



Impact of E-Banking on Financial Performance of Commercial Banks: An Analytical Review

Neha Rani, Assistant Professor

Govt. College, Narnaund

Abstract:

Increase in Competition and the continuous changes in information technology fuels the need for commercial banks to innovate in products, services, and delivery channels. Commercial banks are investing heavily into banking technology due to increase in consumer demands and fear of losing market share. Now many channels like ATM, Mobile Banking, Internet Banking, Telephone Banking and EFT have been introduced by commercial banks for providing different products and services like checking of account balances, transfer of funds and pay utility bills online etc. Due to investment in technology, cost as well as income of banks have been effected so there is need to know the effect of e-banking on financial performance. This paper is based on extensive review of literature available on the effect of e-banking on financial performance and found that some authors found positive and some found negative impact of e-banking on financial performance so banks should effectively use technology for improving their performance and profitability.

Introduction:

The Indian Banking sector was originated in the 18th century. Firstly Bank of Hindustan was established in 1770 but liquidated in 1829 and General Bank of India was established in 1786 but failed in 1791. Then Bank of Calcutta originated in 1806 and renamed as Bank of Bengal in 1809. Then three presidency banks: Bank of Bengal, Bank of Bombay (1840) and Bank of Madras (1843) were merged in 1921 and formed Imperial Bank of India which became State Bank of India in 1955. After this a new phase of metamorphosis was occur in 1969 when 14 commercial banks were nationalized. Then in 1980, 6 more private sector banks were nationalized. The third phase occur in 1990 due to the policy of liberalization, license was provided to private sector banks for increasing competition and offering better fare to customers.

Digital Revolution in Indian Banking Sector:

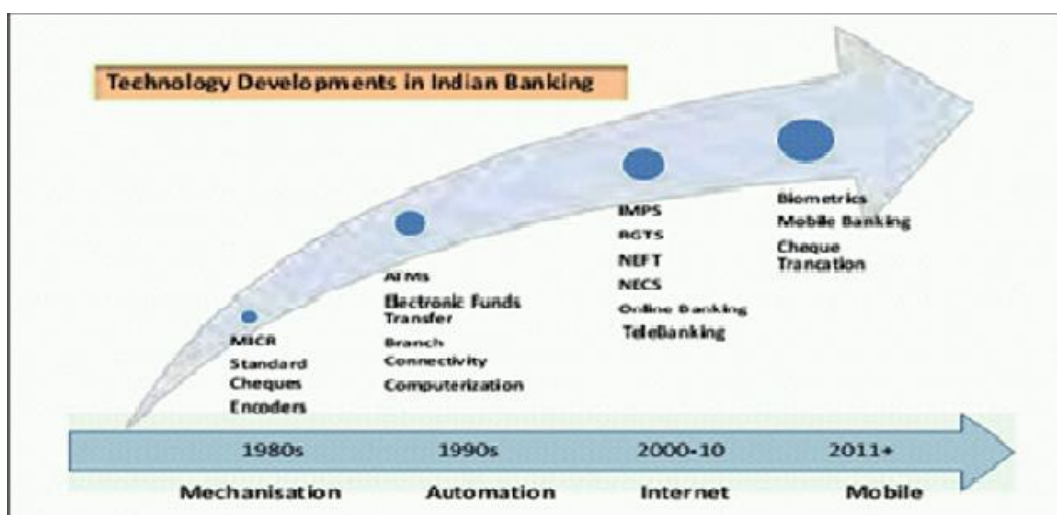
In 1980s, computerization need was raised in banking sector for improving customer service and book keeping records. Many committees were set up by RBI to define and coordinate banking technology which are as follows:

1. First committee on Mechanization in the banking industry was formed in 1984 and MICR technology was introduced for using standardized cheques and encoders.
2. Second committee on computerization in banks was formed in 1988 and focus was on computerization of branches for increasing connectivity among branches.
3. Then committee was set up for solving issues regarding payment system, cheques clearing and securities settlement in 1994. Under it, EFT was adopted.
4. Then in 1995, legislation was made for EFT and other electronic payments.

After this, National Payment Corporation of India (NPCI) launched Unified Payment Interface (UPI) and Bharat Interface for Money (BHIM) for improving payment system. So through these interface, instant fund transfer between accounts in different banks on the basis of virtual address was started.

