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International Journal in Management and Social Science
Volume 13 Issue 02, February 2025 ISSN: 2321-1784 Impact Factor: 8.088
Journal Homepage: http://ijmr.net.in, Email: irjmss@gmail.com
Double-Blind Peer Reviewed Refereed Open Access International Journal

E-BANKING AND BANK PROFIT: DOES INCREASED CUSTOMER ADOPTION LEAD TO FINANCIAL GAINS?

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ABSTRACT

The financial services sector has been revolutionized due to the explosive rise of electronic banking, or e-banking, which has changed how banks conduct business and how their clients engage with them. This study investigates the effect of growing consumer use of e-banking services on bank profit. This study examines whether increased e-banking usage results in quantifiable financial gains by examining data from a public sector (PNB) and a private sector (ICICI) bank that has adopted digital channels. It assesses the correlation between the active number of mobile and internet banking customers and the chosen bank's profit for two years.

The results indicate that implementing e-banking has a favorable impact on profit through Mobile banking and Internet banking channels. The study points out the reasons for the shift in banking services from traditional methods to online banking methods and the effect of digitalized services on banking. The findings show that, although e-banking adoption may increase profitability, the resulting financial benefits depend on efficient cost control, client engagement tactics, and ongoing innovation.

This study advances knowledge of the digital transformation of banking and offers insightful information to financial organizations looking to use e-banking to boost their bottom line. To maximize profitability in the digital age, the report emphasizes banks' need to take a balanced approach, fusing customer-focused initiatives with technology improvements.

Keywords: E-banking and profit, digital transformation, PNB, ICICI

INTRODUCTION

Technological developments and the emergence of digital solutions have caused a significant transformation in the banking sector in recent years. The rise of electronic banking, or e-banking, which includes digital wallets, ATMs, online and mobile banking, and other electronic channels, is one of the most important advancements in this field. With the ability to perform transactions, manage accounts, and access financial services effectively and conveniently from personal devices, e-banking has completely transformed how consumers engage with banks.

There are concerns about how these digital solutions may affect banks' profitability with the frequent use of e-banking services. By eliminating the need for physical branches and employees, automating repetitive processes, and improving operational efficiency, e-banking can save money. However, the transition to digital banking necessitates large expenditures in cybersecurity, customer service, and technology infrastructure. Fintech firms and digital-only banks are also becoming more competitive, which might affect banks' traditional revenue sources.

The purpose of this study is to examine how e-banking customers affect the bank profit of PNB and ICICI banks while understanding the effect of e-services on banking. It looks at the reasons for the shift from traditional banking to modern banking, such as technological advancement, changing customer expectations, cost efficiency, competitive pressure, the impact of the COVID-19 Pandemic, and regulatory support. This study aims to shed light on these variables to determine how much e-banking adds to a bank's bottom line and how banks might use digital platforms to increase profitability in an increasingly digitalized environment.

LITERATURE REVIEW

1. Rani, Neha (2019) "Impact of e-banking on operational performance and service quality of public and private sector banks in India." The goal of this research is to investigate how e-banking affects the financial performance of banks in the public and private sectors, employee work-life balance, and service quality. It also makes recommendations for actions to enhance the operational efficiency of Indian banks, both public and private.

2. Jain, Neha (2018) "Evaluation of e-banking service- A comparative study of SBI and ICICI bank". Customer views of banking services are the subject of this inquiry for the assessment of e-banking services. It explains the degree of satisfaction with suggestions made to

enhance emerging banking trends. The results of the comparison between SBI and ICICI Banks concluded that e-banking products and services showed that private bank clients are happier than those of public banks.

3. Jain, Megha Arun Kumar (2017) "An analytical study of e-banking services provided by nationalized and private sector banks in Ahmednagar district. “The goal of this investigation is to examine the issues that consumers encounter when using e-banking services as well as the challenges that private and nationalized banks encounter when offering e-services. It also aims to ascertain how well-informed consumers are about financial services and the protection and security afforded to their private data when utilizing them.

4. Sharma, Surabhi, (2016) "Role of e-commerce technologies in the banking industry in India." Through e-commerce operations at the public sector State Bank of India and the private sector Kotak Mahindra Bank, the researcher in this study emphasized the advantages and difficulties faced by the Indian banking industry. This study explains the history of Indian banking, including the evolving circumstances following computerization and the creative banking practices brought about by the advancement of information technology in India.

OBJECTIVES

- To understand the importance of electronic banking services.
- To know the effect of e-services on banking.
- To comprehend the shift in banking services from traditional banking to electronic banking.
- To analyze whether the modern banking approach affects the profit of banks.

