

Evaluating Customer Perceptions and Preferences in E-Banking Services: A Comparative Study of Public and Private Banks in India

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ABSTRACT

This study, "Evaluating Customer Perceptions and Preferences in E-Banking Services: A Comparative Study of Public and Private Banks in India," delves into the preferences and perceptions of 760 respondents from diverse demographics to understand the influence of security, privacy, access, and availability, along with financial and insurance schemes, on the adoption and satisfaction levels of e-banking services in India. Utilizing a structured survey and employing the Kruskal-Wallis test for data analysis, the study uncovers a significant preference for public banks over private banks in terms of security, privacy, and access to e banking services. Results indicate that public banks are perceived to provide superior e-banking services, underscoring the critical importance of these factors in shaping customer satisfaction and preferences. The findings suggest a need for private banks to enhance their e-banking offerings by focusing on improving security, privacy, and access, thereby aligning with customer expectations and enhancing their competitive edge in the rapidly evolving digital banking landscape in India.

Keywords: E-Banking, Private Banks, Public Banks, Customer Perceptions and Preferences.

INTRODUCTION

The rise of e-banking in India has changed how we handle money, making it crucial to understand what people think about these services. Our study, "Evaluating Customer Perceptions and Preferences in E-Banking Services: A Comparative Study of Public and Private Banks in India," aims to find out how security, privacy, easy access, and the availability of financial and insurance options influence people's choices and happiness with their bank's online services. By surveying 760 people from different backgrounds, we want to highlight what makes e-banking appealing to Indian customers and shed light on the preferences that shape the future of banking in a world that's quickly moving online.

REVIEW OF THE LITERATURES

India has witnessed a significant surge in e-banking adoption in recent years. Various studies (Mishra et al., 2019; Nair & Balakrishnan, 2020) have highlighted the growing reliance of Indian consumers on digital banking channels. Factors such as increased internet penetration, smartphone usage, and government initiatives like Digital India have played pivotal roles in fostering e-banking adoption.

Several researchers have conducted comparative analyses between public and private banks in India (Bose & Jyoti, 2018; Singh & Manocha, 2019). These studies have examined various dimensions including service quality, customer satisfaction, and technological advancements. However, there is a dearth of research specifically focusing on e-banking services and customer perceptions in the context of public and private banks.

Customer perceptions play a crucial role in shaping their preferences towards e-banking services. Studies (Siddiquei & Rehman, 2015; Mishra & Dhal, 2019) have identified factors such as perceived usefulness, ease of use, security, and reliability as key determinants influencing customer perceptions of e-banking services. Understanding these perceptions is essential for banks to design effective e-banking strategies.

STUDY OBJECTIVE

The primary objective of this study is to evaluate customer perceptions and preferences regarding e-banking services provided by public and private banks in India. It aims to understand how factors such as security, privacy, access, and availability, as well as financial and insurance schemes, influence customer choices and satisfaction levels.

SURVEY DESIGN AND SAMPLING

A structured survey was designed to collect data from a diverse group of e-banking users across India. The survey comprised sections on demographic information (gender, age, education, occupation, place of residence, annual income), e-banking usage patterns, type of banks used (public, private, or both), and perceptions on security, privacy, access and availability, and financial and insurance schemes associated with e-banking services.

The sample size for the survey was determined to be 760 respondents, ensuring a mix of urban and rural populations to represent the diversity of India's banking sector. Stratified random sampling was used to ensure that different strata of the population, defined by demographic characteristics and banking behaviors, were adequately represented.

DATA COLLECTION

Data were collected through online questionnaires distributed via email and social media platforms, as well as through face-to-face interviews in selected urban and rural areas to include respondents with limited internet access.

VARIABLES AND MEASURES

Dependent Variables: Customer perceptions and preferences regarding e-banking services.

Independent Variables: Demographic factors (gender, age, education, etc.), type of bank (public, private, both), and factors associated with e-banking services (security, privacy, access and availability, and financial and insurance schemes).

