The Effect of Internet Banking on the Financial Performance of Nepalese Commercial Banks

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Abstract

This study examines the effect of internet banking and financial performance of Nepalese commercial banks. Financial performance is selected as the dependent variable. Similarly, mobile banking, internet banking, agency banking, QR code, point of sale are selected as independent variables. This study is based on primary data with 124 observations. To achieve the purpose of the study, structured questionnaire is prepared. The correlation coefficients and regression models are estimated to test the significance and importance of different factors influencing the effect on financial performance of Nepalese commercial banks.

The study showed that internet banking has a positive impact on financial performance. It means that higher the quality of internet banking higher will be the financial performance. Similarly, mobile banking has a positive impact on financial performance. It indicates that an increase in effective use of mobile banking leads to an increase in financial performance. Moreover, agency banking has a positive impact on financial performance. It indicates that an increase in agency banking leads to an increase in financial performance. Likewise, QR code has a positive impact on financial performance. It shows that the higher the use of QR code, the higher will be the financial performance. Similarly, point of sale has a positive impact on financial performance. It indicates that the higher the used of in point of sale higher will be the financial performance.

Keywords: mobile banking, internet banking, agency banking, QR code, point of sale, financial performance.

1. Introduction

Financial performance is defined as the process which ensures accessibility, availability and utilization of financial system by members of an economy (Sharma, 2008). Financial performance can be defined as delivery of basic banking services at an affordable cost to all sections of society, especially the vast sections of disadvantaged and low-income groups who tend to be excluded (Abid and Noreen, 2006). Similarly, Financial

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performance refers to the absence of price or non-price barriers in the use of financial services (Sharma and Kukreja, 2013). Likewise, De Young (2005) E-banking is the use of electronic means to deliver banking services, mainly through the internet. In addition, financial performance refers to the absence of price or non-price barriers in the use of financial services (Sharma and Kukreja, 2013).

Siyanbola (2013) examined the effect of cashless banking in Nigerian economy. The study showed a significant and positive relationship between Point-of-sale terminal and financial performance. Similarly, Okoye and Ezejiofor (2013) examined the impact of selected e-payment instruments on the intermediation efficiency of the Nigerian economy. The study found that the ATM, point of sales and Internet services have positive and significant impact on the performance of bank in Nigeria. Likewise, Wansem (2014) examined the effect of mobile banking and financial performance in Rwanda. The study showed that mobile banking has a significant and positive effect on financial performance. Similarly, Lawang and Adong (2016) investigated the relation of use of mobile banking and financial. The result showed that an increase in the use of mobile banking leads to an increase in the living standard of people through saving. Similarly, Ogare (2013) assessed the effect of internet banking on the financial performance in Kenya. The study found that internet banking has a strong and significant effect on the financial performance in Kenya. Likewise, Lotto (2016) examined the leverage provided by agency banking in promoting the financial inclusion in Tanzania. The study found that agency banking costs are reported to be lower compared to those of traditional banking services. Further, Ugwueze and Nwezeaku (2016) examined the relationship between internet banking and financial performance in Nigerian commercial banks. The study showed that internet banking is co-integrated with financial performance.

Sulistyaningsih and Hanggraeni (2022) revealed that adoption of QRIS is determined by knowledge, organizational readiness, competitive pressure, and third-party support. Similarly, Ivantury *et al.* (2008) argued that one of the primary impediments to provide financial services to the poor through branches and other bank-based delivery channels is the high costs inherent in the traditional banking methods. Likewise, Andrianaiva and Kpodar (2011) the study revealed that mobile banking and internet banking reinforces the impact of money consideration on monetary development. Similarly, Nato (2011) assessed the effect of financial innovation on financial performance in Kenya specially in Kibera. The study revealed that there is a negative

but significant relationship between point-of-sale terminal and financial performance.

