

Unveiling the Digital Frontier: A Comparative Examination of E-Banking Offerings in India's Public and Private Banks

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ABSTRACT

The financial markets have changed drastically. As a result of financial sector reforms, the banking industry has been seriously shaken. The banks have cast off their traditional roles have been innovating, improving and creating new types of services to meet growing demands their existing and new customers' needs. In recent years, it has undergone major changes such as the incorporation of E-banking. E-banking offers and sends financial products or services by electronic means. The study is based on primary data collection and used this data to do a comparative study on the private sector and public sector banks. The objective of the study is to assess customer awareness of e-banking services by public and private banks, examine the association between bank types and service performance, and understand the overall customer perception of e-banking service quality by public and private sector banks. The analysis is done based on the demographic details of the participants to understand the versatility in people's choice. These choices are directly based on the different e-banking services provided by these banking sector. The significant association between the types of banks and the level of performance of different e-banking services like internet banking, mobile banking, ATM services using chi-square test. Then graphical representation of the analysis is also represented. The findings of the study suggests that most customers choose a bank for E-banking services due to their traditional bank account and efficient customer service. Most respondents use E-banking services like internet banking, mobile banking, and ATM services, and are satisfied with their respective banks' services. The study found that customers' choices are significantly influenced by the bank type therefore both private and public sector, may need to adjust their e-banking services or marketing strategies based on customer preferences, which could influence resource allocation, service enhancements, and customer engagement strategies within the banking institution. Thereby concluding that public and private sector banks are equally considered technologically advanced.

Keywords: E-banking, private bank sector, public bank sector, chi-square test

INTRODUCTION

The bank is an organization that accepts money for safekeeping, gives out credits, or engages in their management. This is a traditional setting whereby customers and the bank are in close interaction. Just as any service provider, banks learned of the significance of increased retention and improved profits by

meeting and exceeding customers' expectations. Several disadvantages existed within most economies when their banking systems were operated manually. These included very high costs and poor service delivery as most transactions took up so much time and required a large number of staff to handle them efficiently.

The advent of the Internet has initiated an electronic revolution in the global banking sector.

E-banking services play a pivotal role in the modern banking sector, revolutionizing the way customers access and manage their financial transactions. The major idea is to provide a series of services to the customer through the Internet, and make the customer comfortable with feel flexible in calling out simple tasks faster instead of making customer visit the bank every time. The Internet promised an ideal platform for commercial exchange, helping banks achieve new levels of efficiency in financial transactions by strengthening customer relationships, promoting price discovery and spend aggregation, and increasing their reach.

All countries in the world need banking for economic development since a sophisticated banking system is both the key and a gauge of a nation's economic health. Among the strongest and most prosperous sectors in our nation is the banking sector. The US banks are utilizing the Internet to take advantage of opportunities in three distinct areas: information marketing, banking product and service delivery, and customer relationship enhancement. Even though many Asian nations have strong Internet connections, security remains the main concern limiting the expansion of e-banking in the region. Another problem is having access to high-quality E-banking products. When compared to banks in industrialized nations, the majority of banks in Asia only provide the most basic services. However, it appears that e-banking will survive throughout Asia.

Banking sectors in India

The banking sector of India is a crucial component of the country's economy, playing a significant role in its growth and development. The banking sector in India can be broadly classified into two categories: scheduled banks and non-scheduled banks. Scheduled banks are those that are recognized by the Reserve Bank of India (RBI) and are included in the Second Schedule of the RBI Act, of 1934. These banks must comply with specific regulatory requirements and maintain certain standards to ensure the safety and stability of the banking system. Scheduled banks can further be categorized into commercial banks and cooperative banks. Commercial banks are made up of public sector banks, private sector banks, foreign banks, and Regional Rural Banks. These are profit-oriented financial institutions that provide a wide range of banking services to individuals, businesses, and industries. Cooperative banks, on the other hand, are member-owned cater to the financial needs of specific groups or areas, and are divided into urban and rural co-operative banks. There are currently 121 commercial banks in India, with 12 public sector banks, 22 private sector banks, 43 regional rural banks, and 44 foreign banks.

Non-scheduled banks, on the other hand, are those that are not included in the Second Schedule of the RBI Act, 1934 and do not enjoy the privileges and benefits offered to scheduled banks. These banks typically operate on a smaller scale and are less regulated compared to scheduled banks. However, they still play a significant role in providing banking services in certain regions or niche markets. Non-scheduled banks include regional rural banks, local area banks, and primary cooperative banks. These banks often cater to the financial needs of rural areas and agricultural sectors, contributing to financial inclusion and rural development.

