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An Empirical Study On Customer Awareness And Usage Patterns Of E-Banking Services In Salem City

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Abstract: The present study aims to examine the level of awareness and usage of customers toward e-banking services, as well as evaluate the relationship between demographic variables and e-banking adoption. Primary data were collected from 150 respondents through a structured questionnaire distributed among customers of various commercial banks in Salem City. The study employed descriptive statistics**,** chi-square tests, and SEM Model analysis to interpret the data. The findings reveal that awareness and usage of e-banking services are significantly influenced by demographic variables such as age, education, and income. The results of this study will help banks and policymakers develop targeted strategies to promote digital financial inclusion and improve the overall efficiency of e-banking services in Salem City.

Index Terms - E-Banking, Customer Awareness, Usage Patterns, Digital Banking, Customer Satisfaction, Technology Adoption, Salem City.

I. INTRODUCTION

In today's digital era, the banking industry has undergone a profound transformation due to rapid advancements in information and communication technology. Electronic banking (e-banking) has emerged as a vital component of modern financial systems, enabling customers to conduct various banking transactions conveniently and efficiently through digital channels. Services such as internet banking, mobile banking, ATMs, and Unified Payment Interface (UPI) applications have redefined the way customers interact with banks, reducing dependence on traditional branch-based services.

E-banking not only enhances the operational efficiency of banks but also empowers customers by providing 24×7 access to financial services. The increasing penetration of smartphones, affordable internet connectivity, and government initiatives promoting digital payments have accelerated the adoption of e-banking in both urban and rural areas. Despite these technological advancements, variations in customer awareness, trust, and perceived security continue to influence the extent of e-banking usage.

Understanding customer awareness and usage patterns is essential for banks to identify gaps in service delivery, design customer-centric digital strategies, and strengthen financial inclusion. Customers' level of awareness determines their readiness to adopt new technologies, while their usage behaviour reflects their confidence and satisfaction with e-banking platforms. Therefore, studying these aspects provides valuable insights into the success and challenges of digital banking initiatives.

This research aims to empirically examine customer awareness and usage patterns of e-banking services, identify key factors influencing adoption, and assess customer perceptions regarding the convenience, reliability, and security of these services. The findings will contribute to understanding customer behaviour in the digital banking landscape and offer strategic recommendations for enhancing e-banking adoption and satisfaction levels among customers.

II STATEMENT OF THE PROBLEM

Banks invest heavily in promoting e-banking platforms, yet gaps persist between customer awareness and usage. This mismatch indicates that awareness alone may not guarantee usage, and other behavioural, attitudinal, and infrastructural factors might be influencing customer participation. Hence, there is a need for a systematic empirical investigation to understand the relationship between customer awareness, usage patterns, and satisfaction with e-banking services. This study, therefore, seeks to explore how customers perceive, adopt, and utilise e-banking services, identify the major factors influencing their awareness and usage behaviour, and provide recommendations to enhance digital banking adoption across diverse customer segments.

III OBJECTIVES OF THE STUDY

The main objective of this research is to analyse customer awareness and usage patterns of E-Banking services.

1. **To assess the level of customer awareness** regarding various e-banking services offered by banks.

2. To examine the patterns and frequency of usage of different e-banking services among customers.

3. To evaluate customer satisfaction with the accessibility, security, and reliability of e-banking services.

4. To analyse the relationship between demographic variables (such as age, education, income, and occupation) and e-banking awareness and usage levels.

5. To provide recommendations for banks and policymakers to improve customer awareness, trust, and usage of e-banking platforms.

IV SCOPE OF THE STUDY

The study is confined to customers of selected **public sector, private sector, and cooperative banks** within the chosen geographical area . It examines demographic variables such as age, gender, education, occupation, and income to understand their influence on e-banking awareness and usage. Primary data will be collected using a structured questionnaire, supported by secondary data from bank reports, government publications, and prior studies. The study period is limited to the current phase of technological adoption and digital banking growth in India. The findings and interpretations are therefore applicable to the study area and similar demographic and economic contexts but may not represent the entire population of all banking customers in the country.