Kithinji (2017) investigated the effect of digital banking strategy on financial performance among commercial banks. The study found a significant positive change in financial performance as proxies by number of accounts, deposit value, number of outlet and customer base, over the 5- year period. Likewise, Hossain (2017) analyzed the key issues related to the development of agent banking operation and its effectiveness in financial performance in Bangladesh. The study also found that services provided by agency banking increases the number of business transaction of banking industry. Similarly, Dzombo (2018) explored the effect of financial performance and government policy in the relationship between branch less banking and financial performance and financial performance of commercial banks in Kenya. The study found that both agency banking and electronic banking has a significant negative effect on financial performance as well as financial performance.

Ozili (2018) showed a positive and significant impact between internet banking and mobile banking with financial performance. Further, Ene *et al.* (2019) analyzed the impact of electronic banking on financial performance in Nigeria. The study found that automated teller machine does not significantly impact financial performance. Likewise, Ogbeide (2019) examined the effects of cashless policy on financial performance in Nigerian emerging economy. The findings revealed that volume of point of sale shows more significant and positive influence on financial performance in urban areas. Likewise, Durai and Stella (2019) investigated the impact of digital finance on financial inclusion. The result showed that there is a positive impact of internet banking and ATM service on financial performance and point of sales has a negative impact on financial performance. Likewise, Doh (2020) assessed the effect of financial innovation in Cameroon. Regression results showed that the mobile money transaction has a positive effect on financial performance. Similarly, Musau and Melubo (2020) examined digital banking and financial performance of women enterprise in Narok County. The study found that digital banking services significantly and positively influenced financial performance of women enterprise in Narok County.

Agbaeze (2020) assessed impact of cashless policy on financial performance in Nigeria. The findings revealed that automated teller machines, point of sale terminals, mobile phone banking and web cashless instruments had significant impacts on financial inclusion in Nigeria. Similarly,

Mohammed (2022) analyzed comprises all the banks operating in Nigeria. The results showed that mobile payment, POS (point of sales) transactions and internet payment has a positive and significant impact on return on assets of commercial banks in Nigeria, while RTGS has a negative impact on the return of assets. Moreover, Khalifaturofilah (2023) examined the effect of financial performance innovation, financial ratios, cost efficiency, and good corporate governance on the financial performance of banks in Indonesia. The results showed financial innovation affects the financial performance of banks. Further, Adurayemi (2023) examined the effect of cashless policy on financial performance of commercial banks in Nigeria. The study found that ATM transactions, NIP transaction, mobile banking transactions, and cheque transaction has a significant impact of the performance of commercial banks in Nigeria. Similarly, Hermuningsih *et al.* (2023) the study found that that fin-tech has a positive effect on financial performance. The study concluded that bank size is a moderating variable for the repercussions of fin tech on financial performance and liquidity also has a positive impact on financial performance, and bank size performance.

Kombe and Wafula (2015) investigated effect of internet banking on the financial performance in Kenya. The study found that there exists a significant negative relationship between internet banking and financial performance. Wansem (2014) examined the effect of mobile banking and financial performance in Rwanda. The study found that the mobile banking has increased the total number of financial access points that has positive effect on financial performance. Similarly, Michelle (2016) assessed the relationship between digital finance and level of financial performance in the banking sector Kenya. The study found an insignificant negative relationship between agency banking and point of sale terminal and financial performance.

In the context of Nepal, Kumar (2018) found that financial innovation and financial performance differ with each other. Both variables are not significant and do not have relationship to each other. similarly, Shrestha (2019) investigated impact of electronic banking on banking industry in Nepal. The study showed that effect of the e-banking performance expectancy, responsiveness and reliability of customer satisfaction in Nepalese e-banking business. Dhungana and Kumar (2015) found that financial performance in Nepal is not satisfactory and majority of people does not have bank account at the formal financial institutions. Similarly, Pradhan (2019) analyzed agreeableness and satisfaction towards e banking services offered by Nepalese bank. The study showed e - banking services have positive impact

in terms of use of banking products, ease of use, security and privacy and cost effectiveness.