Perceptions were measured using a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) for statements related to each factor (security, privacy, access and availability, and financial and insurance schemes).

DATA ANALYSIS

The analysis involved descriptive statistics to summarize demographic characteristics and e banking preferences. The mean ranks of digital transactions and factors associated with e banking services were calculated to identify trends and preferences among the respondents.

For hypothesis testing, the Kruskal-Wallis test was used to examine the differences in perceptions between users of public banks, private banks, and those using both types of banks regarding security, privacy, access and availability, and financial and insurance schemes. This non-parametric test was chosen due to its suitability for ordinal data and its ability to handle data that does not assume a normal distribution.

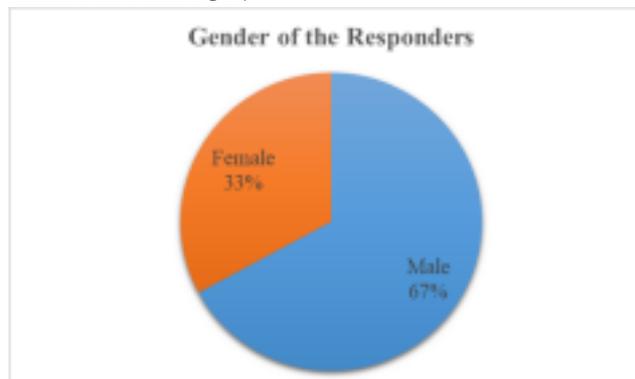
ETHICAL CONSIDERATIONS

The study was conducted following ethical guidelines to ensure the confidentiality and anonymity of the respondents. Informed consent was obtained from all participants, and they were informed about the purpose of the study and their right to withdraw at any time without penalty.

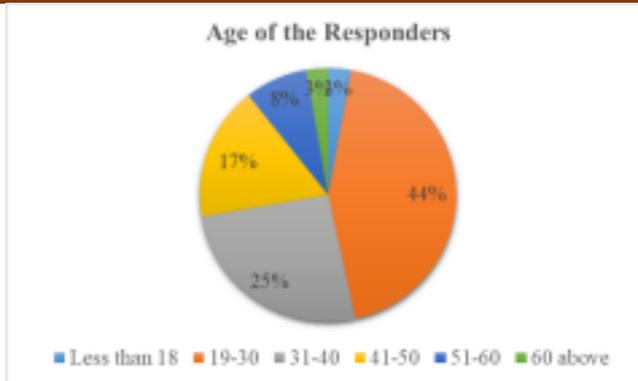
LIMITATIONS

The study acknowledges potential limitations, including bias in self-reported data, the possibility of non-response bias, and limitations in generalizing findings beyond the Indian context.

DATA ANALYSIS AND INTERPRETATION

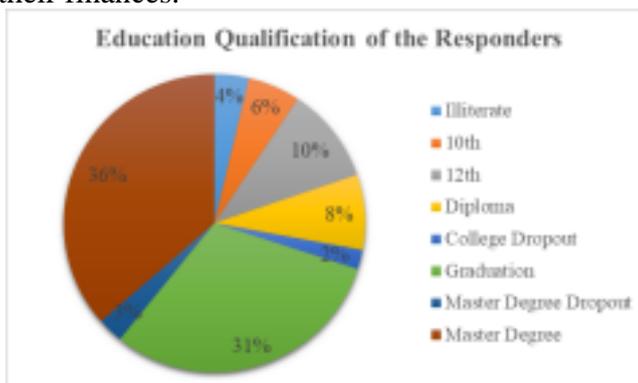


The pie chart shows the gender distribution of 760 respondents to a survey on e-banking preferences in India. It shows that 67% of the respondents were male and 33% were female.