E-banking in India

E-banking, also known as electronic banking otherwise called Online banking, or virtual banking, refers to the delivery of financial services through digital channels. In India, all banks offer e-banking services to their customers. E-banking means delivering different banking products and services using electronic and telecommunications networks or the Internet. With the help of e-banking, customers can access their accounts as well as they can perform various transactions using their computer, laptop, or mobile phone supported by an internet connection. Banks have been provided an opportunity through e-banking to determine the solutions to management-related issues such as saving time, money, and energy, minimizing or reducing paperwork, eliminating waiting in long queues, lack of communication, and lack of efficiency. A successful e-banking solution provides the following e-banking products and services: Automated Teller Machine (ATM), Credit card or Debit card or Smartcard, Mobile banking, Telephone banking, Internet or online banking, Electronic Fund Transfer (EFT), Immediate Payment Service (IMPS), Real Time Gross Settlement (RTGS) Electronic Clearing Services (ECS), Demat account, etc.

REVIEW OF LITERATURE

(Agrawal & Chauhan, 2017) “A Comparative Study of E-Banking in Public and Private Sectors Banks” The study's main goal was to determine how satisfied customers are with online banking services and how staff members feel about them in both public and private banks. The findings demonstrated that a large number of users, particularly in private banks, are utilizing the majority of e-banking services, supporting the view that private banks offer superior services to public ones. Regarding how attentive employees are to any of the available e-banking services, opinions vary.

(Chaturvedi & Kuckle, 2021) “E-BANKING SERVICES- A COMPARATIVE STUDY OF PUBLIC, PRIVATE & FOREIGN BANKS IN INDIA” The basis of this study is to find an association between the demographic influence of e-banking and type of bank, e-banking services provided versus type of bank. Based on the data, it appears that private banks have higher client satisfaction than public and foreign banks. They also discovered that a significant portion of the clients used e-banking services; nevertheless, only the elderly need assistance in comprehending how to use them.

(Diwan, 2021) “A Study on Customer’s Satisfaction Towards E-Banking Services (with Special Reference to Banking Customers of Bhopal City)” The study was conducted to understand customer satisfaction towards E-Banking services in Bhopal City, India while examining the relationship between security, convenience, and quality of E-Banking services and customer satisfaction. The study revealed that e-banking is more popular among women, young people, and urban residents than men, older people, and rural residents. ATM and mobile banking are more widely used than internet banking, and convenience and security are the main factors affecting customer satisfaction with e-banking services. The study identifies network issues as the main risk of using internet banking and suggests that e-banking services need to improve their reliability, accessibility, and awareness among potential customers.

(Kathi, 2013) “A Study of Awareness of E-Banking Services in India” This study was conducted to know about the customers, in relation to the satisfaction, awareness, benefits, preferences, security, and education provided by e-banking services. It was found that most of the respondents were aware of internet banking services and their benefits, but many were not satisfied with the security and education provided by their banks. Many people preferred using Internet banking over conventional banking and valued the transparency, speed, convenience, and time saving aspects of it and many expressed interest in various e-banking services, such as money transfers, bill payments, fixed deposits, demand drafts, chequebooks and

stop payments.

(Sagar, 2023) “COMPARATIVE STUDY OF E-BANKING SERVICES BY PUBLIC AND PRIVATE SECTOR BANKS OF INDIA” The findings include the level of awareness, performance, satisfaction, and perception of e-banking services by the respondents, as well as the comparison of public and private sector banks on various aspects of e-banking. The author also reports the results of the chi-square tests of independence between different demographic variables and e-banking-related variables. The study concluded that e-banking services have become an essential part of banking operations and customer satisfaction in India and also that private sector banks are more efficient, better in performance and satisfaction, and more preferred by the customers than public sector banks.

(Thomas, 2022) “A COMPARATIVE STUDY ON E-BANKING SERVICES OF PUBLIC SECTOR AND PRIVATE SECTOR BANK WITH SPECIAL REFERENCE TO SBI AND HDFC BANK” This study aimed to find the relationship between the satisfaction

level with e-banking services and the problems faced by the customers of public sector banks with that of private sector banks. The results showed many SBI bank users are more than the HDFC bank users and most of them were aware of the e-banking services. The main reasons for some of them not having an internet bank account were security concerns and complexity. The main influencing factors to open an internet bank account were self-motivation, advertisement, friends, and the internet. The most preferred net banking services were bill payments for SBI customers and inter-account transfers for HDFC customers. The main problem encountered by customers through ATM services was the maximum withdrawal limit. It was clear that both the private and public sector banks are equally advanced in technology.

