

Does Electronic Banking Improve the Bank Performance of Indian Public Sector Banks: A Study of Post Covid Scenario

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Abstract

The research is to see how E-banking affects the performance of a bank. As a measure of the electronic method of transactions, we used credit cards, debit cards, National Electronic Fund Transfer (NEFT), Real Time Gross Settlement (RTGS), and Point of Sale (POS), while Return on Assets (ROA) was used as a metric of profitability. The research focuses on India's top ten public sector banks, as determined by market capitalization. The findings reveal that digital payment instruments considerably influence return on assets, indicating that internet banking might help banks increase their profitability. Furthermore, the study shows that electronic banking has a significant favorable influence on bank profitability. Financial institutions were able to reduce their banking expenses after the advent of e-banking services. Furthermore, technical progress in the banking industry provides additional potential for banks to improve their interaction with customers, easier access to banking facilities by clients, and banks' market reach with e-banking.

Keywords: E-Banking, Return on Assets (ROA), Profitability, Public Sector Banks, Covid-19

Introduction

The covid-19 pandemic is without a doubt the world's worst health and economic calamity ever. The pandemic's disruption has impacted all industries, and the banking industry is no exception. Nonetheless, stability and consistent innovation have been critical in rebuilding the economy. As a result of the pandemic's slowing expansion in numerous areas, the volume of digital banking has increased. As a result, the ICT-based payment system became critical, transforming it from a convenience to a necessity.

Moreover, The concept is not new in the banking sector as it took place in the Indian economy after economic reforms, which took place in 1992. In recent years, government initiatives for monetary assistance to the marginalized sections through direct transfer have also boosted the volumes of ICT-based financial products and services. Since IT flattens operations and helps in the advancement of every department,

information technology plays a leading role in every business sector (G & Vikram, 2018). Financial institutions have all acted promptly to ensure business continuity in the face of the pandemic. Technology will play a significant role in distinguishing the strong from the weak competitors as they navigate through this crisis. However, how prepared are our financial institutions to weather the storm and what changes are they making to stay ahead of the game? We know what their most essential lessons have been and, more importantly, what opportunities this crisis presents.

Digital Payment instruments are considered one of the major revolutions in the banking sector. The emergence of e-banking services was through electronic remoting services in the early 1980s. The devices like keyboards, monitors, and terminals were used. The United American Bank was the pioneer bank, to introduce the concept of 'Home Computer Banking' in December 1980. The initiative taken by the United American Bank became the revolution in terms of banking services, and it resulted in an increase in the acceptance of it by the other large banks. At the initial stage, the concept of digital payments was not greatly acceptable by most customers. However, the online banking services offered by the major banks changed the mindset of people, and in the 2000s, its acceptance saw a rise.

Once the banking and financial institutions recognized its benefits, such as low processing cost and fast access, they began to consider it as an extension of the banking services (Itah&Ene, 2014; Cobb, 2005). The major drawback in accepting the concept of online banking is hesitant customers in that it is not a secure medium and the reason behind this is the lack of awareness. Nevertheless, in recent years, its acceptance has increased. The demonitisation in 2016 played a major role in acceptance of digital banking. The other important factors were introduction of Goods and Services Tax in 2017, DBT initiatives taken by the Indian government, and then the pandemic situation that made digital payment a necessity.

Today, due to the increase in competition and changing regulatory environment, banks are encouraging their customers to respect the adaptability of digital mediums (Saxena & Taneja, 2018). Eventually, online banking is a paradigm shift for both the banks and the customers. It is

considered the digital revolution in the banking sector. The criteria of banking services changed from 'Conventional Banking to Convenience Banking,' which has a huge impact on banks' profitability. Thus, it is counted among the essential banking services. Looking into all these aspects, a major concern, which ignites us to conduct this study, is whether the volume of these digital banking instruments has led to any impact on profitability of public sector banks. For this purpose, past literature created a base discussed below.

