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Demographic Profile and Adoption of Artificial Intelligence Enabled Banking Services: An Empirical Study of Bank Customers in Coimbatore District

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ABSTRACT

The banking industry's quick adoption of artificial intelligence (AI) has drastically changed consumer interaction, service delivery, and operational effectiveness. Evaluating the uptake and acceptance of AI-enabled banking services requires an understanding of consumer demographics. This study looks at how certain bank customers in the Coimbatore district use AI banking based on personal criteria. A structured questionnaire was used to gather primary data from 385 respondents, and descriptive statistical methods were used for analysis. The results show that the majority of users of AI-based banking services are young, educated, and salaried consumers, especially those who work in the private sector. consumers with moderate income levels have considerable engagement with AI technologies, whereas female consumers exhibit slightly higher adoption levels than male customers. The study offers insights for banks to improve technology-driven financial inclusion and customer-centric initiatives while highlighting the increasing adoption of AI banking across various demographic categories.

Keywords: Artificial Intelligence, Banking Services, Customer Demographics, Digital Banking, Coimbatore District

INTRODUCTION

In the contemporary banking sector, artificial intelligence has become a disruptive force that allows organizations to provide individualized services, automate repetitive tasks, and improve decision-making. Chatbots, robo-advisors, fraud detection systems, and predictive analytics are examples of AI-driven financial services that have enhanced client satisfaction and operational effectiveness. However, consumer acceptability and usage patterns play a major role in the effective adoption of AI banking. Customers' attitudes regarding the adoption of technology are greatly influenced by demographic factors like age, gender, income, education, and occupation. Regional studies are crucial to comprehending how various client segments react to AI-enabled financial services in a diverse nation like India. As a developing industrial and educational center in Tamil Nadu, Coimbatore District offers a perfect environment for researching client acceptance of AI banking. In order to determine who utilizes AI banking services and to what degree, this study focuses on examining the demographic profile of AI banking clients in particular banks in the Coimbatore District.

Statement of the Problem

Customer adoption of AI-driven banking solutions is still unequal across demographic groups, despite significant investments in these technologies. AI-enabled services are easily embraced by younger, more educated consumers, but elderly users and other income groups may have issues with trust, usability, and awareness. Banks frequently use cutting-edge technology without fully comprehending the demographics and interests of their clientele.

There is little empirical data on how individual factors affect the uptake of AI banking services in the Coimbatore district, where banking clients come from a variety of socioeconomic backgrounds. Banks face difficulties in

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optimizing AI implementation, enhancing client engagement, and guaranteeing fair access to digital financial services due to the lack of localized, data-driven insights. Therefore, to close this knowledge gap, a methodical demographic analysis is needed.

Research Gap

The majority of research on artificial intelligence in banking, according to a review of the literature, focuses on technological efficiency, improving service quality, customer satisfaction, and security-related issues. These studies offer important insights into the technological and operational advantages of adopting AI, but they mainly ignore how customer-specific traits affect the use of AI-enabled financial services. Additionally, empirical research on the demographic characteristics of AI banking users is conspicuously lacking, particularly at the district or regional level. The majority of current research takes a macro-orientational approach, which restricts our ability to comprehend localized adoption trends influenced by customer disparities in age, gender, education, and occupation.

Furthermore, relatively few primary data-based research has examined the duration of AI banking usage in relation to consumers' socioeconomic characteristics. In order to fill these gaps, the current study provides a thorough demographic analysis of Coimbatore District's AI banking clients using primary data, adding region-specific insights and expanding the body of knowledge already available on AI adoption in the banking industry.

Objectives of the Study

1. To examine the age distribution of AI banking clients in particular institutions.

2. To investigate the marital status and gender of clients utilizing AI financial services.

3. To investigate AI banking users' educational and professional backgrounds.

4. To determine the income levels of clients using AI banking.

5. To determine how long bank clients have been using AI technologies

Hypotheses of the Study

The following hypotheses are framed for the study:

H_1: There is a significant association between age and usage of AI banking services.

H_2: Gender significantly influences the adoption of AI banking.

H_3: Educational qualification has a significant impact on AI banking usage.

H_4: Occupation and income level significantly affect the adoption of AI-based banking services.

H_5: The duration of AI usage varies significantly among different demographic groups.