OBJECTIVE OF THE STUDY

1. To identify the awareness among customers regarding various e-banking services by the banks.
1. To study the relationship between types of banks and the level of performance of different e-banking services.
2. To understand the overall customer perception towards the service quality related to e-banking services by public and private sector banks.

RESEARCH HYPOTHESIS

H_0 (null hypothesis): There is no significant association between types of banks and the level of performance of different e-banking services.

H_1 (alternate hypothesis): There is a significant association between types of banks and the level of performance of different e-banking services.

DATA COLLECTION

- The data collected is primary data with a sample size of 40
- The primary data was collected by circulating a link to the questionnaire which was prepared using Google Form. This link to sent to participants who were from PES College, Bangalore. Their participation was done voluntarily and with consent.

SCOPE OF THE STUDY

- The study was conducted using primary method where the data is collected from customers who are using e-banking services of public and private sector banks.
- This study provides information that would help the management of the public and private sector banks to re-design their e-banking services in order to retain its existing customers and to attract new ones in today’s competitive environment.

LIMITATIONS OF THE STUDY

- This study was conducted in PES college, Bangalore and only 40 people participated out of the large population.
- This can't be used as a reference to other regions, and can't be generalized.

DATA REPRESENTATION AND INTERPRETATION

1. GENDER OF RESPONDENTS

Table 1. Representing gender wise classification

Gender	Percentage of respondents (%)
Female	69
Male	31
Total	100

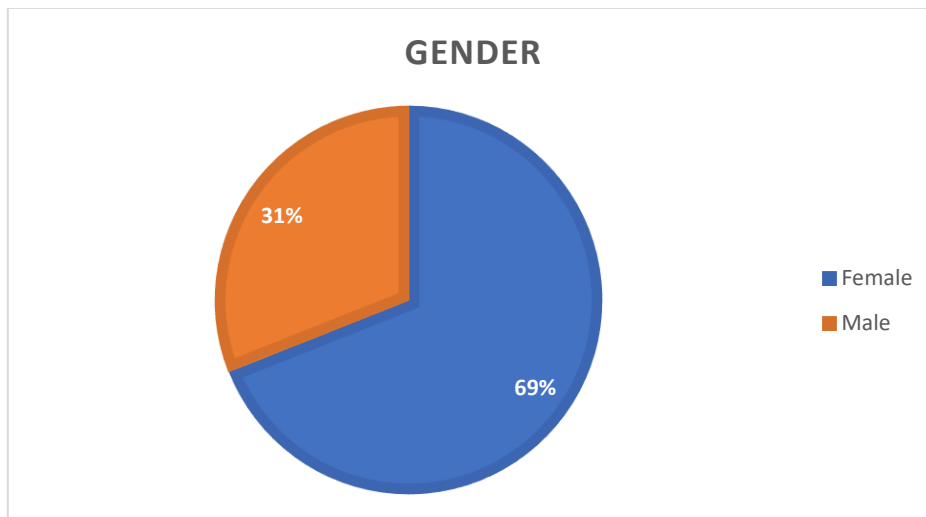


Figure 1: Gender

Interpretation: From the above table and figure it was found that majority of respondents are female. Out of 100 respondents, 69% are female and 31% of them are male.

