Technology Impact on Banking Sector Performance with Reference to Select Private Sector Banks

J. Sai Sudha, P. Venkata Durga Rao

Abstract: The present study is focused on the technology impact on the banking sector growth in 4G period. The usage of technology by the banking customers increased enormously in 4G compared to other telecom generations i.e., 2G and 3G. The study has considered the high technology spending private banks and B2C segment digital transactions (i.e., Neft, Rtg, ATM, Mobile, Debit card and Credit Card transactions) growth on the business of the banking sector examined with the panel data in E-Views software. The study has considered the time series data of the selected five private sector banks digital transactions and constructed the Banking Technology Index in 4G period. The study result reveals with the ordinary least square that the mobile transactions and RTGS are having the positive impact on the performance of the Banking technology index. The BTI impact has been examined on the business per employee of the selected private sector banks and the result stated that the BPE got reduced significantly in 4G period. This paper is useful to the bankers, regulators and various stakeholders of the bankers.

Keywords: ATM, Banking, Credit, Debit, NEFT, RTGS, Technology Index

I. INTRODUCTION

The economic reforms that improve economic reforms form part and parcel of financial sector reforms and reforms of the banking sector. The 2000 IT Act brought the Indian financial sector a new dimension. In the banking sector, IT has driven transformation: banking architecture, business processes, working culture, and the development of human resources. It had a significant impact on bank growth, profitability and performance. The main goal of financial sector reforms was to reinforce the financial sector and enhance its functioning. The IT revolution in India began in June 1999 when, with the launch of the Indian Financial Net, the IT market, in general, seemed too free. This Indian financial network included a large satellite network which uses technology for Very Small Aperture Terminals. It is founded jointly by the Reserve Bank of India with the Institute for Banking Technology Development and Research. Originally only the public sector banks were included in the Indian Financial Network, but then it was opened up to members of other groups, including foreign banks. The first banking section was the payment system, and B2C segment digital transactions (i.e., Neft, Rtg, ATM, Mobile, Debit card and Credit Card transactions) growth on the business of the banking sector examined with the panel data in E-Views software. The study has considered the time series data of the selected five private sector banks digital transactions and constructed the Banking Technology Index in 4G period. The study result reveals with the ordinary least square that the mobile transactions and RTGS are having the positive impact on the performance of the Banking technology index. The BTI impact has been examined on the business per employee of the selected private sector banks and the result stated that the BPE got reduced significantly in 4G period. This paper is useful to the bankers, regulators and various stakeholders of the bankers.

Benefits of Technology in Banking

In many cases, the IT Act 2000 allows, except those cases that remain subject to the provisions of the Negotiable Instrument Act of 1881, for this electronic data to also be considered as legitimate evidence in a Court of Justice. RBI has also highlighted the introduction of the unified cash management program, which allows for a consolidated view of account holders ‘ balance positions at different reserve bank locations in India. This was a two-part operation. The first section equipped the customers with a centralized funds investigation process and, by the end of 2003, the second section coordinated the centralized fund transfer system.

To improve network data protection, the Government of India has approved the Digital Signatures Certification Authority of the Institute for Banking Technology Development and Research. The transfer of electronic funds by means of digital signatures using the facilities provided by the certification authority is being improved with regard to protection. A pilot project on multi-application smart cards, together with a few banks under the leadership of the Ministry of Communications and IT, Government of India, has been launched to recognize further the need for technical payment products. The face of the Indian Banking system has all changed this technological advancement. As mentioned above, each individual customer of current banks receives a variety of technologically advanced steps. An in-depth analysis will then demonstrate that the Automatic Teller Machine Card of ATM is accessible to the customer at the end of the day with its most valuable input from information technology. When we say that the major driver for changing the banking system today is ATM, it will not be correct. Barclay Bank, London internally installed the first ATM on June 1974. ATM was launched in India in 1987 in India. The number of ATMs in the world is 16, 00,000. The ATM card may also be used in other banks' ATMs.

Revised Manuscript Received on March 10, 2020.

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Cost Effectiveness and Operational Excellence: Transaction automation for individuals and companies transforms our daily lives. Our day-to-day lives are made much easier and economical. Cost efficiency creates revenue and gives workers a better pay. Easier and less stressful working conditions make everyday life. In contrast to automation days transactions are done in the less time. The use of IT makes fewer errors.

Bridging the Cultural Gap: People from various nationalities and cultures are able to communicate between each other, which makes it possible to share views and opinions that can improve their lives, boost consciousness and minimize discrimination.

Longer Working Hours: Business hours are extended Monday through Friday to 8-5 business days. The agency is almost open 24 hours a day, 7 days a week. This is true for all corporations worldwide. The longer hours facilitate the conduct of business transactions every day. Customers can now shop anywhere and anywhere.

Creation of New and Exciting Jobs in the Field of IT: New and interesting jobs are created in the field of IT. Of starters, computer programmers, system administrators, system analysts, hardware and software technical experts, web development, computer technology and network management would be eligible.