So now MICR (Magnetic Ink Character Recognition), ATM (Automatic Teller Machine), CBS (Core Banking Solution), NEFT (National Electronic Fund Transfer), RTGS (Real Time Gross Settlement System), ECS (Electronic Clearing Service), Cheque Truncation System, Debit Cards, Credit Cards, Prepaid Cards, Point of Sale (POS), Internet Banking, Mobile Banking and IMPS (Immediate Payment System) have been introduced in Indian Banks.

Snapshot of Technology Developments in Indian Banking Sector



Source: Digital revolution in the Indian banking sector

Objective of the study:

Economic growth of a country largely depends on its banking sector but technology was rapidly changed the ways of performing banking transactions which affected customer satisfaction level, cost of banking operations and productivity. So along with enlargement of customer service, banks should study the impact of E-banking on financial performance of banks. The study is based on extensive study of review of literature to know the present status about the impact of e-banking on performance of banks because expected impact is positive.

Reviews related to positive impact on financial performance:

Sr. No.	Title	Author	Year	Factors	Tools	Results
1.	Effect of Bank Innovations on Profitability and Return on Assets (ROA) of Commercial Banks in Lebanon	Hiyam Sujud & Boutheina Hashem	2017	Independent variables= ATM, POS, Mobile Banking, Debit & Credit Cards, Internet Banking and EFT Dependent Variable= Profit and ROA	Multiple Regression	For this study, data is collected from 200 employees and it is found that 59.3 per cent variation in profitability is explained by these variables and Among all Independent variables it is found that only EFT has significant impact on profitability of commercial banks in India. Secondly, 97.7 per cent variation in ROA is explained by these variables and among all only debit and credit cards have positive and significant contribution in ROA. Overall, it can be concluded that bank innovations potentially leads to higher profitability and higher return on assets of commercial banks.
2.	Impact of Electronic Banking on the Profitability of Commercial Banks in Kenya	Joseph M. Vekya	2017	Independent Variables= ATM Transactions, POS Transactions and Mobile Transactions Dependent Variable= ROE	Multiple Regression	For this study, data is collected from 43 commercial banks from January 2007 to June 2015 (34 Quarters). From study, it is concluded that ATM Transactions and POS transactions have positive and significant effect on ROE whereas mobile banking transactions have negative and insignificant effect on bank profitability.
3.	Effect of Internet Banking on the Financial Performance of Commercial Banks in Kenya	Kinyua Daniel Miwangi	2014	Dependent Variable=ROA, Independent Variable= Overhead Ratio(Expenses/Net Operating Revenue), Market Share(Bank Deposits/Total Sector Deposits), Deposit to Assets Ratio, Loan to Assets Ratio, Effective Lending Rate (Interest Income/ Total Operating Loans), Fees and Commission (ATM,M-Banking, Internet Banking/ Net Income)	Regression Analysis	For this study, data was collected from 44 commercial banks from 2009-13. It is Revealed that Investment in E-Banking is not useless because it helps in boosting the financial performance of commercial banks and Market Share, E-Banking income; Loan- Assets Ratio has a positive relation with ROA. It will help in satisfying customer by improving service quality and improve performance by reducing fraud and easing the work of employees.
4.	The Effects of Electronic Banking Expansion on Profitability of a Commercial Bank(Sepah Bank of Iran)	Saeid Daei Karimzadeh, Mostafa Emadzadaeh, Javad Shateri	2014	Dependent Variable= ROA Independent Variables=No. of ATM, Terminal Branches, POS, Market Concentration, Bank Size, Credit Cards	Autoregressive Distributed Lag Model	For this study, data was collected from Sepah Bank of Iran of period 2004-12. The result depicted that ATMs, Credit Cards, POS, Bank Size has a positive and significant impact on the profitability of banks while Market Concentration has had a negative and significant impact on bank profitability because it reduces competitiveness and efficiency of banks so overall E-Banking has a positive impact on bank profitability.