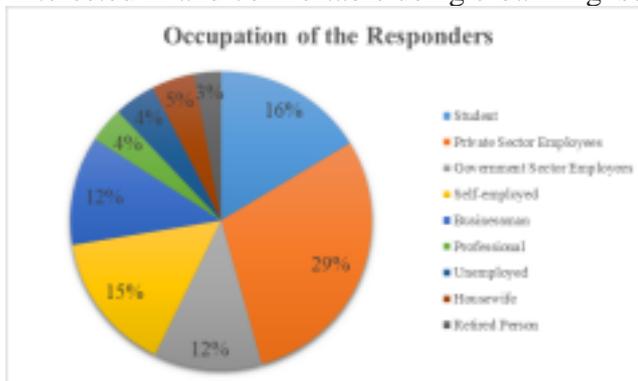


The pie chart you sent me shows the age distribution of 760 respondents to a survey about e banking preferences in India. 25% of respondents are less than 18 years old. 44% of respondents are 19-30 years old. 17% of respondents are 31-40 years old. 8% of respondents are 41-50 years old. 4% of respondents are 51-60 years old. 2% of respondents are over 60 years old. This suggests that e-banking in India is most popular among young adults, with over two-thirds (69%) of respondents being under 31 years old. This could be due to a number of factors, such as:

- Younger adults are more likely to be comfortable with technology and using new devices.
- Younger adults are more likely to be active on social media and online banking, which can make them more aware of e-banking options.
- Younger adults may have fewer financial resources than older adults, and e-banking can be a more affordable way to manage their finances.

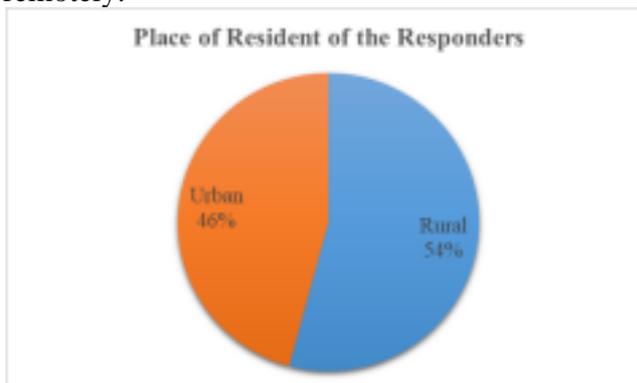


The pie chart you sent me shows the education qualification of 760 respondents to a survey about e-banking preferences in India. 31% of respondents have a Master's degree. 36% of respondents have a 12th standard education. 10% of respondents have a 10th standard education. 8% of respondents have a diploma. 4% of respondents are illiterate. 3% of respondents are Master's degree dropouts. 2% of respondents are college dropouts. 6% of respondents have other qualifications. This suggests that a majority of respondents (67%) have a higher education (Master's degree or 12th standard and above). This could indicate that people with higher education are more likely to be interested in and comfortable using e-banking services.

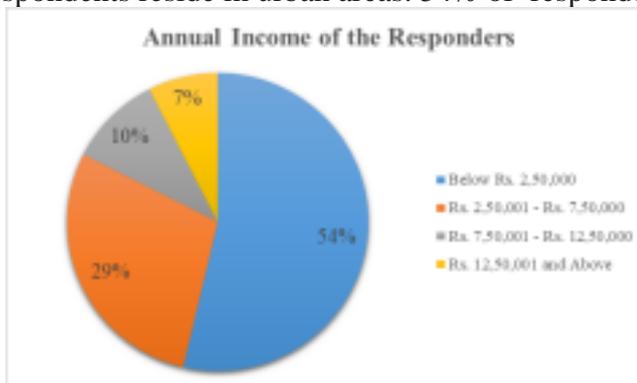


The pie chart shows the occupation of the 760 respondents to a survey about e-banking preferences in India. 29% of respondents are professionals. 16% of respondents are students. 15% of respondents are housewives. 12% of respondents are self-employed. 12% of respondents are retired. 4% of respondents are private sector

