E-BANKING'S EFFECTS ON FINANCIAL PERFORMANCE OF NEPALESE SELECTED COMMERCIAL BANKS

Sudip Wagle

Assistant Professor, Birendra Multiple Campus

Tribhuvan University, Nepal

Abstract

The overview of e-banking has revolutionized and redefined the ways of banks operating. Internet banking, mobile banking, ATM, Card Services, electronic funds transfer, account-to-account transfer, online bill payments, online statements etc. are now consider as the main contribution for the banks success among their core competencies. However, the banking industry has faced challenge to keep pace with technological developments and innovative products to suit its needs to generate more profits. This paper shows the data of five commercial banks from fiscal year 2016/17 to 2020/21. The objective of the study is to identify whether e-banking services has significantly improved the profitability performance of commercial banks in Nepal with regards to the returns on assets (ROA) and returns on equity (ROE) or not. The descriptive as well as inferential statistical tools has been used by using SPSS version 25 software. This result shows that the independent variables; Mobile Banking, Internet Banking, ATM, Debit Card has insignificant impact on profitability of Nepalese commercial banks in terms of ROA. However, Credit Card has negative but significant impact on profitability. On the other hand, all the variables has found to insignificant impact on the profitability of ROE of the commercial banks. Besides this, various macroeconomic factors such as monetary policy, fiscal policy, IT policy, electric Transaction act, political factors etc. are also the cause of profit growth of commercial banks in Nepal.

Keywords: E-banking tools, profitability, firms' performance, commercial banks, Nepal

INTRODUCTION

E-Banking is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic and interactive communication channels. It includes systems that enable financial institutions, customers, individuals or businesses, to access accounts, transact business, or obtain information on financial products and services through a public or private network, including the internet (FFIEC, 2003). For the last decade, the rapid advancement in information and communication technology has significantly influenced the banking industry in Nepal. Banks and financial organizations have improved their services as a financial intermediary through adopting various IT services. Technology now has become a tool that facilitates bank's organizational structures, business strategies, customer services and related functions.

The Internet allows banks to reach a whole new market- and a well off one too, because there are no geographic boundaries with the Internet. The Internet provides the bank with an almost paper less system. With more better and faster options a bank can able to create better customer relations and satisfaction. E-banking gives customer the control over nearly every aspect of managing the bank accounts. Besides that Customers can, Buy and Sell Securities, Check Stock Market Information, Check Currency Rates, Check Balances, See which checks are cleared, Transfer Money, View Transaction History. E-banking services has so many benefits not only to the bank itself, but also to the society as a whole; Lower operational costs of banks; Automated process; Accelerated credit decision; Expanded financing reach; Increased transparency; Expand reached through self-service; Lower transaction cost; Make some corporate services economically feasible for society; Make anytime access to accounts and loan information possible.

Many researchers have studied and completed their research in the title of e-banking practices. Out of them, few were only studied the impact of e-banking on banks performance in Nepal. Moreover, their findings have not been exposed as needed in consistency. This study therefore seeks to show the electronic banking affect on the financial performance of banks. The study also aims to find out whether the bank is making profits or losses and whether its customers are being satisfied by the services of that or not. This research tries to fulfill the gap by analyzing, identifying and estimating the effect of e-banking on the financial performance in terms of return on assets (ROA) and return on equity (ROE) of commercial banks in Nepal. To reach the results of above queries following hypotheses has been developed.

H_1: E-banking services have significant positive effect on Return on Assets (ROA) of commercial banks in Nepal.

H_2: E-banking services have significant positive effect on Return on Equity (ROE) of commercial banks in Nepal.

