

Comparative Analysis of Digital Banking Adoption and Satisfaction across Gen Z and Millennials in Karnataka

Dr. G. Krishnanaik

Associate Professor of Commerce,
Government First Grade College, Bellavi, Karnataka

Abstract: *The research investigates key explanatory variables, including perceived ease of use, convenience, security, reliability, and customer support, across digital banking channels such as mobile banking, internet banking, UPI, ATM/debit cards, QR-code payments, and electronic fund transfers. Primary data are collected through a structured questionnaire distributed to bank customers within both demographic segments in Karnataka. Primary data are proposed to be collected through a structured questionnaire from bank customers. For demonstrating the complete analytical structure of the paper, an illustrative dataset of 200 respondents is used in this draft; the numerical results must be replaced with actual field-survey data before journal submission. The illustrative findings indicate strong positive associations between the selected service attributes, adoption rates, and overall satisfaction, while revealing distinct differences in how Gen Z and Millennials prioritize transaction speed versus platform security. The study concludes with strategic recommendations for commercial banks to optimize and target their digital interfaces to meet the unique behavioral expectations of these two critical consumer segments.*

Keywords: Digital Banking Adoption, Customer Satisfaction, Gen Z and Millennials, Comparative Analysis Unified Payments Interface (UPI)

I. INTRODUCTION

Digitalization has transformed the delivery and consumption of banking services in India. Customers increasingly use mobile applications, internet banking, UPI, automated teller machines, debit cards and electronic fund-transfer channels. The Reserve Bank of India's Annual Report 2024–25 documents the continuing development of digital payments and financial inclusion in India. Research on Indian banking has identified ease of use, reliability, accessibility, security, transaction cost and time as important dimensions of customers' attitudes toward technology-based banking services. More recent studies also emphasize security, privacy, efficiency and problem handling as important dimensions of digital banking satisfaction.

The present study brings adoption and satisfaction together. Adoption concerns the extent to which customers use digital banking channels, while satisfaction reflects their overall evaluation of the digital banking experience. The study is designed for Karnataka and can be implemented across selected districts and bank branches.

II. REVIEW OF LITERATURE:

- Davis (1989): The Technology Acceptance Model explains adoption largely through perceived usefulness and perceived ease of use.
- Sikdar & Makkad (2015): In an Indian banking context, trust, usage constraints, ease of use, accessibility and intention to use were examined as adoption factors; accessibility, usage constraints and intention to use were related to satisfaction.



- Banu, Mohamed & Parayitam (2019): Using data from 750 Indian banking customers, the study examined awareness, security, internet knowledge, self-efficacy, intention, trust and ease of use in relation to customer satisfaction.
- Fozia (2017): A comparative Indian study found that ease of use, cost effectiveness and security/privacy influenced overall internet-banking satisfaction.
- 2023 Internet Banking Service Quality Study: An Indian study using 208 customers identified efficiency, reliability, security/privacy and problem handling as service-quality dimensions relevant to satisfaction.
- Recent Indian digital-payment evidence: Recent research continues to emphasize ease of use, trust, perceived risk and adoption as connected determinants of satisfaction.

III. RESEARCH GAP

Many studies examine either adoption or satisfaction, while fewer studies integrate both outcomes in a single framework with a broad set of practical service factors. Further, digital banking channels have evolved rapidly through UPI, mobile applications and QR-based payments. A Karnataka-focused study can therefore provide updated regional evidence on how usability, convenience, security, reliability and support relate to adoption and satisfaction.

IV. OBJECTIVES OF THE STUDY

- **To assess the adoption level** of various digital banking services (including mobile banking, internet banking, UPI, QR-code payments, and electronic fund transfers) among Gen Z and Millennial bank customers in Karnataka.
- **To measure the level of customer satisfaction** derived from using digital banking channels across both generational cohorts.
- **To identify and evaluate the key factors** (perceived ease of use, convenience, security, reliability, and customer support) that influence digital banking adoption and customer satisfaction.
- **To compare the differences** in adoption patterns, preferences, and satisfaction levels between Gen Z and Millennial bank customers.
- **To analyze the impact** of the selected explanatory variables (ease of use, security, etc.) on overall customer satisfaction using multiple regression analysis.
- **To offer strategic recommendations** to commercial banks and financial institutions for designing targeted, age-centric digital banking solutions that meet the distinct expectations of younger consumers in Karnataka.