2. AGE OF RESPONDENTS

Table 2. Age-wise Distribution of Respondents

Age	Percentage of respondents%
18-20	5
20-22	65
23-25	25
above 25	5
Total	100

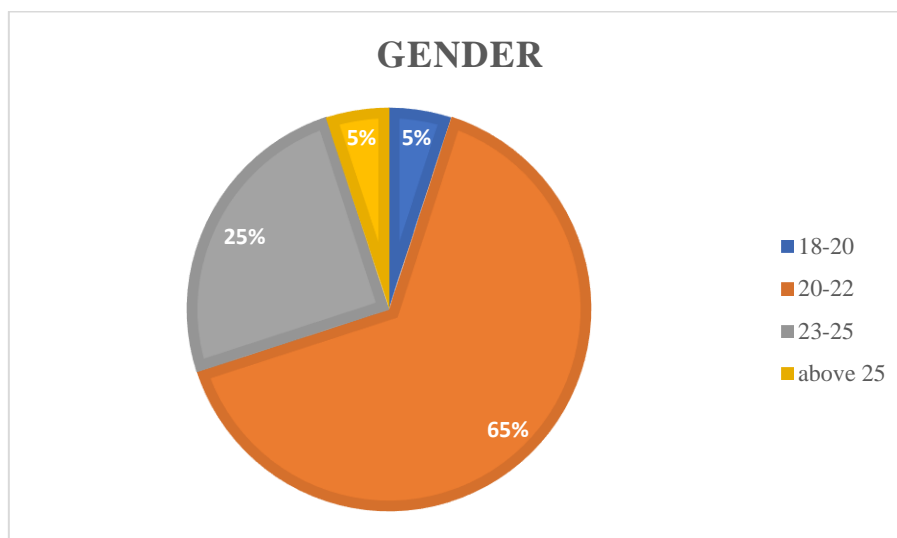


Figure 2. Age-wise Distribution of Respondents

Interpretation: From the above data, it is observed that number of respondents belonging to 18-20 years is 2 (5%), while 20-22 years is 25 (62.5%), then 23-25 years is 11 (27.5%), and above 25 years is 2 (5%). It shows that maximum user of e-banking service belongs to the age group of 20-22 years and 23-25 years, as they are easily use to with technology and e-banking services and also, they prefer very rarely towards visiting bank branch physically.

3. NO. OF RESPONDENTS HOLDING DIFFERENT TYPE OF BANK

Table 3. No. of respondents holding different type of bank

Type of bank	Percentage (%)
Private sector bank	51
Public sector bank	49
Total	100

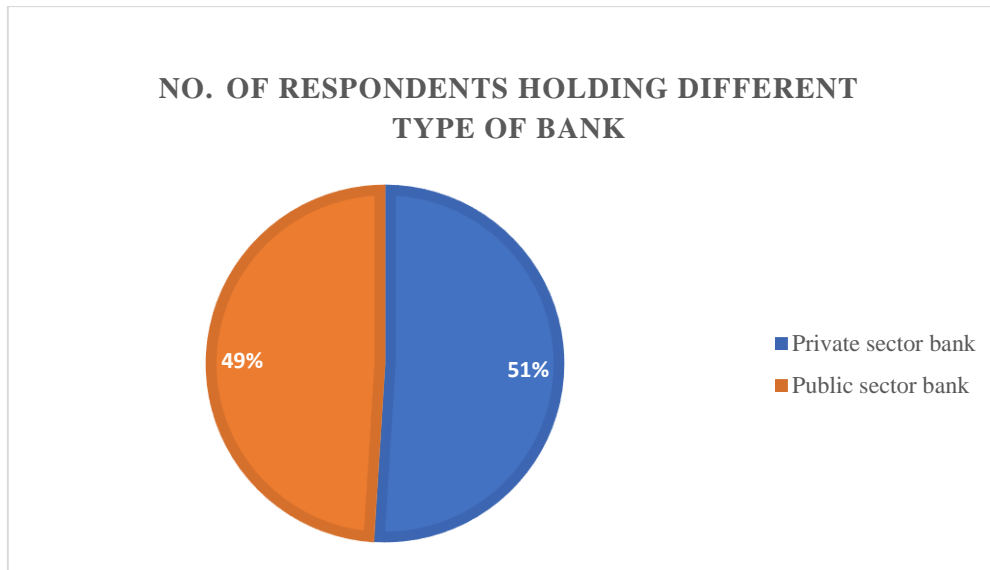


Figure 3. Type of bank

Interpretation: In the above data, 51% of the respondents hold account in private banks whereas 49% of the respondents hold account in public banks.

4. RESPONDENT’S NUMBER OF YEARS HAVING ACCOUNT WITH THE BANK

Table 4. Respondent’s number of years having account with the bank

Number of years having account with bank	Private sector bank%	Public sector bank%	No. of respondents%
Less than 2 years	33.3	16	25
2-4 years	37.3	39	38
Above 4 years	29.4	45	37
Total	100	100	100