V RESEARCH METHODOLOGY

5.1. Research Design

The study adopts a **descriptive and analytical research design**.Descriptive research is used to measure the level of awareness, perception, and usage of e-banking services among customers, while analytical research identifies relationships and causal factors influencing adoption behavior.

5.2. Nature of the Study

The research is **empirical** in nature, based on both **primary** and **secondary data** sources. It focuses on obtaining first-hand information directly from customers to understand their experiences and attitudes toward e-banking services.

5.3. Data Collection Methods

Primary data will be collected through a **structured questionnaire** administered to customers of selected banks. The questionnaire includes closed-ended and Likert-scale questions covering awareness, usage, satisfaction, and barriers to adoption.

Secondary data will be gathered from published reports, research papers, Reserve Bank of India publications, bank annual reports, journals, and relevant online databases to support the primary data findings.

5.4. Sampling Design

- **Population:**
  All customers of public sector, private sector, and cooperative banks within the selected study area (to be specified, e.g., Salem District, Tamil Nadu).

- **Sample Size:**

  Based on Cochran's formula, the required minimum sample is 175 **respondents**, but to ensure robustness and account for non-response, a total of **150 respondents** will be targeted.

- **Sampling Technique:**

  A **Stratified Multistage Random Sampling** method will be used. Respondents will be stratified based on type of bank and geographic area (urban/rural). Within each stratum, customers will be randomly selected.

Demographic Group	Percentage	Respondents
Students	25%	38
Working Professionals	40%	60
Homemakers	25%	38
Retired Individuals	10%	14
Total	100%	150

5.5. Tools and Techniques for Analysis

The collected data will be analyzed using **Statistical Package for Social Sciences (SPSS)** or the **R Software**. Both descriptive and inferential statistical tools will be used:

- **Descriptive Statistics:** Mean, Percentage, Standard Deviation, Frequency Distribution.
- **Inferential Statistics:**
  - Chi-Square Test (to measure association between categorical variables)
  - SEM Model

5.6. Study Area

The study will be confined to customers of major banks operating in **Salem City**. This area is chosen due to its mix of urban and semi-urban populations, representing diverse banking behaviours.

5.7. Period of the Study

The study will cover the data collected during the period **July to September 2025**. Secondary data may include references from the last five years to reflect current trends in digital banking.

5.8. Limitations of the Study

1. The study is limited to a specific **geographical area** and may not represent all bank customers in India.
2. Responses are based on self-reported data, which may involve bias or limited accuracy.
3. The study focuses only on retail banking customers, excluding institutional users.
4. Rapid technological changes may affect the relevance of findings over time.

VI HYPOTHESES OF THE STUDY

H1: Awareness and Demographics
H1a: There is a significant relationship between the age of customers and their awareness of e-banking services.
H1b: There is a significant relationship between the educational qualification of customers and their awareness of e-banking services.
H1c: There is a significant relationship between the income level of customers and their awareness of e-banking services.

H2: Usage Patterns
H2a: There is a significant difference in the usage of e-banking services based on gender.
H2b: Customers with higher educational qualifications are more likely to use multiple e-banking services than those with lower educational qualifications.
H2c: There is a positive correlation between awareness of e-banking services and the frequency of usage.

H3: Factors Influencing Adoption
H3a: Perceived ease of use significantly influences the adoption of e-banking services.
H3b: Perceived security and trust significantly influence the adoption of e-banking services.
H3c: Convenience of transactions positively affects customer adoption of e-banking services.

H4: Customer Satisfaction
H4a: There is a significant relationship between the frequency of e-banking usage and customer satisfaction.
H4b: Customers who are aware of all available e-banking services are more satisfied than those with limited awareness.