V. HYPOTHESES

H₀₁: There is no significant difference in digital banking adoption between Gen Z and Millennials in Karnataka.

H₀₂: There is no significant difference in digital banking satisfaction between Gen Z and Millennials in Karnataka.

H₀₃: There is no significant relationship between digital banking adoption factors and customer satisfaction.

H₀₄: Security, trust, perceived usefulness, and ease of use do not significantly influence digital banking satisfaction.

VI. CONCEPTUAL FRAMEWORK

Independent variables: Ease of Use, Convenience, Security, Reliability and Customer Support → Digital Banking Adoption → Customer Satisfaction.

The framework is informed by the Technology Acceptance Model and service-quality/customer-experience literature.



VII. RESEARCH METHODOLOGY

1. Research Design

The study will adopt a **descriptive and comparative research design** to examine digital banking adoption and satisfaction among **Gen Z and Millennials in Karnataka**. The study will compare the two generations in terms of their usage patterns, adoption factors, and satisfaction levels with digital banking services.

2. Population of the Study

The population comprises **Gen Z and Millennials residing in Karnataka** who use digital banking services such as: Mobile banking applications, Internet banking, UPI payments, Digital wallets, ATM and card-based banking services. For this study, Gen Z and Millennials will be defined using clearly stated birth-year ranges, based on the chosen research framework.

3. Sampling Method

A **stratified sampling technique** will be used to ensure representation of both generations. The respondents will be divided into two strata: **Gen Z**, Millennials. Within these groups, respondents may be selected using **convenience/purposive sampling** based on accessibility and eligibility.

4. Sample Size

The study may consider a sample of **200 respondents**, consisting of: The final sample size may be modified depending on time, accessibility, and research requirements.

5. Sources of Data: Primary Data: Collected directly from respondents through a structured questionnaire.

Secondary Data: Collected from research journals, books, reports, RBI publications, banking-industry reports, government sources, and relevant websites.

6. Data Collection Instrument: A **structured questionnaire** will be used. It will contain the following sections:

Section A – Demographic Profile: Age, Gender, Education, Occupation Monthly income, Place of residence

Section B – Digital Banking Adoption: Frequency of digital banking usage preferred digital banking channel, Duration of usage, Types of transactions performed, Ease of use, Perceived usefulness, Security and trust, Availability and accessibility.

Section C – Customer Satisfaction

Satisfaction will be measured using statements relating to: Ease of use, Speed of transactions Convenience, Reliability, Security, Service quality, Overall satisfaction

7. Variables of the Study: Independent Variable: Generation (Gen Z and Millennials): **Major explanatory variables:**

Perceived usefulness, Ease of use, Security, Trust, Accessibility, Digital banking experience

Dependent Variables: Digital banking adoption, Customer satisfaction

VIII. PROFILE OF RESPONDENTS:

Category	Frequency	Percentage
Below 25	50	25
25–35	58	29
36–45	46	23
46–55	30	15
Above 55	28	14