5.	The Impact of E-Banking on Customer Service and Profitability of Banks in Ghana	Alex Addae Korankye	2014	-	Simple Frequency Tables	For this study, data was collected from 250 customers and 20 employees and it is observed that 80% of consumers were agreeing that E-Banking has improved customer service. Employees also responded that E-Banking has positive impact on bank profitability. So E-Banking play positive role but bank should try to resolve issues regarding ATMs improve service quality and improve security measures to improve customer satisfaction.
6.	Study on Pre and Post Impact of E-Banking on Banking Operation	Ranajan J Sabhaya, Ankita Bhalala, Parul Chovatiya	2014	-	-	The study concluded that E-Banking has positive effect on profitability of banks so banks can earn more profit by providing different products and services.
7.	Effects of Financial Innovations on the Financial Performance of Commercial Banks in South Sudan	Makur Peter Malak	2013	Dependent Variable= ROE, Independent Variable=No. of Transactions done during ATM per day, No. of Transactions done using a Phone per day, Amount of Money Borrowed using Internet Transactions	Regression and Correlation Analysis	For this study, data was collected from 16 Commercial banks from 2009-13. The study revealed that No. of Daily Transactions through ATM and financial performance of Commercial Banks has Positive Relation. No. of Daily Transactions using Phones have positive but weak relations with financial performance. Money Borrowed using Internet Transactions has also positive relation with profitability of Commercial Banks. So Financial Innovation has a positive and significant impact on Financial Performance of Commercial Banks but there is need to fast and secure payment system for development of business and economic growth of all sectors and facilitating financial deepening.
8.	E-Banking and Bank Performance: Evidence from Nigeria	Oginni Simon Oyewole, Mohammed Abba, El-maude, Jibreel Gambo, Arikpo, I. Abam	2013	Dependent Variables=ROA, ROE and Net Interest Margin Independent Variables=Loan/Assets, Loan/Deposit, Equity/Total Assets, Operating Expenses/Total Assets, Logarithm of Total Assets, Log of Operating Expenses, E-banking. Macroeconomic Variables= Inflation, Cyclical Output=GDP, Bank consolidation	Ordinary Least Square Regression Model	For this study, data was collected from 8 Commercial Banks of 1999-2010. It is reported that in the first year of adoption, negative impact was observed but E-Banking contributes positively to bank performance after two years of adoption in terms of ROA and NIM due to financial cost of adopting E-Banking. So investment in E-Banking should be rational so as to justify cost and revenue implications on bank performance.
9.	Electronic Banking Products and Performance of Nigerian Listed Deposit Money Banks	Shehu Usman and Hassan, Aliyu Mamman	2013	ATM, SMS Alert, E-Direct, E-Mobile	Regression, Correlation and Descriptive Statistics	SMS Alert and E-Direct has not significantly impacted the performance of banks while ATMs and E-Banking has strongly impacted the performance of Nigerian banks.
10.	Effects of Financial Innovation on Financial Performance of Commercial Banks in Kenya	Patrick Mwangi Ngumi	2013	Independent Variables=ATM, Debit & Credit Cards, Mobile Banking, Internet Banking, EFT and POS Terminals, Mobile Phone Subscription and Internet Subscription Dependent Variables= Total Income, Profit Before Tax, Return on Assets and Deposits	Linear Regression Equation, ANOVA and Correlation	For this study, data is collected from 202 senior managers of 20 selected commercial banks. The findings revealed that bank innovation has significant influence on income, ROA, Profitability and Deposits of commercial bank in Kenya. It is found that bank innovations had the highest positive influence on mobilization of consumer deposits and from moderating variables revealed that mobile phone had a higher moderating influence on bank innovations than internet service. So banks commission income is increasing from transactions done on innovation channels like mobile phones, internet, credit cards and POS terminals and cost is also decreasing but bank innovation have positive impact on performance of banks but not wholly deprived from bank innovations but other drivers like regulations, human resource, quality of

