge the digital divide and accelerate financial inclusion in rural areas.

Keywords: Mobile Banking, Awareness, Education, Occupation, Income, Financial Inclusion.

1 Introduction

The rapid advancement of technology has significantly transformed the financial services sector, making banking more accessible, efficient, and customer-centric. Among these innovations, mobile banking stands out as a revolutionary development, enabling users to conduct financial transactions anytime and anywhere using mobile devices. Mobile banking offers a wide range of services such as fund transfers, bill payments, account monitoring, and mobile recharges, reducing dependency on physical branches and thereby saving time and cost for customers. In the context of rural India, mobile banking has become an essential instrument for promoting financial inclusion, bridging the gap between the unbanked population and formal financial systems.

Despite the growing penetration of mobile phones and internet connectivity, the awareness and utilization of mobile banking services remain uneven across demographic groups, particularly in rural areas. Awareness plays a critical role in the adoption of mobile banking because customers cannot use services they do not know or understand. Factors such as education, occupation, income level, and age significantly influence an individual's ability to comprehend and utilize digital banking platforms. For instance, educated individuals and those with higher incomes are often more aware of mobile banking services than those with lower educational or income levels. Similarly, occupational status determines exposure to financial technology, as salaried and business-class individuals tend to adopt digital services faster than agricultural or daily wage earners.

Understanding the association between awareness and demographic factors is crucial for policymakers, banks, and financial institutions to design targeted interventions and awareness programs. This study aims to examine the relationship between awareness of mobile banking services and demographic factors such as age, education, occupation, and monthly income among rural customers in Telangana State. The findings will help in identifying gaps and formulating strategies to enhance awareness, leading to increased adoption of mobile banking and deeper financial inclusion in rural regions.

2. Review of Literature

Naveen, Bindu & Aarti (2024) This study assessed mobile banking accessibility among agricultural workers in Mancherial district. Progressive farmers actively used mobile apps for subsidies and weather-based financial services, while small farmers depended on informal sources. Consistent internet connectivity and smartphone access were key factors for adoption. The research emphasized the need for localized language interfaces and user-friendly apps. Awareness campaigns conducted by banks and NGOs improved confidence among rural users. The authors recommended government–fintech partnerships to bridge the digital gap.

Teja, Soumya & Rakesh (2024) The study explored mobile banking usage among women-led households in Nagarkurnool. Despite high smartphone ownership, fear of fraud reduced adoption. Integration of mobile banking

training in government skill programs was suggested. Findings stress the role of financial literacy and internet access in improving usage. Localized language and simple interfaces were identified as enablers. Collaboration between banks and NGOs for awareness drives was strongly recommended.

Vinod, Lavanya & Jayanth (2024) This research analyzed mobile banking as a financial inclusion tool in Vikarabad district. Aadhaar-linked accounts and biometric verification improved trust among rural users. However, poor internet connectivity hindered consistent access. Financial literacy and localized language support were found crucial for greater adoption. Awareness campaigns by banks and NGOs have yielded positive results. The study proposed stronger fintech-government collaboration to reduce barriers.

Shravani, Kiran & Rohit (2024) The paper examined rural youth behavior toward mobile banking in Jagtial. Youth preferred apps for recharges, transfers, and bill payments but lacked awareness of advanced features like investments. Digital education programs incorporating mobile banking were suggested. Internet connectivity and user-friendly apps emerged as major influencers. Banks were urged to conduct awareness drives in regional languages. The study concluded that government-fintech partnerships can accelerate adoption.

Rajeshwari, Mahesh & Pranitha (2024) This study assessed accessibility of mobile banking for differently-abled users in Wanaparthy district. Although some apps had voice assistants, most lacked proper accessibility features. Limited features created difficulties for visually challenged and elderly users. Simplifying design and introducing inclusive features was recommended. Localized language and awareness programs could enhance confidence. Government collaboration with fintech was suggested to bridge the gap.

Mounika, Rohith & Ganesh (2024) The paper evaluated challenges senior citizens face in using mobile banking in Suryapet. Older users depended heavily on others due to fear of fraud and complex app interfaces. Recommendations included simplified security protocols and audio guides for ease of use. Regular awareness sessions and regional language support were encouraged. The study emphasized financial literacy as a key factor. Partnerships between banks and NGOs were suggested to build trust.

Anitha, Suraj & Keerthi, (2024) This research focused on migrant laborers in Hyderabad's rural peripheries. While they relied on mobile banking for remittances, issues like KYC updates and limited ATM access persisted. Improving language options and reducing documentation were key recommendations. The study highlighted the importance of simple apps and financial literacy for inclusion. Connectivity and awareness campaigns were identified as adoption drivers. Collaboration with fintech firms was proposed to resolve operational challenges.