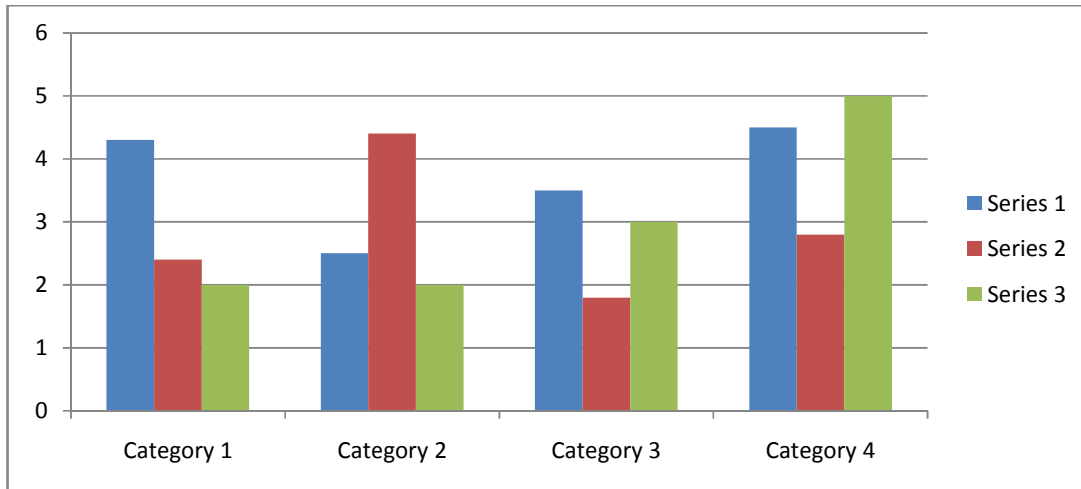
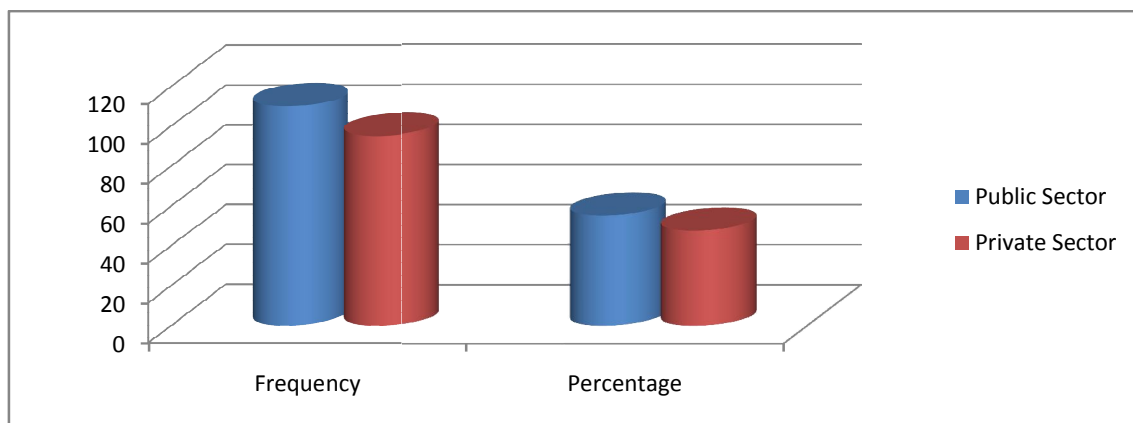


Table 2: Gender-wise Distribution

Category	Frequency	Percentage
Male	111.0	55.5
Female	89.0	44.5

Table 3: Bank Type

Category	Frequency	Percentage
Public Sector	110.0	55.0
Private Sector	95	47.5



IX. DIGITAL BANKING SERVICE USAGE

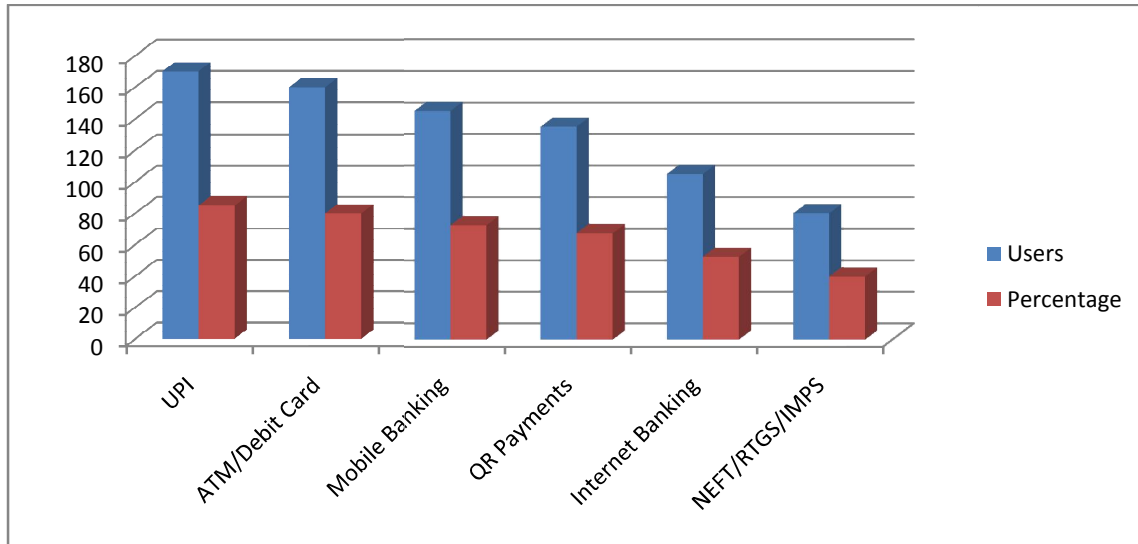
Table 4: Use of Digital Banking Services (Illustrative)