						management, corporate governance also effect performance of banks.
11.	Effect of Internet and Mobile Banking on Financial Performance of Commercial Banks in Kenya	Njiru Caroline Wanja	2012	Dependent Variable= ROA, Independent Variable= Investment in Internet and Mobile Banking= Total Assets invested in Mobile and Internet Banking/ Total Bank Assets, Internet Banking Income= Total Deposits for Internet Banking/ Total Bank Deposits, Mobile Banking Income= Total Deposits for Mobile Banking/ Total Bank Deposits, Bank Size=Total Assets	Regression Analysis	For doing this study, secondary data was collected from 43 Commercial Banks and concluded that Mobile and Internet banking have positive impact on Profitability of Banks. It is found that Monthly Income through Mobile and Internet banking continuously increasing and Financial Performance is also increasing but in fluctuating trend. So all factors have a positive association with profitability of banks. So every bank should invest in innovative technology and provide training to staff for providing better service to consumer.
12.	The Relationship between Electronic Banking and Financial Performance of Commercial Banks in Kenya	Josiah Abuda, Nancy Kingoo	2012	Dependent Variable=ROA, Independent Variables=Investment in Electronic Banking, No. of Debit Cards, No. of ATM System install by banks.	Descriptive Statistics, Product Moment Correlation and Regression Analysis	For this study, data was collected from 43 commercial banks. It is showed that 72 percent variation was explained by these three variables. E-Banking has strong and significant marginal effects on ROA in Kenyan banking industry by making workers performance more effective and efficient. ATMs, Credit Card have significant influence on performance of banks by bringing services closer to its customers and hence improved industry performance.
13.	Investigating the effect of E-Banking on Increasing of Bank Revenues	Mehdi Alinezhad Sarokolaei, Akbar Rahimipoor, Samad Saraei, Zahra Vakilzadeh	2011	Factors= Bank Cards, ATM, POS, Internet Bank, Telephone Bank	Regression and Correlation	This study is done in Iran on Private Banks of 2009-11 to know the effect of E-Banking on service fees. It is assessed that ATM, POS, Bank Card, Internet Bank, Telephone Bank and Service Fee have a positive and significant relation. So Electronic Banking can increase the revenue of private banks because E-Banking helps in reducing cost of service.
14.	The Impact of E-Banking on the Profitability of Banks: A Study of Pakistani Banks	Sana Haider Sumra, Mohammad Khurram Manzoor, Hassan H. Sumra, Momina Abbas	2011	-	-	It is found that E-Banking effect the profitability of banks positively in short span of time and illiteracy of customers is not major hindrance in use of products and services.

Reviews related to Negative Impact on Financial Performance:

Sr. No.	Title	Author	Year	Factors	Tools	Result
1.	E-payments adoption and Profitability performance of Deposits Money Banks in Nigeria	Oladejo Morufu	2016	Independent Variables= ATM, POS, Web Internet and Mobile Banking Transactions Dependent Variable= ROA, Profit after Tax and Gross Earnings	Panel Logistics Regression and Least Squares	For this study, data was collected from 10 deposit money banks from 2005-2012. From the study, it is found that mobile payment transactions have negative but significant relation with gross earnings while ATM, POS have positive and insignificant effect on gross earnings and internet banking transactions have negative and insignificant relation with gross

						<p>earnings of banks.</p> <p>Secondly, ATM and POS transactions have negative and significant relation with net profit and mobile banking have positive but insignificant effect on PAT and internet banking have negative and insignificant effect on PAT so there is no significant effect of e-banking on profitability of banks.</p> <p>Thirdly, only mobile banking transactions have positive and insignificant effect on ROA whereas POS transactions have negative and significant effect on ROA. ATM transactions and internet banking transactions have positive but insignificant effect on ROA. So it shows positive association between e-banking adoption and gross earnings of banks & negative association between e-banking adoption and PAT.</p>
2.	Effect of Internet Banking on Profitability of Banks	Narjes Heydarzaden Aghdam, Mohammad Hossein Hassani Sadrabadi	2015	<p>Dependent Variables= ROA, ROE</p> <p>Independent Variables= Deposit Growth, Bank Rising, Market Concentration Index, Online Branches, Entry Year</p>	Regression Model	<p>For this study, Data was collected from eight banks during 2001-13. It is found that Market Concentration Index has positive relation with profitability due to monopoly effect and online branches have positive relation with ROA not with ROE. Secondly relationship between Banking Risk, Deposit Growth and Profitability is meaningless. Entry year also effect profitability due to high cost of IB installation. So overall using of IB has a negative impact on ROA and ROE.</p>
3.	The Effects of Innovations on Bank Performance: The Case of Electronic Banking Services	Ilyas Akhisar, K.Batu Tunay and Necla Tunay	2015	<p>Independent Variables= Cards, POS, Ratio of TAM/Branch and internet banking customers</p> <p>Dependent Variables= ROA, ROE</p>	Dynamic Panel Data Models	<p>For this study, data was collected from 23 countries from 2005-2013. From study, it is revealed that POS terminals and internet banking effect negatively the bank profitability and ATMs have positive impact on bank profitability and cards have weak and positive impact on profitability.</p>
4.	Effects of ATM on the performance of	Jegade C.A.	2014	Factors= Effectiveness, Growth,	Chi Square Test	<p>For this study, Data was collected from 125 employees. It is observed that ATM contributes to effectiveness,</p>