RESEARCH METHODOLOGY

This research is the qualitative and quantitative study of PNB and ICICI Banks. It is descriptive and analytical by nature. The study covers the descriptive knowledge of the topic along with the statistical analysis to emphasize the results derived.

Reasons for a shift in banking services from traditional to modern services.

1. Technological advancement: The development in technology has enabled banks to provide digital platforms for digital transaction services. The widespread use of smartphones has enabled the penetration of banking services among a larger population. The convenience and accessibility

of transactions on the spot and of larger amounts with secured biometric verification and two-factor authentication have built customer trust in online banking services.

2. Changing customer expectations: The changing environment changes customers' needs. The presence of online services makes customers expect banking services 24/7. Fund transfers, balance checks, loan applications, investment services, etc., can be done at a click without visiting a branch. Using artificial intelligence for tailored recommendations and customized financial products enhanced the customer experience on banking platforms.

3. Cost efficiency for banks: The banks benefit from the reduction in operational costs. The increased online services led to a reduction in physical branches and staff for in-person relations. Automating routine processes like fund transfers, account management, and loan approvals helps save operational expenses and improves the accuracy of work. Since the internet makes connections in far regions and globally, therefore banks could even reach remote areas without their physical presence, making it cost-effective and reducing the digital divide.

4. Competitive pressure: The emergence of fintech companies has brought tough competition for the banking sector. The innovation in banking facilities with user-friendly services has compelled banks to update to hold their stake. Globalization has given access to international banks and financial services through digital platforms. Young and tech-savvy customers prefer digital solutions to problems. Thus motivating local and regional banks to accept the innovative facilities.

5. Impact of COVID-19 pandemic and regulatory support: COVID-19 became the acceleration point of digitalization. Building contactless relations and avoiding visits to physical branches has expedited the digitalization process. Moreover, the government’s and central bank's policies for developing digital banking, for the growth of the economy as part of financial inclusion have provided regulatory support to the digital infrastructure. Digital platforms enable banks to manage regulatory requirements through digital compliance and reporting.

Effect of e-services on banking

1. Enhanced Customer Convenience and Accessibility: Customers now get 24/7 e-banking services without visiting a bank. Even services like opening bank accounts, applications, and sanctioning of loans could be accessed in remote areas. The e-services are conveniently available

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on mobile banking, internet banking, and ATM platforms. Further introduction of facilities like NEFT, RTGS, IMPS, etc. has aided in popularizing electronic banking services.

2. Improved Operational Efficiency and Cost Reduction for Banks: The onset of Internet banking brought a reduction in physical branches and staff, lowering operational costs like salary, rent, and utility costs. On the other hand, it widened the area of reach through internet connectivity and improved the service quality. Regular processes like fund transfers, bill payments, and balance inquiries are made automatically, hampering productivity. Thus improving efficiency and reducing human errors.

3. Increased Customer Satisfaction and Retention: The most important feature of e-services is their personalized and tailored service. Banks offer customized financial services and provide recommendations on products. Further different online platforms and mobile apps smoothen the banking process and improve customer experience. The availability of real-time support and query solutions through live chats, immediate notifications, and transaction alerts improves customer trust and satisfaction. It also improves customer retention rate.

4. Improved Security and Fraud Detection: Electronic services have enhanced measures for cybersecurity like encryption, biometric authentication, and two-factor authentication restricting unauthorized access. Two-factor verification aids the security of transactions. Real-time transaction monitoring and instant notification to customers enable them to detect fraudulent activities. Thus, avoiding suspicious activities and reducing potential losses.

5. Increased Competition and Innovation: The innovation of electronic banking brought a shift from traditional to modern banking methods. Developed technology and business process models like Fintech and startups have put pressure on traditional banks to accept digital platforms. The adoption of innovative technology like artificial intelligence, virtual assistants, and Robo-advisors enables banks to stay competitive and meet customer expectations.

Profile of PNB and ICICI bank

Founded in 1894, Punjab National Bank (PNB) is among the biggest and oldest public sector banks in India. PNB, which has a long history in Indian banking, offers a variety of financial services, such as asset management, treasury services, and retail and corporate banking. It serves a wide range of customers, particularly in rural and semi-urban areas, with a vast network of branches and ATMs throughout India and a few overseas. To remain competitive, PNB has concentrated on digital projects, including Internet banking and mobile banking (PNB ONE) in recent years. However, it has to deal with issues like managing non-performing assets (NPAs) and adjusting to the digital transition because it is a public sector bank.