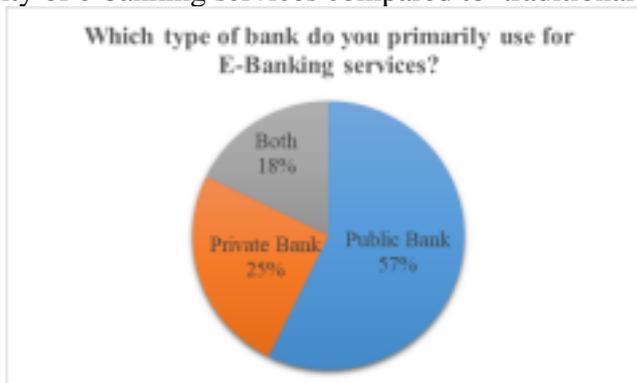
employees. 4% of respondents are unemployed. 4% of respondents are businessmen. This suggests that a plurality of respondents (29%) are professionals, followed by students (16%) and housewives (15%). This could indicate that e-banking is popular among these groups, potentially due to their higher incomes, tech-savviness, or need for managing finances remotely.



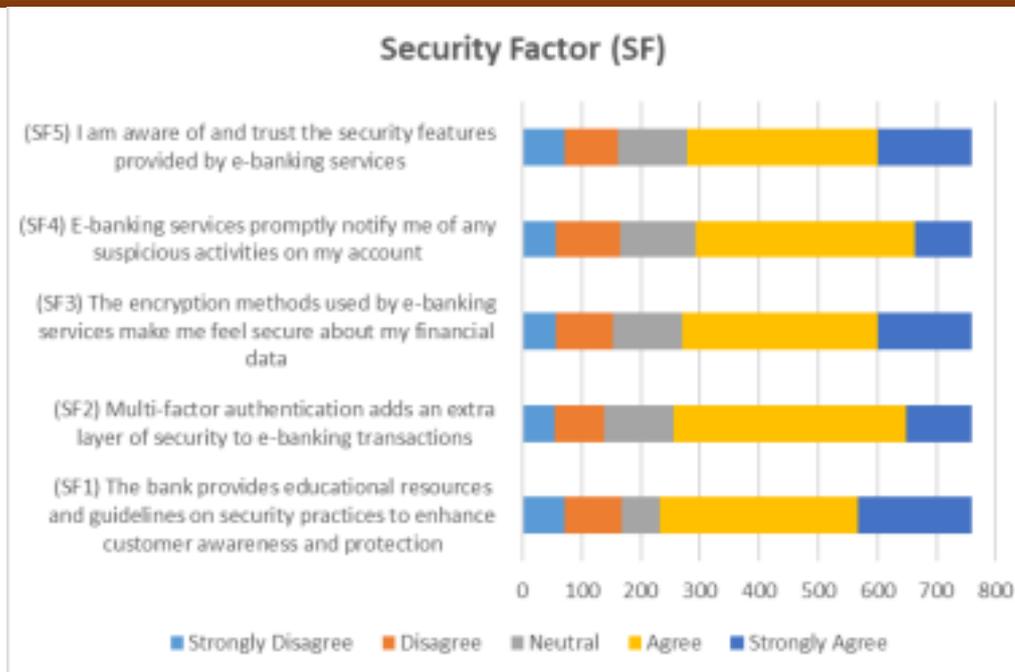
The pie chart you sent me shows the place of residence of the 760 respondents to a survey about e-banking preferences in India. 46% of respondents reside in urban areas. 54% of respondents reside in rural areas.