	Nigerian Banks			Profitability and Fraud		growth of banking sector and simultaneously, ATM fraud is continuously increasing which effects the users of ATM. So ATMs have averagely improved the performance of Nigerian banks because of increasing rate of ATM fraud. Hence banks should improve security layers by limiting the withdrawal amount, providing alerts to consumers phone carried out on banks account etc.
5.	Impact of Online Banking on Bank Performance	Bc. Rrezarta Halili	2014	Dependent Variables=ROE,ROA AND MRG Independent Variables=Loan/Asset ratio, Deposit to Asset, Overhead Ratio , Market Share, Efficiency Ratio, Internet as dummy variable	OLS Regression	For this study, data was collected from 22 commercial banks of five European Countries United Kingdom, Germany, Czech Republic, Latvia and Poland. The study covered the period 1999 to 2010 and internet banking proved not so profitable for banks due to social and economic causes and also global crisis which also badly hit commercial banks.
6.	A Performance Analysis of Online Banking System	Miceli Campailla Andrea	2013	ROAE, ROAA, Cost to Income Ratio and Loan to Asset Ratio	-	In this study, a comparative performance analysis is done between online and traditional banks belonging to European and north American countries by analyzing socio-demographic and performance indicators. It is concluded that there is no significant difference in ROAE and ROAA Between online banks and standard banks as well as cost to income ratio and loan to asset ratio. Due to high initial cost, IT revolution has not shaped the banking industry so structure of banking market would change when IT infrastructure will develop.
7.	Impact of Information and Communication Technology on Banks Performance: A	Abubakar Muhammad, Nasir Mukhtar Gatawa, Haruna Sani BirminKebbi	2013	ROE, Net Profit, ATM, E-Banking Services	Panel Data Analysis	For this study, secondary data is collected from 11 commercial banks from 2001 to 2011 and it is concluded that investment in ICT (i.e. ATM) does not improve commercial banks performance in Nigeria and e-banking services have positive but insignificant

	Study of Selected Commercial Banks in Nigeria					effect on bank performance so there is need to improve policies regarding e-banking. Lastly net profit has positive and significant influence on bank performance in Nigeria.
8.	The Impact of Internet Banking on Brick and Mortar Branches: The Case of Turkey	Ceylan Onay, Emre Ozsoz	2012	Dependent Variable= ROA, ROE Independent Variable= Internet, Control and crisis include Bank Specific Variable= Deposit to Total Assets Ratio, Loan/Total Assets, Total NPAs/Total Loans, No. of Personnel Per Branch, No. of Branches of Bank, Internet Income/Total Assets, Non-Interest Income/Non-Interest Expenses, Profit Per Branch, Deposits Per Branch	Regression Analysis	From the study, it is revealed that internet banking has a negative impact on ROA and ROE after two years of adoption due to increased competition in banks regarding interest income. So adoption of internet banking depresses banks profitability and interest income while positively influenced non-interest income. So impact of E-Banking is different in emerging markets than developed market.
9.	The Impact of Information Technology on the Banking Industry: Theory and Empirics	Shirley J. Ho, Sushanta K. Mallick	2006	Factors= IT spending, Bank Profit	Econometric Techniques, Hotelling Model	This study try to analyses whether IT spending effect bank profit after increasing competition in financial services due to IT application. Hotelling Model is used to examine the impact of IT on cost and revenue. Data was collected from 68 banks for 20 years of US. By using econometric techniques, it is reported that IT leads to cost saving but due to increase in network effect, banks with IT have lower profitability. So overall, banks profit decline due to adoption and diffusion of IT industry reflecting negative network effects in this industry.