Literature review

To unearth the impact, Husni Ali Khrawish (2011) attempted to study all the domestic banks in Jordan and divide the banks into early adopters, recent adopters, and those who do not have any e-banking service of e-banking services on the profitability of banks in Jordan. Results do not support the fact and reveal a negative impact of e-banking services on banks' lucrativeness, specifically for early adopters. However, the study also concluded that results might vary due to fast technological changes. Siam (2006) examined the effect of electronic banking on bank profitability in Jordan. He found that e-banking negatively impacts the short run, whereas it contributes positively to banks' profitability in the long run. The study reveals that those banks using the internet has better efficiency in their operations and have better profitability ratios than non-electronic banking. Electronic banks are dependent largely on key deposits for funds, whereas non-electronic banks fail to do such things. Elsewhere several regressions show no significant relationship between e-banking services and profitability, revealing that risk is negatively associated with e-banking services. Banks offer more e-banking services, and the risk profile of banks is more. The study conducted by Malhotra & Singh (2009) concluded that banks using internet banking are operating efficiently and have better profitability ratios than those that do not perform operations using the internet. It can be stated that e-banking has a significant positive impact on banking performance.

On the contrary online banking reveals an unfavorable relationship with the risk profile of financial institutions.

One more study was done by Muhammad (2013) to know how the Nigerian banking industry is influenced by information and communication technology with the help of annual data from the period 2001 to 2011 by using fixed. Random effect models, which indicate a highly positive association with return on equity, mean there is an increase in ROE if new and advanced technologies are used by banks, whereas reveals an inverse impact of constant investment in technology on efficiency. Therefore, the study emphasizes the framing of policies for the proper utilization of e-banking equipment instead of further investments.

In the study conducted by G & Vikram (2018) to analyze the impact of IT on a bank's lucrativeness, compared with marketing expenses, the results reveal that IT has a greater impact on a bank's profitability than marketing. In the study performed by Vekya (2017), it is revealed that ATM Transactions and Point of Sale transactions (POS) are major contributors to E-banking as both the factors possess a substantial favorable effect on the performance and lucrativeness of financial institutions in Kenya, respectively. In contrast, mobile bank transactions have no substantial impact on Kenya's commercial banks' accomplishments. Sabhaya J Ranjan (2014) analyzed how the banking industry has changed with the arrival of advanced technology and concluded that the banking system would not be able to attain success without the use of Information and Communication Technology. It has broadened the aspect of the banking sector in the economy. Banks with technology are more competent in the financial market and can positively affect bank profitability. According to KujurTeju (2015), the establishment of e-banking leads to an increment in the profit-making ability of banks and customer satisfaction and therefore leads to improved banks performance. The advancement has a negative relation to risk and security. Compared with developed countries, the developing countries face many barriers to successfully implementing the new technology initiatives. Electronic banking like ATM, banking via mobile, and online banking had a major impact on banks' performance; therefore, Nigerian banks' customers should adopt it for convenience and ease (Ezekiel & Olaleakn,

2016). Ceylan Onay (2008) also studied the impact of internet banking on banking performance and concluded that both are positively related to each other in Turkey in terms of ROE (returns on equity), and ROA (return on assets) is increased along with enhancement in the utilization of electronic banking initiatives and investments in them. Research conducted by Sumra (2011) reveals that usage of ICT banking results in enhanced customer satisfaction, improved efficiency, and growth in profits, whereas a decrease in costs or expenses.

The study performed by Jane (2013) suggests that banks should fully adopt e-banking services rather than as an alternative for physical branches to understand how the growth of technology influences the operation in the banking sector. G & Vikram (2018) also suggested that Indian banks focus more on investments to improve and build up the IT infrastructure for efficient and effective performance. In contrast with the above-performed studies, the study by Ngungi (2013) concluded the existence of a mixed nexus of E-banking with the financial viability of financial institutions concerning the Kenyan economy. Adopting the web as a conveyer mode has a significant favorable effect on the lucrativeness of banks following a specific period of adoption of technology.