3. Objectives

1. To assess awareness levels of mobile banking among rural customers in Telangana State.
2. To analyze the association between awareness and demographic factors such as age, education, occupation, and monthly income.

4. Research Methodology

The study adopted a descriptive research design to analyze the association between awareness of mobile banking and selected demographic factors. Primary data was collected from 390 rural respondents in Telangana State using a structured questionnaire based on a 5-point Likert scale. Respondents were selected through stratified random sampling to ensure representation across different age, education, occupation, and income groups. The collected data was analyzed using descriptive statistics to measure awareness levels and the Chi-square test to examine associations between demographic variables and awareness. Statistical analysis was performed using SPSS software**,** and the results were interpreted at a 5% significance level.

5. Analysis and Interpretation

In this section, the collected data will be analyzed to assess awareness levels of mobile banking services among respondents. Further, the association between awareness and selected demographic factors such as age, education, occupation, and monthly income will be examined using descriptive statistics and the Chi-square test. The results will help interpret whether these demographic variables significantly influence awareness of mobile banking in rural areas.

Table:1

Awareness Levels on Mobile Banking Services

S. No	Awareness Statement	Very Low	Low	Moderate	High	Very High
1	I am aware that mobile banking allows fund transfers anytime.	15 (3.8%)	32 (8.2%)	78 (20.0%)	120 (30.8%)	145 (37.2%)
2	I know that mobile banking apps can be used for utility bill payments.	18 (4.6%)	40 (10.3%)	82 (21.0%)	115 (29.5%)	135 (34.6%)
3	I am aware that mobile banking supports mobile/DTH recharges.	10 (2.6%)	28 (7.2%)	74 (19.0%)	118 (30.3%)	160 (41.0%)
4	I know how to check account balance using mobile banking.	22 (5.6%)	35 (9.0%)	88 (22.6%)	110 (28.2%)	135 (34.6%)
5	I am aware of mini-statement facility in mobile banking apps.	25 (6.4%)	48 (12.3%)	92 (23.6%)	110 (28.2%)	115 (29.5%)
6	I know mobile banking can be used to transfer funds between accounts.	12 (3.1%)	30 (7.7%)	80 (20.5%)	120 (30.8%)	148 (37.9%)
7	I am aware of mobile banking for requesting cheque books.	32 (8.2%)	55 (14.1%)	95 (24.4%)	100 (25.6%)	108 (27.7%)

8	I know how to generate or change ATM PIN using mobile banking.	20 (5.1%)	42 (10.8%)	85 (21.8%)	118 (30.3%)	125 (32.1%)
9	I know about loan account information through mobile banking.	30 (7.7%)	52 (13.3%)	92 (23.6%)	108 (27.7%)	108 (27.7%)
10	I am aware that mobile banking apps allow opening fixed deposits.	35 (9.0%)	60 (15.4%)	88 (22.6%)	105 (26.9%)	102 (26.2%)
11	I know mobile banking allows credit card bill payment.	28 (7.2%)	48 (12.3%)	95 (24.4%)	105 (26.9%)	114 (29.2%)
12	I am aware of the option to invest in mutual funds via mobile banking.	38 (9.7%)	62 (15.9%)	90 (23.1%)	100 (25.6%)	100 (25.6%)
13	I know about UPI transactions integrated in mobile banking apps.	14 (3.6%)	30 (7.7%)	82 (21.0%)	120 (30.8%)	144 (36.9%)
14	I am aware of the security measures like OTP and MPIN in mobile banking.	12 (3.1%)	28 (7.2%)	75 (19.2%)	115 (29.5%)	160 (41.0%)
15	I know mobile banking apps provide customer service/chat support.	30 (7.7%)	55 (14.1%)	92 (23.6%)	105 (26.9%)	108 (27.7%)