REVIEW OF LITERATURE

Evolution of E-Banking in Nepal

With the established of Nepal Bank Ltd. in 1937, the first bank to start banking in Nepal, it took nearly 53 years for the introduction of credit card by the Nabil Bank Ltd. in early 1990s. As for the development of e-banking in Nepal, Himalayan Bank Ltd. Stood in a front row with the introduction of Automated Teller Machine (1995) and Tele-banking. After the establishment of first bank, Banking sector as well as bank customers have to wait nearly about 65 years for internet banking, and the Kumari Bank Ltd. was the first to start the internet banking in Nepal in 2002 (Khatri & Dhungel, 2013). After ten years of introduction of internet banking, it was not popular in Nepal. Although the major cities like Kathmandu, Pokhara, Biratnagar have good internet facilities and majority of the bank provides the internet banking in urban cities however customers were not utilized. Study shows that there were about 200,000 internet users in Nepal, out of which 50% user were inside Kathmandu valley. However, only about 3000 (1.5%) internet user was using the internet banking regularly. One of the study have found that in terms of e-banking, ATM services is adapted by most of the banks in Nepal, while mobile banking getting the popularity but internet (computer-based) banking was still not available. (Banstola, 2008).

Tools of E-Banking

Followings are the most common used tools of electronic banking which are taken as independent variables in this study:

Mobile Banking

Mobile banking is a service provided by a bank or other financial institution that allows its customers to conduct financial transactions remotely using a mobile device such as a smart phone or tablet (Shah & Clarke, 2009). Unlike the related internet banking it uses software, usually called an app, provided by the financial institution for the purpose. Mobile banking is usually available on a 24-hour basis. Some financial institutions have restrictions on which accounts may be accessed through mobile banking, as well as a limit on the amount that can be transacted. Mobile banking is dependent on the availability of an internet or data connection to the mobile device.

Internet banking

Wireless Application Protocol (WAP) technologies are available for services delivery, their use is still limited in the provision of financial services. Issues related to these technologies are also very similar to those of the Internet (Shah & Clarke, 2009). Web-based banking is an assistance presented by banks that permits account holders to get their record information by means of the web or the internet. Web-based banking or Internet banking is otherwise called "Web banking" or "Online banking. Internet banking through customary banks empowers clients to play out every standard exchange, for example, bill payments, balance requests, stop-payment requests, and balance inquiries. Some banks even proposition online credit card and loan applications. Account data can be acquired day or night, and should be possible from any place.

ATM

An automated teller machine is an electronic telecommunications device that enables customers of financial institutions to perform financial transactions, such as cash withdrawals, deposits, funds transfers, balance inquiries or account information inquiries, at any time and without the need for direct interaction with bank staff. The ATM is an innovative service delivery mode that offers diversified financial services like cash withdrawal, funds transfer, cash deposits, payment of utility and credit card bills, cheque book requests and other financial enquiries (Khan, 2010). Using an ATM, customers can access their bank deposit or credit accounts in order to make a variety of financial transactions, most notably cash withdrawals and balance checking, as well as transferring credit to and from mobile phones. ATMs can also be used to withdraw cash in a foreign country. If the currency being withdrawn from the ATM is different from that in which the bank account is denominated, the money will be converted at the financial institution's exchange rate. Customers are typically identified by inserting a plastic ATM card (or some other acceptable payment card) into the ATM, with authentication being by the customer entering a personal identification number (PIN), which must match the PIN stored in the chip on the card (if the card is so equipped), or in the issuing financial institution's database.

Debit Card

To increase convenience for consumers, banks formed networks and allowed their customers to use ATMs owned by any bank in the network. A network logo was added to the card for consumers to easily identify the

ATMs that were in the network. To extend the value of their ATM cards, networks encouraged merchants to install PIN-pads at their cash registers so consumers could make purchases with ATM cards. Over time, ATM cards came to be known as "debit cards." (Parker, et. al., 2011). A debit card (also known as a bank card, plastic card or check card) is a payment card that can be used in place of cash to make purchases. It is similar to a credit card, but unlike a credit card, the money for the purchase must be in the cardholder's bank account at the time of a purchase and is immediately transferred directly from that account to the merchant's account to pay for the purchase. Some debit cards carry a stored value with which a payment is made (prepaid card), but most relay a message to the cardholder's bank to withdraw funds from the cardholder's designated bank account. In some cases, the payment card number is assigned exclusively for use on the Internet and there is no physical card. This is referred to as a virtual card.