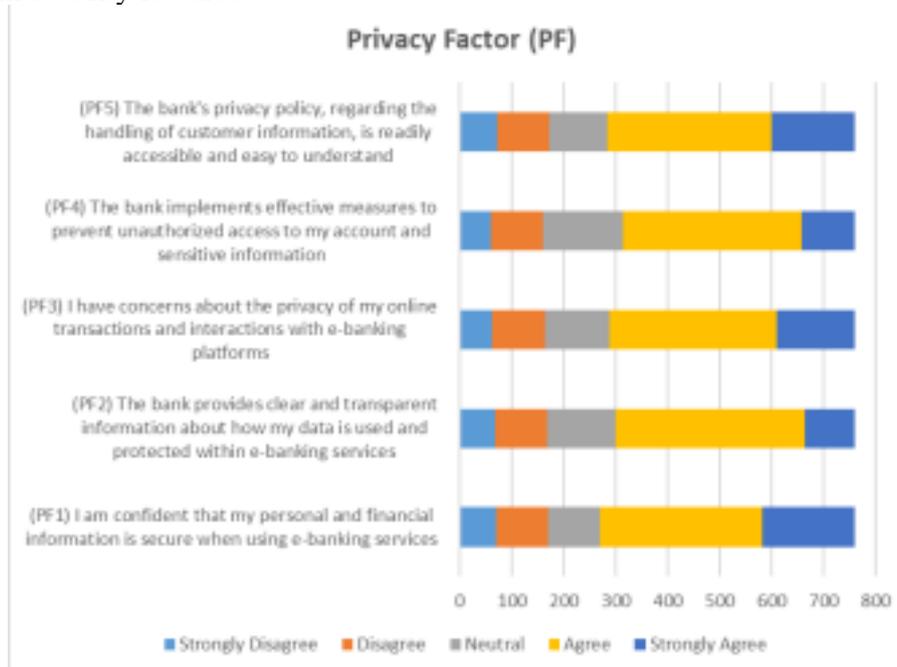
The pie chart shows the annual income of 760 respondents to a survey about e-banking preferences in India. 54% (408 respondents) have an annual income of below Rs. 250,000. 29% (219 respondents) have an annual income of between Rs. 250,001 and Rs. 750,000. 10% (76 respondents) have an annual income of between Rs. 750,001 and Rs. 1,250,000. 7% (57 respondents) have an annual income of above Rs. 1,250,000. This suggests that a majority of respondents (83%) have an annual income of less than Rs. 1,250,000. This could indicate that e-banking is popular among middle-class and lower-middle-class individuals in India, potentially due to the convenience and affordability of e-banking services compared to traditional banking methods.



The pie chart shows the type of bank that 760 respondents to a survey about e-banking preferences in India primarily use for e-banking services. 57% of respondents primarily use public banks. 25% of respondents primarily use private banks. 18% of respondents primarily use both public and private banks. This suggests that public banks are the most popular type of bank for e-banking in India, with over half of respondents using them primarily for their e banking needs. However, a significant number of respondents (43%) also use private banks, either primarily or in conjunction with public banks.



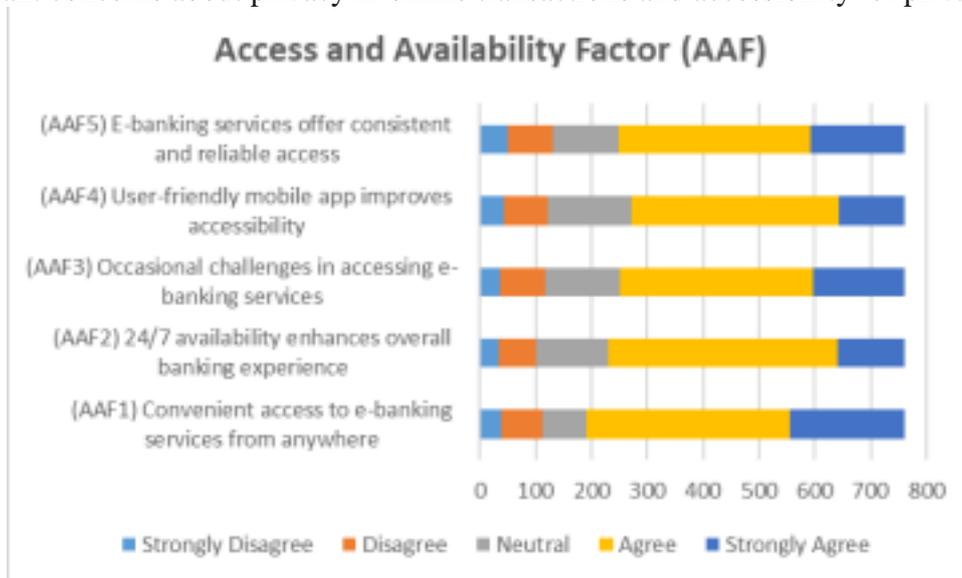
It shows the awareness and trust in security features of e-banking services among 760 respondents in India. The bank provides educational resources and guidelines on security practices to enhance customer awareness and protection - 38% of respondents strongly agree or agree, indicating the lowest level of trust and awareness regarding educational resources provided by banks. Multi-factor authentication adds an extra layer of security to e-banking transactions - 42% of respondents strongly agree or agree, suggesting that while multi-factor authentication is used, it's not perceived as highly impactful on security. The encryption methods used by e-banking services make me feel secure about my financial data - 48% of respondents strongly agree or agree, indicating a lower level of trust in encryption methods compared to other features. E-banking services promptly notify me of any suspicious activities on my account - 56% of respondents strongly agree or agree, suggesting moderate trust in notification systems. I am aware of and trust the security features provided by e-banking services - 67% of respondents strongly agree or agree with this statement, indicating a high level of awareness and trust in security features.