Business Intelligence: IT is the rivalry leader among other rivals in banking. Important and relevant data is used to make strategic business decisions. Information gathered from competitors, individuals, industry, internal operations and business partners.

II. REVIEW OF LITERATURE

Suman Kumar (2009) study stated that all the banks of both public sector, private sector, foreign banks and cooperative sector banks provide core banking solution facility in a big way. With this facility, banks gave up manual operation in banks with the enjoyment of the benefits of CBS to maintain books of accounts up to date, and also to achieve error free banking operations with no time loss.

Rosy Chawla, Rachana Kumari and Ponam Rani (2009) study made an attempted to study on the changing face of Indian Banking. Financial sector reforms, banking sector reforms are the part and parcel of economic reform. Computerization, ATMs cash Deposit machine in public sector banks, scheduled commercial banks are the mark of their technological advancement. The study mainly concentrated on two aspects i.e. financial soundness; Technological development like computerization, branch automation, ATM technology etc.

Kulwant Singh Patnania, and Mamatha Sharma (2010) study emphasized on rate of banking technologies. The study identified the operational problem in the usage of modern banking technologies and suggested measures for improvement of technologies. The researchers opined that the banking technologies must be user friendly and able to operate even an illiterate and a layman. The range of adoption of technologies of different kinds elaborated in their study.

Chakrabarty K. C, Deputy Governor RBI (2010) paper focused on “Processes of growth and development of banks”. The researcher opined that effective use of technology has a multiplier impact on growth and development of banking sector. Technology enables increased penetration of banking system. The researcher firmly believes that banking economic development is not possible to scale up without the adoption of and ICT - IT based deliver model. Core banking solution (CBS) enables banks to extend the full benefits of ATM, Tele banking, Mobile banking. Internet banking to all customers allowing banks to offer a multitude of customer centric services on 24 x 7 basis from a single location using CBS, customers can access their accounts from any branch, anywhere irrespective of where they have physically opened their accounts. Banks need to adopt IT to develop comprehensive customer Relation Management Techniques to increase volume quality and profitability of business.

Rajeev Johari (2011) study made an attempt to examine relationship between RBI, SBI and SEBI their portfolio functions. In researchers opinion the corporate governance in banks leads to social responsibility, customer satisfaction and quality service transparent management system in banks opens to customer focus and gains to customer confidence. Corporate governance is trustworthy economic activity and economic development of retail banking in this conclusion the study observed that even SBI a largest bank in public sector stood at a small position in global scenario / Asian standards.

Nadire Cavus, Dambudzo Netsai Christina Chingoka (2016): The paper discusses the benefits and disadvantages of various models to test the effects of the decision to implement mobile banking, the various innovations currently deployed by banks and the potential of mobile banking. There are two categories for IT's position in the banking industry: communications and networking as well as individual and business transactions. In order to connect with people from various nations, industries around the globe, geographic distance and diverse markets, IT allows new goods with better mechanisms to be created and effective strategies applied.

Gayathri G, Suviatha K Vikram (2018): In every sector of the market, Information Technology (IT) plays a major role throughout enhancing operations and productivity in each organization. IT effects on bank profitability and marketing costs are the main objective of this report. The study found that IT expenses have a better impact on bank profitability and performance compared with marketing costs based on data from 21 Indian banks for the period 2011-2015. Findings indicate that investment in IT can improve banks’ productivity in relation to marketing costs. Banks in India must therefore give more attention to the development of their information technology infrastructure in order to increase efficiency and performance.

Ahmed Taha Al Ajlouni, Monir Al-Hakim (2019): The paper aims first to shed light on this wave of financial sector growth, which, combined with high technology, also seeks to explain FinTech's position in the financial sector as a rule, and in particular the banking industry. In addition to detailing current market trends and environment, and some other potential funding mechanisms, the study will address the history and concept of FinTech. The paper's targets are achieved in two key steps, first of all. In the second phase, the study described FinTech's influence and response to the banking industry.
The paper also proposed several future research ideas on FinTech's consequences for the Arab countries’ financial and banking sectors.

III. OBJECTIVES OF THE STUDY
1. To study the banking digital transactions impact on select banks technology Index.
2. To study the impact of banking digital transactions on the operating profits of select banks.

IV. HYPOTHESES OF THE STUDY
H0: There is no banking digital transactions impact on select banks technology Index.
H0: There is no impact of banking digital transactions on the operating profit.

SCOPE OF THE STUDY
The present study has been focused on the business to customer transactions of banking segment in 4G periods i.e., 2012 to 2019. The study has considered the four largest Indian private banks based on the highest technological spending.