Credit Card

A credit card can be defined as a card (usually plastic) that financial institution issue to their customers so that they can access credit facilities. The card holder can make payment on credit at some point of sale. Credit cards contain information about the holder's identity and their credit account at bank. They are designed so that this information can be read in ATMs and by electronic card readers in shops. The information can also be used online. Credit cards incur some interest which starts a month after the payment was made. Most banking institutions issue these cards to facilitate an increase in revenue and customer loyalty. Credit cards offer the convenience of cashless transactions and also allow for purchases over the telephone and, increasingly, via the internet. Credit cards also offer consumers the flexibility of deferring payment to a future date, and thus can allow consumers to smooth spending over temporary liquidity shortfalls (Bertaut & Haliassos, 2006).

Measurement tools of profitability:
  i)   Return on assets

Return on asset (ROA) is an investment return of sorts. It gives the information about the amount of money returned from every rupee invested in the business. ROA demonstrates the capacity of business to produce profits utilizing its assets. In some sectors, ROA is greater than others because the amount of capital invested in assets varies. The company's operational efficiency is affected by the use of resources, which is seen in the net profit margin. Success and failure are not necessarily tied to high and low profit margins. A business may have low margins yet still be successful if it is creating a high return on its investments and assets. The two factors used to calculate a company's total operational efficiency are combined. Asset turnover calculates how well an organization utilizes its assets, while net profit margin evaluates how profitable the company's sales are (Panigrahi & Vachhani, 2021).
 ii)   Return on equity (ROE)

ROE indicates how much profit may be made for every rupee invested in a business. In every sector, this is a crucial ratio, and for certain firms, it's more important than ROA. Calculation of Return on Equity (ROE) will be into three components: operating efficiency, asset efficiency, and leverage. Net Profit Margin is a metric of operational efficiency that indicates how much net income is made per rupee of revenue generated by a business. The Total Asset Turnover Ratio (TATR) is a financial indicator of asset efficiency that indicates the amount of money generated per rupee invested in assets. Finally, the Equity Multiplier is in charge of financial leverage calculation. An organization's output rises as these factors rise. Net Profit Margin and Total Asset Turnover are also subject to give-and-take within different industries. The last component, financial leverage, deals with the company's financial dealings. More the company's debt, higher the chance of default. More the debt lowers the return on equity. Increased interest expenses lead to lower net income. This causes the company's net profit margin to decrease (Panigrahi & Vachhani, 2021).

Empirical Review

Rauf & Fu (2014) measured the impact of e-banking on the performance of Pakistani commercial banks where the performance was measured in terms of Return on Assets, Return on equity and interest margin. Their empirical investigation revealed that e-banking has significant positive impact on profit margin, ROA and ROE. They conclude that banks can consider e-banking as a cost saving effective strategy to compete with the domestic and foreign banks given a well-managed monitoring and control over the risks involved in. Likewise, Dinh et al. (2015) studied about the impact of internet banking to performance of bank in Vietnam. The research results show that Internet banking has the positive impact of non-interest incomes and thereby increasing the profitability of commercial banks but this effect takes a time lag after 3 years and has a relatively small degree. Moreover, the research reveals the real situation of Internet banking in Vietnam. While in developing countries, the adoption of digital channel such as Internet banking reduces operating expenses, increases non-interest income, and consequently increases banks' profitability. Moreover, Maharjan (2021) concluded that the majority of current-banking users are between the age of 31 to 40, gender wise the female are the dominant users, occupationally salaried and students are the majority users and educational level diploma and above

diploma holders are the majority users and the banks do not keep full record of their customer profile in standardized way for easy reference. Their study shows the relationship between demographic characteristics and customer satisfaction in e-banking than ordinary banking. Specifically, the study inferred that ATM, internet banking services, mobile banking services, credit card services, debit card services and electronic fund transfer services were insignificant with customer satisfaction. From the above literatures, the conceptual frame work has been workout.