It shows the level of agreement among 760 respondents in India regarding their concerns about privacy in online transactions and interactions with e-banking platforms. The bank provides clear and transparent information about how my data is used and protected within e-banking services (62%). I am confident that my personal and financial information is secure when using e-banking services (58%). These two factors have the

highest percentage of respondents who strongly agree or agree, indicating a moderate level of confidence in data privacy and security practices of e-banking platforms. The bank implements effective measures to prevent unauthorized access to my account and sensitive information (47%). Nearly half of the respondents are neutral on this factor, suggesting there is no clear consensus on the effectiveness of security measures taken by banks. I have concerns about the privacy of my online transactions and interactions with e-banking platforms (36%). The bank's privacy policy, regarding the handling of customer information, is readily accessible and easy to understand

(29%). These two factors have the highest percentage of respondents who disagree or strongly disagree, indicating significant concerns about privacy in online transactions and accessibility of privacy policies.



It shows the factors affecting access to e-banking services in India, based on responses from 760 individuals. Convenient access to e-banking services from anywhere (39% agree or strongly agree). 24/7 availability enhances overall banking experience (42% agree or strongly agree). Occasional challenges in accessing e-banking services (46% agree or strongly agree). User-friendly mobile apps improve accessibility (69% agree or strongly agree). E-banking services offer consistent and reliable access (74% agree or strongly agree). The chart suggests that while a majority of respondents find e-banking services to be generally accessible (with consistent access and user-friendly mobile apps), there are still challenges. Nearly half (46%) experience occasional difficulties, and less than half find 24/7 availability and convenient access from anywhere to be true.

RELIABILITY TEST AND NORMALITY TEST

Table 1: Reliability and Normality Test

Variable	Reliability Test		Normality Test			
	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Kolmogorov Smirnov		Shapiro-Wilk	
			Statistic	Sig.	Statistic	Sig.
Security Factor (SF)	0.933	0.934	0.22	0	0.914	0
Privacy Factor (PF)	0.939	0.939	0.206	0	0.92	0

Access and Availability Factor (AAF)

0.921 0.922 0.215 0 0.918 0

The table presents the results of reliability and normality tests for variables related to customer perceptions and preferences in e-banking services, focusing on Security Factor (SF), Privacy Factor (PF), and Access and Availability Factor (AAF). For reliability, Cronbach's Alpha values for SF (0.933), PF (0.939), and AAF (0.921) alongside their standardized items (SF: 0.934, PF: 0.939, AAF: 0.922) indicate high internal consistency, suggesting that the items within each factor reliably measure the intended constructs. Regarding normality, both Kolmogorov Smirnov and Shapiro-Wilk tests yield significant results ($p < 0.05$) with statistics for SF (K-S: 0.22, S-W: 0.914), PF (K-S: 0.206, S-W: 0.92), and AAF (K-S: 0.215, S-W: 0.918), indicating a deviation from normal distribution for all variables. These findings highlight the robustness of the constructs in terms of reliability, while the significant results of the normality tests suggest the need for non-parametric methods in subsequent analyses due to the non-normal distribution of the data.