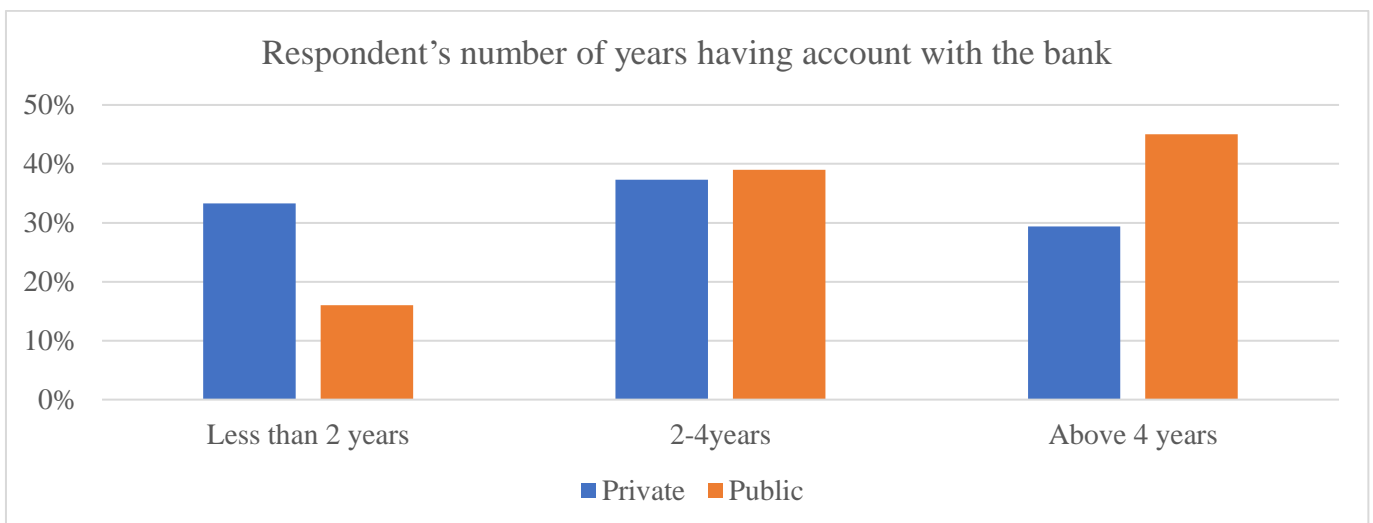


Figure 4. Respondent’s number of years having account with the bank

Interpretation: From the above data it shows that 25% use online banking services for less than two years, 38% use them between two and four years, 37% use them above 4 years.

No. of years using e-banking service	Private sector bank%	Public sector bank%	No. of respondents%
Less than 2 years	45	64	54
2-4 years	26	18	22
Above 4 years	29	18	24
Total	100	100	100

Table 5. Respondents number of years using e-banking service

5. RESPONDENTS NUMBER OF YEARS USING E-BANKING SERVICE

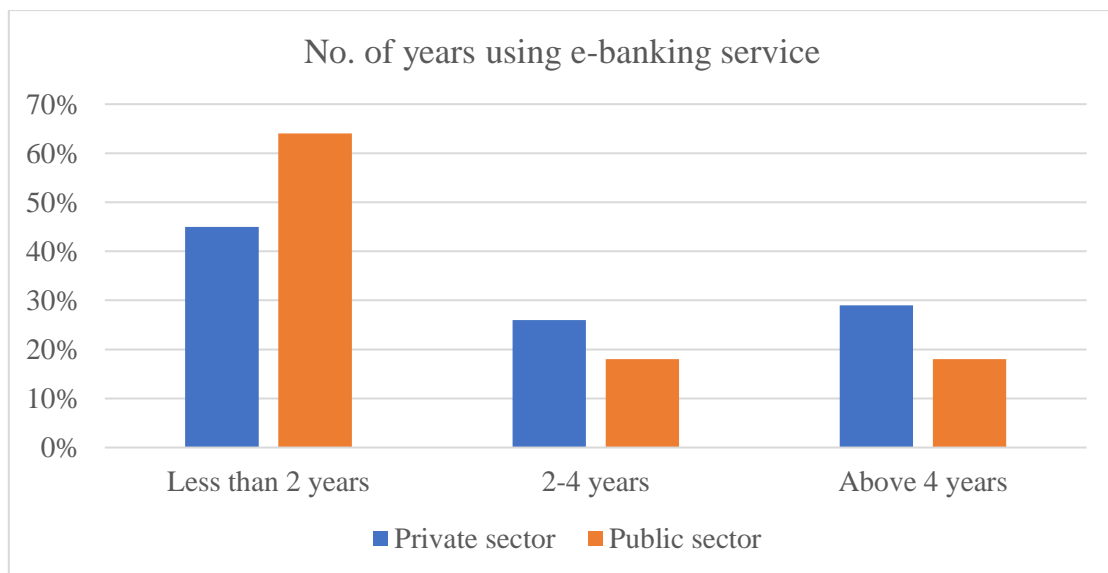


Figure 5. Respondents number of years using e-banking service

Interpretation The information above demonstrates how long respondents' banks' e-banking services have been used. 54% of respondents use e- banking services for less than two years, 22% use them between two and four years, 24% use them for more than 4 years.