Figure 1:
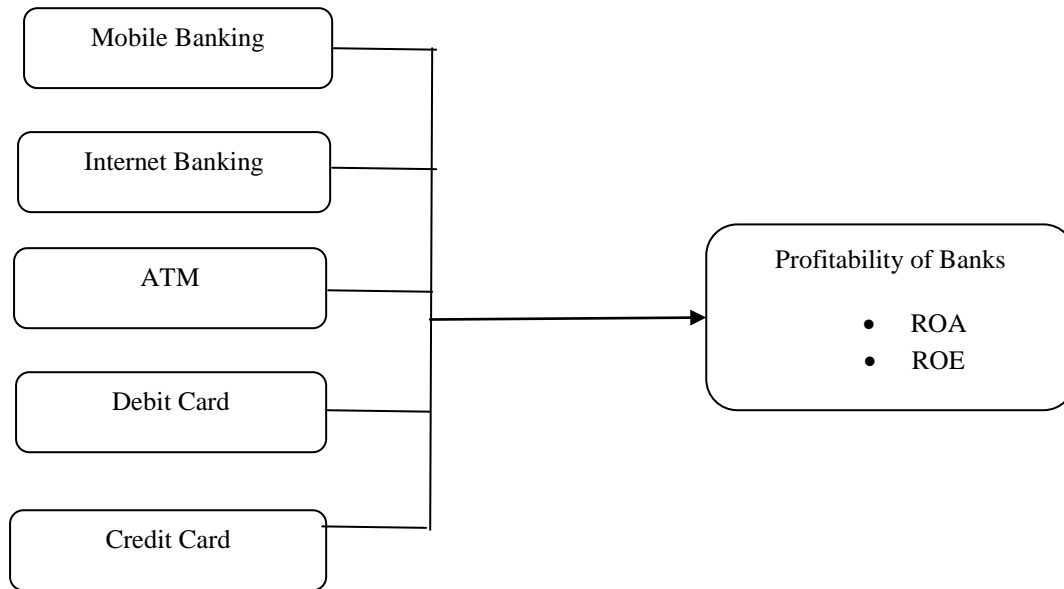
Source: Developed by a researcher from various related studies, including Dinh et al (2015).

RESEARCH METHODOLOGY

This research has been employed descriptive research design. Structured questionnaires survey were used to collect the primary information. There were all together 26 commercial banks operated in Nepal (till 2079 ashad end). Out of them 5 commercial banks were selected randomly. There were unlimited no of customers of that commercial banks using the e-banking services. Out of them, 406 respondents were taken as a study using a purposive sampling technique. The researcher made sure that the sampled respondents were the users and adopters of e-banking services, so that non-users and non-adopters respondents were eliminated from the sample frame. Primary and secondary data was collected in order to find out the real and fact-full result of this research. All possible and useful data available was collected. Required financial and operational information of the sample banks was collected based on their annual reports and their websites. The survey was created online and link sent to the respondents. Descriptive as well as Inferential statistics tools were used to find out the fact of effect of e-banking on banks financial performance. The collected data were processed and analyzed by using SPSS version 25 software. Following econometric model has applied to test the hypotheses:

Model 1

It has used to test the relationship between independent variables and ROA:

$ROA = a + b1\,MB + b2\,IB + b3\,ATM + b4\,DC + b5\,CC + \ldots\ldots\ldots\ldots ei$ Eqn. 1

Model 2

It has used to test the relationship between independent variable and ROE:

$ROE = a + b1\,MB + b2\,IB + b3\,ATM + B4\,DC + b5\,CC + \ldots\ldots\ldots\ldots ei$ Eqn.2

Where,

a	=	Constant
b1-b5	=	Intercept of independent variables
MB	=	Mobile Banking
IB	=	Internet Banking
ATM	=	Automated Teller Machine
DC	=	Dabit Cards
CC	=	Credit cards
ei	=	error term

Demographic Variables
Demographic variables are the gender, age groups, marital status, profession, and education status. Which is taken from different professionals, community and different area.