Conclusion:

As banking sector has been completely changed due to introduction of information and communication technology. All basic banking functions are performed but in a different manner so impact has also occurred on income and cost of banking sector. From review of literature, mixed type of result found out. Some Researchers are in favour of positive impact of E-Banking on financial Performance of banks while others supported negative impact of E-Banking on Financial performance.

1. Sujud & Hashem (2017), Miwangi(2014), Karimzadeh(2014), korankye(2014), Sabahay et.al(2014), Malak(2013), Ngumi(2013), Oyewole et.al(2013), Abuda& Kingoo(2012), Wanja (2012),Sarokolaei et.al(2011), , Sumra et.al(2011), Hassan & Mamman (2013) supported the positive impact of E-Banking on financial performance. Different Reasons are given for positive financial performance:

- No. of daily transactions through ATM, Internet banking, Phone Banking and Mobile Banking have positively impacted financial performance.
- ROA and E-Banking income has been increased due to increase in efficiency of employees and service quality of customers.
- Initially cost will increased but after two years of installation Internet banking will increase ROA and net interest margin.
- Revenue increased due to decrease in cost of service.
- Financial innovations increase the profitability by maximum mobilization of deposits.

2. Morufu (2016), Aghdam &Sadrabadi (2015), Akhisar et.al (2015) Jegede(2014), Muhammad et.al(2013), Andrea(2013), Onay& Ozsoz(2012), Halili(2012), Shirley & Mallick(2006) supported the negative impact of E-banking on financial performance.

Different reasons are given for negative financial performance:

- High cost in installation of internet banking negatively impacted ROA and ROE.
- Due to ATM frauds, ATM has average performance impact on performance of banks.
- E-banking services reduce cost but service profitability declined due to network effects.
- Increased competition negatively impacts the interest income but positively impacted non interest income so overall profitability reduced.
- Internet banking is not profitable due to socio economic causes and global crisis.

Suggestions:

Following steps should be taken to increase impact of E-Banking on profitability of banks:

1. For improving revenue effect of e-banking channels like mobile banking on ROA, NIM and net profit should charge money for SMS alert and debit & credit cards because in comparison to investment in technology, revenue is very low even some banks have started charging the fee for different e-banking services.
2. Product and services should be provided that are linked with the needs of the customers.
3. Central government and central bank must enforce the proper standards and policy on charges on electronic transactions.
4. Customer insecurity regarding e-banking like money laundering, frauds should be reduced by implementing legal laws which will enhance growth of the industry.
5. Awareness regarding all e-banking channels should be increased by organizing seminars and workshops. This will boost positive effect of technology on financial performance and reduce negative and insignificant of some channels. Acceptance of these facilities will consolidate the gains from the investment occur in India.
6. Heavy and intermediate cost on technology adoption and less charges on e-banking services effect banks performance so growth of customer base will improve effect of all channels on financial performance.
7. Regulation of telecommunication should be ensured by government through reducing or removing avoidable cost of implementing e-banking in order to increase access by unbanked population.

References:

1. Sujud, H. & Hashem, B. (2017) "Effect of Bank Innovations on Profitability and Return on Assets (ROA) of Commercial Banks in Lebanon", International Journal of Economics and Finance; Vol. 9, No. 4, pp: 35-50, ISSN 1916-971.
2. Vekya, J.M. (2017) "Impact of Electronic Banking on the Profitability of Commercial Banks in Kenya", Journal of Technology and System, Vol.1, Issue No.1, pp 18 – 39.
3. Miwangi,K.D.(2014) " The Effect of Electronic Banking on the Financial Performance of Commercial Banks in Kenya", University of Nairobi,pp:1-46.