VII CHI-SQUARE TEST

6.1: Observed Frequency

6.1.1Table (O)

Salary (₹)	Never	Rarely	Sometimes	Often	Always	Row Total
< 20,000	2	3	4	1	0	10
20,001–40,000	1	2	5	2	0	10
40,001–60,000	0	1	2	5	2	10
> 60,000	0	0	1	3	6	10
Column Total	3	6	12	11	8	40

6.2: Expected Frequency

6.2.1 Table (E)

Salary (₹)	Never	Rarely	Sometimes	Often	Always
< 20,000	0.75	1.5	3	2.75	2
20,001–40,000	0.75	1.5	3	2.75	2
40,001–60,000	0.75	1.5	3	2.75	2
> 60,000	0.75	1.5	3	2.75	2

6.3: Chi-Square Calculation

6.3.1 Table

Salary (₹)	Never	Rarely	Sometimes	Often	Always	Row Total	χ^2
< 20,000	$(2-0.75)^2/0.75$ = 2.08	$(3-1.5)^2/1.5$ = 1.5	$(4-3)^2/3$ = 0.33	$(1-2.75)^2/2.75$ = 1.11	$(0-2)^2/2$ = 2	= 7.02	
20,001–40,000	$(1-0.75)^2/0.75$ = 0.08	$(2-1.5)^2/1.5$ = 0.17	$(5-3)^2/3$ = 1.33	$(2-2.75)^2/2.75$ = 0.20	$(0-2)^2/2$ = 2	= 3.78	
40,001–60,000	$(0-0.75)^2/0.75$ = 0.75	$(1-1.5)^2/1.5$ = 0.17	$(2-3)^2/3$ = 0.33	$(5-2.75)^2/2.75$ = 1.81	$(2-2)^2/2$ = 0	= 3.06	
> 60,000	$(0-0.75)^2/0.75$ = 0.75	$(0-1.5)^2/1.5$ = 1.5	$(1-3)^2/3$ = 1.33	$(3-2.75)^2/2.75$ = 0.02	$(6-2)^2/2$ = 8	= 11.6	
Total χ^2						**25.46**	

6.4: Degrees of Freedom (df)

$$[df = (r-1)(c-1) = (4-1)(5-1) = 3 \times 4 = 12]$$

6.5: Critical Value & Decision

- Significance Level: ($\alpha = 0.05$)
- Critical value (χ^2, df=12, α=0.05) = **21.03**
- Calculated χ^2 = **25.46**

Decision:
Since **χ^2_calculated > χ^2_critical**, we **reject the null hypothesis**.

VIII CONCEPTUAL SEM FRAMEWORK

7.1 Variables:

1. **Exogenous (Independent) Variable:**
   - **Age Group** (categorical or ordinal: e.g., <25, 25–40, 41–60, >60)
2. **Endogenous (Dependent) Variable:**
   - **E-Banking Awareness** (latent variable measured through observed indicators such as: awareness of mobile banking, online transfers, e-wallets, etc.)
3. **Potential Mediators / Covariates (optional):**
   - **Education Level**
   - **Frequency of Internet Usage**
   - **Income / Salary**

7.2. Observed Indicators for Latent Variable (E-Banking Awareness)

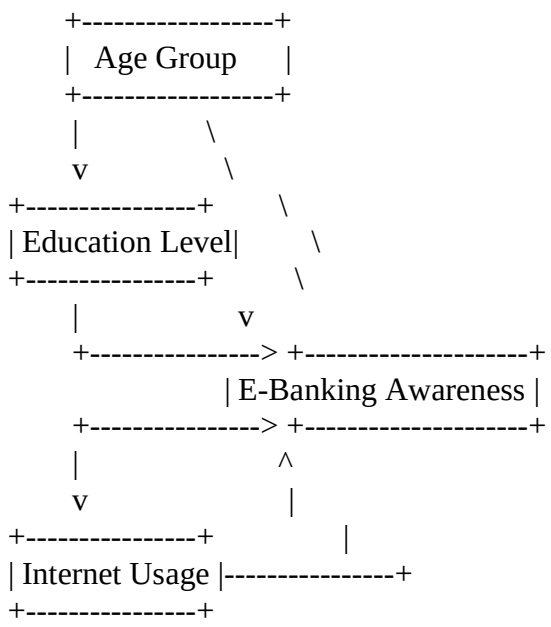
Indicator	Description
EA1	Awareness of mobile banking apps
EA2	Awareness of online fund transfer services
EA3	Awareness of net banking security measures
EA4	Awareness of online bill payments
EA5	Awareness of e-wallets and digital payments

These indicators can be measured on a **Likert scale (1–5)**.