RESULT AND DISCUSSIONS
Table 1
Demographic characteristics of the Respondents (n=406)

Gender	Frequency	Percent
Male	214	53.0
Female	192	47.0
Age Group		
Below 20	25	6.0
20 to 29	108	27.0
30 to 39	129	32.0
40 to 50	114	28.0
50 or above	30	7.0
Education Status		
Less than higher secondary	41	10.0
Higher secondary	128	32.0
Bachelors/Masters degree	224	55.0
Above masters degree	13	3.0
Profession		
Students	57	14
Employees	146	36
Teacher	76	19
Businessman	91	22
Others	36	9

Source: Field Survey 2022

Table 1 show that, the majority of the respondents were male (53%). Likewise, the majority of the respondents are between 30-39 years age group which is 32 percent of the respondents and 7.0 percent lies above 50 age groups. Similarly, the level of education status 55.0 percent respondent were having bachelor and master degree, and the majority of the respondents 36 percent were employees profession.

Table 2
Descriptive statistics (Positions of e-banking service and profitability indicators of sample banks)

	Year	Mobile Banking	Internet Banking	ATM	Debit Card	Credit Card	ROA	ROE
ADBL	2016/17	154884	1516	41	25165	0	2.15	11.77
	2017/18	194151	2541	60	54115	0	2.71	14.07
	2018/19	253306	5071	71	63517	0	2.77	15.19
	2019/20	274522	6212	83	92992	0	1.86	11.70
	2020/21	439136	7882	97	121684	0	1.59	11.67
EBL	2016/17	254784	3519	65	45156	1175	1.72	16.04
	2017/18	294352	4546	78	64122	2760	1.97	16.00
	2018/19	353407	6098	91	83519	3742	1.94	17.33
	2019/20	364512	8521	116	101993	5485	1.42	13.50
	2020/21	499239	10864	143	141694	8674	0.89	8.56
CZBIL	2016/17	74509	1543	59	66020	1070	1.80	11.52
	2017/18	98757	5745	70	78454	1758	1.72	11.22
	2018/19	153311	10209	78	92376	2848	1.74	11.71
	2019/20	236678	12482	99	129352	3458	1.19	8.93
	2020/21	357020	26760	123	195557	4684	1.29	9.55
SBL	2016/17	11245	18554	93	153287	7123	1.51	14.89
	2017/18	152124	34312	117	196684	9824	1.47	15.34
	2018/19	237833	45888	172	271113	17207	1.49	15.71
	2019/20	318648	53177	202	344375	23813	1.26	13.81
	2020/21	468139	60899	208	430613	27215	1.25	15.68
NI	2016/17	125500	33600	74	129000	1015	1.64	16.84

2017/18	629000	74000	220	401000	4536	1.97	12.09
2018/19	858809	96455	464	657096	7623	1.56	22.73
2019/20	1143831	115894	464	832729	11579	1.32	19.26
2020/21	1426508	133022	471	1129742	15422	1.09	17.09

Source: Annual Reports

Above table 2 shows the position of e-banking facility (Mobile banking, Internet banking, ATM, Debit card and Credit card) user of ADBL, EBL, CZBIL, SBL & NICA Banks. The sample banks E-banking users are growing up by the year come. Similarly, ROA and ROE shows the position of profitability of banks. The results shows all the sample banks achievement in expanding e-banking services have helped to manage assets effectively to realize return and its importance in attracting more customers in this computerized world. A positive ROA and ROE ratio usually indicates an upward profit trend as well.