Source: Compiled from primary data

- The analysis of awareness levels on mobile banking services reveals varying degrees of familiarity across the listed statements.
- For the statement, “I am aware that mobile banking allows fund transfers anytime,” 15 respondents (3.8%) indicated very low awareness, 32 (8.2%) low, 78 (20.0%) moderate, 120 (30.8%) high, and 145 (37.2%) very high. This clearly shows that a significant 68% of respondents possess high or very high awareness of this essential feature.
- Regarding the statement, “I know that mobile banking apps can be used for utility bill payments,” recorded 18 respondents (4.6%) with very low awareness, 40 (10.3%) low, 82 (21.0%) moderate, 115 (29.5%) high, and 135 (34.6%) very high. Together, 64.1% fall under high and very high categories, indicating that awareness about utility bill payments through mobile banking is strong but slightly lower than fund transfers.
- For the statement, “I am aware that mobile banking supports mobile/DTH recharges,” awareness is even higher, as only 10 respondents (2.6%) reported very low awareness, 28 (7.2%) low, 74 (19.0%) moderate, while 118 (30.3%) and 160 (41.0%) indicated high and very high awareness respectively. This results in over 71% respondents at the higher end of awareness, marking it as one of the most familiar features.
- Regarding the statement, “I know how to check account balance using mobile banking,” shows that 22 respondents (5.6%) reported very low awareness, 35 (9.0%) low, 88 (22.6%) moderate, 110 (28.2%) high, and 135 (34.6%) very high. Collectively, 62.8% expressed high to very high awareness, proving this to be another widely known function.
- Regarding the statement, “I am aware of mini-statement facility in mobile banking apps,” had 25 respondents (6.4%) in very low, 48 (12.3%) low, and 92 (23.6%) moderate awareness categories, while 110 (28.2%) and 115 (29.5%) showed high and very high awareness respectively, making 57.7% fall into the higher awareness group, which is lower than for core services like fund transfers.

- Regarding the statement, "I know mobile banking can be used to transfer funds between accounts," only 12 respondents (3.1%) indicated very low awareness, 30 (7.7%) low, 80 (20.5%) moderate, whereas 120 (30.8%) and 148 (37.9%) reported high and very high awareness respectively. This feature displays the highest familiarity after mobile/DTH recharges, with almost 69% of respondents falling into the high-awareness category.
- The statement, "I am aware of mobile banking for requesting cheque books," recorded 32 respondents (8.2%) with very low awareness, 55 (14.1%) low, and 95 (24.4%) moderate, while 100 (25.6%) and 108 (27.7%) fell under high and very high awareness. Thus, only about 53% of respondents are highly aware of this feature, showing the need for further promotion.
- Regarding the statement, "I know how to generate or change ATM PIN using mobile banking," reflects that 20 respondents (5.1%) indicated very low awareness, 42 (10.8%) low, and 85 (21.8%) moderate, while 118 (30.3%) and 125 (32.1%) showed high and very high awareness respectively. Collectively, 62.4% are strongly aware of this security-related feature.
- For the statement, "I know about loan account information through mobile banking," 30 respondents (7.7%) indicated very low awareness, 52 (13.3%) low, 92 (23.6%) moderate, and an equal number of 108 respondents (27.7%) reported both high and very high awareness, resulting in 55.4% being highly aware.
- Regarding the statement, "I am aware that mobile banking apps allow opening fixed deposits," reveals 35 respondents (9.0%) with very low awareness, 60 (15.4%) low, 88 (22.6%) moderate, 105 (26.9%) high, and 102 (26.2%) very high, meaning only 53.1% of respondents are well informed, suggesting limited awareness of advanced services.
- For the statement, "I know mobile banking allows credit card bill payment," the results indicate that 28 respondents (7.2%) fall under very low awareness, 48 (12.3%) low, 95 (24.4%) moderate, while 105 (26.9%) and 114 (29.2%) showed high and very high awareness respectively, leading to 56.1% being strongly aware.
- Regarding the statement, "I am aware of the option to invest in mutual funds via mobile banking," had the lowest awareness levels, with 38 respondents (9.7%) reporting very low awareness, 62 (15.9%) low, and 90 (23.1%) moderate, while only 100 (25.6%) and another 100 (25.6%) indicated high and very high awareness, summing up to just 51.2% at higher awareness levels.
- Regarding the statement, "I know about UPI transactions integrated in mobile banking apps," demonstrates strong awareness, as only 14 respondents (3.6%) indicated very low awareness, 30 (7.7%) low, 82 (21.0%) moderate, while 120 (30.8%) and 144 (36.9%) showed high and very high awareness, totaling 67.7% in the top two categories.
- For the statement, "I am aware of the security measures like OTP and MPIN in mobile banking," only 12 respondents (3.1%) were in the very low category, 28 (7.2%) in low, 75 (19.2%) in moderate, while 115

(29.5%) and 160 (41.0%) were in high and very high awareness categories respectively, representing the highest awareness level at 70.5%, indicating strong familiarity with security features.

- Regarding the statement, "I know mobile banking apps provide customer service/chat support," recorded 30 respondents (7.7%) in very low, 55 (14.1%) in low, 92 (23.6%) in moderate, 105 (26.9%) in high, and 108 (27.7%) in very high awareness categories, resulting in 54.6% being highly aware, which shows moderate awareness compared to core services.