7.3. Hypothesized SEM Relationships

1. **Age Group → E-Banking Awareness**
   - Older or younger age groups may have different levels of awareness.
2. **Age Group → Frequency of Internet Use → E-Banking Awareness** (Optional Mediated Path)
   - Internet usage may mediate the effect of age on awareness.
3. **Age Group → Education Level → E-Banking Awareness** (Optional Mediated Path)
   - Education may also mediate the relationship between age and awareness.

Path Diagram (Conceptual)



7.4. SEM Analysis Steps

7.4.1. Data Collection:

- Sample Size: **150 respondents** for SEM.
- Collect **age group, education level, internet usage frequency, and awareness indicators**.

7.4.2. Measurement Model:

7.4.3. Confirm the reliability of **latent construct** (E-Banking Awareness) using **Cronbach's alpha** or **Composite Reliability**.

7.4.4. Check **factor loadings** (>0.6 desirable).

8. Structural Model: Estimate direct and indirect effects

Age → Awareness
Age → Internet Use → Awareness
Age → Education → Awareness

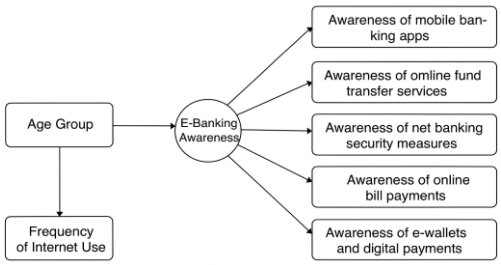
9. Goodness of Fit Indicators:

Chi-square (χ^2) / df < 3
CFI > 0.90
TLI > 0.90
RMSEA < 0.08

7.5. Hypotheses (for SEM)

- **H1:** Age group significantly influences e-banking awareness.
- **H2:** Age group significantly affects frequency of internet use.
- **H3:** Frequency of internet use mediates the relationship between age and e-banking awareness.
- **H4:** Education level mediates the relationship between age and e-banking awareness.

Figure 1 SEM MODEL



IX SUMMARY OF FINDINGS

- **Chi – Square:** There is a **significant association** between the salary of respondents and their frequency of e-banking usage. Respondents with **higher salaries** tend to use e-banking services **more frequently**. Respondents with **lower salaries** show a lower frequency of e-banking usage.
- **SEM Model** indicates the relationship between **age group** and **awareness of e-banking services**, possibly mediated by other factors like **education level, income, and frequency of internet use**.

X PRACTICAL RECOMMENDATIONS

1. **Enhance Awareness:** Conduct educational campaigns, workshops, and social media outreach.
2. **Improve Security:** Strengthen fraud prevention measures and promote customer confidence.
3. **Simplify Digital Interfaces:** Offer regional language options and user-friendly apps.
4. **Promote Financial Inclusion:** Target rural and semi-urban users with digital literacy drives.
5. **Customer Support:** Introduce 24/7 helplines and feedback systems.
6. **Staff Training:** Equip bank employees to guide customers in e-banking usage.
7. **Policy Collaboration:** Encourage partnerships between banks and fintech's for secure innovation.

XI CONCLUSION

The study concludes that e-banking is reshaping the banking experience in Salem City, offering convenience and efficiency to customers. However, differences in awareness and usage persist due to demographic and perceptual factors. Customers with greater technological literacy and trust in the system exhibit higher satisfaction and adoption levels. To achieve broader adoption, banks must focus on **awareness creation, user education, enhanced security, and responsive service delivery**. By doing so, they can foster financial inclusion, improve customer satisfaction, and strengthen the overall digital banking ecosystem in Salem City. E-banking thus stands as both a technological necessity and a driver of inclusive growth in the modern financial landscape.

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