HYPOTHESIS TESTING - KRUSKAL-WALLIS TEST**Digital Transactions and Factors Associated with E-Banking Services****Table 2: Mean Ranks of Digital Transactions and Factors Associated with E-Banking Services**

Factors	Which bank's e banking services are better for doing digital transactions?	N	Mean Rank
Security Factor (SF)	Public Bank	364	416.10
	Private Bank	247	360.90
	Both	149	326.01
	Total	760	
Privacy Factor (PF)	Public Bank	364	415.57
	Private Bank	247	358.52
	Both	149	331.25
	Total	760	
Access and Availability Factor (AAF)	Public Bank	364	413.30
	Private Bank	247	367.02
	Both	149	322.70
	Total	760	

The data from the table regarding mean ranks of digital transactions and factors associated with e-banking services highlight a clear trend: public banks are perceived to offer superior e banking services for digital transactions across all factors—security, privacy, and access and availability—compared to private banks and the combined category of both. Specifically, public banks lead with the highest mean ranks in security, privacy, and access factors, indicating a stronger customer perception of their effectiveness in facilitating safe, private, and accessible digital banking transactions. Private banks,

while still offering considerable mean ranks, trail behind public banks in these aspects. The category representing customers who perceive both types of banks equally lags significantly in mean ranks, suggesting that when it comes to digital transactions, a distinct preference exists for the services provided by public banks. This preference underscores the importance customers place on security, privacy, and accessibility in e-banking, areas where public banks are currently seen as excelling.

Kruskal-Wallis Test of Digital Transactions and Factors Associated with E-Banking Services

Table 3: Kruskal-Wallis Test of Digital Transactions and Factors Associated with E-Banking Services

	Null Hypothesis	Chi Square	df	Asymp. Sig.	Result
1	There is no significant difference in the security factor between the e banking services of public bank and private bank for conducting digital transactions.	21.32	2	0.000	Reject the Null Hypothesis
2	There is no significant difference in the privacy factor between the e banking services of public bank and private bank for conducting digital transactions.	19.75	2	0.000	Reject the Null Hypothesis
3	There is no significant difference in the access and availability factor between the e-banking services of public bank and private bank for conducting digital transactions.	20.05	2	0.000	Reject the Null Hypothesis

The study employed the Kruskal-Wallis test to investigate the impact of various factors— security, privacy, and access and availability—on the preferences for e-banking services among public and private banks. The analysis revealed significant differences in the perceived quality of e-banking services offered by public and private banks across all three factors. Specifically, the null hypotheses asserting no significant differences in the perceptions of security, privacy, and access and availability factors were rejected based on the chi-square values and the associated significance levels ($p < 0.001$) for each factor. This indicates a statistically significant variation in customer perceptions of e-banking services, with public banks generally ranked higher in terms of mean ranks for these factors. These findings suggest that public banks may offer superior e-banking services in terms of security, privacy, and access and availability compared to private banks. To enhance customer satisfaction and competitiveness, private banks should consider investing in these areas, focusing on improving their e-banking services to match or surpass the standards set by public banks. This could involve adopting advanced security measures, ensuring greater privacy protection, and expanding access and availability to meet the evolving needs of digital banking customers.