The above discussion shows that the empirical evidences vary greatly across the studies on the internet banking and the financial performance of commercial banks. Though there are above mentioned empirical evidences in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The main purpose of the study is to analyze the internet banking and the financial performance of Nepalese commercial banks. Specifically, it examines the impact of internet banking, mobile banking, QR code, point of sales and the financial performance of Nepalese commercial banks.

The remainder of this study is organized as follows. Section two describes the sample, data and methodology. Section three presents the empirical results and the final section draws the conclusion.

2. Methodological aspects

The study is based on the primary data. The data were gathered from 124 respondents through questionnaire. The respondents' views were collected on internet banking, mobile banking, QR code, point of sales and financial performance. The study used descriptive and casual comparative research design.

The model

The model estimated in this study assumes that internet banking depends upon the financial performance of Nepalese commercial banks. The dependent variables selected for the study is financial performance. Similarly, the selected independent variables are internet banking, mobile banking, QR code, point of sales. Therefore, the model takes the following form:

$$FP= \beta_0 + \beta_1 IB + \beta_2 MB + \beta_3 AB + \beta_4 QRC + \beta_5 POS + \varepsilon$$

Where,

F = financial performance

IB = Internet banking

MB = Mobile banking

AB = Agency banking

QRC = Quick response code

POS= Point of sales

Mobile banking was measured using a 5-point Likert scale where respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include "Mobile banking assures quick transaction in terms of time.", "Mobile banking process is clear and easy." and so on. The reliability of the items was measured by computing the Cronbach's alpha ($\alpha = 0.844$).

Internet banking was measured using a 5-point Likert scale where respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include "Internet banking is easier than traditional banking.", "Internet banking is convenient and user friendly." and so on. The reliability of the items was measured by computing the Cronbach's alpha ($\alpha = 0.844$).

Agency banking was measured using a 5-point Likert scale where respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include "Agency banking charges/cost is minimal.", "Agent banking is quick and faster." and so on. The reliability of the items was measured by computing the Cronbach's alpha ($\alpha = 0.895$).

Point of sale was measured using a 5-point Likert scale where respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include "POS is very useful among customers at retail store.", "POS technology helps to execute transaction fast." and so on. The reliability of the items was measured by computing the Cronbach's alpha ($\alpha = 0.913$).

QR code was measured using a 5-point Likert scale where respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include "QR is quick and faster.", "QR code plays huge role in driving customer engagement and loyalty." and so on. The reliability of the items was measured by computing the Cronbach's alpha ($\alpha = 0.919$).

Financial performance code was measured using a 5-point Likert scale where respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include "Financial services are equally available to all.", "Financial services provided

services with specific need." and so on. The reliability of the items was measured by computing the Cronbach's alpha (α =0.950).

The section describes the independent variables and dependent variables used in this study along with the hypothesis formulation.

Mobile banking

Mobile banking refers to the provision of banking and financial services with the help of mobile telecommunication devices (Adewuyi, 2011). Mobile banking has a positive correlation with the access and use of financial services (Chakrabarty, 2011). Similarly, Ishengoma (2011) exhibited positive association and statistically important link between financial inclusion and mobile banking. Likewise, Ngugi (2015) showed that mobile money transfer services are positively associated to financial performance. Similarly, Kigen (2010) found that mobile banking reduced transaction costs considerably though they were not directly felt by the banks because of the then small mobile banking customer base. Based on it, the study develops the following hypothesis:

H_1: There is a positive relationship between mobile banking and financial performance.

Internet banking

Pikkarainen *et al*. (2004) defined internet banking as an 'internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments. Similarly, E-banking is the unique of banking in which money is transferred over electronic channels by sending and receiving certain electronic signals as opposed to utilizing a cheque, trading money (Panida and Sunsern, 2012). Similarly, Freedman (2000) stated that internet banking and internet money consists of three devices; access devices, stored value cards, and network money. The findings revealed that adoption of ICT has an impact on the performance of banking sector mainly in time reductions and quality improvements, rather than cost reductions. Based on it, the study develops the following hypothesis:

H_2: There is a positive relationship between internet banking and financial performance.