TABULATION OF DATA ANALYSIS
The present study has considered the six banking B2C digital transactions in the 4G period i.e., 2012-13 to 2018-19. The study mainly focused on the usage of digital transactions impact on the business per employees. The following hypothesis has been framed.
H0: There is no stationary under unit Root for the select digital transactions of Private sector banks

Table – 1: Panel unit root test: Summary

| Transaction   | Levin, Lin & Chu t | Im, Pesaran and Shin W-stat | ADF – Fisher Chi-square | PP - Fisher Chi-square |
|---------------|--------------------|-----------------------------|-------------------------|------------------------|
| ATM           | 0.782              | 0.614                       | 0.576                   | 0.588                  |
| NEFT          | 0.512              | 0.925                       | 0.172                   | 0.494                  |
| RTGS          | 0.285              | 0.058                       | 0.0625                  | 0.082                  |
| Mobile        | 0.002              | 0.089                       | 0.189                   | 0.805                  |
| Debit Card    | 0.199              | 0.074                       | 0.0856                  | 0.528                  |
| Credit Card   | 0.185              | 0.839                       | 0.285                   | 0.551                  |

Source: Secondary Data
The above table represents the unit root test for the panel data for the private sector digital transactions in the 4G period. The panel unit test result stated that the six selected digital transactions are observed to be greater than the 0.05, which states that the selected digital transactions are found to be stationary. Hence, the null hypothesis has been rejected and accepted the alternative hypothesis.

Table - 2: Pairwise Granger Causality Tests

| Null Hypothesis                                      | Obs | F-Statistic | Prob.    |
|-------------------------------------------------------|-----|-------------|----------|
| NEFT does not Granger Cause Banking Technology Index  | 25  | 0.03522     | 0.9655   |
| Banking Technology Index does not Granger Cause NEFT  |     | 0.67418     | 0.5208   |
| RTGS does not Granger Cause Banking Technology Index  | 25  | 0.08778     | 0.9163   |
| Banking Technology Index does not Granger Cause RTGS  |     | 23.6302     | 5.E-06   |
| Mobile_Transaction does not Granger Cause Banking Technology Index | 25  | 2.57249     | 0.1013   |
| Banking Technology Index does not Granger Cause Mobile_Transaction |     | 4.08332     | 0.0326   |
| Debit Does Not Granger Cause Banking Technology Index  | 25  | 1.58433     | 0.2298   |
| Banking Technology Index Does Not Granger Cause Debit  |     | 0.16671     | 0.8476   |
| Credit Does Not Granger Cause Banking Technology Index  | 25  | 0.15234     | 0.8597   |
| Banking Technology Index Does Not Granger Cause Credit  |     | 0.32650     | 0.7252   |
| ATM Does Not Granger Cause Banking Technology Index    | 25  | 0.53273     | 0.5951   |
| Banking Technology Index Does Not Granger Cause ATM     |     | 1.48278     | 0.2509   |

Source: Secondary Data
Granger Cause table illustrate the NEFT transaction with Banking technology Index and RTGS with Banking Technology Index’s f-statistic value is greater than critical value. Similarly, Mobile transaction with banking technology Index, Debit and Credit with banking technology index’s calculated value of f-statistic are observed to be greater than critical and found that these digital transaction have unidirectional effect with Banking Technology Index. Whereas, ATM with Banking technology index and Banking technology index with ATM had observed significant effect which indicates the bidirectional effect exist between them. Therefore, it signifies that Digital transaction are granger cause to Banking technology index.

Table - 3. Panel Least Square with respect to Digital transaction with Technology Index

| Variable            | Coefficient | Std. Error | t-Statistic | Prob. |
|---------------------|-------------|------------|-------------|-------|
| C                   | -0.1192     | 0.1503     | 6.095550    | 0.000 |
| NEFT                | -0.1287     | -0.052886  | -2.434819   | 0.021 |
| RTGS                | 0.363074    | 0.309571   | 1.172832    | 0.010 |
| Mobile Transaction  | 0.447503    | 0.007935   | 5.986760    | 0.000 |
| DEBIT               | 0.025032    | 0.015770   | 1.587525    | 0.023 |
| CREDIT              | -0.04175    | -0.217579  | -0.191910   | 0.041 |
| ATM                 | 0.110876    | 0.435874   | 0.362690    | 0.019 |

R-squared: 0.672472
Adjusted R-squared: 0.602288
S.E. of regression: 3.561212
Log likelihood: -493.2281
Prob(F-statistic): 0.000009

Pairwise Granger Causality Tests with respect to Technology Index on Business per Employee

Null Hypothesis: BANKING_TECHNOLOGY_INDEX does not Granger Cause BUSINESSES_PER_EMPLOYEE
Obs: 25
F-Statistic: 5.69234
Prob: 0.0120

Null Hypothesis: BUSINESSES_PER_EMPLOYEE does not Granger Cause BANKING_TECHNOLOGY_INDEX
Obs: 13135
F-Statistic: 0.13135
Prob: 0.8777

Source: Secondary Data

The F-statistic calculated value observed to be greater than table value (i.e., 5.6923 > 4.1701) which indicates that Banking technology index grange cause to Business per Employee. Hence it is concluded that Reject H0 and Accept H1.
An empirical study on banking technology index (BTI) of the private sector banks in India, and Mamatha Sharma (2010), “An Empirical study Mobile banking in the private banking sector, which states that the technology of B2C is having the significant negative impact on the business per employee. Hence, there is a need to do further research in this area by considering the B2B segment so that the usage of technology effectively reduced the cost of the business operations of the Indian banking sector after the implementation of technology.

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