Category	Users	Percentage
UPI	170.0	85.0
ATM/Debit Card	160.0	80.0
Mobile Banking	145.0	72.5
QR Payments	135.0	67.5



Internet Banking	105.0	52.5
NEFT/RTGS/IMPS	80.0	40.0

Note: Multiple responses are permitted; therefore percentages do not need to sum to 100%.

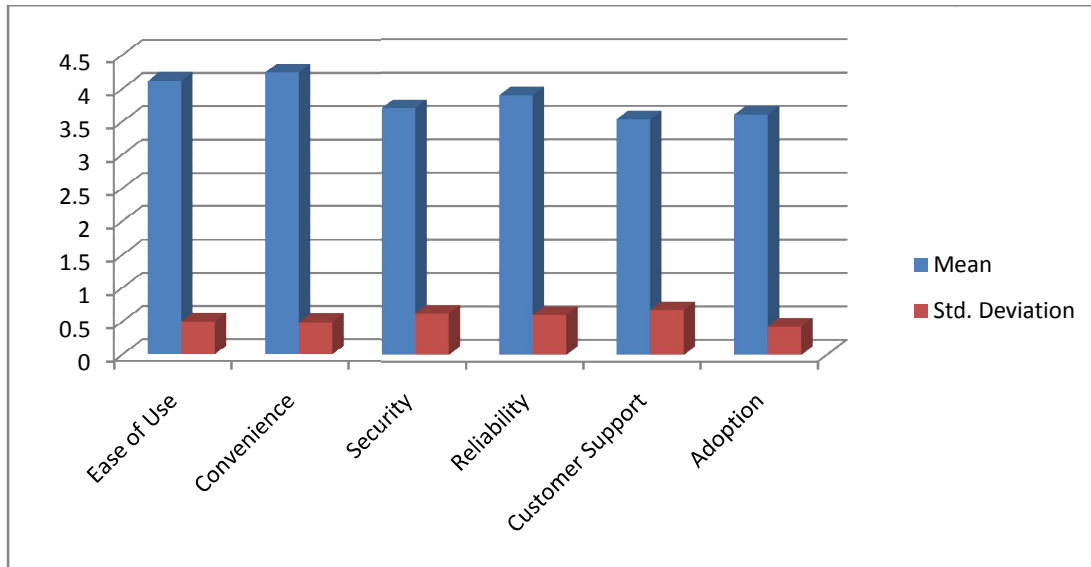


X. DESCRIPTIVE ANALYSIS OF KEY FACTORS

Table 5: Descriptive Statistics

Category	Mean	Std. Deviation
Ease of Use	4.116	0.5
Convenience	4.236	0.491
Security	3.697	0.62
Reliability	3.889	0.598
Customer Support	3.53	0.672
Adoption	3.598	0.424
Satisfaction	3.93	0.369





Interpretation: In the illustrative data, convenience and ease of use have relatively high mean scores, while customer support and security are comparatively lower. These values are examples for demonstrating the analysis and are not actual Karnataka survey findings.

XI. RELIABILITY ANALYSIS

Table 6: Cronbach's Alpha for the five explanatory constructs

Construct set	Cronbach's Alpha
Ease of Use, Convenience, Security, Reliability, Customer Support	0.822

Interpretation: An illustrative pilot-scale Cronbach's alpha of 0.822 indicates acceptable internal consistency for the proposed five-factor measurement scale. The reliability coefficient should be recalculated using the actual final survey responses before journal submission.