Agency banking

Agency banking refers to delivery of financial services outside the conventional bank branches (Kelly, 1989). Agency banking is new strategy

commercial banks are employing to increase market share and offer banking services to their clients in varied places (Beckett, 1996). Agency banking increases trust and usages of banking services. Similarly, Doh (2020) found that agency banking is positively correlated with financial performance. Likewise, Muasya and Kerongo (2015) revealed that agency banking services awareness among the rural population are positively correlated to access to financial services. Further, Waithanji (2012) revealed lack of connection between agent banking and financial deepening banks adopt agency banking. Based on it, the study develops the following hypothesis:

H_3: There is a positive relationship between agency banking and financial performance.

Point of sale

Point of sale is an electronic device that is used for verifying debit card and credit card transactions. Similarly, Sorescu *et al*. (2003) showed that point of sale includes convenience and low transaction cost which leads to an increase in financial services. Boateng *et al.* (2020) showed that POS transactions are positively related to ROE of banking industries. Further, Kamboh and Leghari (2016) confirmed that market concentration and bank size have positive effect on bank's profitability. Similarly, Demaki *et al.* (2021) found that POS banking has a positive relationship with the profitability of the banks. Based on it, the study develops the following hypothesis:

H_4: There is a positive relationship between point of sale and financial performance.

QR code

QR codes are widely used in various settings such as consumer advertising, commercial tracking, ticketing and marketing. Focardi *et al*. (2019) found that in some cases security breaks usability they provide the choice of secure and usable cryptography schemes. Similarly, QR code payment is a contact less payment method where payment is performed by scanning a QR code from a mobile app (Ogutu and Fatoki, 2019). Likewise, QR Code is a two-dimensional bar code type that can be used to represent information into square-shaped patterns that can be read by using QR Scan through a smartphone camera (Dennehy and Sammon, 2015). QR codes are widely being used to convey short information such as website address, mobile numbers etc. (Sharma *et al.*, 2013). The study found that the QR code payment model on mobile banking can be used widely as a non-cash payment

alternative (Lee *et al.*, 2010). Based on it, the study develops the following hypothesis:

H_6: There is a positive relationship between QR code and financial performance

3. Results and discussion

Correlation analysis

On analysis of data, correlation analysis has been undertaken first and for this purpose, Kendall's Tau correlation coefficients along with means and standard deviations have been computed, and the results are presented in Table 1.

Table 1

Kendall's Tau correlation coefficients matrix

This table presents Kendall's Tau correlation coefficients between dependent variable and independent variables. The correlation coefficients are based on124 observations. The dependent variable is FP (Financial performance). The independent variables are MB (Mobile banking), AB (Agency banking), IB (Internet banking), POS (Point of sale) and QR (Quick response code).

Variables	Mean	SD	FP	MB	IB	AB	QR	PO
FP	3.643	0.855	1					
MB	3.543	0.879	0.523**	1				
IB	3.401	0.903	0.476**	0.529**	1			
AB	3.463	0.970	0.515**	0.507**	0.465**	1		
QR	3.621	0.872	0.447**	0.461**	0.453**	0.518**	1	
PO	3.575	0.871	0.546**	0.468**	0.4496**	0.503**	0.585**	1

Note: The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent levels respectively.

Table 1 shows correlation of dependent and independent variables. The table shows that internet banking has a positive impact on financial performance. It means that the higher the quality of internet banking, the higher will be the financial performance. Similarly, mobile banking has a positive impact on financial performance. It indicates that an increase in effective use of mobile banking has led to an increase in financial performance. Moreover, agency banking has a positive impact on financial performance. It indicates that an increase in agency banking leads to an increase in financial performance. Likewise, QR code has a positive impact on financial performance. It shows that the higher the use of QR code, the higher will be the financial performance. Similarly, point of sale has a positive impact on

financial performance. It indicates that an increase in point of sale leads to an increase in financial performance.