Table 3
Pearson's Correlation Matrix for the Dependent and Independent Variables

	Mobile Banking	Internet Banking	ATM	Debit Card	Credit Card	ROA	ROE
Mobile Banking	1						
Internet Banking	0.863	1					
ATM	0.916	0.954	1				
Debit Card	0.920	0.975	0.962	1			
Credit Card	0.375	0.597	0.526	0.570	1		
ROA	-0.368	-0.424	-0.433	-0.445	-0.578	1	
ROE	0.442	0.564	0.589	0.522	0.274	0.084	1

Correlation Analysis shows from the table 3 that, Mobile Banking is negatively related with firms ROA (r=-0.368) but positively related with firms ROE (r=0.442). Similarly, Internet Baking is also negatively related with ROA (r=-0.424) and positively related with ROE (r=0.564). ATM, Debit Card and Credit Card are also negatively related with ROA (since r=-0.433, r=-0.445 and r=0.578 respectively) but positively related with ROE (since r=0.589, r=0.522 and r=0.274 respectively).

Regression analysis
Regression analysis model was applied for determining the relationship between the dependent variables of the bank's profitability (ROA and ROE) and independent variables such as mobile banking, internet banking, ATM, debit card and credit card.

Table 4
Regression results of ROA on Mobile banking, Internet banking, ATM, Debit Card and Credit Card

	Coefficients	Standard Error	t Stat	P-value
Intercept	1.98286	0.16855	11.76380	0.00000
Mobile Banking	-0.00000	0.00000	-0.02794	0.97800
Internet Banking	0.00000	0.00001	0.79629	0.43569
ATM	-0.00133	0.00265	-0.50407	0.62000
Debit Card	-0.00000	0.00000	-0.42657	0.67448
Credit Card	-0.00003	0.00001	-2.19892	0.04046
R = 0.620	R^2 = 0.384	F = 2.368	Sig = 0.0786	

From table 4, the R-squared statistics of the model shows 38.40%. The result indicates that the changes in the independent variables explain 38.4% of the changes in the dependent variable. That is Mobile Banking, Internet banking, ATM, Debit Card and Credit Card explain 38.40% of the changes in ROA. The remaining 61.60% of changes was explained by other factors, which are not included in the model. Thus, these variables affects on the profitability of commercial banks in Nepal in terms of ROA to some extent. Moreover, F statistics shows that the independent variables are statistically insignificant in predicting the profits or affecting the ROA of the banks. The study established value of p=0.0786 that indicates statistical insignificance relationship. Likewise, Mobile Banking (P=0.978), Internet Banking (P=0.436), ATM (p=0.620), Debit Card (p=0.0.674) were not significant in predicting the profits of the banks since all the p values were more than 0.05. However, Credit Card has significant in predicting the profit of the banks since the p value was less than 0.05. However, the relationship is negative.

Table 5
Regression results of ROE on Mobile banking, Internet banking, ATM, Debit Card and Credit Card

	Coefficients	Standard Error	t Stat	P-value
Intercept	11.97668	1.20370	9.94992	0.00000
Mobile Banking	-0.00001	0.00001	-0.89628	0.38132
Internet Banking	0.00004	0.00008	0.52279	0.60716
ATM	0.03200	0.01898	1.68613	0.10812
Debit Card	-0.00001	0.00001	-0.52126	0.60821
Credit Card	-0.00006	0.00011	-0.57927	0.56921
R = 0.655	R^2 = 0.430	F = 2.861	Sig = 0.043	