One of India's top private sector banks, ICICI Bank was established in 1994 and is renowned for its creativity and customer-focused philosophy. It provides a broad range of goods and services, such as wealth management, insurance, business and personal banking, and more. Internet banking, mobile banking, and artificial intelligence-based customer support are just a few of the digital banking technologies that ICICI Bank is renowned for having adopted early. One of the most profitable banks in India, ICICI Bank stands apart in a highly competitive industry by concentrating on extending its digital offerings and improving customer experience. The bank has a significant presence in India and is expanding internationally.

Statistical analysis of data

Table 1: ICICI and PNB banks' profit and number of active customers

	ICICI	ICICI	PNB	PNB
YEARS	**PROFIT**	**NO. OF ACTIVE CUSTOMERS USING MOBILE BANKING**	**PROFIT**	**NO. OF ACTIVE CUSTOMERS USING MOBILE BANKING**
2022-2023	755,678,356	169,456,425	25,072,049	8,749,130
2023-2024	972,452,577	190,097,730	8244,61,55	13,781,888

Source: website.rbi.org.in/web/rbi/statistics/data-releases

MOBILE BANKING: Following is the statistical analysis of the number of active mobile banking customers and the profits of ICICI and PNB banks.

1. Correlation between the number of active mobile banking customers and profit of ICICI Bank.

H0: Mobile banking users do not significantly affect ICICI Bank's profit.

H1: Mobile banking users significantly affect ICICI Bank's profit.

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Correlations

		ICICI POFIT	ICICI CUSTOMER
ICICI POFIT	Pearson Correlation	1	1.000**
	Sig. (2-tailed)		.
	N	2	2
ICICI CUSTOMER	Pearson Correlation	1.000**	1
	Sig. (2-tailed)	.	
	N	2	2

**. Correlation is significant at the 0.01 level (2-tailed).

The table shows the result of the correlation, statistically derived from SPSS between profit and the number of active mobile banking customers of ICICI Bank.

- Pearson correlation: In this table, the correlation between ICICI profit and ICICI customers is 1.000, which indicates a perfect positive correlation. This implies that as the number of customers increases, the profit also increases at a directly proportional rate.
- Significance (2-tailed): A "**" at the 0.01 level denotes a highly significant correlation. It indicates a less than 1% chance that this result is due to random variation.
- Sample size: The sample size (N) is 2. Typically, a large sample size is required for statistically effective analysis. Therefore, the sample size of 2 is a very small size for deriving a reliable statistical analysis.

Conclusion: The table shows that there is a perfect positive and statistically significant correlation between profit and the number of active customers of ICICI Bank. However, the sample size is small therefore, the interpretation is done cautiously.

2. Correlation between the number of active mobile banking customers and profit of PNB Bank.

H0: Mobile banking users do not significantly affect PNB Bank's profit.

H1: Mobile banking users significantly affect PNB Bank's profit.

Correlations

		PNB POFIT	PNB CUSTOMER
PNB POFIT	Pearson Correlation	1	1.000**
	Sig. (2-tailed)		.
	N	2	2
PNB CUSTOMER	Pearson Correlation	1.000**	1
	Sig. (2-tailed)	.	
	N	2	2

**. Correlation is significant at the 0.01 level (2-tailed).

The table shows the result of the correlation, statistically derived from SPSS between profit and the number of active mobile banking customers of PNB Bank.

- Pearson correlation: In this table, the correlation between PNB profit and PNB customers is 1.000, which indicates a perfect positive correlation. This implies that as the number of customers increases, the profit also increases at a directly proportional rate.
- Significance (2-tailed): A "**" at the 0.01 level denotes a highly significant correlation. It indicates a less than 1% chance that this result is due to random variation.
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Conclusion: The table shows that there is a perfect positive and statistically significant correlation between profit and the number of active customers of PNB Bank. However, the sample size is small therefore, the interpretation is done cautiously.

INTERNET BANKING: Following is the statistical analysis of the number of active Internet banking customers and the profit of ICICI and PNB banks.

Table 1: ICICI and PNB bank profit and number of active customers

	ICICI	ICICI	PNB	PNB
YEARS	**PROFIT**	**NO. OF ACTIVE CUSTOMERS USING INTERNET BANKING**	**PROFIT**	**NO. OF ACTIVE CUSTOMERS USING INTERNET BANKING**
2022-2023	755,678,356	54,080,992	25,072,049	8,377,724
2023-2024	972,452,577	50,690,963	8244,61,55	7,549,314

Source: website.rbi.org.in/web/rbi/statistics/data-releases

3. Correlation between the number of active Internet banking customers and profit of ICICI Bank.

H0: Internet Banking users do not significantly affect ICICI Bank's profit.