COMPARISON OF VARIOUS E-BANKING SERVICES OF PUBLIC AND PRIVATE SECTOR BANKS

6. INTERNET BANKING

Table 6. Comparison of internet banking services of public and private sector bank

Internet banking	Private sector bank%	Public sector bank%	No of respondents%
Very good	15.6	27	21
Good	72.5	43	58
Fair	11.7	12	12

Poor		0	6	3
Very poor		0	12	6
Total		100	100	100

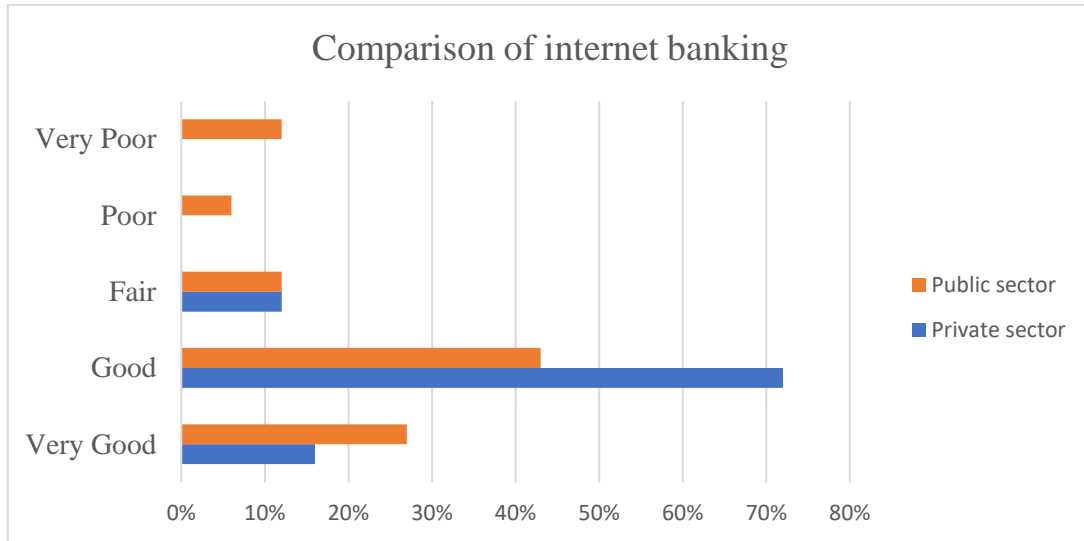


Figure 6. Comparison of internet banking services of public and private sector bank

Interpretation: Above table and chart show the comparison of performance of internet banking service between public and private sector banks. Here it shows that private sector has better and fair rating as compared to public sector banks. While public sector has got more very good rating. Also, private sector banks got no poor or very poor rating. From the data we can henceforth analyse that both have good internet banking services.

7.MOBILE BANKING

Table 7. Comparison of mobile banking services of public and private sector banks

Mobile banking	Private sector bank%	Public sector bank%	No. of respondents%
Very Good	25	39	32
Good	75	31	53
Fair	0	12	6
Poor	0	6	3
Very poor	0	12	6
Total	100	100	100