4. Korankye,A.A.(2014) “The Impact of E-Banking on Customer Service and Profitability of Banks in Ghana”, *Global Journal of Commerce & Management Perspective*,*Vol.3(1):61-65*, ISSN: 2319 – 7285.
5. Karimzadeh,S.D., Emadzadeh,M.,& Shateri,J.(2014) “The Effects of Electronic Banking Expansion on Profitability of a Commercial Bank (Sepah Bank of Iran)”, *Indian Journal Science.Res.* 4 (6), pp: 305-312, ISSN: 2250-0138.
6. Malak, M.P.(2013) “ The Effects of Financial Innovation on the Financial Performance of Commercial Banks in South Sudan”, *The University of Nairobi.(Research Project)*
7. Sabhaya,R.J., Bhalala,A. & Chovatiya,P.(2014) “Study on Pre and Post Impact of E-Banking on Banking Operation”, *GALAXY International Interdisciplinary Research Journal*, , Vol.2 (3),pp:175-186, ISSN 2347-6915.
8. Oyewole,O.S., Abba,M., Maude,M., Gambo,J., Arikpo & Abam, I. (2013) “E-banking and Bank Performance: Evidence from Nigeria”, *International Journal of Scientific Engineering and Technology* Volume No.2, Issue No.8, pp : 766-771, (ISSN : 2277-1581).
9. Ngumi,P.M.(2013) “ Effect of Bank Innovations on Financial Performance of Commercial Banks in Kenya”, *Jomo Kenyatta University of Agriculture and Technology.(Thesis)*
10. Hassan,S.U. & Mamman, A.(2013) “Electronic Banking Products and performance of Nigerian Listed Deposit Money Banks”, *American Journal of Computer Technology and Application* Vol. 1, No.10, PP: 138 - 148, ISSN: 2327-2325.
11. Wanja,N.C.(2012) “ The Effect of Internet and Mobile Banking on Financial Performance of Commercial Banks in Kenya”, *the School of Business, University of Nairobi*, PP:1-51.(Research Project)
12. Aduda,J. & Kingoo,N.(2012) “The Relationship between Electronic Banking and Financial Performance among Commercial Banks in Kenya”, *Journal of Finance and Investment Analysis*, vol.1, no.3, pp:99-118,ISSN: 2241-0988.
13. Sarokolaei,M.A., Rahimipoor,A., Saraei,S. & Vakilzadeh,Z. “ Investigating of the effect of E-Banking on Increasing of Bank revenues (Case Study:Iranian Private Banks)”.

14. Sumra,S.H., Manzoo,M.K., Sumra,H.H. & Abbas,M.(2011) “The Impact of E-Banking on the Profitability of Banks: A Study of Pakistani Banks”,*Journal of Public Administration and Governance*, Vol. 1, No. 1, ISSN 2161-7104,PP:31-38.
15. Morufu, O. (2016) “E-payments adoption and Profitability Performance of Deposits Money Banks in Nigeria” *IPASJ International Journal of Information Technology*, Volume 4, Issue 3, March, ISSN 2321-5976.
16. Aghdam1, N.H. & Sadrabadi, M.H.H (2015) “The Effect of Internet Banking on Profitability of Banks”, *International Journal of Review in Life Sciences*, 5(4), PP:218-225, ISSN 2231-2935.
17. Akhisar, I., Tunay,K.B. &Tunay, N. (2015) “The Effects of Innovations on Bank Performance:The Case of Electronic Banking Services”, *Procedia - Social and Behavioral Sciences* , pp:369-375.
18. Jegede C.A. (2014) “Effects of Automated Teller Machine on the Performance of Nigerian Banks”, *American Journal of Applied Mathematics and Statistics*, Vol. 2, No. 1, PP: 40-46.
19. Halili,B.R.(2014) “The impact of Online Banking on Bank Performance”, Charles University in Prague,pp:1-62.(Master Thesis)
20. Andrea,M.C.(2013) “ A Performance Analysis of the Online Banking System”.
21. *Muhammad, A., Gatawa,N.M. & Kebbi,H.S.B.(2013) “Impact of Information and Communication Technology on Bank Performance: A Study of Selected Commercial Banks in Nigeria (2001 – 2011)”*, *European Scientific Journal* March 2013 edition vol.9, No.7 ISSN: 1857 – 7881,pp:213-238.
22. Onay,C. & Ozsoz,E.(2013) “The Impact of Internet-Banking on Brick and Mortar Branches: The Case of Turkey”, *J Financ Serv Res* 44,pp:187–204.
23. Ho,S.J. & Mallick,S.K(2006) “The Impact of Information Technology on the Banking Industry: Theory and Empirics”pp:1-19.
24. Digital Revolution in the Indian Banking Sector, WESCHOOL.
25. https://en.wikipedia.org/wiki/Banking_in_India, assessed on Nov.12, 2017.