From table 5, the R-squared statistics of the model shows 43.00%. The result indicates that the changes in the independent variables explain 43.0% of the changes in the dependent variable. That is Mobile Banking, Internet banking, ATM, Debit Card and Credit Card explain 43.00% of the changes in ROE. The remaining 57.00% of changes was explained by other factors, which are not included in the model. Thus, these variables affects on the profitability of commercial banks in Nepal in terms of ROE to some extent. Moreover, F statistics shows that the independent variables are statistically significant in predicting the profits or affecting the ROE of the banks. The study established value of p=0.043 that indicates statistical significance relationship. Likewise, the findings show the coefficients of the regression. According to the findings, Mobile Banking (P=0.381), Internet Banking (P=0.607), ATM (p=0.108), Debit Card (p=0.608) and Credit Card (p=0.569) were no significant in predicting the profits of the banks since all the p values were more than 0.05.

Hypothesis test
Hypothesis 1: E-banking tools have significant effect on Return on Assets (ROA).
The regression equation was:
ROA = 1.983+ (-0.00000)MB + (0.00000)IB + (-0.00133)ATM + (-0.00000)DC + (0.00003)CC

Hypothesis 2: E-banking tools have significant effect on Return on Equity (ROE).
The second regression equation was:
ROE = 11.977+ (-0.00001)MB + (0.00004)IB + (0.03200)ATM+ (-0.00001)DC+ (-0.00006)CC

DISCUSSION
The result shows that use of e-banking channels of internet banking has had a few impacts on the financial performance of the commercial banks in terms of ROA. Mobile Banking, ATM, Debit Card and Credit cards has found to negative impact on the ROA of the banks. Also, the result shows that use of e-banking channels of internet banking and ATM has had a few impacts on the financial performance of the commercial banks in terms of ROE. Mobile Banking, Debit Card and Credit cards has found to negative impact on the ROE of the banks. The finding for the sampled banks in Nepal confirms the study conducted by Dinh et.al.(2015). They reveals that internet banking has positive impacts on banks' income and in turn, banks' profitability. These effects are gradual, becoming significant three years after the adoption of Internet banking. In other words, this is the evidence to prove that, in developing countries, digital channels such as Internet banking still bring benefits to banks. This study is agree in some extent with the study by Aduda & Kingoo (2012) stating that the coefficient of investments in e-banking measured by expenditure on bank ICT investments (e-banking) has the correct sign and is significant. They found that investments in e-banking has a positive relationship with bank performance at 1% level. There is a negative relationship between number of debit/credit cards issued to customers as proxy of e-banking and bank performance. 1% increase in number of debit cards and credit cards issued to customers by the banks leads to 0.00001% and 0.00006% decrease in the bank profitability (ROE).
The finding from this research is also supported by the study conducted by Olwande & Ngada (2019) concluding that internet banking and use of ATMs had a positive and significant effect on the financial performance of commercial banks in Kenya. This study found a positive relationship between number of ATM installation as proxy of e-banking and bank performance. 1% increase in number of ATM installation by the banks leads to 0.032% increase in the bank profitability (ROE).

Though there is rapid growth in Nepalese financial sector, E-banking is still in its infancy. E-banking has a huge prospective to contribute to the financial system of Nepal. Certain segments of the consumer group are only using Electronic Banking. Consumers are less aware of risk involved in E-banking. Banks are investing lots of money in technology but they have not been successful enough in E-banking activities. If the banks do not see the scenario and challenges of E-banking, they cannot be make profitable.

CONCLUSION

In general it can be concluded that commercial bank have varieties of electronic banking services for their customer in order to provide effective and efficient service delivery. This different electronic banking promotes effectiveness and efficient service delivery since client can be able to withdraw, deposit money, bill payment and check account balance etc. From the result of statistical analysis, e-banking channels (MB, IB, ATM, DC and CC) have negative correlation with the ROA and positive correlation with the ROE of the commercial banks in Nepal. Further, use of e-banking channels of internet banking has had positive impacts on the financial performance of the commercial banks in terms of ROA. But mobile Banking, ATM, Debit Card and Credit cards has found to negative impact on the ROA of the commercial banks in Nepal. Accordingly, use of e-banking channels of internet banking and ATM has had positive impacts on the financial performance of the commercial banks in terms of ROE. But, mobile Banking, Debit Card and Credit cards has found to negative impact on the ROE of the commercial banks.