Analysis and Interpretation

Demographic Profile of The Selected Bank Customers in Coimbatore District

Personal Factors	Classification	No. of Respondents	Percentage	Cumulative Percentage
Age	Up to 25 years	186	48.31	48.31

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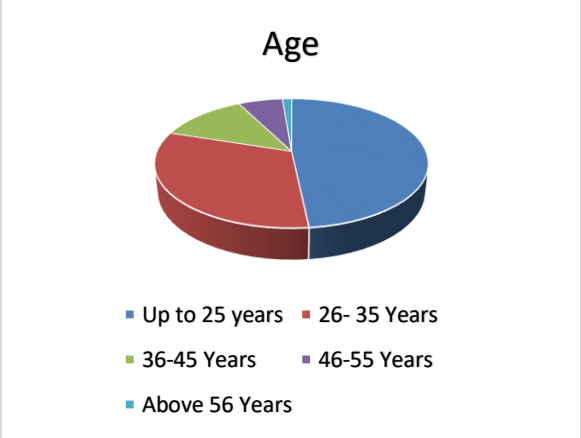
	26- 35 Years	122	31.69	80.00
	36-45 Years	48	12.47	92.47
	46-55 Years	24	6.23	98.70
	Above 56 Years	5	1.30	100.00
	Total	**385**	**100.0**	
Gender	Male	177	45.97	45.97
	Female	208	54.03	100.00
	Total	**385**	**100.0**	
Marital Status	Married	185	43.6	48.05
	Unmarried	200	47.6	100.00
	Total	**385**	**100.0**	
Education Qualification	School Level	13	3.38	3.38
	UG	72	18.70	22.08
	PG	183	47.53	69.91
	Others	117	30.39	100.00
	Total	**385**	**100.0**	
Occupation	Govt. Employee	142	36.88	36.88
	Private Employee	149	38.70	75.58
	Others	94	24.42	100.00
	Total	**385**	**100.0**	
Monthly Earning	Below 20,000	184	47.8	47.8
	20,001-40,000	130	33.8	81.6
	40,001-80,000	48	12.5	94.0
	80,001-1,00,000	20	5.2	99.2
	Above 1,00,000	3	0.8	100.0
	Total	**385**	**100.0**	

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Using AI Technology in Your Bank	Less than 3 Years	138	35.84	35.84
	3 to 5 Years	142	36.88	72.73
	Above 5 Years	105	27.27	100.00
	Total	**385**	**100.0**	

Sources: Calculated & Computed from Primary Data

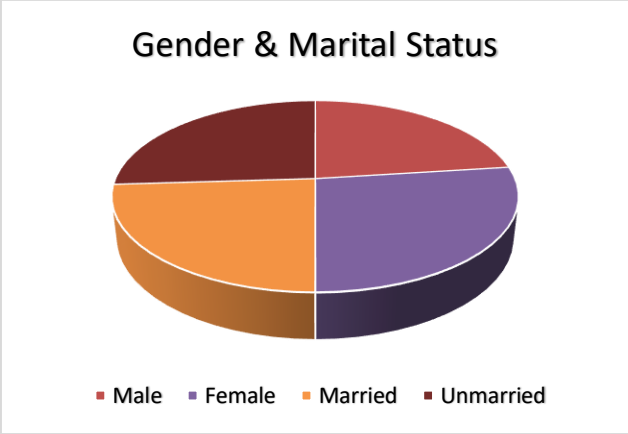
The demographic profile of the personal characteristics of the AI Banking clients in the Coimbatore district is shown in the above table. It is evident from the age-wise classification that 48.31 percent (186 respondents) of bank customers are under 25 years old. Of the bank customers, 31.69 percent (122 respondents) are between the ages of 26 and 35, 12.47 percent (48 respondents) are between the ages of 36 and 45, 6.23 percent (24 respondents) are between the ages of 46 and 55, and 1.30 percent (5 respondents) are between the ages of 56. Therefore, it can have concluded that the most of respondents are up to 25 years and over, indicating that many middle-aged consumers took part in the study.



Source: Calculated and Computed from the Primary Data

When it comes to gender, 45.97 percent of bank customers were male (177 respondents), while 54.03 percent were female (208 respondents). When compared to male customers, it suggests that the majority of Coimbatore district female clients use AI banking.

Upon classifying bank customers according to their marital status, it was found that 43.6 percent (185 respondents) of them are married, while 47.6 percent (200 respondents) are single.