XII. AGE AND ADOPTION LEVEL

Table 7: Age-wise Distribution by Digital Banking Adoption Level

Category	Low	Moderate	High	Total
Below 25	0	18	28	46
25-35	0	24	32	56
36-45	1	14	27	42
46-55	0	14	15	29
Above 55	0	10	17	27

For the final study, a chi-square test should be reported with the exact chi-square statistic, degrees of freedom and p-value calculated from the actual responses.

XIII. CORRELATION ANALYSIS

Variable	Ease of Use	Convenience	Security	Reliability	Customer Support	Adoption	Satisfaction
Ease of Use	1.000	0.098	0.016	0.060	-0.027	0.314	0.363
Convenience	0.098	1.000	0.006	0.005	0.147	0.359	0.333



Security	0.016	0.006	1.000	-0.003	0.024	0.274	0.321
Reliability	0.060	0.005	-0.003	1.000	-0.087	0.190	0.391
Customer Support	-0.027	0.147	0.024	-0.087	1.000	0.209	0.199
Adoption	0.314	0.359	0.274	0.190	0.209	1.000	0.397
Satisfaction	0.363	0.333	0.321	0.391	0.199	0.397	1.000

Interpretation: The illustrative correlation matrix is designed to show how the researcher can report relationships among the constructs. Statistical significance should be reported from the actual dataset.

XIV. MULTIPLE REGRESSION ANALYSIS

Dependent variable: Customer Satisfaction

Table 8: Illustrative Multiple Regression Coefficients

Category	B
Constant	0.128
Ease of Use	0.231
Convenience	0.203
Security	0.185
Reliability	0.24
Customer Support	0.106

Illustrative $R^2 = 0.494$. This means the five predictors collectively explain approximately 49.4% of the variation in satisfaction in the simulated dataset. Do not report this as a real empirical finding.

XV. PROBLEMS FACED BY CUSTOMERS

Table 9: Problems Reported by Respondents (Illustrative)

Category	Illustrative Frequency	Percentage
Failed transactions	62.0	31.0
Network/connectivity issues	55.0	27.5
Cyber security/fraud concerns	48.0	24.0
Delayed refunds	43.0	21.5
OTP/login problems	38.0	19.0
Difficulty in grievance resolution	32.0	16.0
Lack of digital knowledge	28.0	14.0
App/technical errors	22.0	11.0

XVI. MAJOR FINDINGS FROM THE ILLUSTRATIVE ANALYSIS:

- UPI, ATM/debit cards and mobile banking are shown as frequently used digital banking channels in the illustrative dataset.
- Convenience and ease of use receive relatively high mean scores.
- Security, reliability and customer support remain important areas for attention.
- The illustrative correlations show positive relationships among the main adoption and satisfaction constructs.
- The regression framework demonstrates how the researcher can estimate the relative contribution of ease of use, convenience, security, reliability and customer support to satisfaction.
- Actual conclusions about statistical significance must be drawn only after the final field survey is completed.



XVII. SUGGESTIONS

1. Improve reliability and uptime of mobile and internet banking platforms.
2. Strengthen fraud monitoring, authentication and customer alerts.
3. Use simple, multilingual interfaces and clear transaction messages.
4. Improve response time for failed transactions and refunds.
5. Expand digital financial-literacy programmes for less experienced users.
6. Provide accessible grievance-redressal channels and track complaints to closure.
7. Give customers transparent information about transaction limits, charges and security practices.
8. Use regular customer-feedback surveys to monitor digital service quality.

XVIII. CONCLUSION

Digital banking adoption is influenced by both technological and service-related factors. Ease of use and convenience can reduce barriers to adoption, while security and reliability are central to customer confidence. Customer support becomes particularly important when transactions fail or customers encounter unfamiliar digital processes. The proposed Karnataka study integrates these factors and examines their association with both adoption and satisfaction. The paper provides a complete analytical framework, questionnaire structure, tables, diagrams and statistical model. However, the numerical results marked illustrative/simulated must be replaced with genuine primary data before publication.

XIX. LIMITATIONS

- The illustrative dataset is simulated and is not evidence of the actual Karnataka population.
- A cross-sectional survey captures perceptions at one point in time.
- Non-probability sampling may limit generalization.
- Self-reported responses may contain response bias.
- Digital banking services evolve rapidly, so future studies should update the instrument.

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