Financial and Insurance Schemes and Factors Associated with E-Banking Services

Table 4: Mean Ranks of Financial and Insurance Schemes and Factors Associated with E-Banking Services

Factors	Which banks' e-banking services are better in financial and insurance schemes?	N	Mean Rank
Security Factor (SF)	Public Bank		410.49
	Private Bank		361.04

	Both		329.52
	Total	760	
Privacy Factor (PF)	Public Bank		410.46
	Private Bank		359.96
	Both		331.76
	Total	760	
Access and Availability Factor (AAF)	Public Bank		409.85
	Private Bank		359.53
	Both		334.47
	Total	760	

The analysis of financial and insurance schemes associated with e-banking services, as detailed in Table, indicates a clear preference among customers for public banks over private banks and a combined option regarding security, privacy, and access and availability factors. Public banks lead with the highest mean ranks across all three factors: Security Factor (SF) at 410.49, Privacy Factor (PF) at 410.46, and Access and Availability Factor (AAF) at 409.85, suggesting that customers perceive public banks to offer superior e-banking services in these domains. Private banks follow with lower mean ranks, and the option of both banking types ranks lowest, indicating a lesser perception of their effectiveness in these areas. This data suggests that public banks are viewed as more reliable and accessible, with better privacy protections in their e banking services, compared to their private counterparts and a combination of both.

Kruskal-Wallis Test of Financial and Insurance Schemes and Factors Associated with E Banking Services

Table 5: Kruskal-Wallis Test of Financial and Insurance Schemes and Factors Associated with E-Banking Services

S/N	Null Hypothesis	Chi Square	df	Asymp. Sig.	Result
1	There is no significant difference in the security factor between the e-banking services of public bank and private bank for financial and insurance schemes	16.39	2	0.00	Reject the Null Hypothesis
2	There is no significant difference in the privacy factor between the e-banking services of public bank and private bank for financial and insurance schemes	15.95	2	0.00	Reject the Null Hypothesis
3	There is no significant difference in the access and availability factor between the e-banking services of public bank and private bank for financial and insurance schemes	15.19	2	0.00	Reject the Null Hypothesis

The study's findings reveal significant differences in the perception of security, privacy, and access and availability factors associated with e-banking services between public and private banks. Public banks were consistently rated higher in mean ranks for all three factors—security, privacy, and access and availability suggesting that customers perceive public banks to offer better financial and insurance schemes in e-banking services. The Kruskal-Wallis test results further support these differences, with all three null hypotheses being rejected, indicating significant disparities across the factors examined. Given these results, it is recommended that private banks enhance their e-banking services by focusing on improving security, privacy, and access. Implementing advanced security protocols, ensuring user data privacy, and expanding service availability can potentially elevate their rankings and customer satisfaction levels to those of public banks. Additionally, both public and private banks should continue to innovate and adapt to the evolving needs of digital banking customers to maintain competitiveness and service excellence in the financial sector.

RECOMMENDATION

Based on the findings of this comprehensive study, it is strongly recommended that private banks in India invest significantly in enhancing their e-banking services to align more closely with customer expectations, particularly in the areas of security, privacy, and access and availability. By adopting advanced security measures, ensuring robust privacy protections, and expanding the accessibility of their e-banking platforms, private banks can improve customer

satisfaction and loyalty. Furthermore, both public and private banks should continue to innovate and tailor their financial and insurance schemes to meet the evolving needs of their customers, recognizing the importance of digital banking in today's increasingly online world. This strategic focus on customer-centric improvements is essential for private banks to remain competitive and for the banking sector as a whole to thrive in the digital era.

CONCLUSION

The study's implications suggest that private banks need to enhance their e-banking services by focusing on security, privacy, and accessibility to compete more effectively with public banks. By adopting advanced security measures, ensuring greater privacy protection, and expanding access and availability, private banks can align more closely with customer expectations and improve their competitive standing in the digital banking landscape. Moreover, the significant differences in perceptions regarding financial and insurance schemes between public and private banks indicate an area for improvement for private banks. Both public and private banks must continue to innovate and adapt to the evolving needs of digital banking customers to maintain service excellence and competitiveness. This study contributes to a better understanding of customer preferences in the rapidly growing e-banking sector in India and offers valuable insights for banks aiming to enhance their e-banking offerings.

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