

A Comparative Study on Online and Offline Banking Preferences: Insights Using Chi Square Test

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Abstract—The banking sector has been greatly impacted by the swift development of digital technology, leading to a boom in online banking services in addition to conventional offline banking. Using a chi-square test for analysis, this study attempts to investigate and contrast consumer preferences for online versus traditional banking. A thorough survey was carried out with a wide range of bank clients, emphasizing important elements including ease of use, accessibility, security, and frequency of usage. The gathered information was carefully examined to see if the two banking methods differed significantly from one another. The study offers insightful information about how consumer trend has changed as financial services have become more digitally oriented. It provides insight into how the banking industry is changing and how customers are becoming more and more dependent on digital technology.

Index Terms—offline banking, online banking, chi square test analysis, banking sector transformation, digital shift in banking

I. INTRODUCTION

Online banking has entered a new phase with the advent of digital technology, providing unmatched efficiency and ease. However, due to its dependability and human touch, traditional offline banking continues to play a big role in the financial scene. It is imperative for banks to comprehend customer preferences about online and offline banking in order to prosper in this ever-evolving landscape. By contrasting the two banking methods using an independent chi-square test analysis, this study seeks to clarify these preferences. The report provides important insights into the changing patterns influencing consumer decisions and the future of banking by highlighting important factors. Banks can more effectively modify their offerings to satisfy the

demands of both digital-first clients and those who prefer traditional banking.

II. HYPOTHESIS

Null Hypothesis (H₀)

There isn't a significant difference in how customers prefer online banking compared to offline banking.

Alternative Hypothesis (H₁)

There is significant difference in how customers prefer online banking compared to offline banking.

III. METHODOLOGY

Sample Size

A sample of 24 participants were taken from diverse background and age group.

Data Collected

Table 1.1

Banking Method	Observed Frequency
Offline Banking	4
Online Banking	20
Total	24

Statistical Tool Used: Chi Square Test

IV. DATA ANALYSIS

Frequency Table

Expected Frequency

$$\text{Expected Frequency} = \frac{\text{Total Frequency}}{\text{No of categories}}$$

$$\text{Expected Offline} = \text{Expected Online} = 24/2 = 12$$

Table 1.2

Banking Option	Observed Frequency	Expected Frequency
Offline	4	12

Banking		
Online Banking	20	12

Formula

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

Table 1.3

Banking Option	Observed	Expected	(O-E)	(O-E) ²	(O-E) ² /E
Offline Banking	4	12	-8	64	5.33
Online Banking	20	12	8	64	5.33

$$\chi^2 = 5.33 + 5.33 = 10.66$$

Determining Degrees of Freedom

Degrees of Freedom (d_f) = (N - 1)

Where,

D_f = Degrees of Freedom

N = Sample Size

Here, $d_f = 2 - 1 = 1$

P-value Calculation

p-value is kept at 0.05

=CHISQ.DIST. RT (10.66,1)

We got the value 0.001095

V. RESULTS AND INTERPRETATION

Since the p-value (0.001) is lower than the significance level (0.05), we reject the null hypothesis. This indicates that there is a notable difference between preferences for online and offline banking.

The observed frequency show that 20 out of 24 respondents prefer online banking, while only 4 prefer offline banking.

VI. PRACTICAL IMPLICATIONS

- Banks should consider investing more in online banking infrastructure, as the majority of respondents show a clear preference for it.
- Offline services could be maintained but with less focus, potentially targeting specific customer segments that may still prefer them.
- The findings suggest that digital transformation in banking is not just a trend but a customer demand.

Where

χ^2 is the chi square statistic

O_i represents the observed frequency

E_i represents the expected frequency

Calculation of Chi Square

VII. CONCLUSION

There is statistically a significant preference for online banking over offline banking among the respondents.

VIII. APPENDIX A (QUESTIONNAIRES)

1. Name
 2. Age
 - 18-24
 - 25- 34
 - 35&Above
 3. Gender
 - Male
 - Female
 4. Educational Background
 - High School
 - Undergraduate
 - Postgraduate
 - Doctorate
 5. Occupation
 - Student
 - Employed
 - Self Employed
 - Business
 6. Which banking option do you prefer?
 - Offline Banking
 - Online Banking
- For the respondents who choose Online Banking Preference
1. Which online banking services do you use most frequently? (Select all that apply)
 - Checking account balance

- Fund Transfers
 - Paying Bills
 - Investment Services
 - Applying for credit cards or loan
 - Customer Service/Chat Support
2. How satisfied are you with the security of online banking?
 - Very Satisfied
 - Satisfied
 - Neutral
 - Dissatisfied
 - Very Dissatisfied
 3. What is the primary reason for using online banking?
 - Convenience
 - 24/7 Access
 - Faster Transactions
 - Lower Fees
 4. Have you faced any issues while using online banking?
 - Yes
 - No
 5. Rate your overall satisfaction with online banking on a scale of 1 to 5.
 - 1 – Very Dissatisfied
 - 2- Dissatisfied
 - 3 – Neutral
 - 4- Satisfied
 - 5 – Very Satisfied
 6. How many times per month do you use online banking? (Give answer in number)
 7. On a scale of 1 to 5, how cost effective does you find online banking?
 - 1 being Very Expensive
 - 5 being Very Cost Effective
 8. On an average, how much do you spend on online banking per transaction?
 - Less than 5 minutes
 - 5-10 minutes
 - 10-20 minutes
 - More than 20 minutes
 9. On a scale of 1 to 5, how secure do you feel using online banking?
 - 1 being Not secure at all
 - 5 being Very Secure

For the respondents who choose Offline Banking Preference

1. Which offline banking services do you use most frequently? (Select all that apply)
 - Depositing or Withdrawing cash
 - Applying for loan or credit cards
 - Opening or Closing accounts
 - Investment Services
 - Customer Service/Support
2. On a scale of 1 to 5, how cost-effective do you find offline banking? (in-person at a branch)
 - 1 being Very Expensive
 - 5 being Very Cost Effective
3. How often do you visit your bank branch?
 - Weekly
 - Monthly
 - Once in a few months
 - Rarely
4. How many times per month do you use offline banking? (Give answer in number)
5. On a scale of 1 to 5, how secure do you feel using offline banking (in-person at a branch)?
 - 1 being Very Secure
 - 5 being Not Secure at all
6. On an average, how much time do you spend at a bank branch per visit?
 - Less than 15 minutes
 - 15- 30 minutes
 - 30 – 60 minutes
 - More than 60 minutes
7. Rate your overall satisfaction with offline banking on a scale of 1 to 5.
 - 1 being Very Dissatisfied
 - 5 being Very Satisfied
8. How satisfied you're with the service provided at your branch?
 - Very Satisfied
 - Satisfied
 - Neutral
 - Dissatisfied
 - Very Dissatisfied

REFERENCES

- [1] <https://www.investopedia.com/terms/c/chi-square-statistic.asp>

- [2] <https://www.investopedia.com/terms/d/degrees-of-freedom.asp>
- [3] <https://www.thoughtco.com/null-hypothesis-vs-alternative-hypothesis-3126413>