Objective

1. To determine the impact of E-banking on profitability in Indian public sector banks.

Research methodology

The population considered for the study was India's entire public sector financial institutions. The sample considered for the study was the top 10 public sector banks of India, namely State Bank of India, Punjab National Bank, Bank of Baroda, Canara Bank, Union Bank of India, Bank of India, Indian Bank, Central Bank of India, Bank of Maharashtra, UCO Bank. The duration considered for the study was 14 years, particularly from 2007 to 2021. Further specific statistics of E-banking wherein the parameters considered were a Credit card, Debit Card, NEFT, RTGS, and Point of Sale (POS). Secondary data were considered for the study; particularly the websites of financial data, the Reserve bank

of India, and journals were used for data collection. Analysis of the data was done with the help of the Ordinary least square test. Moreover, the test of Normality was employed for the residuals.

Analysis and discussions

To ascertain the stationarity of the sample data and to avoid the problem of autocorrelation ADF test is applied, wherein the null hypothesis defines the presence of a unit root. Deriving from AR(p) model representations, this test involves the following equation:

$$t = t - I_j t - j + t,$$

which signifies a random walk with drift and linear trend. Test results from the above table state that the variable, namely online banking (ONBAN) and ROA as a measure of profitability is stationary as first and second difference order of integration, respectively, as the p-value is 0.0180 for online banking and 0.0132 for ROA which is less than 0.05 that is 5% level of significance, so the null hypothesis framed that online banking and ROA has a unit root is rejected.

Table 1 Ordinary Least Square (OLS)

Dependent Variable	Independent Variable	Coefficient	Std. Error	T-Stats	Prob.
ROA	C	55.44609	12.23242	4.532717	0.0003
	Digital Payment System	-0.230241	0.069757	-3.300633	0.0040
Adjusted R-Squared		Durbin-Watson Stats.		F-Stats.	Prob.(F-Stats.)
0.677700		2.609991		8.509635	0.000123

The Ordinary Least Square (OLS) method is applied for predicting unknown parameters in the regression model. In other words, we can say that OLS is applied to estimate the effect of the independent variable on the dependent one and residuals as well.

Adjusted R square shows the explanatory or forecasting power of the model. The table shows the value of adjusted R square as 0.6777, showing that the digital payment system

is forecasting a 67.77% true value of profitability (ROA) for public sector banks. The F-statistics show the combined effect of digital payment systems on ROA, and the results show the significant effect of the digital payment system on the profitability of public sector banks in India, as the F stats came out to be 8.509635. In contrast, its P-value is 0.000123, which is less than a 5% significance level.

Table 2 Residual statistics

Skewness	Kurtosis	Jarque-Bera	Probability
-0.247810	1.606767	2.368968	0.305904

The table above exhibits the Jarque-Bera statistics applied to determine whether there seems to be any relation among the residuals. The table depicts the association of residuals by rejecting the null hypothesis as the p-value came out to be greater than 5%.

Conclusion and Implication

With the advent of new technologies, it becomes imperative for the banks to match the pace of changing environment and become more technology friendly. In this regard, some

of the suggestions are made to public sector banks. Public sector banks must initiate a financial literacy campaign to train and encourage non-users and illiterate customers to utilize banking facilities. E-Banking was an innovative tool useful to the public/government to bring financial innovations. With the advent of new technologies, banks should create awareness. Despite the good results, the bank should focus on the country's rural areas to bring more participation from the people living in remote areas. This can be done by creating awareness among them. Service

Quality also becomes one of the most important factors for profitability, as customer satisfaction will ensure more participation in E-banking services. The same companies providing applications like Paytm, phonepe, Bhim, and many more should make user-friendly applications, so the customer benefit from internet banking services more frequently and easily.

This research made an effort to determine the impact of E-banking on Banks' profitability by using the variables of Online Banking and ROA of public sector banks in India from 2007-to 2021. In order to analyze the stationarity of the data, we have employed the augmented dickey fuller unit root test, and jarque-bera statistics was employed in order to test the Normality of residuals wherein the P-value was more than 5%. Furthermore, Ordinary least square results show a significant impact of digital payments instruments on return on assets, which clearly states that online banking helps increase banks' profitability. Further, the study concludes the existence of a substantial positive impact of electronic banking on banks' profitability. The introduction of e-banking facilities enabled financial institutions to cut their banking expenditure. Also, technological innovation in the banking sector provided greater opportunities for the banks to enhance their interactivity with customers. Easy accessibility of the banking facilities by the customers and banks with the help of e-banking could expand their market reach. Despite digitization, the banking industry has been struggling during this pandemic, which might be because the industry, especially the public sector, needs to be revived and rebooted in terms of digital advancement; otherwise, private players will soon fully participate and encroach upon this sector.