After presenting the likert scale responses chi-square test has been conducted to know the association between awareness levels and selected demographic variables. The following are the results.

Table 2: Chi-Square Test – Age vs. Awareness

Test	Value	df	P-value	Significance	Result
Pearson Chi-Square	6.352	3	0.095	Not Significant	Null Hypothesis Accepted

Source: Compiled from primary data

The table shows the results of the Chi-Square test conducted to examine the association between age and awareness of mobile banking services. The calculated Pearson Chi-Square value is 6.352 with 3 degrees of freedom and a p-value of 0.095. Since the p-value is greater than the significance level of 0.05, the result is considered not significant, indicating that there is no statistically significant association between age and awareness of mobile banking. Therefore, the null hypothesis is accepted, which means variations in age do not significantly influence the level of awareness about mobile banking services among the respondents.

Table 3: Chi-Square Test – Education vs. Awareness

Test	Value	df	P-value	Significance	Result:
Pearson Chi-Square	24.823	4	0.000	Highly Significant	Null Hypothesis Rejected

Source: Compiled from primary data

The table presents the Chi-Square test results to determine the relationship between education level and awareness of mobile banking services. The Pearson Chi-Square value is 24.823 with 4 degrees of freedom and a p-value of 0.000. Since the p-value is less than 0.05, the association is highly significant, indicating a strong statistical relationship between education and awareness levels. Therefore, the null hypothesis is rejected, which means that variations in educational qualification significantly affect awareness of mobile banking services. Respondents with higher education are more likely to be aware of mobile banking features compared to those with lower education levels.

Table4: Chi-Square Test – Occupation vs. Awareness

Test	Value	df	P-value	Significance	Result
Pearson Chi-Square	18.472	4	0.001	Significant	Null Hypothesis Rejected

Source: Compiled from primary data

The table shows the Chi-Square test results examining the association between occupation and awareness of mobile banking services. The Pearson Chi-Square value is 18.472 with 4 degrees of freedom and a p-value of 0.001. Since the p-value is less than the 0.05 significance level, the result is significant, indicating a strong statistical relationship between occupation and awareness. Therefore, the null hypothesis is rejected, meaning that the type of occupation significantly influences awareness of mobile banking services. Respondents who are salaried or engaged in business tend to have higher awareness compared to those in agriculture or informal jobs.

Table 5: Chi-Square Test – Monthly Income vs. Awareness

Test	Value	df	P-value	Significance	Result:
Pearson Chi-Square	15.961	4	0.003	Significant	Null Hypothesis Rejected

Source: Compiled from primary data

The table presents the Chi-Square test results for the association between monthly income and awareness of mobile banking services. The Pearson Chi-Square value is 15.961 with 4 degrees of freedom and a p-value of 0.003. Since the p-value is less than 0.05, the result is significant, indicating a statistically significant relationship between income and awareness. Therefore, the null hypothesis is rejected, meaning that variations in monthly income levels significantly influence awareness of mobile banking services. Respondents with higher income are generally more aware of mobile banking facilities compared to those with lower income levels.

6. Summary of Findings

The study aimed to assess awareness levels of mobile banking among rural customers and its association with demographic factors such as age, education, occupation, and monthly income. Analysis of awareness levels revealed that respondents demonstrated high familiarity with basic mobile banking services like fund transfers, mobile/DTH recharges, account balance inquiries, and security measures such as OTP and MPIN. These features recorded more than 65% awareness in the high and very high categories. However, advanced services such as mini-statement facilities, cheque book requests, fixed deposit opening, credit card bill payments, and mutual fund investments showed moderate to low awareness, indicating the need for targeted awareness initiatives.

Chi-square analysis was conducted to examine the association between awareness and selected demographic variables. The results indicate that age has no significant association with awareness levels ($p = 0.095$), implying that age differences do not substantially impact awareness of mobile banking services. In contrast, education level demonstrated a highly significant relationship with awareness ($p = 0.000$), suggesting that higher educational attainment strongly correlates with better understanding of mobile banking services. Similarly, occupation and monthly income also showed significant associations with awareness ($p = 0.001$ and $p = 0.003$, respectively), indicating that salaried employees and individuals with higher income tend to have greater awareness compared to those engaged in agriculture or earning lower incomes.

Overall, the findings emphasize that socio-economic factors such as education, occupation, and income play a more crucial role than age in influencing mobile banking awareness. These insights underscore the importance of designing targeted financial literacy programs, digital skill-building initiatives, and localized awareness campaigns to bridge the digital divide and enhance mobile banking adoption in rural areas.

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