Regression analysis

Having indicated Kendall's Tau correlation coefficients, the regression analysis has been carried out and the results are presented in Table 2. More specifically, it presents the regression results of internet banking, mobile banking, agency banking, QR code and effect of internet banking on the financial performance of Nepalese commercial banks.

Table 2

The regression result of mobile banking, agency banking, internet banking, point of sale and quick response code on effect of E-banking on the financial performance of Nepalese commercial banks

The results are based on 124 observations using a linear regression model. The model is FP= $\beta_0 + \beta_1 MB + \beta_2 IB + \beta_3 AB + \beta_4 POS + \beta_5 QR + \varepsilon$ where the dependent variable is FP (Financial performance). The independent variables are MB (Mobile banking), AB (Agency banking), IB (Internet banking), POS (Point of sale) and QR (Quick response code).

Model	Intercept	Regression coefficients of					Adj. R_bar2	SEE	F-value
		MB	IB	AB	QR	PO			
1	0.866 (3.656)	0.744 (11.743) **					O.529	0.59841	137.888
2	0.991 (4.446)		0.730 (11.951) **				0.538	0.59277	142.835
3	1.072 (5.374)			0.736 (12.89) **			0.579	0.56567	168.727
4	1.164 (5.531)				0.658 (11.845) **		0.533	0.59563	140.314
5	0.659 (3.296)					0.805 (15.005) **	0.648	0.51752	225.141
6	0.607 (2.628)	0.405 (4.303)	0.421 (4.600)				0.596	0.5504	91.010
7	0.537 (2.552)	0.389 (5.061)		0.477 (6.554)			0.650	0.51565	114.055
8	0.799 (4.019)			0.471 (5.651)	0.320 (4.127)		0.628	0.53155	104.055
9	0.543 (2.756)			O.233 (3.084)		0.602 (7.940)	0.694	0.50023	125.246
10	00.371		0.317 (4.418)		0.574 (7.940)		0.694	0.48196	139.555
11	0.213 (1.066)	0.351 (5.268)				0.575 (8.806)	(0.711)	0.46833	151.336

Notes:

i. Figures in parenthesis are t-values.
ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.
iii. Consumer buying behavior is dependent variable.

Table 2 shows that the beta coefficients for internet banking are positive

with the financial performance. It indicates that internet banking has a positive impact on financial performance. This finding is consistent with the findings of Cheruiyot and Sharma (2010). Likewise, the beta coefficient for mobile banking is positive with the financial performance. It indicates that mobile banking has a positive impact on financial performance. This finding is consistent with the findings of (Chakrabarty, 2011). Furthermore, the beta coefficient for agency banking is positive with the financial performance. It indicates that agency banking has a positive impact on financial performance. This finding is consistent with the findings of Doh (2020). In addition, the beta coefficient for QR code is positive with the financial performance. It indicates that QR code has a positive impact on financial performance. This finding is consistent with the findings of Denso (2011). Moreover, the beta coefficients for point of sale are positive with the financial performance. It indicates that point of sale has a positive impact on financial performance. This finding is consistent with the findings of Demaki *et al.* (2021).

4. Summary and conclusion

Financial performance is the provision of affordable, accessible and relevant financial products to individuals and firms that were previously not able to enjoy those benefits. Banking customers have a more sophisticated and demand quality, speed and variety of services and products offered by banks. Customers who require banking services have had to leave everything and travel to their branches to be able to transact banking business.

This study attempts to examine the effect of the internet on the financial performance of Nepalese commercial Banks. The study is based on primary data with 124 observations.

The study also showed that internet banking, mobile banking, agency banking, QR code and the internet have a positive relationship with financial performance. The study concluded that proper internet banking, mobile banking, agency banking, QR code and financial performance have a significant role in increasing financial performance of Nepalese commercial banks. The study also concluded that the most influencing factor is internet banking followed by mobile banking and agency banking that explain the financial performance.

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