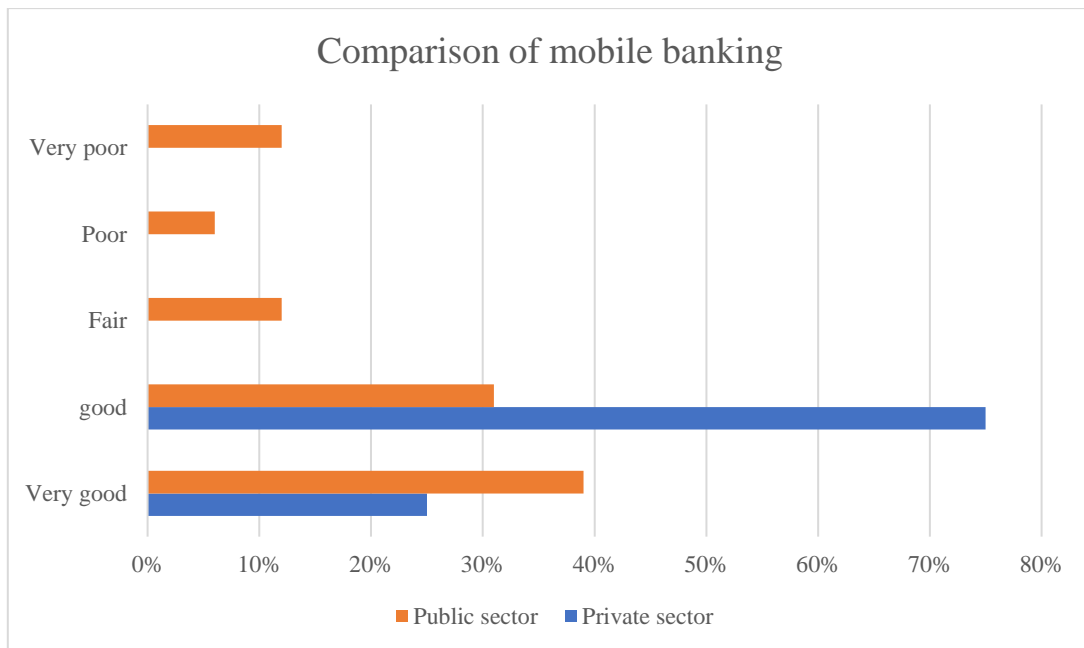


Figure 7. Comparison of mobile banking services of public and private sector banks

Interpretation: Above table and chart show the comparison of performance of mobile banking service between public and private sector banks. Here it shows that private sector has more good rating as compared to public sector banks. While public sector has got more very good and fair rating. The private sector banks got no fair, poor or very poor rating and public sector banks got no very poor ratings. From this we can analyse that private banks have good mobile banking services.

8. ATM

Table 8. Comparison of ATM service of public and private sector banks

ATM service	Private sector bank%	Public sector bank%	No. of respondents%
Very good	22	24.4	23
Good	67	41	54
Fair	11	22.4	17
Poor	0	12.2	6
Very Poor	0	0	0
Total	100	100	100

Interpretation: Above table and chart show the comparison of performance of ATM banking service between public and private sector banks. Here it shows that private sector has more very good, good rating as compared to public sector banks. While public sector has got more fair rating. The private sector banks got no poor and very poor rating but the public sector has poor rating. From this we can analysis that the ATM services provided by private is better than public banks.

HYPOTHESIS TESTING

Hypothesis testing is a statistical procedure used to make inferences about population parameters based

on sample data. The methodology employed by the analyst depends on the nature of the data used and the reason for the analysis.

Statistical analyst tests a hypothesis by measuring and examining a random sample of the population being analysed. All analysts use a random population sample to test two different hypothesis: the null hypothesis and the alternative hypothesis

The null hypothesis (H_0) assumes that any observed difference or relationship between variables is due to chance, while the alternative hypothesis (H_1) proposes that there is a genuine effect or relationship.

THE LEVEL OF PERFORMANCE OF DIFFERENT E-BANKING SERVICES

In order to test whether there is significant difference between level of performance of different e-banking services provided by public and private sector banks, following hypothesis is formulated.

1.TYPE OF BANK AND INTERNET BANKING

H_0 (null hypothesis): There is no significant association between types of banks and Internet banking.

H_1 (alternate hypothesis): There is a significant association between types of banks and Internet banking.

Observed value table

Type of bank	Internet banking					
	Very good	Good	Fair	Poor	Very poor	Total
Private sector bank	8	37	6	0	0	51
Public sector bank	13	21	6	3	6	49
Total	21	58	12	3	6	100

Expected value table

Type of bank	Internet Banking					
	Very good	Good	Fair	Poor	Very poor	Total
Private sector bank	10.71	29.58	6.12	1.53	3.06	51
Public sector bank	10.29	28.42	5.88	1.47	2.94	49
Total	21	58	12	3	2	40

By using the chi-square formula,

p-value=0.005681181

Degree of freedom=1

Level of significance = α =0.05

p-value < 0.05

Since, the calculated value is lesser than level of significance, we reject null hypothesis and accept the alternate hypothesis.

Therefore, there is a significant association between types of banks and internet banking.

2.TYPES OF BANKS AND MOBILE BANKING

H_0 (null hypothesis): There is no significant association between types of banks and Mobile banking.

H_1 (alternate hypothesis): There is a significant association between types of banks and Mobile banking.