H1: Internet banking users significantly affect ICICI Bank's profit.

Correlations

		ICICIPOFIT	ICICI CUSTOMER
ICICIPOFIT	Pearson Correlation	1	-1.000**
	Sig. (2-tailed)		.
	N	2	2
ICICI CUSTOMER	Pearson Correlation	-1.000**	1
	Sig. (2-tailed)	.	
	N	2	2

**. Correlation is significant at the 0.01 level (2-tailed).

The table shows the result of the correlation, statistically derived from SPSS between profit and the number of active Internet banking customers of ICICI Bank.

- Pearson correlation: In this table, the correlation between ICICI profit and ICICI customers is -1.000, which indicates a perfect negative linear relationship. This implies that as the number of customers increases, the profit decreases in a perfectly proportional manner. However, this is an unusual and extreme relationship, as it implies that customer numbers and profits are inversely and perfectly related, which might not be typical in a real-world scenario.
- Significance (2-tailed): A "**" at the 0.01 level denotes a highly significant correlation. It means there is strong statistical evidence to support this relationship.
- Sample size: The sample size (N) is 2. Typically, a large sample size is required to draw a strong statistically significant analysis. Therefore, a sample size of 2 may mislead the correlation results.

Conclusion: The table shows that there is a significant, perfect negative correlation between profit and the number of active customers of ICICI Bank. However, the sample size is small therefore, the interpretation is done cautiously.

4. Correlation between the number of active Internet banking customers and profit of PNB Bank.

H0: Internet banking users do not significantly affect PNB Bank's profit.

H1: Internet banking users significantly affect PNB Bank's profit.

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Correlations

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	N	2	2
ICICI CUSTOMER	Pearson Correlation	-1.000**	1
	Sig. (2-tailed)	.	
	N	2	2

**. Correlation is significant at the 0.01 level (2-tailed).

The table shows the result of the correlation, statistically derived from SPSS between profit and the number of Internet banking customers of PNB Bank.

- Pearson correlation: In this table, the correlation between PNB profit and PNB customers is -1.000, which indicates a perfect negative linear relationship. This implies that as the number of customers increases, the profit decreases in a perfectly proportional manner. However, this is an unusual and extreme relationship, as it implies that customer numbers and profits are inversely and perfectly related, which might not be typical in a real-world scenario.
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Conclusion: The table shows that there is a significant perfect negative correlation between profit and the number of active customers of PNB Bank. However, the sample size is small therefore, the interpretation is done cautiously.

LIMITATIONS

- The data used is secondary data based on customer preferences and not primary data.
- There is availability of only two years of data. Thus it may not be a correct approach to driving to a conclusion.
- The study may not capture the applicability of recent changes because the effect of changing methods will be derived at a later time.

- The study is between a public and a private sector bank and not in public-public or private-private sector banks. This does not create a homogeneity in the study.

Reasons for decline in profits.

2022-2023

- PNB: Faced challenges from global economic uncertainty, rising interest rates, and inflation, which led to slow credit growth and higher provisioning for NPAs.
- ICICI Bank: ICICI Bank’s diversified income streams and lower NPA ratio allowed it to maintain profitability. Rising interest rates slightly boosted net interest margins (NIMs) for ICICI, supporting profits.

2023-2024

- PNB: PNB struggled with operational costs, digital transformation expenses, and remaining legacy NPAs, which weighed on profitability. Competition from private banks further eroded its market share.
- ICICI Bank: ICICI continued to see strong growth, driven by a focus on retail lending, digital banking, and fee-based income. Its leaner operational model allowed it to be more profitable compared to PNB.

CONCLUSION

The purpose of this study is to investigate the connection between bank profit and the number of active customers of e-banking services. According to the results, e-banking generally improves a bank's financial performance by lowering operating expenses, increasing client convenience, and improving efficiency. Banks can increase their reach, decrease their dependency on physical branches, and streamline operations as more and more consumers conduct business through digital channels, all of which could result in financial gains.

However, to draw in and keep consumers, traditional banks must constantly innovate and improve their e-banking services due to the growing competition from fintech firms and digital-only banks. In addition to growing their digital platforms, banks should prioritize customer-centric digital experiences, maximize operational efficiency, and consistently invest in security and innovation. In a highly competitive digital market, banks can optimize the economic benefits of e-banking by striking a balance between cost control, customer engagement, and technological progress. In addition to providing insights for banks looking to leverage e-banking as a driver of sustainable financial growth, this research adds to our understanding of the digital transformation occurring in the banking industry.

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