This report will assist banks in better understanding customer perceptions of E-banking features and usage. This paper discusses the value of E-transactions for customers and encourages banks to work on such areas to improve client relationships. This will automatically increase client transactions, resulting in more fee-based revenue for banks. Banks can take this information and conduct further analysis to assess client needs in E-banking. The study is useful for the government to make further changes and draft policies to enhance the electronic mode of transaction in the

banking sector. It could help future researchers to impart the results for their studies for its effective utilization.

Future research

The present study focuses on internet banking and its effect on the profitability of public sector banks concerning the Indian context; future studies can focus on the banking sector of the world's developing countries. Secondly, the study focuses on public sector banks, and it opens up the future scope for private sector banks. Thirdly, with the help of the present study, research can be done to analyze the future of banks post-Covid 19 situations.

Bibliography

- Ezekiel, A. I., & Olalekan, E. (2016). Impact of Electronic Banking on Bank Performance in Ekiti State, Nigeria. *International Journal of Multidisciplinary and Current Research*, 4, 826-835.
- G, G., & Vikram, S. K. (2018). Impact of Information Technology on the Profitability of Banks in India. *International Journal of Pure and Applied Mathematics*, 118(20), 225-232.
- Itah, A. J., & Ene, E. E. (2014). Impact of Cashless Banking on Banks' Profitability (Evidence from Nigeria). *Asian Journal of Finance & Accounting*, 6(2), 362-376.
- Khrawish, H. A., & Al-Sa'di, N. M. (2011). The Impact of E-Banking on Bank Profitability: Evidence from Jordan. *Middle Eastern Finance and Economics*(13), 142- 158.
- Malhotra, P., & Singh, B. (2009). The Impact of Internet Banking on Bank Performance and Risk: The Indian Experience. *Eurasian Journal of Business and Economics*, 2(4), 43-62.
- Muhammad, A., Gatawa, N. M., & Kebbi, H. S. (2013). Impact of information and communication technology on bank performance: A study of selected commercial banks in Nigeria (2001-2011). *European Scientific Journal*, 9(7), 213-238.
- Saxena, N., & Taneja, M. (2018). A study on CRM effectiveness in public and private sector banks.

- International Journal of Public Sector Performance Management, 4(1), 45-56.
- Siam, A. Z. (2006). Role of the electronic banking services on the profits of Jordanian banks. American Journal of Applied Sciences, 3(9), 1999-2004.
 - Vekya, J. M. (2017). Impact of Electronic Banking on the Profitability of Commercial Banks in Kenya. Journal of Technology and Systems, 1(1), 18-39.
 - Khrawish, H. A., & Al-Sa'di, N. M. (2011). The impact of e-banking on bank profitability: Evidence from Jordan. Middle Eastern Finance and Economics, 13(1), 142-158.
 - Sabhaya, R. J. (2014). A study on insurer responsibilities towards insuree. ZENITH International Journal of Business Economics & Management Research, 4(5), 50-55.
 - Kujur, T., & Shah, M. A. (2015). Electronic banking: Impact, risk and security issues. International Journal of Engineering and Management Research, 5(5), 207-212.
 - Onay, C., Ozsoz, E., & Helvacioğlu, A. D. (2008, June). The impact of internet-banking on bank profitability- The case of Turkey. In 2008 Oxford Business & Economics Conference Program.
 - Ngungi, T. M. (2013). Effect of Online Banking on financial performance of Commercial Banks in Kenya (Doctoral dissertation, University of Nairobi).
 - Onay, C., Ozsoz, E., & Helvacioğlu, A. D. (2008, June). The impact of internet-banking on bank profitability- The case of Turkey. In 2008 Oxford Business & Economics Conference Program