Observed value table

Types of banks	Mobile banking					
	Very Good	Good	Fair	Poor	Very poor	Total
Private sector bank	13	38	0	0	0	50
Public sector bank	19	15	6	3	6	49
Total	32	53	6	3	6	100

Expected value table

Types of banks	Mobile banking					
	Very Good	Good	Fair	Poor	Very poor	Total
Private sector bank	16.32	27.03	3.06	1.53	3.06	50
Public sector bank	15.68	25.97	2.94	1.47	2.94	49
Total	13	22	3	2	0	40

By using the chi-square formula,

p-value= 0.00003054

Degree of freedom=1

Level of significance = $\alpha = 0.05$

p-value < 0.05

Since, the calculated value is lesser than level of significance, we reject null hypothesis and accept the alternate hypothesis.

Therefore, there is significant association between types of banks and mobile banking.

3. TYPES OF BANKS AND ATM SERVICE

H₀(null hypothesis): There is no significant association between types of banks and ATM Service.

H₁(alternate hypothesis): There is a significant association between types of banks and ATM Service.

Observed value table

Types of banks	ATM services					
	Very good	Good	Fair	Poor	Very poor	Total
Private sector bank	11	34	6	0	0	51
Public sector bank	12	20	11	6	0	49
Total	23	54	17	6	0	100

Expected value table

Types of banks	ATM services					
	Very good	Good	Fair	Poor	Very poor	Total
Private sector bank	11.73	27.54	8.67	3.06	0	51
Public sector bank	11.27	26.46	8.33	2.94	0	49
Total	23	54	17	6	0	100

By using the chi-square formula,

$p\text{-value}=0.011155268$

Degree of freedom=1

Level of significance = $\alpha =0.05$

$p\text{-value} < 0.05$

Since, the calculated value is less than level of significance, we reject null hypothesis and accept the alternate hypothesis.

Therefore, there is significant association between types of banks and ATM service.

FINDINGS

- The majority 69% of respondents are female and 31% are male respondents out of 40 respondents.
- The age group 20-22 is the largest group representing 65% of the respondents followed by 25% of respondents who belong to the age group of 23-25
- Among the overall percentage of the customers whose having bank account in private sector banks is 51% and 49% in public sector banks.
- The study reveals the major influencing factors to open an internet bank account such as self – motivation followed by advertisement, friends and internet.
- The study reveals that majority of customers of both banks have been using E- banking for less than 2 years.
- Most of the customers select the particular bank for E- banking services because of holding traditional bank account in the same bank and efficient customer services.
- Majority of respondents uses some of the E-banking services like internet banking, mobile banking, ATM services, etc., and most of the users are very much satisfied with the services of their respective banks.
- It's possible that in the context of internet banking, mobile banking and ATM service usage, customers' choices are not significantly influenced by whether a bank is private or public sector. This was found by using chi square statistical tool.
- Chi square statistical tool suggests that customers' choices are significantly influenced by bank type. Both private and public sector, may need to tailor their e- banking services or marketing strategies based on the preferences or behaviours observed in their customer base. This association could influence decision-making processes related to resource allocation, service enhancements, or customer engagement strategies within banking institutions.
- The study thus concludes that public sector banks and private sector banks are equally considered as technologically advanced.

Conclusion

One of the biggest changes to the worldwide banking industry is the availability of e-banking services. Over the past ten years, the introduction of numerous e-banking services to all consumer categories in India has given this concept a greater chance of succeeding. The research has attempted to examine the e-banking services offered by banks in the public and private sectors in light of this concept. This study offers data on how a sizable portion of consumers use e-banking services for convenience and benefit. Within the banking sector, contemporary banking services are seen as a novel phenomenon that aim to

expand client satisfaction and boost business by exploring new avenues for success and development. The study's findings indicate that consumers' perceptions of the e-banking services and products offered by public and private sector banks differ significantly. Consumers believe that private banks have better technology advancements than public ones. In order to meet the expectations of their clients, public sector banks must thus step up and advance in terms of using the newest technology and providing a range of e-banking products with excellent customer care.

To make e-banking more popular, banks need to segregate customers based on demographic preferences (e.g. age, gender, occupation, etc.) and personalize offers e-banking services according to their needs and requirements. Bankers need to educate and train their customers, they can also use video presentations at bank branches. There should be seminars/workshops/discussions on the healthy use of e-banking, especially for those who do not know how to use ATMs or computers. With increasing competition and pressure to cut costs, banks must attract and retain customers by creating, maintaining and introducing attractive e-banking features.

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