The Banking and Financial Industry (BFI) has encountered three significant changes; the combined strength of the industry, the diffusion of e-banking and the increased freedom to combine banking with other financial services especially through internet. Within this context the change it has adopted enormously is the adoption of internet technology but parallel to this it has faced many challenges such as significant high cost of installing and maintenance of IT and its infrastructure, skilled work force, issues of increasing demand to meet customer expectation for service quality, trustworthiness of the information system and ability to achieve economies of scale within IT structure.

Future scope and Implications

The study recommends to the management of banks which are slow in innovation adoption, to move in and adopt various innovations in their operations in order to shore up their profitability. This recommendation is well supported by the fact that in Nepal, the leading banks in terms of profitability are mostly the fast movers in adoption of new technologies. Profitability is also crucial to shareholders and the market is also keen on the profitability of organizations. Government policy makers should also need to review policies related to promotion of innovation adoption and transfer of technology. Government should encourage adoption of innovations that will improve profitability of organizations because it will convert to better tax revenues for the government. Nepalese banks must ensure that their e-banking services are secured and protected. And also, they need to convince and aware their customers about security of e-banking services.

REFERENCES

Aduda, J., & Kingoo, N. (2012). The Relationship between Electronic Banking and Financial Performance among Commercial Banks in Kenya. *Journal of Finance and Investment Analysis.* 1(3), 99-118.

Bertaut, C.C. & Haliassos, M. (2006). Credit Cards: Facts and Theories. *Article in SSRN Electronic Journal,* 5(1), 1-34. doi: 10.2139/ssrn.931179

Dinh, V., Le, U., & Le, P. (2015). Measuring the impacts of internet banking to bank performance: Evidence from Vietnam. *The Journal of Internet Banking and Commerce.* 20(2), 1-13.

Federal Financial Examination Council, United States of America. (2003). *E-banking Handbook.* Retrived from https://www.ffiec.com (access date: March 22, 2023).

Khan, A. M., (2010). An Empirical Study of ATM Service Quality and Customer Satisfaction in Pakistani Bank. *European journal of social sciences,* 13(3), 333-344.

Khatri, J. R. & Dhungel, K. U. (2013). Internet Banking in Nepal: Use and Challanges. *Banking Journal.* 3(2), 57-77.

Maharjan, A. (2021). *Impact of Electronic Banking Services Delivery on Customer Satisfaction in Nepalese Private Commercial Banks.* Unpublished Masters Degree Thesis, Tribhuvan University.

Olwande, O. S. & Ngaba, D. (2019). E-Banking Services and Financial Performance of Commercial Banks in Kenya. *International Academic Journal of Economics and Finance.* 3(4), 132-153.

Panigrahi, A.K. & Vachhani, K. (2021). Financial analysis by return on equity (ROE) and return on asset (ROA)-A comparative study of HUL and ITC. *Journal of Management Research and Analysis.* 8(3), 131-138.

Parker, C.C., Wironen, J., Murphy, M.G. & Mahoney, K.J. (2011). Debit Card Fundamentals and Their Use in Government Programs. *CLASS Technical Assistance Brief Series,* 9, 1-13.

Rauf, S., & Fu, Q. (2014, February). Integrated Model to measure the Impact of E-Banking Services on Commercial banks' ROE: Empirical Study of Pakistan. In *2014 International Conference on Information, Business and Education Technology (ICIBET 2014)* (pp. 19-22). Atlantis Press.

Shah, M. & Clarke, S., (2009). *E-Banking Management : Issues, Solutions and Strategies*. Hershey, United States: Information Science Reference's (an imprint of IGI Global) Publication.