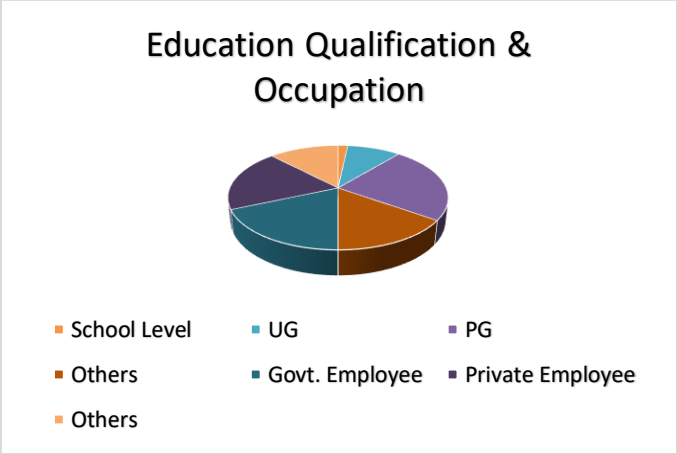


Source: Calculated and Computed from the Primary Data

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When it comes to educational qualifications, the majority of customers fall into one of the following categories: 30.39 percent (117 respondents) are from other categories, followed by postgraduates (47.53 percent; 183 respondents), undergraduates (18.70 percent; 72 respondents), and school-level customers (3.38 percent; 13 respondents). Here, 70 percent of the clients are well-educated.

The aforementioned table provides proof that the vast majority of bank clients are private-sector workers. Here, 24.42 percent (94 respondents) belong to another occupation type, 38.70 percent (149 respondents) are private employees, and 36.88 percent (142 respondents) are government employees. Therefore, the table suggests that bank clients of private employees deal in the AI banking industry.



Source: Calculated and Computed from the Primary Data

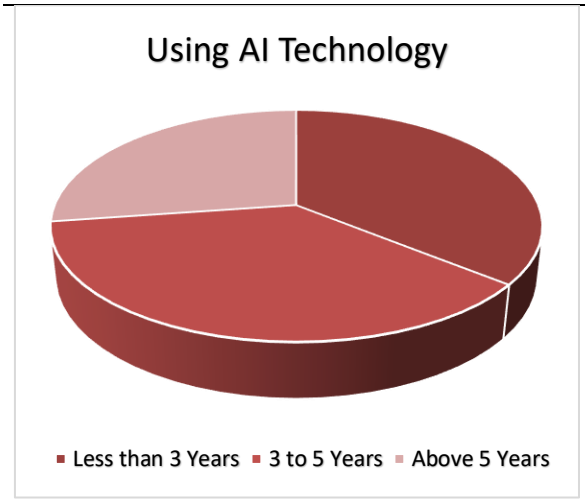
According to the bank customers' monthly income classification, 48.31 percent (186 respondents) earn less than Rs. 20,000, 31.69 percent (122 respondents) earn between Rs.20,000 and Rs. 40,000,12.47 percent (48 respondents) earn between Rs. 40,000 and Rs.80,000, 6.23 percent (24 respondents) earn between Rs. 80,000 and Rs.1,00,000, and 1.30 percent (5 respondents) earn more than Rs. 1,00,000.



Source: Calculated and Computed from the Primary Data

Of the bank respondents 35.84% (138 individuals) reported using AI technology in banking for less than three years, 36.88% (142) have used it for three to five years, and 27.27% (105) have been using it for more than five years of AI technology using through banking.

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Source: Calculated and Computed from the Primary Data

CONCLUSION

The demographic research of Coimbatore District's AI-enabled banking clients shows that younger users especially those under 35 are mostly driving adoption. Younger customers' greater digital literacy and receptivity to technological advancements are reflected in this area. Customers who are female exhibit a somewhat higher level of participation than those who are male, indicating a rise in women's financial inclusion and digital engagement. These results suggest a progressive change in the adoption of modern financial technologies toward more equitable female representation. Adoption of AI banking appears to be significantly influenced by educational attainment. With postgraduate and undergraduate degrees making up the largest sectors, the majority of users are well educated. This emphasizes how important education is to comprehending, embracing, and successfully using AI-driven banking services. Customers with better education are more likely to recognize the value, dependability, and convenience of use of AI-based systems, which will hasten their adoption.

Private sector workers make up the majority of AI banking users in terms of occupation and income, closely followed by government workers. This suggests that salaried people rely more and more on AI-enabled banking services for time-saving, efficiency, and convenience. Customers from lower- and middle-class groups, especially those making less than ₹40,000 a month, make up a sizable portion of the user population, indicating that AI banking services are not exclusive to high-income clients.

Overall, the results show that the adoption of AI-enabled financial services in Coimbatore District is greatly influenced by demographic parameters, including age, gender, education, occupation, income, and length of usage. Growing familiarity, confidence, and dependence on AI-driven financial services are shown in the sizeable percentage of clients who have been using AI banking for more than three years. Banks may use these findings to create inclusive, user-friendly AI apps, improve user education, and create focused awareness campaigns. Future studies could expand on this analysis by adding behavioral factors, customer satisfaction, and how AI banking affects long-term consumer loyalty and financial decision-making.

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